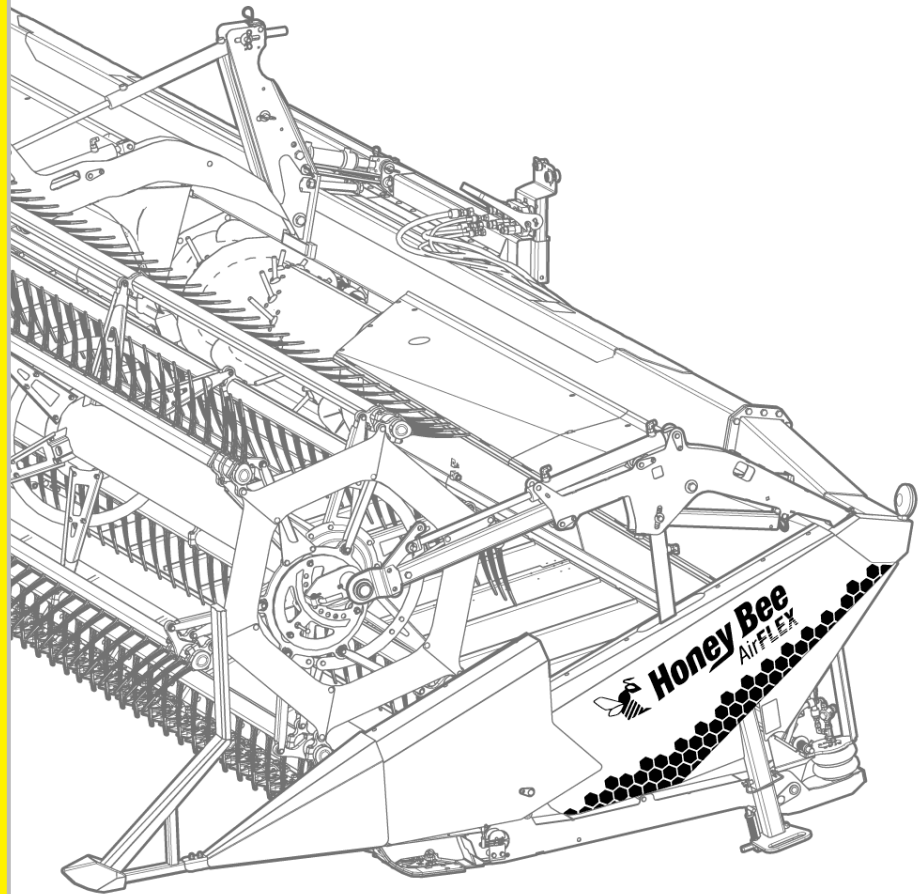


2015

AirFLEX

**FLEX Header
Operator Manual**



1 - Important Notice

This manual covers the AirFLEX header ONLY.

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

Without proper adjustment, damage to the header may occur.

**IMPORTANT!****Please wash this equipment after transporting!**

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

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

2 - 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.

Table of Contents

1 - Important Notice	3
2 - Purchase Information	5
3 - Introduction	11
3.1 - Directions	11
3.2 - Safety	11
3.2.1 - Safety Feature & Decal Locations	12
3.2.2 - General Safety Guidelines	15
3.3 - Warranty	17
3.4 - Specifications	18
3.4.1 - Dimensions & Specifications	18
3.4.2 - Header Identification Number	18
3.5 - Equipment Overview	19
4 - Post Delivery/Pre-Season Inspection	21
5 - Mounting the Header to the Combine	23
5.1 - Combine Preparation	23
5.2 - AirFLEX Preparation	23
5.3 - Mounting The AirFLEX	24
5.4 - Drive Lines	25
5.5 - Remove the Transport	26
5.6 - Draw Bar & Transport Storage	26
5.7 - Hydraulic & Electrical connections	26
5.8 - Automatix Installation	27
5.9 - Mounting Checklist	29
6 - Pre-Start Checks	31
6.1 - Inspect	31
6.2 - Adjust	31
6.3 - Understand	32
6.3.1 - FLEX Mode principles of operation	32
6.3.2 - RIGID Mode principles of operation	32
6.3.3 - Automatix calibration and operation	32
7 - Initialization	33
7.1 - Calibration Errors	33
7.2 - AirFLEX	33
7.2.1 - AirFLEX Speed Calibration	33
7.2.2 - AirFLEX Header Height Calibration	33
7.2.3 - Combine Make Selection	33
7.3 - Combine	33
7.3.1 - Combine feeder house speed	33
7.3.2 - Combine Feeder House Angle	34
7.3.3 - Float	34
7.3.4 - Hydraulic Header Raise and Drop Rates	34
7.3.5 - Combine header height calibration	34
7.3.6 - Combine Header Height/Tilt Sensitivity	34
7.3.7 - Other Combine Settings	34
7.4 - Reel	35
7.4.1 - Reel Speed	35
7.4.2 - Reel Finger Timing Adjustment	35
7.4.3 - Reel Height Adjustment (bottom limit based on finger timing)	35

7.4.4 - Reel Tine Clearance.....	35
7.5 - Knife Hold-Down Clearance.....	35
7.6 - Feed Auger Finger Timing.....	36
7.7 - Check for Problems.....	36
8 - Operation.....	37
8.1 - Cutting mode selection.....	37
8.2 - Header Tilt.....	37
8.3 - FLEX cutting mode.....	38
8.3.1 - FLEX Air Pressure.....	38
8.3.2 - Divider settings.....	38
8.3.3 - Reel settings.....	38
8.3.4 - Ground speed.....	39
8.4 - RIGID cutting mode.....	39
8.4.1 - Center Limit.....	39
8.4.2 - Divider settings.....	40
8.4.3 - Reel settings.....	40
8.4.4 - Ground speed.....	40
8.5 - Reverse Operation.....	40
8.6 - Common considerations.....	40
9 - Automatix.....	41
9.1 - Display Unit.....	41
9.2 - Screen Icons.....	41
9.3 - Power Indicator Lamp (Lightning Bolt).....	41
9.4 - Warning Indicator Lamp (Bee).....	41
9.5 - Standby Screen.....	42
9.6 - Mode Selection.....	42
9.7 - Operating Screens - FLEX.....	42
9.7.1 - Air Pressure Setting for Cutter Bar Ground Pressure.....	42
9.7.2 - Header Height Live View - FLEX.....	43
9.8 - Operating Screens - RIGID.....	43
9.8.1 - Center Limit.....	43
9.8.2 - Header Height Live View - RIGID Mode.....	44
9.8.3 - Header Height Warning View - RIGID Mode.....	44
9.8.4 - Header Height Warning View - FLEX.....	44
9.9 - Information Screens.....	44
9.9.1 - Ground Environmental Data.....	45
9.9.2 - Speeds and Combine Auto Header Height Values.....	45
9.9.3 - Raw Auto Header height Voltages.....	45
9.10 - Stubble Lights.....	46
9.11 - Menu Screens.....	46
9.11.1 - Overview.....	46
9.11.2 - Menu List.....	46
9.11.3 - Menu Screen - Errors.....	47
9.11.4 - Menu Screen - Smoothing.....	47
9.11.5 - Menu Screen - Header Height Sensor Calibration.....	47
9.11.6 - Menu Screen - Speed Sensor Calibration.....	49
9.11.7 - Menu Screen - Center Sensor Mode.....	50
9.11.8 - Menu Screen - Default FLEX PSI.....	50
9.11.9 - Menu Screen - Time and Date.....	50
9.11.10 - Menu Screen - Config. Info.....	50
9.12 - Error Screens.....	51

9.13 - Failure Screens.....	52
10 - General Crop Specific Productivity.....	53
10.1 - Harvesting in Standing Crop Conditions.....	53
10.2 - Harvesting in Tough Feeding Crop Conditions.....	53
10.3 - Harvesting in Short, Thin Crops.....	53
10.4 - Harvesting Soybeans.....	53
10.5 - Harvesting Sorghum.....	53
10.6 - Lodged/Downed Crops.....	53
10.7 - Extreme Lodged/Downed Crops.....	53
10.8 - Bushy/Ripe Crops.....	54
10.9 - Easily Shelled Crops.....	54
10.10 - Normal Crops.....	54
11 - Troubleshooting.....	55
11.1 - Reel.....	55
11.2 - Cutting Platform.....	55
11.3 - Cutting Platform (continued).....	56
11.4 - Drapers.....	57
11.5 - Active Header Height Control.....	57
11.5.1 - Miscellaneous.....	58
12 - Header Dismounting, Storage & Transport.....	59
12.1 - Preparing for Dismount.....	59
12.2 - Full Dismount.....	59
12.3 - Quick Dismount.....	60
12.4 - Read before Transporting.....	61
12.5 - Transport Cart.....	61
12.5.1 - Trailer Brake Settings.....	62
12.5.2 - Off-Road Transportation.....	62
12.5.3 - On-Road Transportation.....	62
12.6 - Transporting on Combine.....	62
12.7 - Flat Deck Trailer Transport.....	63
12.8 - End of Season Storage.....	64
13 - Regular Service & Adjustment.....	65
13.1 - Fasteners.....	65
13.2 - Drive Belt Tension.....	65
13.2.1 - Feed Auger Drive Belt Tension.....	65
13.2.2 - Left Draper Drive Belt Tension.....	65
13.2.3 - Center Draper Drive Belt Tension.....	66
13.2.4 - Right Draper Drive Belt Tension.....	66
13.2.5 - Knife Drive Belt Tension.....	66
13.3 - Drive Belt Replacement.....	67
13.3.1 - Knife Drive Belt Replacement.....	67
13.3.2 - Feed Auger Belt Replacement.....	68
13.3.3 - Left Draper First Drive Belt Replacement.....	68
13.3.4 - Left Draper Second Drive Belt Replacement.....	68
13.3.5 - Right Draper Drive Belt Replacement.....	69
13.3.6 - Center Draper Drive Belt Replacement.....	69
13.4 - PTO (Drive Shaft).....	69
13.5 - Speed Sensors.....	70
13.6 - Drapers.....	70
13.6.1 - Side Draper Belt Tension.....	70
13.6.2 - Side Draper Belt Tracking.....	70

13.6.3 - Center Draper Belt Tension.....	71
13.6.4 - Draper Installation.....	71
13.6.5 - Remove & Install Center Draper Belt.....	72
13.7 - Reel.....	72
13.7.1 - Set Reel Safety Stops.....	72
13.7.2 - Minimum Reel Height and Leveling Reel.....	72
13.7.3 - Rephasing Reel Cylinders.....	73
13.7.4 - Finger Pickup Settings.....	73
13.7.5 - Automatic Reel Speed.....	74
13.7.6 - Reel Speed Sensor Adjustment.....	74
13.8 - Knife.....	75
13.8.1 - Set Cutterbar Knife Timing.....	75
13.8.2 - Knife Section Service Kit.....	75
13.8.3 - Cutterbar Maintenance.....	76
13.8.4 - Replacing Cutterbar Knife.....	76
13.8.5 - Remove and Install Knife Sections.....	77
13.9 - Dividers.....	77
13.9.1 - Standard Divider.....	77
13.9.2 - Divider Pipes.....	77
13.9.3 - Divider Airbag Float Setting.....	78
13.9.4 - Divider Spring Float Setting.....	78
13.9.5 - Divider Handle.....	78
13.10 - Feed Auger.....	79
13.10.1 - Finger Timing Adjustment.....	79
13.10.2 - Feed Auger Drum Position.....	79
13.10.3 - Feed Auger Interior Access.....	79
13.10.4 - Remove and Install Feed Auger Fingers.....	80
13.10.5 - Remove and Install Feed Auger Finger Guides.....	80
13.11 - Center Rock Trap and Draper Cleanout.....	80
13.12 - Permanent Bushings.....	80
13.13 - Open Side Shields.....	81
13.14 - FLEX Header Height Control Sensor Bar Alignment.....	81
13.15 - Checking for Air Leaks.....	82
13.16 - Lubrication.....	83
13.16.1 - Grease.....	83
13.16.2 - Alternative and Synthetic Lubricants.....	83
13.16.3 - Lubricant Storage.....	83
13.16.4 - Mixing of Lubricants.....	83
13.16.5 - Reel Lubrication.....	83
13.16.6 - Lubrication Interval Chart.....	84
14 - Support.....	85
15 - Appendix.....	87
15.1 - AGCO Adapter Plate Bezels.....	87
15.2 - Permanently Lubricated IGUS Bushing Locations.....	88
15.3 - Lift Valve Performance BeeBox.....	89
15.4 - (UNC) Unified Inch Bolt and Screw Torque Values.....	90
15.5 - Metric Bolt and Screw Torque Values.....	91
16 - Quick Start.....	92

3 - Introduction

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

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

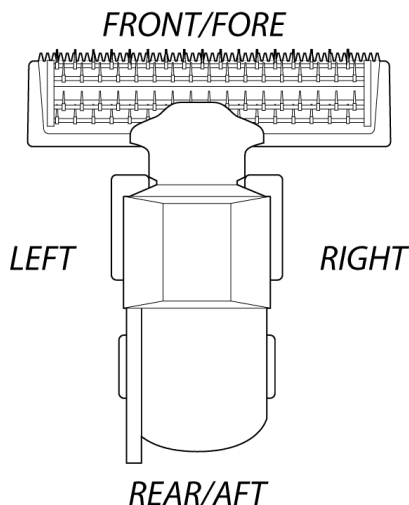
Measurements in this manual are given in the worldwide standard of metric as well as U.S.A. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners require a specific metric or inch wrench.

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

Please write down your equipment serial numbers in the Specification section. Accurately record all the numbers 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 off the machine.

3.1 - Directions

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



3.2 - Safety

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.

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, typically for machine components that, for functional purposes, cannot be guarded.

WARNING!

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

CAUTION!

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

IMPORTANT!

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

NOTE:

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

3.2.1 - Safety Feature & Decal Locations

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

In addition to these safety features, safety signs on the platform and safety messages and instructions in the Operator's Manual contribute to the safe operation of this platform. Please ensure that you fully understand all safety warnings and instruction before operating this equipment.

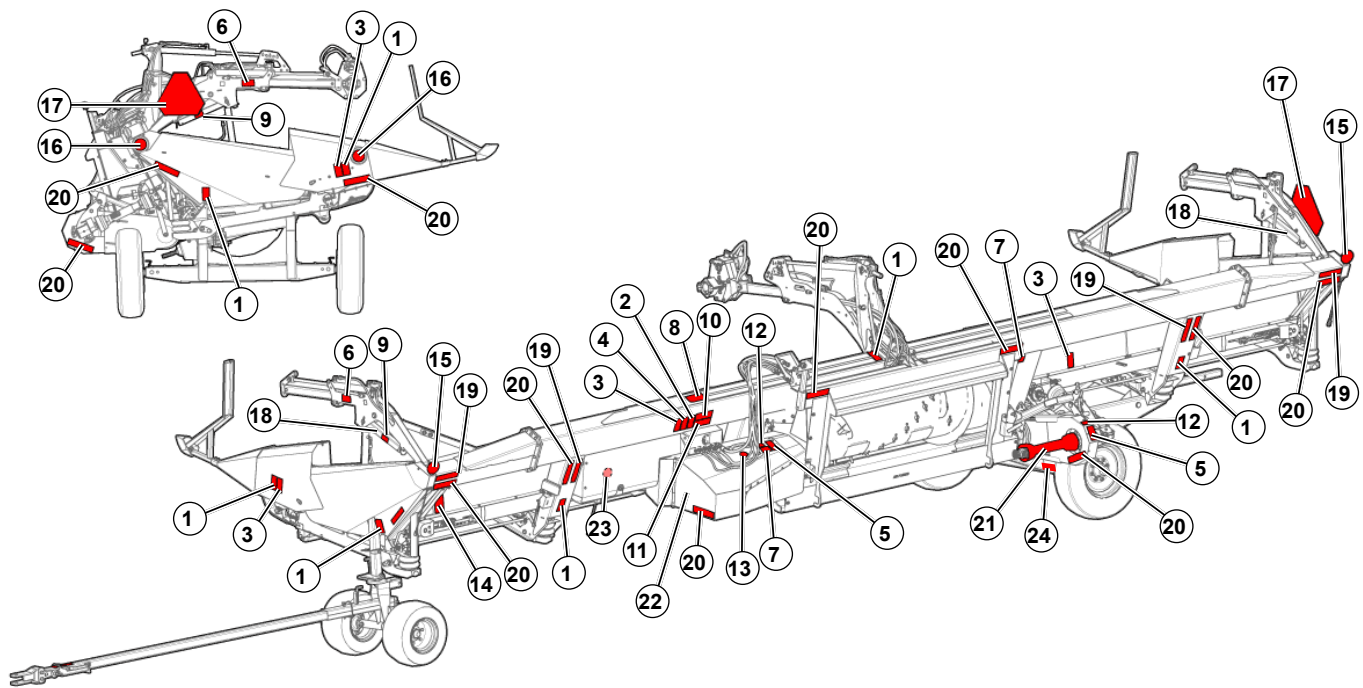


Fig. 1 - Decal & Safety Feature Locations



Fig. 2 - Pinch Points

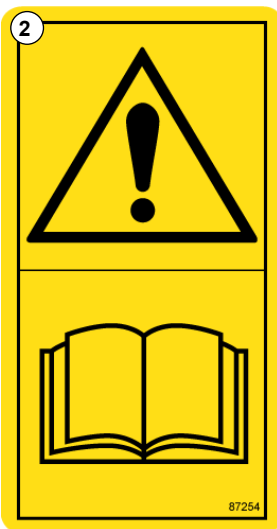


Fig. 3 - Read the Manual



Fig. 4 - Keep your Distance



Fig. 5 - Turn off Engine when Servicing



Fig. 6 - Turn off Engine when Servicing Reel



Fig. 7 - Keep Clear of Rotating Drive Shaft



Fig. 8 - Keep Clear of Drive Belts



Fig. 9 - Not a Step - Falling Hazard

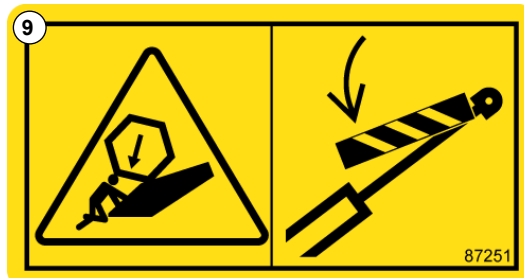


Fig. 10 - Engage Reel Stop Before Servicing

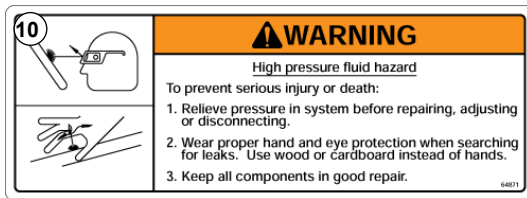


Fig. 11 - High Pressure Fluid Hazard

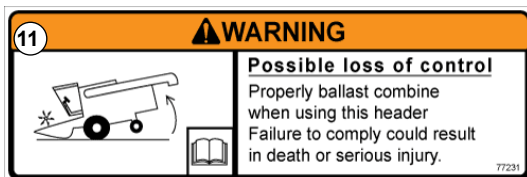


Fig. 12 - Properly Ballast Combine

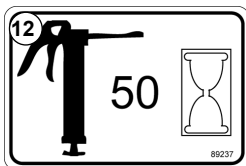


Fig. 13 - Lubricate Every 50 Hours



Fig. 14 - Do Not Step Here



Fig. 16 - Do Not Spray

- 15 - Warning Lamp
- 16 - Transport Warning Lamp
- 17 - Transport Reflector
- 18 - Reel Arm Safety Stop
- 19 - Red Reflector Strip
- 20 - Yellow Reflector Strip
- 21 - Drive Shaft Shield
- 22 - Side Shield

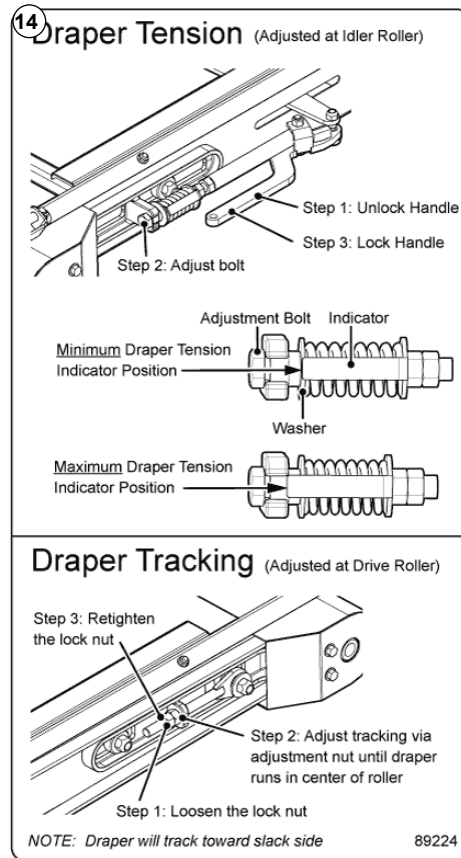


Fig. 15 - Draper Tension & Tracking

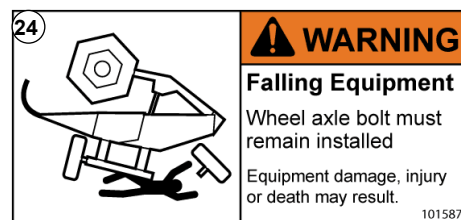


Fig. 17 - Do not remove axle bolt

3.2.2 - General Safety Guidelines

Follow Safety Instructions

Carefully read all safety messages in this manual and on your header safety signs. Keep safety signs in good condition and replace if needed.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

Learn how to operate the header and how to use controls properly. Ensure that you fully understand your equipment documentation. Do not let anyone operate without instruction. Failure to do so could result in personal injury or equipment damage.

Unauthorized modifications to the header may impair the function and/or safety and affect header life.

Wear Protective Clothing



Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, necklace, rings or other jewelry when you work near machine tools, moving parts or electrical systems.

Operating equipment can be very loud, wear suitable hearing protection to protect against hearing damage.

Operating equipment safely requires the full attention of the operator. Do not wear headphones while operating the header.

Prepare for Emergencies

Keep a first aid kit and fire extinguisher with your header at all times. Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

High Pressure Spray



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

Store Attachments Safely



Stored attachments can fall and cause serious injury or death. Securely store attachments and implements to prevent falling. Keep playing children and bystanders away from equipment and storage area.

Safety Around Moving Parts



Never attempt to service your equipment while any parts are moving. Always disengage main clutch, shut off engine and remove key before approaching the header. Keep bystanders away from operating equipment.

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

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

Entanglement in rotating driveline can cause serious injury or death. Keep driveline shields in place at all times.

Park Header Safely

Lower all equipment to the ground.

Ensure combine is shut off and key is removed.

High-Pressure Fluids

DANGER!

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure.

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.

Use Safety Lights and Devices

IMPORTANT!

Prevent collisions between other drivers on public roads. 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 or repair lighting and marking that has been damaged or lost.

Practice Safe Maintenance

WARNING!

Understand service procedure before doing work. Keep area clean and dry.

Securely support all machine elements that must be raised for service work.

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

Disconnect battery ground cable (-) before making adjustments on electrical systems or welding on header.

Always lower the header to the ground before you work on the header. 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 solely by a jack.

Do not attempt to clean belts with flammable cleaning solvents.

Transport Combine With Header Safely

IMPORTANT!

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

If combine must be transported with header attached, make sure 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.

Using Correct Torque Values

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 90 and page 91 can result in equipment damage or injury.

3.3 - Warranty

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

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

Warranty Claims

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

Limitations of Liability

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

This warranty shall not apply to any AirFLEX Header which has been altered outside the factory in any way so as in the judgment of Honey Bee 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 further acknowledges that Honey Bee does not assume any liability resulting from the operation of the Header in any manner other than described in this manual.

3.4 - Specifications

3.4.1 - Dimensions & Specifications

Model	230	236	240	245	250
Size	30ft (9.14 m)	36ft. (10.97 m)	40ft. (12.19 m)	45ft. (13.72 m)	50ft (15.24 m)
Header Weight - Operating Configuration	6444 lbs 2923 kg	6860 lbs 3112 kg	7628 lbs 3460 kg	8016 lbs 3636 kg	8404 lbs 3812 kg
Header Weight - Transport Configuration	7229 lbs 3279 kg	7645 lbs 3468 kg	8413 lbs 3816 kg	8801 lbs 3992 kg	9189 lbs 4168 kg
Transport Cart and Drawbar Axle Weight (combined)	785 lbs 356 kg				
Cutting System	Mechanically driven knife drive with SCH sections. 9" (22.9 cm) of FLEX.				
Drapers	Mechanically driven with high performance tensioning system				
Draper Shield	A new patented system that directs the flow of crop to the center deck without the need for moving parts				
Reel	Hydraulically driven, with multiple crop settings and finger spacing options. Automatic reel speed control				
Transport	Heavy duty road transport with electric brakes				
Header Serial Number:					
Reel Serial Number					

These specifications are subject to change without notice or obligation.

3.4.2 - 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.

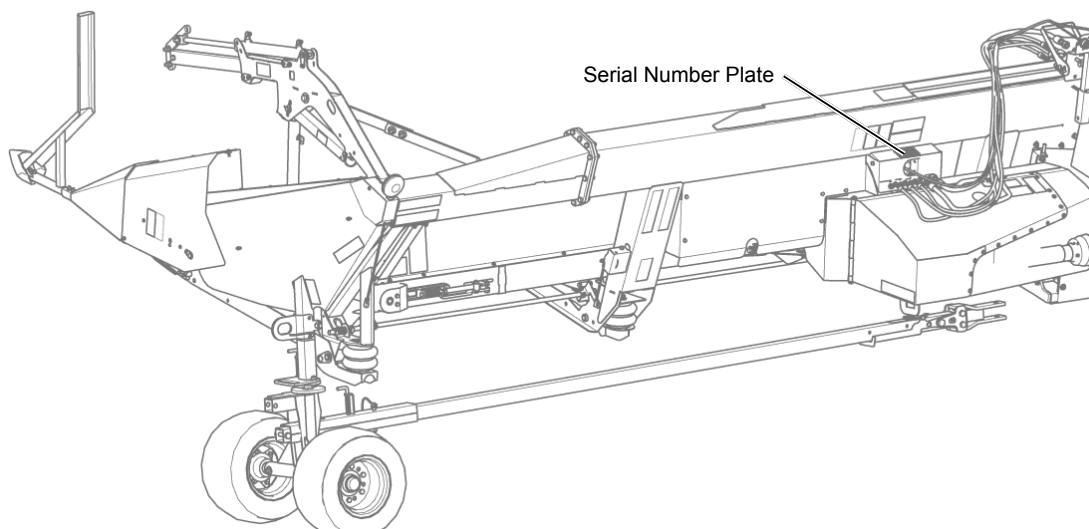


Fig. 18 - Serial number plate location

3.5 - Equipment Overview

The Honey Bee AirFLEX Header is designed to be able to:

- Cut crop cleanly in both FLEX and RIGID mode.
- Transport the crop to the combine for processing with little/no crop damage or loss.
- Be reliable, durable and sustainable from cost effective parts and processes.

Flexible Cutter Bar

The AirFLEX cutter bar has a large float range allowing it to hug uneven ground in order to maximize crop harvest.

The AirFLEX sensor system keeps the cutter bar in position with little/no lateral movement and very little contact with the ground resulting in reduced UHMW wear.

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

The AirFLEX cutter bar can also be "locked up"; i.e. made to function as a rigid table.

Subframe with Interchangeable Combine Adapters

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

Automatic Header Height Control (HHC)

The AirFLEX's Header Height system relays to the combine, the table's proximity to the ground. 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.

The header has a built-in air compressor to keep the air system at the optimum pressure at all times.

Transport

The AirFLEX comes equipped with a removable transport cart with minimal residual impact on frame balance, weight and function. The full transport can be removed or installed by a single person.

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

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. Any hydraulics utilized on table are operated using combine hydraulics.

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

4 - Post Delivery/Pre-Season Inspection

After receiving your equipment and at the beginning of every season thereafter, it is important to do a walk around inspection of the header to ensure all components are in place, clean and secure.

Header

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

Cutting System

Ensure the knife drive is in its operational position. (see steps 9 to 11 in section 5.2)

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

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

Ensure knife timing is correct. (see Fig. 130 and Fig. 131 on page 75)

Drive Belts

Ensure drive belts are undamaged, properly aligned & tensioned. See section "13.2 - Drive Belt Tension" on page 65 for details.

Drapers

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

Ensure the draper belts are properly tensioned and that they are tracking properly. See section 13.6 on page 70 for details.

Crop Dividers

Ensure the crop dividers are properly installed & free from material buildup. (see Fig. 24 and Fig. 25 on page 23)

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.

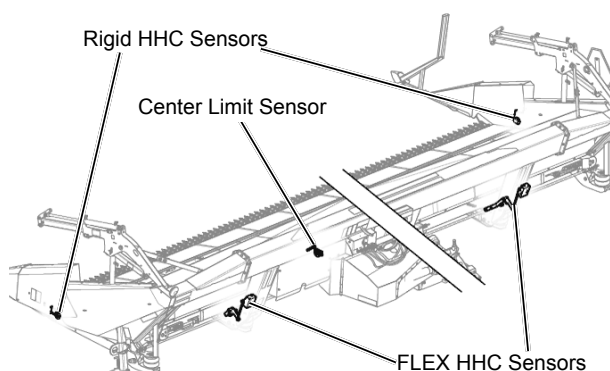


Fig. 19 - AirFLEX HHC Sensor Locations

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.

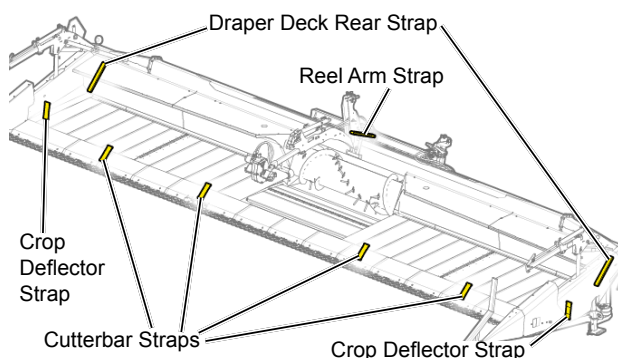


Fig. 20 - AirFLEX Support Strap Locations

Combine Feed House

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

Header Feed Auger

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. See section 13.10 on page 79 for details.

Reel

Ensure the reel bats are in their operational position. (see Fig. 83 on page 62)

Multicoupler

Thoroughly inspect the connection faces on the header and the combine sides of 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.

Lubrication

Check fluid levels on all gearboxes.

Apply grease where needed as outlined in section 13.16 on page 83 section of this manual.

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.

5 - Mounting the Header to the Combine

5.1 - Combine Preparation

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

Set the angle of the combine feeder house front plate to approximately 80°. This angle will vary with make, model and tire size so may require adjustment.

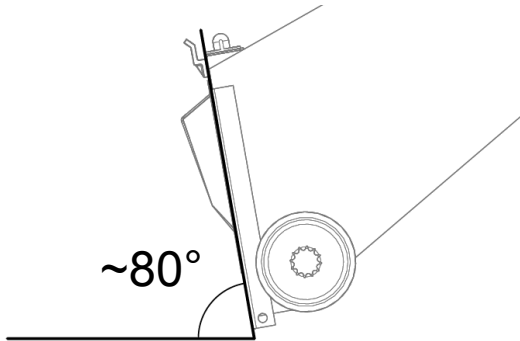


Fig. 21 - Initial Feed House Angle

5.2 - AirFLEX Preparation

1. Park the AirFLEX on flat, hard, level ground.
2. Look under the left side of the header for the red draw bar holder that extends below one of the struts. Remove the draw bar holder and place it in a safe storage location.

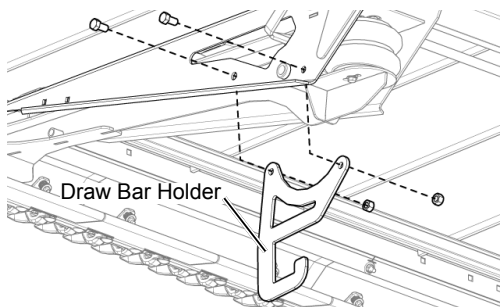


Fig. 22 - Remove Draw Bar Holder

3. Remove the red tie-down bracket located on the draw bar support bracket on the left end of the table if you feel that it will interfere with your crops during harvesting.

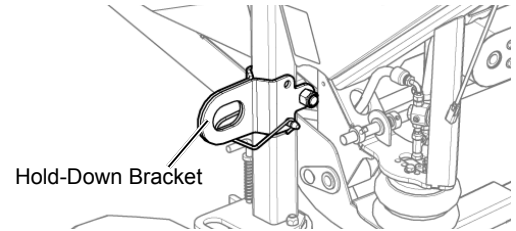


Fig. 23 - Remove Tie-Down Bracket

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

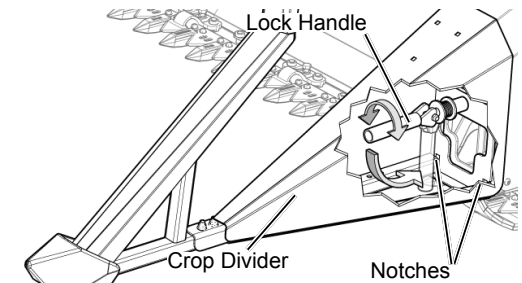


Fig. 24 - Install Crop Divider

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

NOTE:

If the lock handle shown above becomes loose, you can add an additional washer to improve handle performance as shown in section 13.9.5 on page 78.

NOTE:

Please note that some units may have a 'flower' style handle that must be rotated to secure the divider.

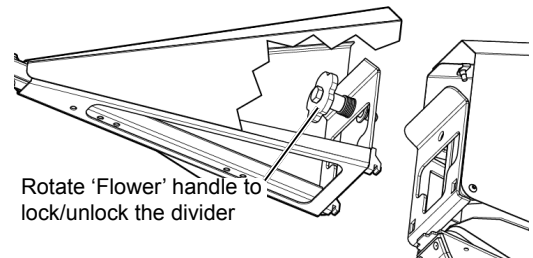


Fig. 25 - Install Crop Divider (flower handle version)

6. Lower the transport support bar and lock in place with its pin. (see Fig. 26)
7. Locate the two lock pins on the top of the transport cart. Release each lock pin by first lifting up on the pin lock (A), then pull the handle back towards the rear of the header (B) then pull the lock pin out from between its lock ribs (C).

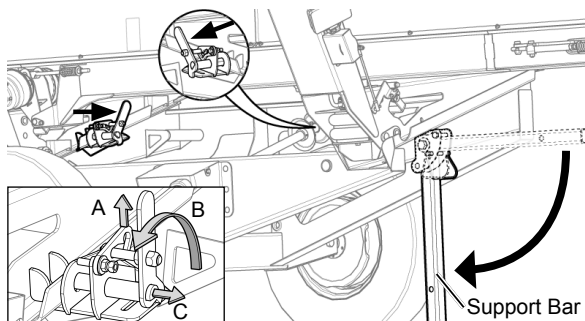


Fig. 26 - Unlock Transport & Lower Support Bar

8. Disconnect the transport's electrical cable from the header.
9. Before running the header, lower the knife drive assembly into its operation position. Loosen the 5 indicated bolts on the knife drive.

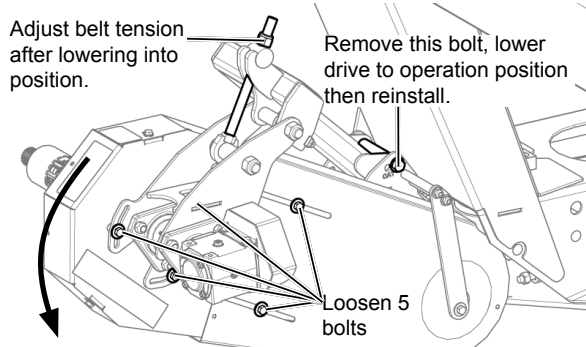


Fig. 27 - Move Knife Drive to Operational Position

10. Remove the bolt from the 'T' position hole, lower the knife drive and re-install the bolt in the hole marked for your make of combine (CAT, JD/GLR, CNH/MSY).
11. Ensure the tension is properly set on the drive belt then tighten the 5 bolts that were previously loosened. See 13.2.5 on page 66)
12. Raise the end reel bats into operational position if necessary (see Fig. 83 on page 62)

5.3 - Mounting The AirFLEX

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. Ensure the combine feeder chain has a minimum of 1/2" clearance.

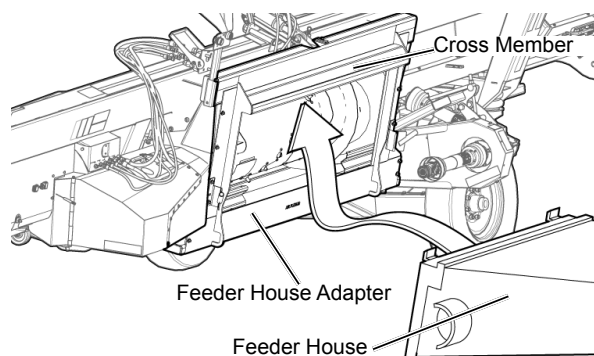


Fig. 28 - Insert Feeder House into Adapter Plate

3. Slowly raise the Feeder House until the it makes contact with the inside top of the Feeder House Adapter.
4. Check clearance and alignment of the Feeder House to the Feeder House Adapter, the Adapter Frame & the Feed Auger Drum. If required, adjust the Feed Auger Drum to a more forward position in the Adapter (See section 13.10 on page 79 for details).
5. Disconnect the header electrical cable from the draw bar axle.
6. 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.

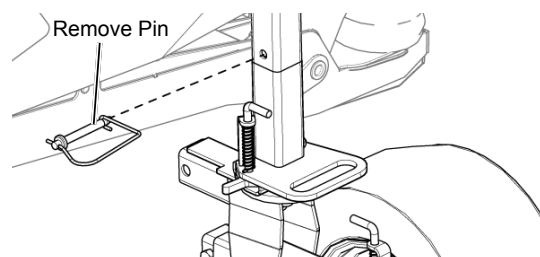


Fig. 29 - Remove Draw Bar Axle Pin

7. After checking feeder house alignment and clearances, restart 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, raise feeder house completely and lower the feeder house safety stop onto hydraulic cylinder rod. Shut OFF engine, set parking brake, and remove the key before exiting the cab.

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

WARNING!

Ensure all locks are properly installed before proceeding.

5.4 - Drive Lines

1. Remove telescoping drive shaft from storage position on the left side of the feeder house adapter and attach to feeder house drive shaft.
2. Verify quick attach collar is fully locked on drive shaft.

IMPORTANT!

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

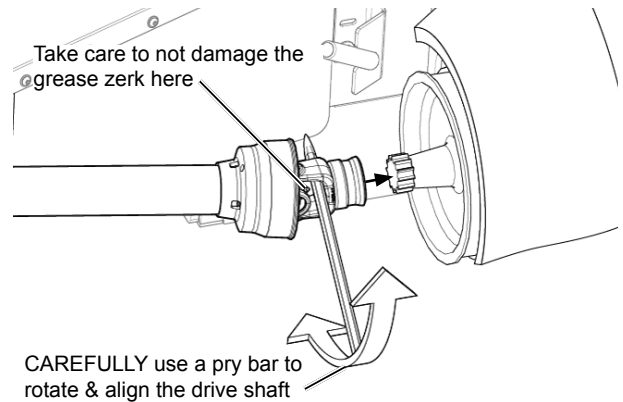


Fig. 30 - Connect Drive Shafts (both sides of feeder house)

NOTE:

To properly connect the PTO drive line, grab the collar and pull it back before pushing the PTO onto the shaft. You should hear a slight click as the collar snaps into place.

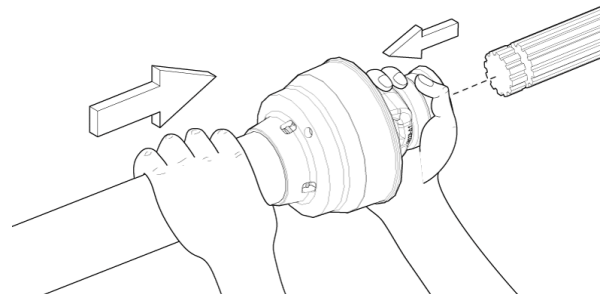


Fig. 31 - Connect PTO

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

WARNING!

Ensure drive shields are in place.

5.5 - Remove the Transport

1. Turn the indicated handle to release the clutch, and lower the transport cart to the ground.

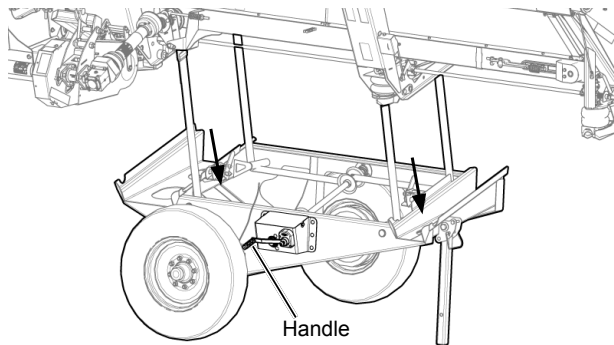


Fig. 32 - Lower Transport to Ground

2. Once on the ground, disconnect the straps from the header and place the transport in its storage location.

5.6 - Draw Bar & Transport Storage

The draw bar and transport can be hooked together and pulled by a truck so they can be transported and placed in 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.

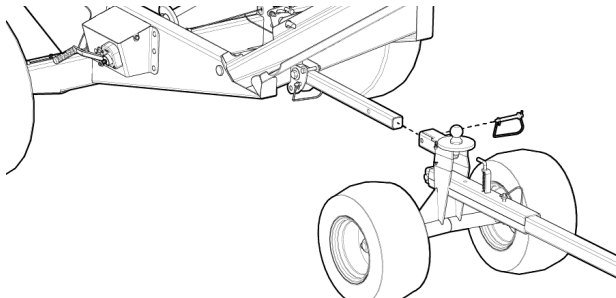


Fig. 33 - Transport Storage Position

5.7 - Hydraulic & Electrical connections

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

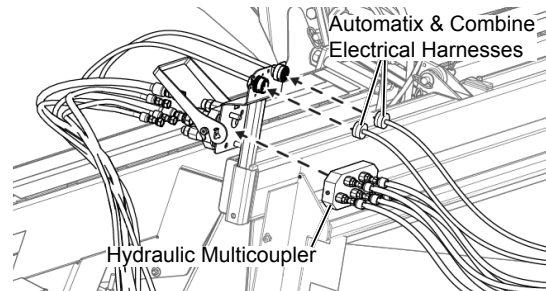


Fig. 34 - Connect Multicoupler & Electrical Harnesses

NOTE:

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

5.8 - Automatix Installation

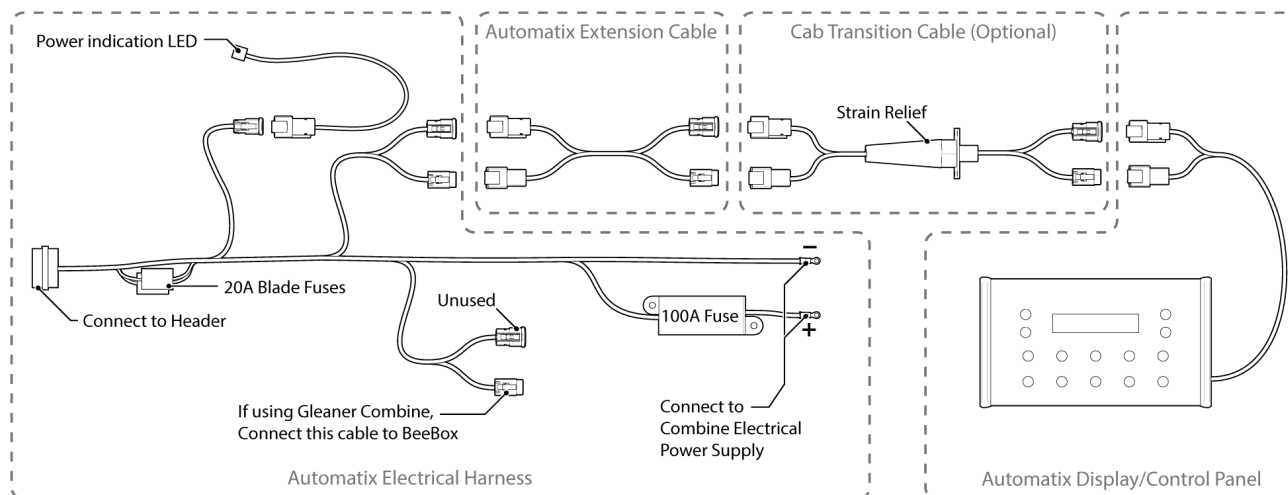


Fig. 37 - Automatix Control Panel & Electrical Harnesses

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

1. Connect the Main Automatix Harness to the header.

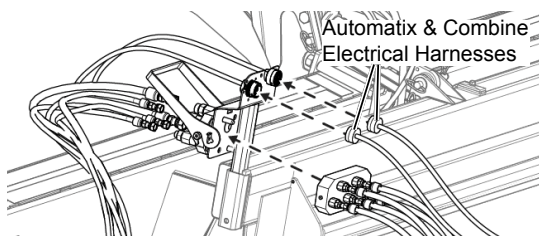


Fig. 35 - Connect Multicoupler & Electrical Harnesses

2. If using a combine equipped with 'Bang-Bang' style directional hydraulic valves, install the BeeBox as described on page 89.
3. Connect one end of the Automatix Extension Cable to the Main Automatix Harness.
4. Route the Automatix Extension Cable as close to the combine cab as possible, keep in mind where you want the cable to enter the cab while routing.
5. Route the optional Combine Cab Transition Cable into the cab of the combine. Use the strain relief to protect the cable as it enters the cab.

6. Using either the provided suction cups or the RAM industries ball, mount the Automatix Control Panel inside the cab in an easily viewable and accessible location.

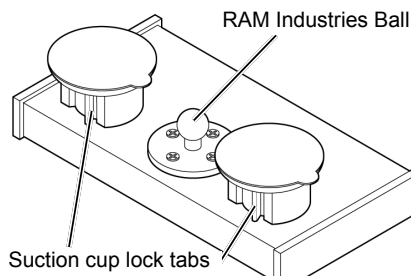


Fig. 36 - Automatix Display Mounting



NOTE:

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

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



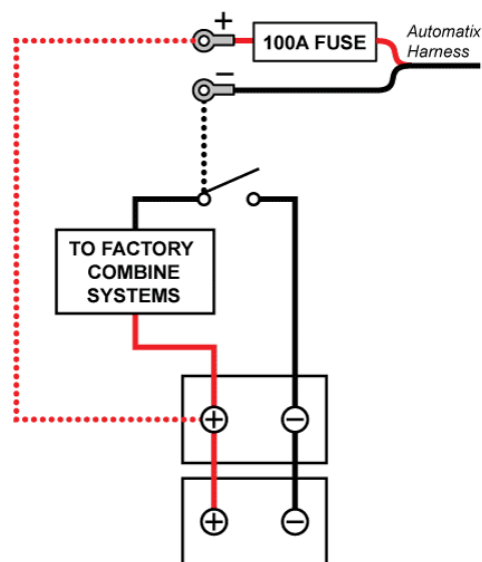
IMPORTANT!

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

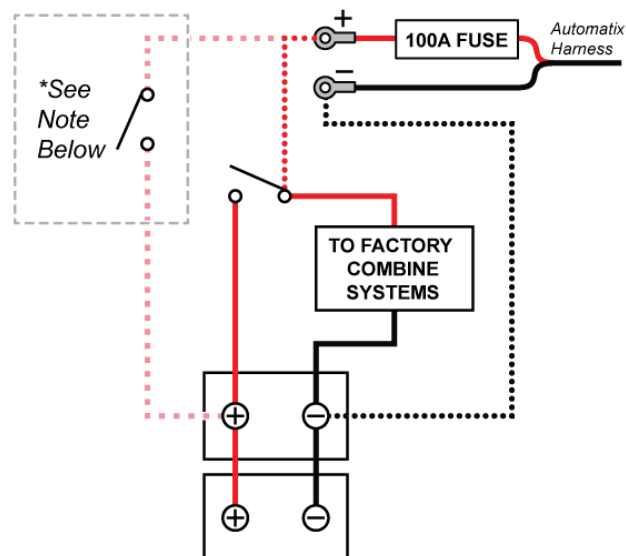
8. Route the two power connectors on the automatix electrical harness to the combine's electrical power supply. Connect the power lines to the battery using the following rules:

- The Automatix power cables should not both 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.
- Always connect the un-switched automatix power wire to the same battery to which 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.

12V Negative Switched Battery System



12V Positive Switched Battery System



***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.

5.9 - Mounting Checklist

- ☐ Combine feed house front plate angle set to approximately 80°.
- ☐ Combine feed house securely connected to adapter plate on header with all locks in place.
- ☐ Electrical connection between header and combine in place.
- ☐ Hydraulic connection between header and combine in place.
- ☐ Drive lines (PTO) connected to left and right sides of combine feed house.
- ☐ Knife Drive Assembly lowered from transport position into operation position.
- ☐ Draw bar front axle and Transport cart removed and stored.
- ☐ Red draw bar storage bracket and hold-downs removed (if applicable).
- ☐ All safety shields and decals in place and undamaged.
- ☐ Automatix display installed in combine cab.
- ☐ Automatix power harness properly connected to combine's electrical supply.
- ☐ Hydraulics and air lines inspected for damage or leaks

6 - Pre-Start Checks

6.1 - Inspect

Safety & Protective Shields

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

Dividers

Crop dividers must be properly installed (see Fig. 79 on page 61). The crop divider extensions (or divider pipes) must be installed on the dividers. There are three positions for the standard divider (See section 13.9 on page 77 for details).



WARNING!

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

Air Hoses

Inspect air hoses, air fittings, and airbags for damage or leaks.

- The air tank is located to the left of the feed house area.
- There is an air bag located at the rear of each strut.
- Some models of AirFLEX headers have an extra air bag approximately midway up the end struts.

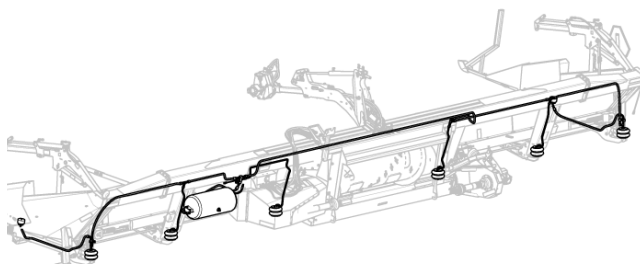


Fig. 38 - AirFLEX Air System

Knife Guards & Sections

Inspect the cutter bar. Replace broken guards and cutting sections. See section 13.8 on page 75 for details.

FLEX Header Height Control Sensors

Inspect and adjust the FLEX header height sensor bar as outlined in section 13.14 on page 81.

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. Ensure there is enough clearance around the feed auger. See section 13.10 on page 79 for details.

6.2 - Adjust

Drapers

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

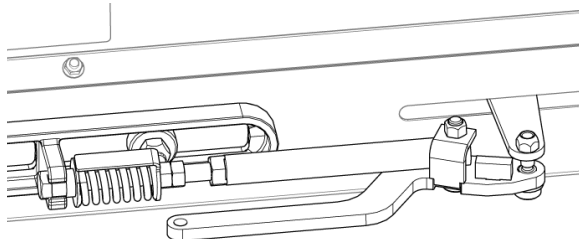


Fig. 39 - Draper Tension Handle

Belts

Ensure drive belts are properly aligned and tensioned. See section 13.2 on page 65 for details.

Lubrication

The knife heads must be greased at four locations every 10 hours of operation, it is recommend that you apply grease every day prior to operating the equipment. See section 13.16 on page 83 for lubrication details & other lubrication points.

6.3 - Understand

6.3.1 - FLEX Mode principles of operation.

When in FLEX mode, the cutter bar on the header will become Flexible and will automatically follow the contours of the land. 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.

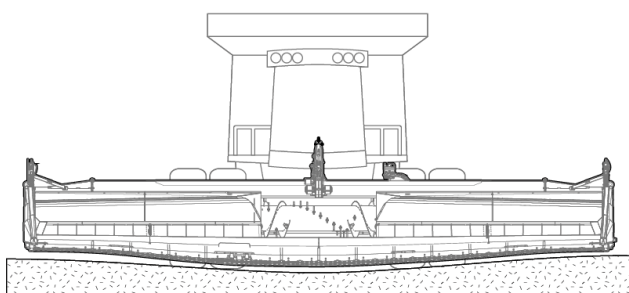


Fig. 40 - FLEX Mode

6.3.2 - RIGID Mode principles of operation.

When in RIGID mode, the cutter bar becomes locked with no vertical Flexibility possible. The AirFLEX works like a regular header in this mode.

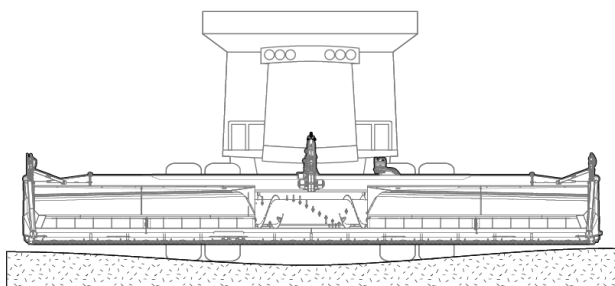


Fig. 41 - RIGID Mode

6.3.3 - Automatix calibration and operation

Pre-read the Automatix calibration procedure and ensure you understand the process before operating your equipment. See section 9.11.5 on page 47 and section 9.11.6 on page 49 for details.

7 - Initialization

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

7.1 - Calibration Errors

For errors that occur during calibration procedures, review the fault information on the AUTOMATIX display. These errors are normally related to sensor adjustment, and rarely to sensor failure.



IMPORTANT!

Conditions causing errors must be corrected before continuing calibration.

7.2 - AirFLEX

7.2.1 - AirFLEX Speed Calibration

Calibrating the header speed sensors is essential for correct header performance. This calibrates the draper, knife, and reel speed, and relates them to the actual combine PTO speed so that the system can tell if a belt is slipping. When calibrated, the system will give warning if the knife, draper or reel operate at an unexpected speed.

Please see section 9.11.6 on page 49 for detailed instructions.

7.2.2 - AirFLEX Header Height Calibration

This calibration is required when:

- The header is used for the first time
- If divider extensions are adjusted or changed
- If you change combines.
- If the linkages connecting the rotary sensor to the lever arms get loose or bumped.

Please see section 9.11.5 on page 47 for detailed instructions.

7.2.3 - Combine Make Selection

See section 9.11.10 on page 50 for details.

7.3 - Combine



NOTE:

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



IMPORTANT!

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

7.3.1 - 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.

The required PTO speed for proper header operation will vary between different makes of combine, so the best way to determine the optimal feeder house PTO speed is to watch the header knife speed. The combine PTO speed is optimal when the knife speed is between 580 rpm and 620 rpm.



IMPORTANT!

Never exceed a knife speed of 620 rpm.

7.3.2 - Combine Feeder House Angle

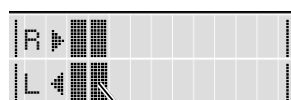
The Combine Feeder House must be tilted at a specific angle for optimal header operation. To set proper operation angle.

1. Set the header to FLEX mode.
2. Fully tilt the table back.
3. Lower the table until the cutter bar is fully pushed up.
4. Slowly raise the table until 2" (2 bars) show on the FLEX Header Height Live View on the Automatix display.

! WARNING!

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

5. Measure the height of the 'heel' of the cutter bar paddle from the ground. It should be approximately 4" (10 cm).
 - If the paddle 'heel' is more than 4" (10 cm) above the ground, then the tilt is too steep and the cutter bar guards will dig into the ground.
 - If the paddle 'heel' is less than 4" (10 cm) above the ground, then the angle is too shallow and the rear of the paddle will drag on the ground.



Raise header until 2" (2 bars) show on FLEX Header Height Live View

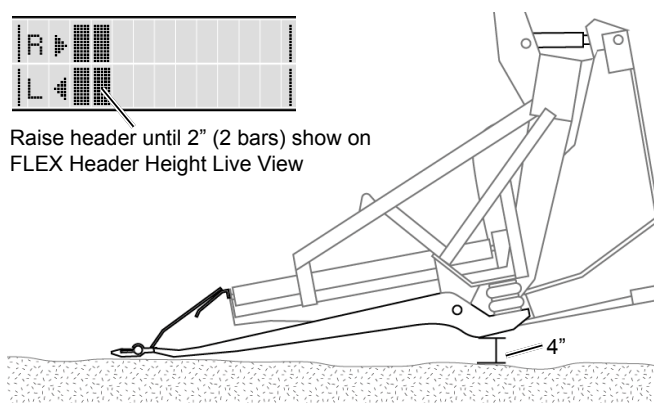


Fig. 42 - Optimal Feed House Angle

6. Adjust the feeder house angle as necessary and re-test the angle as outlined in the previous steps.

7.3.3 - Float

No float (accumulators OFF). Float interferes with proper automatic header height functionality.

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

7.3.4 - Hydraulic Header Raise and Drop Rates

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

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

7.3.5 - Combine header height calibration

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

7.3.6 - Combine Header Height/Tilt Sensitivity

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

7.3.7 - Other Combine Settings

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

7.4 - Reel

7.4.1 - Reel Speed

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.

7.4.2 - Reel Finger Timing Adjustment

It may be necessary to adjust reel height after adjusting finger timing to maintain a 2" (5 cm) clearance from the cutter bar/feather plates.

- **Finger Recommendations in Down Crops** - Position finger angle so that the fingers lift the crop, but not so much as to carry crop around reel.
- **Finger Recommendations For Standing Crops** Position finger angle so that there is minimal disturbance to the crop when entering; helping the crop onto the belt.

See section 13.7.4 on page 73 for details.

7.4.3 - 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 located on the left and right reel arms (as well as the center reel arm when applicable). Ensure the reel maintains a distance of 2" (5 cm) from the cutter bar & feather plates at all times.

When adjusting the reel height, adjust the reel arms at the ends of the table first, then adjust the center reel arm. You may need to make multiple adjustments.

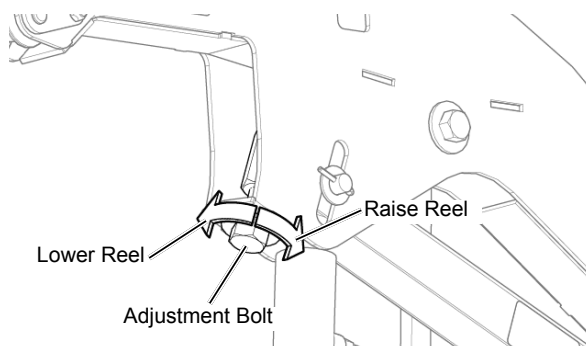


Fig. 43 - Reel Height Adjustment Bolt

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

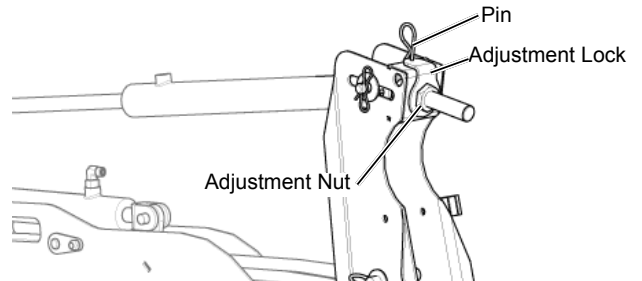


Fig. 44 - Center Reel Arm Height Adjustment

7.4.4 - Reel Tine Clearance

IMPORTANT!

Always maintain a minimum of 2" (5 cm) of clearance between the reel tines and cutter bar/feather plates during normal operation. If harvesting low or downed crops, you can reduce this clearance to 1" (3.8 cm) but you will run the risk cutting the reel tines in the cutter bar, this damage is not covered under warranty.

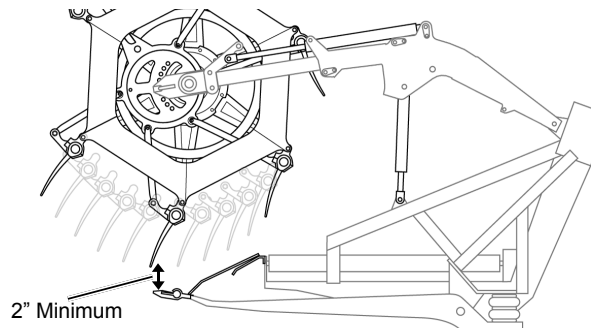


Fig. 45 - Reel Tine Clearance

7.5 - Knife Hold-Down Clearance

NOTE:

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

Knife Hold-Down to Section, Normal Clearance: 0.5 mm (0.020 in.). Generally, this is not critical. Too tight is bad.

7.6 - Feed Auger Finger Timing

Adjusting finger timing is critical in achieving proper material flow from the draper center feed belt to the combine feeder house.

For most crop conditions, operate feed drum with the fingers fully extended towards the front of the header (finger timing handle in middle position). If crop material is being pulled up behind the feed drum or excessive grain is being threshed, reduce finger timing (move the handle down).

When harvesting dry high volume crops move the finger timing up by one notch to move the fingers down and towards the rear to prevent material bunching in front of the feed drum or material appearing to go over the feed drum. Continue making adjustments until the crop flows under the feed drum smoothly



IMPORTANT!

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

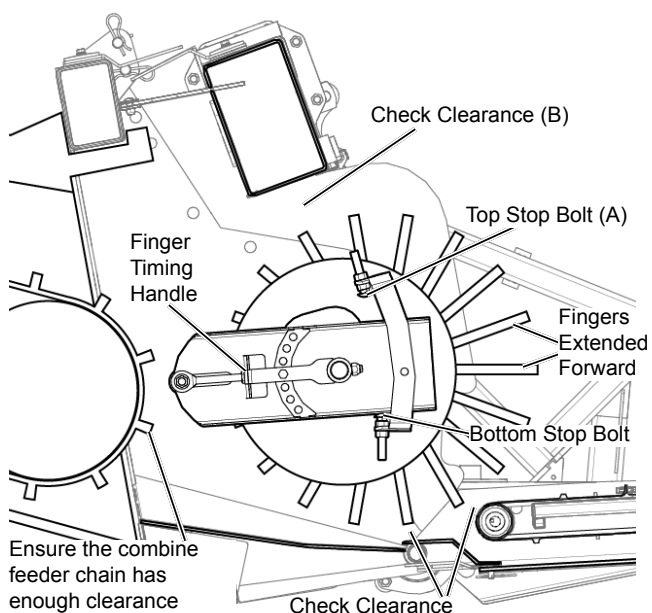


Fig. 46 - Feed Auger Drum Clearances

See section 13.10 on page 79 in this manual for specifics on accomplishing feed auger adjustments.

7.7 - Check for Problems

Run platform at half speed for a few minutes. 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.

8 - Operation

The following guidelines are provided to increase an operator's awareness of factors which affect platform performance.



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.

8.1 - Cutting mode selection

The AirFLEX Header has two modes of operation; FLEX Mode and RIGID Mode. These modes of operation can be selected via the RIGID & FLEX buttons on the Automatix Control Console.

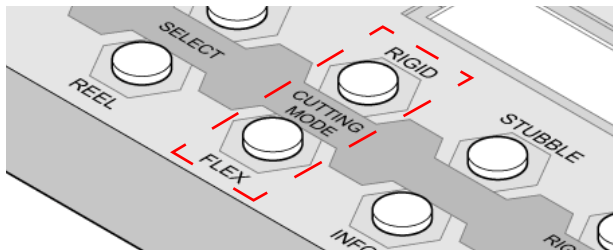


Fig. 47 - Cutting Mode Selection

The transition from RIGID to FLEX entails dumping air from the system and is a quick operation, taking about 60 seconds. The transition from FLEX to RIGID requires the onboard compressor to run until the air system pressurizes to the RIGID pre-set and requires up to 15 minutes.



NOTE:

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

8.2 - Header Tilt

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

The header should be tilted all the way back when in FLEX mode and tilted all the way forward when in RIGID mode.

You can control the header tilt by first pushing the Tilt button on the Automatix control panel, then use the Combine's reel fore/aft controls to tilt the header.

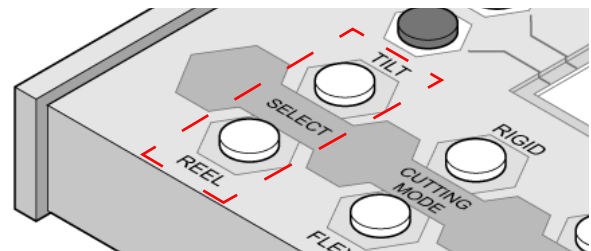


Fig. 48 - Header Tilt - Select function of combine fore/aft controls

The fore/aft controls will default back to reel fore/aft control after 20 seconds. You can also push the Reel button on the Automatix control panel to skip this wait time.

8.3 - FLEX cutting mode

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

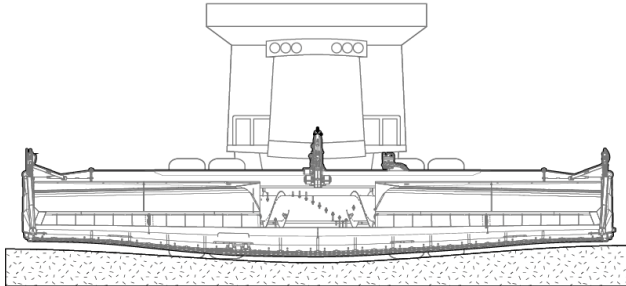


Fig. 49 - FLEX Mode

To place your header in FLEX cutting mode, simply press the FLEX button on the Automatix control console.



IMPORTANT!

The tilt cylinder must be retracted when in FLEX mode.

8.3.1 - FLEX Air Pressure

You can adjust the 'weight' of the cutter bar via the LIGHTER and HEAVIER buttons on the Automatix control console.

The LIGHTER button adds air, making the cutter bar lighter.

The HEAVIER button removes air and makes the cutter bar heavier. Adjust as necessary to prevent the cutter bar from dragging or hanging up (dragging is normally seen on the ends).

See section "9.11.8 - Menu Screen - Default FLEX PSI" on page 50 for details on setting the default FLEX PSI.



NOTE:

The Automatix system does not display the decimal point, so 460 on the display actually represents 46.0 PSI.



IMPORTANT!

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

To maximize FLEX platform performance when harvesting crops close to the ground, operate AirFLEX pressure within the following recommended ranges:

- 42-45 PSI for firm/fast ground conditions.
- 46-49 PSI for normal ground conditions.
- 50-60 PSI for soft/sticky/wet/slow ground conditions.

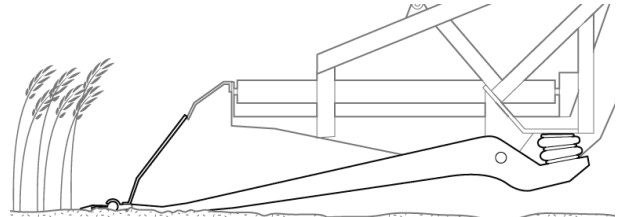


Fig. 50 - FLEX Air Pressure Too Low, Guards Digging Ground

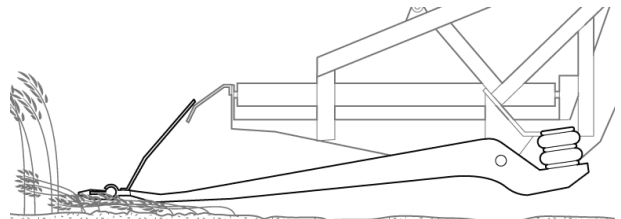


Fig. 51 - FLEX Air Pressure Too High, Riding On Top of Crop



NOTE:

In RIGID mode, the air pressure is automatically set to 90 PSI.

8.3.2 - Divider settings

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

See section 13.9 on page 77 for details.

8.3.3 - Reel settings

When using the FLEX cutting mode, you generally want the reel tines to be pitched more aggressively in order to help pick up crops. See section 13.7 on page 72 for details.

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

Always ensure the reel tines have enough clearance from the cutter bar & feather plates.

8.3.4 - Ground speed

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

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

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

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

8.4 - RIGID cutting mode

In RIGID mode, the cutter bar is inflexible and will not follow ground contours.

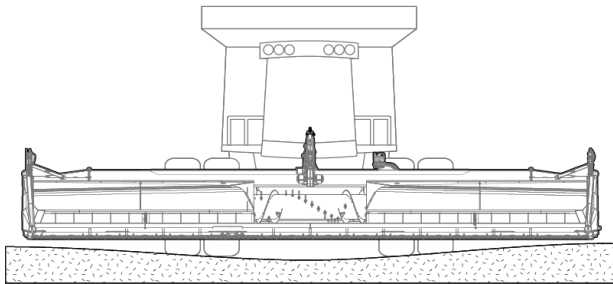


Fig. 52 - RIGID Mode

To select RIGID mode:

1. Push the RIGID button on the automatrix display. (see Fig. 47 on page 37)

WARNING!

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

2. Release the center sensor from the locked up position to the lowered operating position. It will take a few minutes for the cutterbar to transition from FLEX mode to RIGID mode, the header height sensors will switch over immediately.

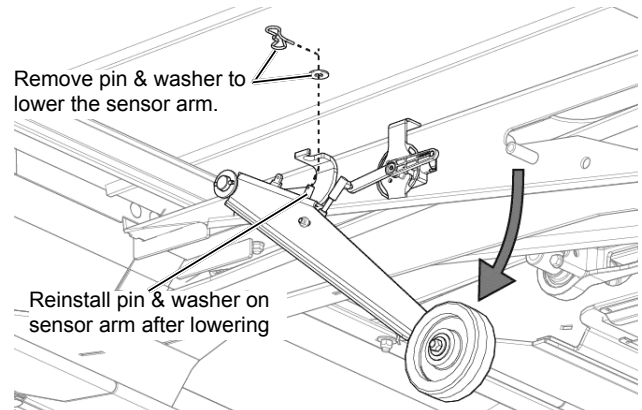


Fig. 53 - Lower center sensor arm



IMPORTANT!

The tilt cylinder must be extended when in RIGID mode.

8.4.1 - Center Limit

Adjust center limit according to desired cut height set point. The center limit determines how close the table can be to the ground before the system will override the main header height sensors, and lift (or warn) the table.

To change these settings when in RIGID mode, press either of the "RIGID Limit Center" buttons.

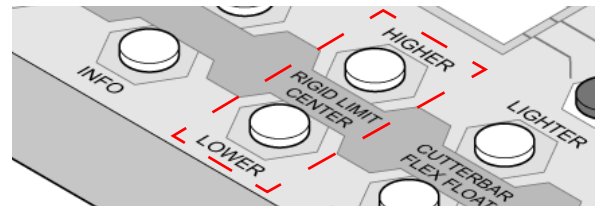


Fig. 54 - Center Limit Adjustment

See section 9.11.7 on page 50 for details.



IMPORTANT!

This height above ground needs to be the same or lower than the cutting height set point that will be used for harvesting. If this value is HIGHER than the CUTTING SET POINT, then the table will never return to cut and always "pop up" when you try. The CTR value must be a height that is physically lower than the auto header height cutting set point for this to work properly.

8.4.2 - Divider settings

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

See section 13.9 on page 77 for details.

8.4.3 - Reel settings

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

See section 13.7 on page 72 for details.

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

Always ensure the reel tines have enough clearance from the cutter bar & feather plates.

8.4.4 - Ground speed

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

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

8.5 - Reverse Operation

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

WARNING!

Do not reverse the mechanical system until all parts have come to a complete stop. Failure to do so WILL result in damage to the drive shaft and other components.

8.6 - Common considerations

Reel Settings

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

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

Ensure the reel tines clear the cutter bar by a minimum of 2" (5 cm). See 13.7 on page 72.

Feed House Auger Drum Fingers

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

Combine Header Height Settings

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

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

Ensure the Header Height system is calibrated for the Combine & Header.

FLEX Cutting Mode

In FLEX mode, the system air pressure should range between 42 PSI and 60 PSI.

Tilt the table all the way back so the cutter bar is at the correct cutting angle.

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

RIGID Cutting Mode

When operating in RIGID mode, the system air pressure is 90 PSI.

Tilt table all the way forward so the cutter bar is at the correct cutting angle.

The center limit should be adjusted to within 1/2 - 1/3 of overall cut height (minimum 3 inches, or 3 bars on the automatix display).

9 - Automatix

9.1 - Display Unit

The AUTOMATIX display unit gives the operator control of and feedback from AirFLEX operations. It is mounted in the combine cab, next to the combine console. The display can be mounted using suction cups or the attached 1" RAM Industries ball which can be mounted to a bracket using accessories from RAM or your combine manufacturer.

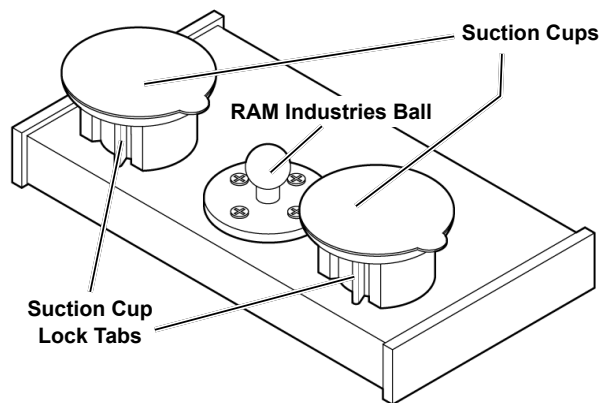


Fig. 55 - Automatix Display Mounting Hardware

The two bottom rows of buttons are used for sending commands to the Automatix system and provide access to harvesting settings that you use on the go.

The upper four buttons are the menu buttons for the settings normally adjusted before harvesting. The Red button is mapped to always return to home screen when pressed.

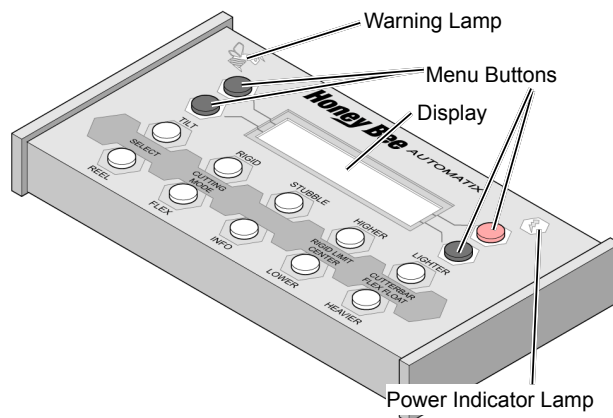
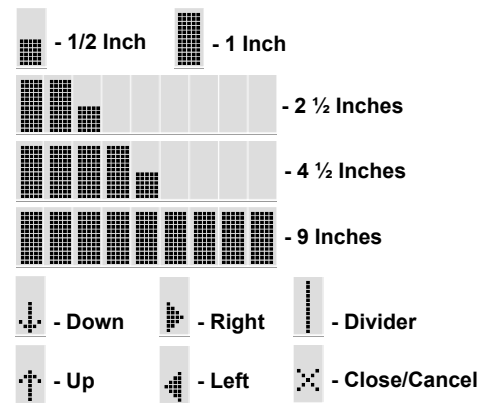


Fig. 56 - Automatix Display

9.2 - Screen Icons

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



NOTE:

To save space, the Automatix system does not show the decimal in 3 digit numbers. The last digit of all 3 digit numbers on the screen is always after the decimal. 460 showing on the display represents 46.0. 475 represents 47.5 etc..

9.3 - Power Indicator Lamp (Lightning Bolt)

Power Lamp On:
Automatix is receiving power.

Power Lamp Off:
Automatix is not receiving power.

Power Lamp Flashing:
Automatix has lost communication with the header.



9.4 - Warning Indicator Lamp (Bee)

Yellow Warning Lamp:
System is operating normally.

Flashing Red Warning Lamp
System Warning

Solid Red Warning Lamp:
System Failure



9.5 - Standby Screen

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

Cut Hours - The total time that the knife has been running.

Temperature & Relative Humidity - Measured from about 2 feet above ground.

Cutting Mode & Pressure - Displays the cutting mode (RIGID or FLEX) and the current air pressure.

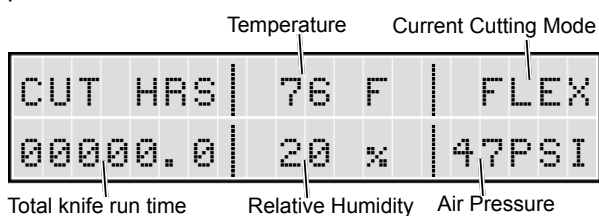


Fig. 57 - Standby Screen

9.6 - Mode Selection

The Honey Bee AirFLEX has 2 modes of operation: FLEX and RIGID. These modes are selected by pressing the FLEX or RIGID buttons on the Automatrix Display Console.

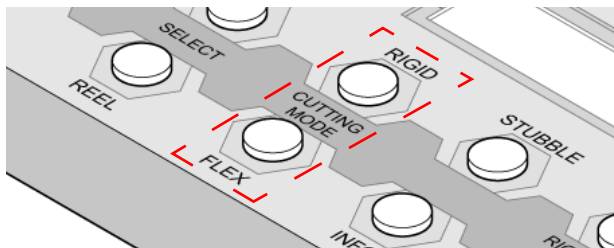


Fig. 58 - Cutting Mode Selection

The transition from RIGID to FLEX entails dumping air from the system, down to the FLEX pre-set pressure (Initially set at factory to 47 psi). This is a quick operation, taking about 60 seconds.

The transition from FLEX to RIGID entails running the onboard compressor (automatically done) until the air system pressurizes to the RIGID pre-set (about 90 PSI). The compressor takes longer to fill the system, and requires up to 15 minutes. The MODE cannot be changed while the header is in operation. This change can only be made when the knife RPM is zero (the display is in the standby state showing CUT HRS).

9.7 - Operating Screens - FLEX

9.7.1 - Air Pressure Setting for Cutter Bar Ground Pressure

When in FLEX mode, access this screen by pressing one of the cutter bar float adjustment buttons.

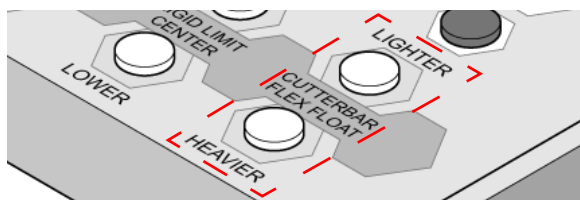


Fig. 59 - Cutter Bar FLEX Float Adjustment

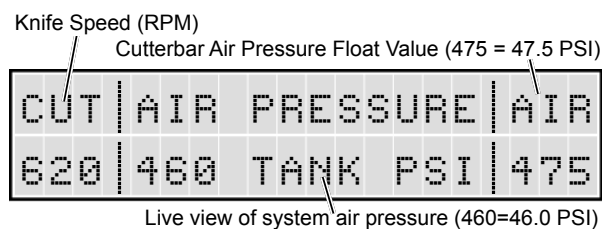


Fig. 60 - Air Pressure Setting

In FLEX mode, the normal range is from 42 PSI up to 60 PSI. Too much higher than that and you start to get a RIGID cutter bar, which will reduce the FLEX performance. The LIGHTER button adds air, making the cutter bar lighter on the ground. The HEAVIER button removes air from the system, and makes the cutter bar heavier on the ground. Lighter is better in most cases. Adjust as necessary to prevent the cutter bar from dragging or hanging up (dragging is normally seen on the ends).

9.7.2 - Header Height Live View - FLEX

In the live view, with the knife running, each bar indicates 1 full inch of travel (1/2 bar = 1/2"). The FLEX cutter bar has a total of 9 inches of travel, so all 9 bars will show when the available travel is 9 inches (or more).

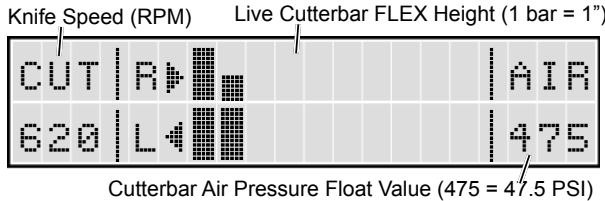


Fig. 61 - FLEX Header Height Live View

Normally, in FLEX mode, you want to adjust the table to a set point of 1 1/2" - 2" as indicated in Fig. 61. This will result in having 1 1/2" - 2" of up travel remaining before the auto header height would lift the table. It also results in having 7" - 7 1/2" of down travel available for the cutter bar to drop into depressions quickly, without having to lower the table. This setting is extremely important for optimal AirFLEX performance. If you make your set point too high, then the cutter bar can't drop as low and follow the terrain as well as a low set point.

9.8 - Operating Screens - RIGID

9.8.1 - Center Limit

This screen is accessed when in RIGID mode by pressing either of the limit adjustment buttons.

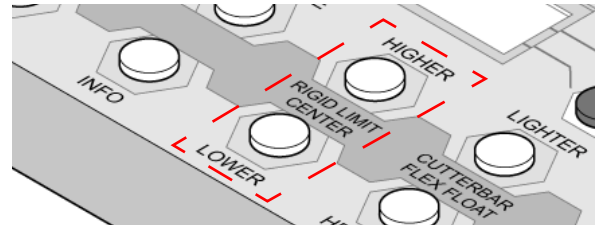


Fig. 62 - Center Limit Adjustment

The middle area of the screen shows a live view of the center limit sensor as a bar graph (%), where each bar represents 10%, and a half bar represents 5%. This is also indicated with a numerical percentage value.

Current Center Limit Function Setting (35% shown)

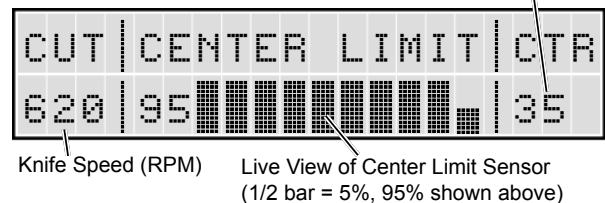


Fig. 63 - Automatix Display

100% indicates that the sensor has 100% of its range of motion available.

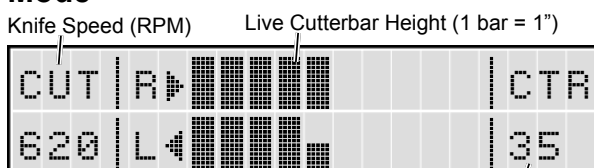
35% (as shown above), would indicate that the sensor arm has been pushed up by the ground, to within 35% of being fully compressed. Depending on the TILT of the table, full compression may not be possible in all terrain.

The setting you are trying to determine is: How close is the table to the ground before the system will override the main header height sensors, and lift (or warn) the table?

The setting is determined by lowering the table to the closest point the table should come to the ground, and noting the bar graph and numerical actual percent value. Then, the buttons can be pressed for more or less until this value shows for the CTR value. This height above ground needs to be the same or lower than the cutting height set point that will be used for harvesting. If this value is HIGHER than the CUTTING SET POINT, then the table will never return to cut height and

always “pop up” when you try. The CTR value must be a height that is physically lower than the auto header height cutting set point for this to work properly.

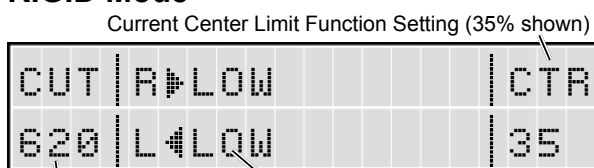
9.8.2 - Header Height Live View - RIGID Mode



Current Center Limit Function Setting (35% shown)
Fig. 64 - RIGID Header Height Live View

The middle display area shows a live view of the cutter bar height above ground and is determined by the auto header height sensors on the end dividers. This is useful for determining and setting the cut height set point.

9.8.3 - Header Height Warning View - RIGID Mode



Knife Speed (RPM) Cutterbar is Too Low
Fig. 65 - RIGID - Header Height - Warning Screen

This screen is displayed intermittently if the cutter bar is running hard on the ground but will not stop the header from working in this state. This is a high wear condition that you should try to avoid.

To clear the warning, raise the cutter bar/set point until the error clears (+ ½ inch).

9.8.4 - Header Height Warning View - FLEX

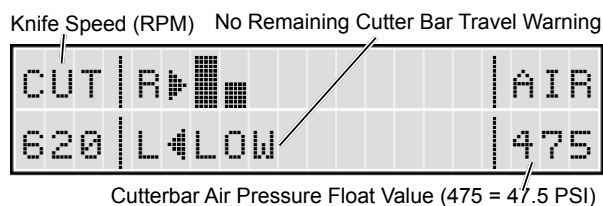


Fig. 66 - FLEX Header Height Warning View

This screen is displayed intermittently if the cutter bar is running while pushed up all the way with no remaining travel, but will not stop the header from working in this state.

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

If auto header height is working properly, it will lift the table right away, when the set point is crossed. The set point has to be high enough to leave some sensor range of up travel to trigger the lift command. If your set point is placed where the FLEX cutter bar is fully compressed, then the auto header height system will NEVER lift. You have to leave some “head room” for the system to work. This is typically 1 ½” to 2”. In the display, 1 bar = 1 inch and a ½ bar = ½”. Less than ½ bar/ inch = LOW warning.

9.9 - Information Screens

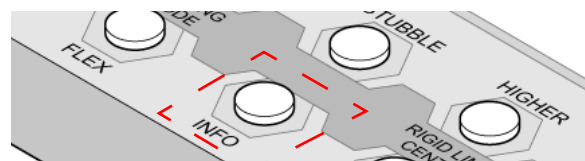


Fig. 67 - Cutter Bar FLEX Float Adjustment

The INFO button, gives you access to information about the header’s operating values. The speeds of the parts that move, the voltages of height measurements, and the environment you are operating in. Generally, these things can be observed from the cab by the operator, but not with much detail. The info screens give the operator some detail and values that allow observations to be made for the purpose of adjusting operating behaviors consistently. This aids in minimizing the guess work of running the header.

Each press of the INFO button, cycles between the operating screen, and the three INFO screens.

9.9.1 - Ground Environmental Data

Dew Point Temperature (°F & °C)					
@GROUND		24	C		DEW 2
xRH 20%		76	F		DEW 34
Relative Humidity		Temperature (°F & °C)			

Fig. 68 - Info Screen - Environmental

This screen shows the relative humidity, temperature and dew point to give you an indication of crop condition. This is facilitated by having the sensors located about 2 feet off the ground (about mid strut).

Note the values here when you feel the crop is getting tough, and later you can predict harvesting conditions. Relative Humidity seems to be the most consistent measure of this.

9.9.2 - Speeds and Combine Auto Header Height Values

Draper Speed (left, center, & right draper in RPM)										
LD	750		CD	790		RD	750			
HH	411		CUT	620		HH	411			
				Knife Speed (in RPM)						
Left & Right Auto Header Height Voltage (411 = 4.11 V.)										

Fig. 69 - Info Screen - Environmental

This screen shows the draper speeds, knife speed, and auto header height voltages that the AUTOMATIX system sends to the combine.

The auto header height voltages (HH) are not the raw values of the sensors, but are the conditioned outputs from the AUTOMATIX controller that are being fed to the combine. This range varies from brand to brand and model to model. The Raw sensor voltage range is generally fixed, so AUTOMATIX does this conversion.

The displayed HH values are not showing the decimal point: 411 = 4.11 volts.

9.9.3 - Raw Auto Header height Voltages

Left RIGID Voltage			Center RIGID Voltage			Right RIGID Voltage		
LHR396		CTR382		RHR155				
LHF134		HHVOLT		RHF349				
Left Hand FLEX Voltage			Right Hand FLEX Voltage					

Fig. 70 - Info Screen - Raw Header Height Voltages

This screen shows the raw, or actual auto header height sensor voltages. The combine never sees these values, but showing them to the operator is very useful for confirming basic sensor functions for trouble shooting.

The decimal place is not shown: 396 = 3.96 volts.

The RIGID mode uses the floating dividers at the ends of the table to sense header height. These are the primary auto header height sensors in RIGID mode. The center sensor does not output to the combine, instead, it will affect the values of the end sensors if the terrain in the middle zone of the table is rising more than at the ends. How and when this happens is set by the operator as the CTR set point.

The FLEX sensors are mounted on the middle left and right struts, and are linked to each paddle by a rock shaft and linkages. This allows the entire cutter bar to impact the auto header height voltages for left and right, when operating in FLEX cutting mode.

9.10 - Stubble Lights

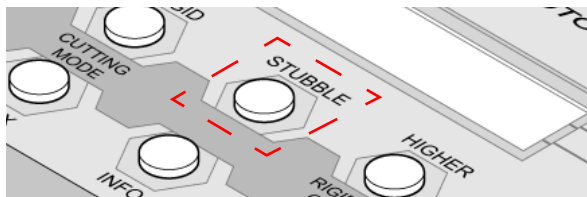


Fig. 71 - Cutter Bar FLEX Float Adjustment

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

This button does not impact anything on the display screen.

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

On - Stubble lights are on

Off - Stubble lights are off

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

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

9.11 - Menu Screens

9.11.1 - Overview

In addition to the directly accessible functions, there are several settings that allow the operator to fine tune and calibrate the system. These are accessible from the menu screens by pressing any of the 3 Black buttons.

The function of each button changes depending on what is displayed on the screen. The left black buttons are usually for scrolling up and down. The red button on the right is usually for Back/NO/Cancel/Exit, and the black button on the right is usually for OK/Yes/Enter. In Fig. 72, you can see how the buttons are associated with icons on the screen.

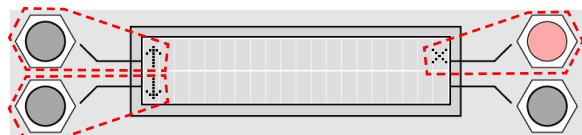


Fig. 72 - Menu Buttons & Display Screen

The yellow lines that extend from the menu buttons, line up with the associated function icons on the display.

9.11.2 - Menu List

There are currently 8 items in the menu list. Most of these menu items have other screens associated with them.

System Errors: Shows and details errors and warnings, such as draper slipping, etc.

Header Height Smoothing: Sets RIGID and FLEX signal smoothing to minimize hunting in header height.

Header Height Calibration: This is the AUTOMATIX header height sensor calibration procedure.

Speed Calibration: This is the AUTOMATIX speed sensor calibration for slow speed warnings.

Default RIGID mode: This sets the center sensor function to lift or just warn.

Default FLEX pressure: This sets the starting pressure in FLEX mode. E.g. 47.5 PSI

Time & Date: This allows the operator to set the time and date to their local.

Configuration Info: The displays software version, combine type, etc.

9.11.3 - Menu Screen - Errors

There are 2 types of errors: Warnings & Failures.

Warnings indicate items that need your immediate attention such as a slipping draper.

Failures indicate that equipment has stopped function and must be addressed immediately such as a jammed/stopped draper.

When an error is encountered, it will appear on the Automatix display. Pressing the lower right BLACK menu button (OK) will acknowledge the error and return to the main operating screen. To review the error in detail, the operator enters the menu (pressing any black button). If the error is corrected, it will no longer be visible on the screen.

The Bee Indicator Light and alert sounds will notify you of any errors or warnings.

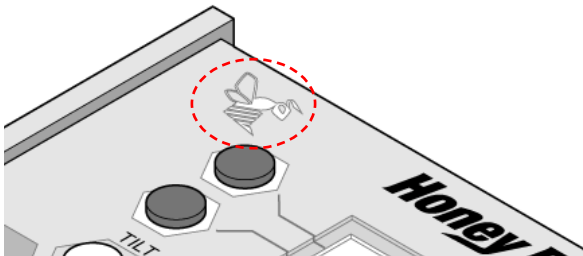


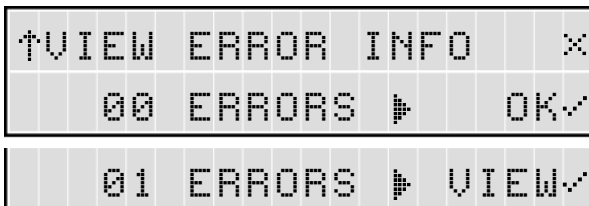
Fig. 73 - Bee Indicator Light

Yellow Bee Indicator Light = System is operating normally.

Flashing Red Bee Indicator = System Warning

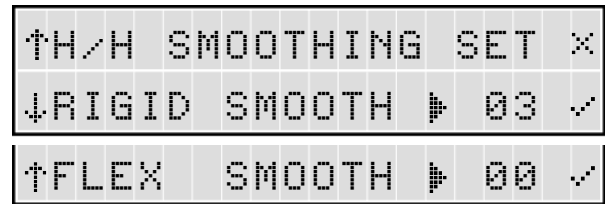
Solid Red Bee Indicator = System Failure

Press any black button to enter the menu and view the error details.



Entering the menu, presents you with the ERROR menu item (first in list). This screen will indicate if errors are present, and how many there are (if any). Below is a summary of Warnings and Failures that the system is aware of. The 4 categories of errors are: header height, draper speeds, knife speed, air pressure issues. See sections 9.12 and 9.13 and for details.

9.11.4 - Menu Screen - Smoothing



The smoothing function provides the ability to reduce hunting (primarily in RIGID mode) while using a higher sensitivity setting on the combine header height system. The recommended settings are 3 in RIGID and 0 (zero) in FLEX. These are the factory default settings. The smoothing function averages the changes in header height voltage over time. The larger the number, the longer the time.

9.11.5 - Menu Screen - Header Height Sensor Calibration

This calibration is only required when the header is used for the first time, or if divider extensions are adjusted or changed. The calibration is stored indefinitely, even with the power off.

If the linkages connecting the rotary sensor to the lever arms get loose or bumped, then they should be reset and a calibration performed again.

Whenever you perform the header height calibration, you should also perform a combine header height calibration (See 7.3.5 on page 34).

Whenever you change combines, you should perform both calibrations again.

The calibration process must be completed without skipping any steps.

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

```

↑H/H CALIBRATION      X
↓SELECT TO START  ▶✓
  
```

2. IN FLEX MODE. The header must be in FLEX mode for calibration so the sensors can go through their full range of motion.

```

IN FLEX MODE  ▶YES✓
  
```

3. CTR SENSOR DWN. Unlock and let down the center sensor. Because, all the sensors must be free to move during the calibration.

```

CTR SENSOR DWN▶YES✓
  
```

4. DIVIDERS TIGHT. The removable crop dividers must be tightly secured prior to calibration. Loose dividers will cause inaccurate readings.

```

DIVIDERS TIGHT▶YES✓
  
```

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

```

DIVIDERS LEVEL▶YES✓
  
```

6. TILT FORWARD. Tilt the table fully FORWARD/OUT. The table is tilted forward when operating in RIGID mode, so the calibration must be too. The FLEX sensors don't care. Tilted in or out, the FLEX cutter bar can still go all the way up and down within its 9" range of motion. Combine calibration must also be performed in FLEX, with header tilted forward!

```

TILT FORWARD  ▶YES✓
  
```

7. LOWER HEADER. Lower the header until the FLEX cutter bar is pushed all the way up. If the table tilts back, you have pushed too far. Once you have achieved the lowered position, wait a few seconds before pushing the check mark (lower right BLACK button).

```

▶LOWER HEADER  ▶YES✓
  
```

8. RAISE HEADER. Raise the header until the RIGID divider tips are about 2 feet off the ground. This ensures that the center sensor is also off the ground. Once you have achieved the raised position, wait a few seconds for the header to stop bouncing, before selecting the check mark.

```

▶RAISE HEADER  ▶YES✓
  
```

9. If successful, your Automatix display will read "Calibration Done!". Select the check mark to view raw sensor voltages, X to exit.

```

↑H/H CALIBRATION      X
↓▶CALIBRATION DONE!✓
  
```

```

LHR 396|RHR 155|CTR X
LHF 124|RHF 349|382
  
```

If the display reads "Calibration Fail!", at least one of the header height sensors did not move the distance required. This can be caused by something limiting the physical range of motion of a sensor or by a faulty sensor. The calibration menu gives you the option at the end of calibration to view the raw sensor voltages. If any of the voltages are not changing enough (they must change by a minimum of 1.5 volts), then a physical look at the sensors and linkages will be required.

```

↑H/H CALIBRATION      X
↓▶CALIBRATION FAIL!✓
  
```



```

↑VIEW H/H 03 ERRORSX
↓LHR|LHF|CS|RHF|RHR✓

```

```

LHR 396|RHR 155|CTR×
LHF 124|RHF 349|382

```

The calibration failure screen shows which sensor(s) aren't working. All 5 sensor are shown (LH RIGID, LH FLEX, Center, RH FLEX, RH RIGID). Only the faulty ones will be displayed.

9.11.6 - Menu Screen - Speed Sensor Calibration

This calibrates the draper, knife, and reel speed, then relates them to the combine PTO speed so that the system can tell if a belt is slipping. When calibrated, the system will give warning if a belt is loose.

Before you start calibration, ensure the drapers and belts are properly adjusted.

1. Select 'Speed Calibration' via the main menu on the Automatix display.

```

↑SPEED CALIBRATION X
↓SELECT TO START ▶ ✓

```

2. DRAPERS TIGHT: set your deck hardware to correct physical setting and "check mark".

```

DRAPERS TIGHT ▶YES✓

```

3. BELTS TIGHT: adjust your knife drive belt for correct physical tension. Check cog belts and pulleys and "check mark".

```

BELTS TIGHT ▶YES✓

```

4. RAISE HEADER: get the knife off the ground so it is not loaded and reel is safe to rotate and "check mark".

```

RAISE HEADER ▶YES✓

```

5. RUN TOP SPEED: set throttle to maximum setting and wait for top speed and "check mark".

```

▶RUN TOP SPEED▶YES✓

```

When properly completed, the display will read "Calibration Done!".

```

↑SPEED CALIBRATION X
↓▶CALIBRATION DONE!✓

```

```

LHR 396|RHR 155|CTR×
LHF 124|RHF 349|382

```

If the display reads "Calibration Fail!", it indicates that one or more of the header speed sensors did not register the correct speed. Failure results in a screen that shows which sensor failed, and the speeds (in RPM) that the system sees.

```

↑SPEED CALIBRATION X
↓▶CALIBRATION FAIL!✓

```

```

↑VIEW SPEED ERRORS X
↓LD|CD|RD|RS|CUT|IN✓

```

```

LD 750|CD 790|RS 75×
RD 750|CUT620|IN 550

```

- An incorrect speed indicates a gap adjustment is required.
- No speed indication indicates a bad wire or sensor.

9.11.7 - Menu Screen - Center Sensor Mode

The center sensor has 2 operating modes: LIFT (default) or WARN.

In LIFT mode, the table will lift when the center sensor set point is triggered.

In WARN mode, the display will flash RED bee and urgent alert tones will indicate that the operator has to manually lift the table to prevent the middle of the cutter bar from digging in.

LIFT mode is highly recommended.

```

↑DEFAULT RIGID MODEX
↓CENTER SENSOR▶LIFT✓
    
```

9.11.8 - Menu Screen - Default FLEX PSI

The default air pressure is the value that will be used when you change from RIGID to FLEX mode. However, if you have been in FLEX mode and changed this to another value via the HIGHER and LOWER buttons, then the last value used will be active. When the combine is restarted, the default value will be used again.

The decimal is not displayed: 475 = 47.5 PSI.

```

↑DEFAULT FLEX PSI X
↓SET AIR START▶ 475✓
    
```

9.11.9 - Menu Screen - Time and Date

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

```

↑SET TIME & DATE X
↓|YYYY|MM|DD|HH:mm ✓
    
```

9.11.10 - Menu Screen - Config. Info

The configuration screen allows you to see the software version and combine version of the current setup.

```

↑VIEW CONFIGURATIONX
↓SOFTWARE|00-00-0000
    
```

```

COMBINE|EQPMT MAKE
    
```

```

↑VIEW CONFIGURATIONX
COMBINE|EQPMT MAKE✓
    
```

When at the config. info screen, select the down arrow to view the Equipment Make Configuration Screen.

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

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

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

9.12 - Error Screens

WARNING that something is wrong but it can be fixed.

The header height values have been at minimum for a short time and set point may need to be raised. Adjust and evaluate.

CUT		R	▶	LOW							CTR
000		L	◀	LOW							35

CUT		R	▶								AIR
000		L	◀	LOW							475

The draper speed values have been lower than as calibrated for a short time and the draper tension may need to be tightened. Adjust and evaluate.

↑		LH		DRAPER		SLOW					×
↓	▶	MAKE		DRAPER		TIGHT					◀

↑		RH		DRAPER		SLOW					×
↓	▶	MAKE		DRAPER		TIGHT					◀

↑		CTR		DRAPER		SLOW					×
↓	▶	MAKE		DRAPER		TIGHT					◀

The knife speed value has been lower than as calibrated for a short time and the belt tension may need to be tightened. Adjust and evaluate.

↑		KNIFE		SPEED		SLOW					×
↓	▶	MAKE		BELT		TIGHT					◀

The air system is not filling at the rate expected. Or the air system is not releasing at the rate expected. Air compressor inlet or dump valve outlet may be plugged. Clean and evaluate.

↑	AIR		COMPRESSOR		ERR		×
↓	▶	CLEAN		AIR		FILTER	◀

↑	AIR		DUMP		VALVE		ERR	×
↓	▶	CLEAN		O/P		SCREEN	◀	

9.13 - Failure Screens

FAILURE of something that likely needs repair.

The header height values have been at minimum for a long time and set point may need to be raised, or header height is off or not working. Stop and investigate.

↑	HEADER	BOTTOMING	×
↓	RAISE	SETPOINT	↵

↑	POOR	HEIGHT	CONTRL	×
↓	CALIBRATE	H/H	↵	

The draper speed values have gone to zero. A draper drive belt may be broken or a draper is jammed. Stop and investigate.

↑	LH	DRAPER	FAIL	×
↓	CHECK	DRAPER	BELT	↵

↑	RH	DRAPER	FAIL	×
↓	CHECK	DRIVE	BELT	↵

↑	CTR	DRAPER	FAIL	×
↓	CHECK	DRIVE	BELT	↵

The knife speed value has gone to zero. The knife drive belt may be broken or knife is jammed. Stop and investigate.

↑	KNIFE	SPEED	STOP	×
↓	CHECK	DRIVE	BELT	↵

The air system is not filling or much slower than the rate expected. Or the air system is not releasing air or much slower than the rate expected. Air compressor may be overheated due to continuous running because of an air leak. Evaluate and tighten hoses at leak. If dump valve is not releasing air, there may be a damaged wire. Evaluate and repair as needed.

↑	AIR	COMPRESOR	FAIL	×
↓	OVER	HEATED	COOL	↵

↑	AIR	DUMP	VALVE	ERR	×
↓	FLUSH	DUMP	VALVE	↵	

10 - General Crop Specific Productivity

10.1 - Harvesting in Standing Crop Conditions

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 the reel until bats and fingers strike just under the grain heads to help guide the crop.

10.2 - Harvesting in Tough Feeding Crop Conditions

Move reel rearward to ensure cut, heavy crop is transferred to draper belts and the feather plates are swept clear.

10.3 - 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.

10.4 - Harvesting Soybeans

When harvesting soybeans, set AirFLEX pressure for crop conditions:

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

10.5 - 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.

10.6 - Lodged/Downed Crops

Fully extend the reel toward the front of the header.

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

The reel height should be positioned so that the fingers have a minimum of 2" (5 cm) clearance to the cutter bar and feather plates.



IMPORTANT!

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

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

10.7 - Extreme Lodged/Downed Crops

Fully extend the tilt cylinder to angle the guards down.

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

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

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



IMPORTANT!

Increased wear will result on guards, knife sections, and knife head bearings. When running in this mode, grease the knife heads every 5 hours (not 10 hours). This method should only be used in extremely down crop on rolled land (e.g. no rocks).

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.

10.8 - 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 tines should be adjusted to be less aggressive.

10.9 - 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.

10.10 - Normal Crops

Position the reel to provide best crop flow with minimal interference. For grain crops, this is typically about 7" out (tines in line with top of feather plate). For leaning or pulse crops, this is further forward at about 11" out (tines in line with back of guards). In both cases, it is best to lower the reel to where the tines are in the crop, but the bats are out of the crop.

11 - Troubleshooting

11.1 - Reel

Symptom	Possible Cause	Solution
Reel Wrapping in Tangled and Weedy Conditions	Incorrect reel location.	Adjust reel forward and down.
	Reel speed too fast.	Slow reel until crop flows smoothly onto belts.
	Reel fingers not able to eject material properly.	Adjust reel timing to next more aggressive setting (lower number)
Reel Carrying Around Crops or Excessive Shattering of Grain Heads	Reel speed too fast.	Slow reel speed. Reel should turn slightly faster than ground speed.
	Reel height too low.	Raise reel height to reduce amount of straw gathered by reel.
	Pickup fingers pitched too much.	Reduce finger pitch by adjusting reel timing to next less aggressive setting (higher number)
Uneven Reel Height and Fore/Aft	Reel cylinders out of phase.	Rephase cylinders (see section 13.7.3 on page 73).
	Reel stops not set to same height	Adjust reel stops.
Cutterbar Plugging or Slug Feeding	Reel speed too slow.	Increase reel speed.
	Reel too far forward	Retract reel
	Reel fingers too far from cutter bar	Lower Reel

11.2 - 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.
	Ground speed too fast for conditions of crop.	Slow down ground speed so reel does not hit crop, causing it to shatter.
	Reel too far forward	Retract reel as far as possible while still allowing proper crop flow.

11.3 - Cutting Platform (continued)

Symptom	Possible Cause	Solution
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.
	Reel too far forward.	Move reel closer to cutterbar.
	Cutterbar belt angle too steep.	Use tilt adjuster at center of platform to adjust angle of cutterbar.
	FLEX Cut Set Point set too high (more than 2").	Decrease the Cut Set Point
Ragged and Uneven Cutting of Crop	Knife dull.	Replace knife.
	Cutterbar plugged with material.	Adjust reel to sweep material off cutterbar.
	Knife sections damaged.	Replace damaged sections.
	Integral knife hold-downs adjusted loose.	Adjust hold-downs to recommended clearance.
Excessive Vibration of Cutting Parts	Feeder house lower shaft not at recommended speed.	Check basic speed of combine (see combine Operator's Manual).
	Variable speed feeder house is too fast.	Slow variable speed feeder house (see combine Operator's Manual).
	Knives not timed properly.	Adjust knife timing (see SERVICE section).
	Loose bolts on drive paddle	Tighten all fittings on the drive paddle.
Excessive Knife Drive Loads or Inconsistent Cut Heights	Dull knife sections.	Replace knife sections.
	Dull knife guard edges.	Replace knife guards.
	Excess binding between top of knife sections and top of guard slots.	Inspect for bent guards, bent cutterbar, or improper position of guards.
	Incorrect setting of knife hold downs.	See SERVICE section for adjustments.
Excessive Knife Drive Loads or Inconsistent Cut Heights	Dull knife sections.	Replace knife sections.
Crop is not feeding properly	Crop is not clearing the feather plates	Lower the reels, increase the speed of the power unit/reel, set reel finger timing to be more aggressive. Set reel fore/aft to clear feather plates.

11.4 - 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 8.5 on page 40)

11.5 - Active Header Height Control

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

11.5.1 - Miscellaneous

Symptom	Possible Cause	Solution
Uneven or Bunched Feeding of Crop to Feeder House	Incorrect feed auger finger timing.	Adjust finger timing.
	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
Hydraulic Leak Detected At Multi-Coupler	Leaking O-ring.	See your dealer.
System is not keeping air pressure while AirFLEX is running	Air is leaking or compressor is not running properly	Check air lines, air bags and air fittings for leaks.
Crop Dividers are riding up on top of the crop	Improper adjustment of the crop divider	Adjust the crop divider float settings as outlined in "13.9 - Dividers" on page 77
FLEX mode PSI setting is not 'remembered' when restarting the combine	You probably only set the operating PSI (shutting down the equipment reverts this value to the default)	Set the default FLEX PSI as described in "9.11.8 - Menu Screen - Default FLEX PSI" on page 50

12 - Header Dismounting, Storage & Transport

12.1 - Preparing for Dismount

There are two methods of dismounting the AirFLEX Header from a combine. Each method differs only in the equipment used to support the Header after it is removed from the Combine:

- **Quick Dismount**, without using a Transport System.
- **Full Dismount**, which utilizes the Transport package.

To begin the dismount process:

1. Completely lower and retract the reel.
2. Raise the header to its fully raised position.
3. Completely retract 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.
5. Disconnect hydraulic coupler and place in storage position.
6. Disconnect electrical cable & place in storage position.
7. Remove all locks, pins/bolts which hold Auger Adapter to the Feeder House of Combine.
8. Raise the center sensor into its storage position. (see Fig. 53 on page 39).

If using the transport package, go to section 12.2 - Full Dismount.

If lowering the header onto the ground, go to section 12.3 - Quick Dismount.

12.2 - Full Dismount

There are two components to the 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 90 psi.

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.

2. Roll the transport into position under the header.
3. Attach the 4 straps to the struts on the underside of the header.
4. 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. Lock the Feeder House Lift Cylinders in raised position as described in your Combine Owner's Manual.

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

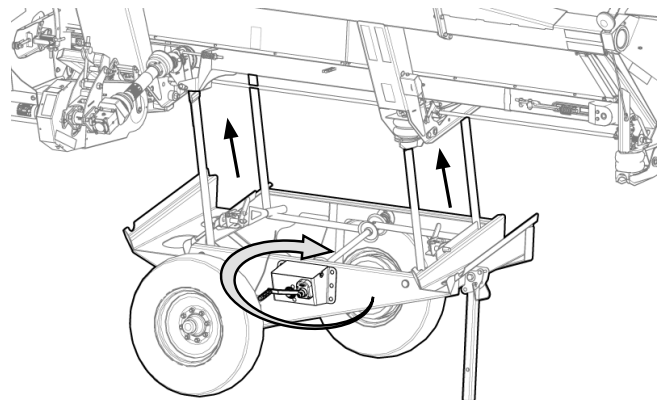


Fig. 74 - Install Header Transport Cart

6. Lock the transport cart in place via the two lock pins.
7. Swing the transport support bar into its transport position, lock in place with its pin.

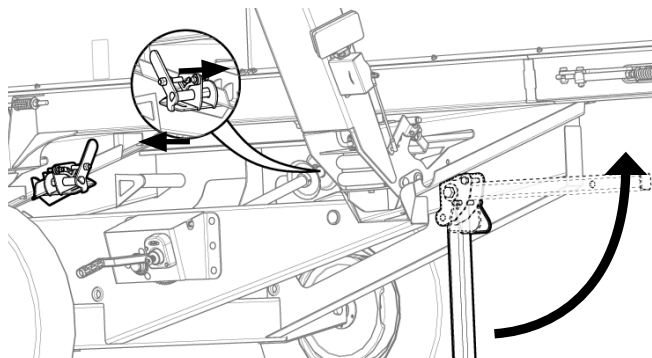


Fig. 75 - Lock Transport Cart to Header

8. Connect the transport's electrical line to the header.
9. Gently lower the header down until the draw bar mount point is about a foot above the draw bar front axle.
10. Pull the pin to lower the draw bar mount point onto the draw bar axle
11. Completely lower header.
12. Re-insert the pin to secure the draw bar axle in place.

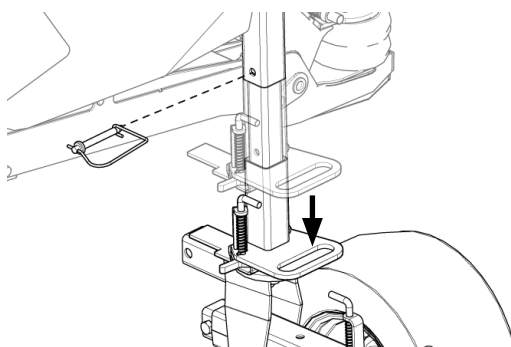


Fig. 76 - Lower draw bar bracket onto draw bar axle

13. Remove pins and locks holding feeder house to header.
14. Lower feeder house slightly and back away.

12.3 - Quick Dismount

1. If lowering the header onto the ground, ensure the rear of the subframe is placed on blocks.
2. Ensure the ground is firm and level.
3. Place two wood blocks on the ground below the bottom strut of the subframe.
4. Gently lower the header down onto the blocks.

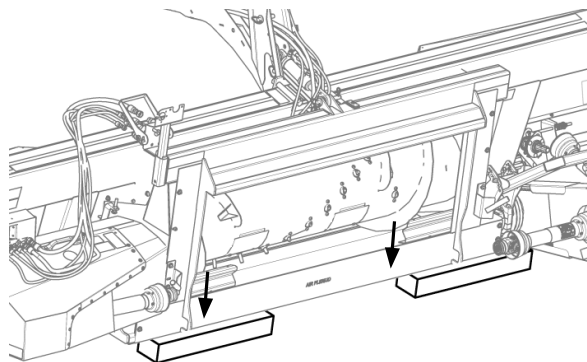


Fig. 77 - Lower Header onto Blocks

5. Remove pins and locks holding feeder house to header.
6. Lower feeder house slightly and back away.

NOTE:

Please see section 12.4 on page 61 for transportation information.

12.4 - Read before Transporting

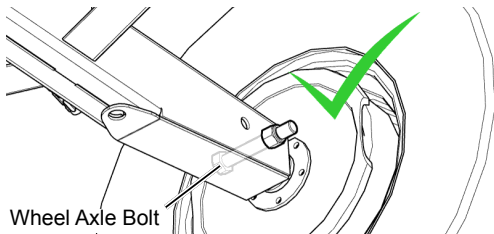
There may be regulations restricting transport of heavy equipment on in your area. Be aware of local regulations before transporting.

When transporting your header via trailer or transport cart, your local regulations may require a maximum equipment width of 8.5 ft (2.6 m). To achieve this width, lower the front-most reel tines and raise the knife drive assembly into it's 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!



Wheel Axle Bolt

Fig. 78 - Ensure wheel axle bolts are installed

12.5 - Transport Cart

1. Completely lower and retract the reel arms.
2. Remove the crop dividers by pulling the handle up into the horizontal position and rotating it 90 degrees to release the divider.

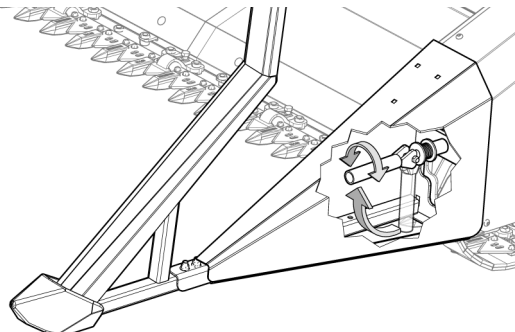


Fig. 79 - Remove Crop Dividers

WARNING!

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

NOTE:

Some units may have a 'flower' style handle that must be rotated to remove the divider.

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

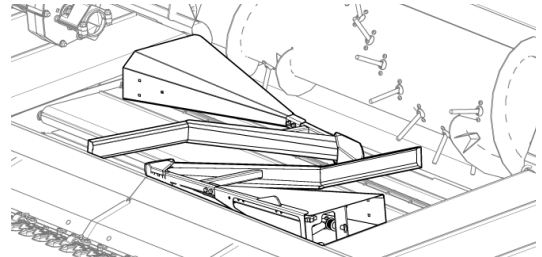


Fig. 80 - Store Crop Dividers on Center Draper

4. Remove the drive shaft from the knife drive assembly and store it on the table for transport.
5. Loosen the five bolts indicated below and loosen the belt tension.

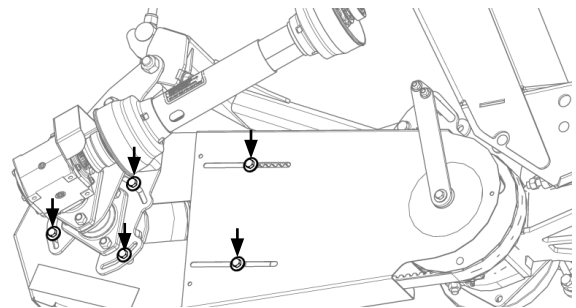


Fig. 81 - Loosen bolts

6. Remove the bolt shown below and lift drive assembly up until you can re-insert the bolt into the 'T' hole and tighten to lock the drive in the transport position. Re-tighten the 5 bolts.

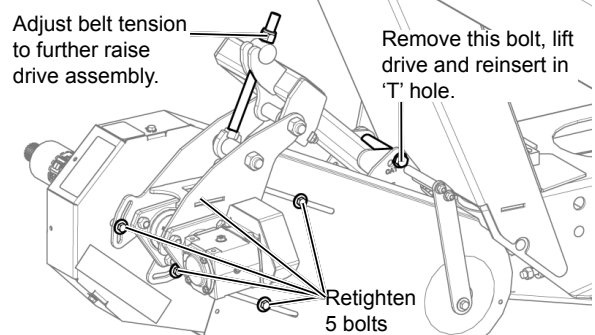


Fig. 82 - Knife drive belt assembly in storage position

7. At each end of the reel, remove the indicated bolt to allow you to drop down the header's front-most reel tine as shown below.

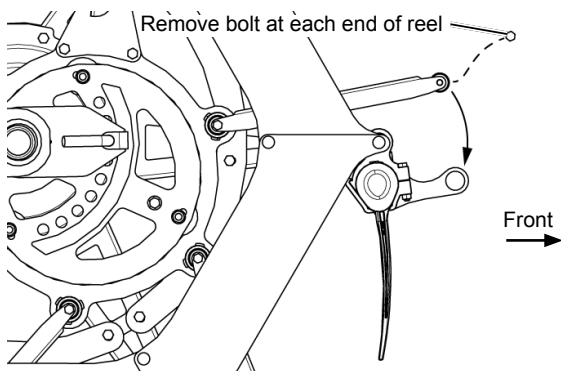


Fig. 83 - Drop Reel Tines for Transport

8. Connect towing vehicle to draw bar hitch.
9. Connect transport electrical harness to towing vehicle for light and brake control.
10. Secure the safety chain to the towing vehicle.
11. All transport lights & reflectors must be installed, clean and functional. (See "Fig. 1 - Decal & Safety Feature Locations" on page 12 for locations).

NOTE:

Please see section 5.5 on page 26 for transport removal instructions.

12.5.1 - Trailer Brake Settings

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

12.5.2 - Off-Road Transportation

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

12.5.3 - On-Road Transportation

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

12.6 - Transporting on Combine

IMPORTANT!

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

Reflective material must be clean and visible

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

Drive at a speed that is safe for conditions.

Completely raise platform and engage the feeder house safety stop.

The reel must be completely lowered and retracted before transport.

When transporting on road or highway, flashing warning lights and tail lights on both sides provide a warning to approaching vehicles. Warning lights must be turned ON when driving a combine on a public road.

Operators should be aware of the assembled width of the Combine, and should check local regulations before transporting on public roadways.

12.7 - Flat Deck Trailer Transport

When transporting your equipment via flatbed trailer, you must use the provided hold-down brackets with your header in order to avoid damaging the equipment.

1. Ensure the draw bar axle hold-down bracket is in place. This bracket can remain on your table during operation and will not require removal.

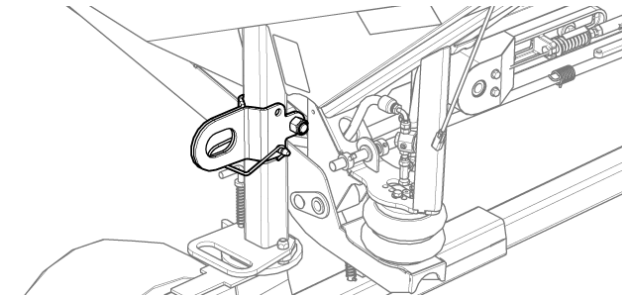


Fig. 84 - Check for draw bar axle hold-down

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.

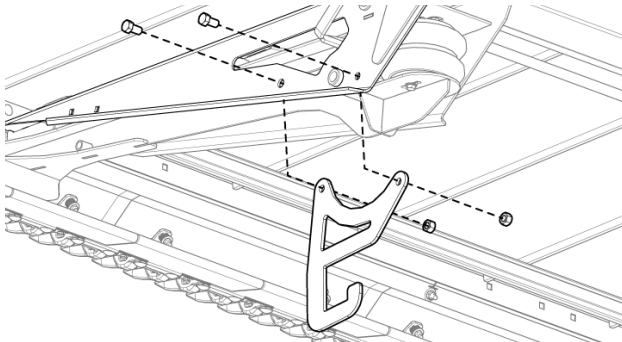


Fig. 85 - Draw bar holder

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

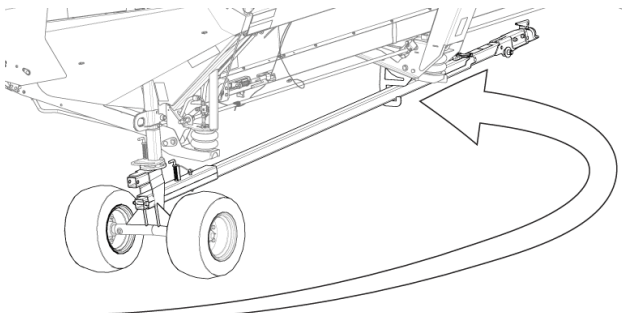


Fig. 86 - Swing Draw Bar into Storage Position on Holder.

4. Inspect the axle on the header transport and ensure the indicated bracket is installed next to each wheel. This bracket does not need to be removed from the transport during regular operation.

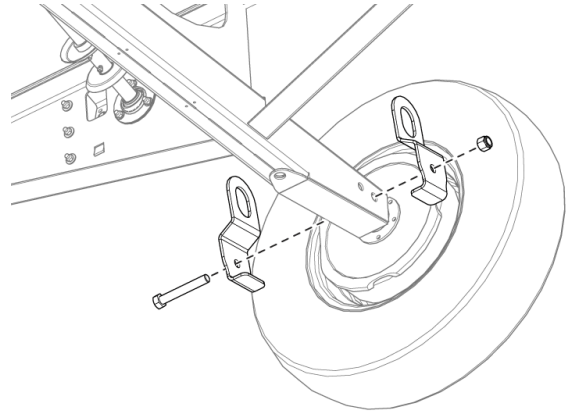


Fig. 87 - Install Axle Hold-Downs next to each of the 2 tires.

12.8 - End of Season Storage

- ❑ Lower platform onto safety stops or blocks.
- ❑ Raise reel completely and engage safety stops.
- ❑ Open side shields (see section 13.13 on page 81) and clean all chaff and debris.
- ❑ Loosen tension on side draper belts (See section 13.6.1 on page 70).
- ❑ Lift up on side belts and power wash inside belts. Make sure to wash away all chaff and debris.



IMPORTANT!

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

- ❑ Remove center draper belt and clean frame (see section 13.6.5 on page 72). Reinstall belt loosely.
- ❑ Check fluid levels on all gearboxes.
- ❑ Apply grease where needed as outlined in section 13.16 on page 83 of this manual.
- ❑ Lower reel completely.
- ❑ Raise the center sensor into it's storage position.
- ❑ Paint all parts where paint is worn or chipped.
- ❑ Close side shields.
- ❑ If possible, shelter header in a dry place.

13 - Regular Service & Adjustment

13.1 - Fasteners

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

Always ensure that all fasteners are torqued to the proper specifications (see sections 15.4 and 15.5 on page 91) Apply thread lock compound when necessary.

13.2 - 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.

13.2.1 - Feed Auger Drive Belt Tension

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

Refer to the illustration below for details on tensioning & aligning the feed auger drive belt.

Ensure the belt tracks in the center of the roller when in operation, adjust alignment as necessary.

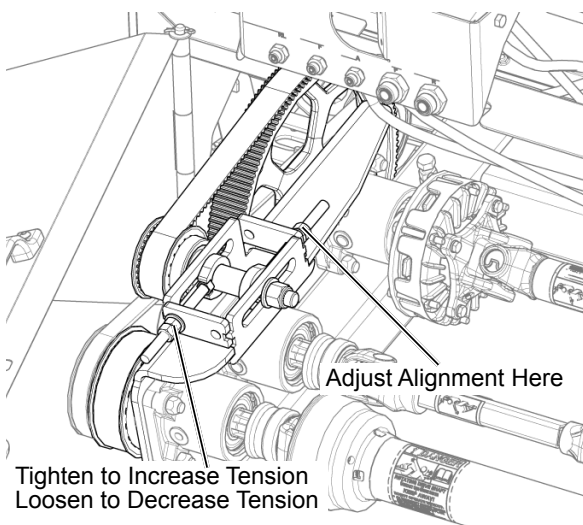


Fig. 88 - Feed Auger Drive Belt Adjustment

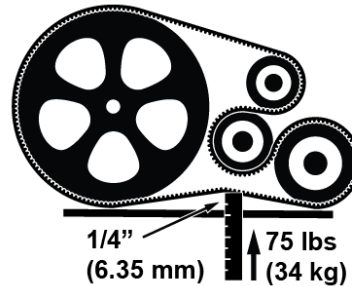


Fig. 89 - Feed Auger Belt Tension Measure

13.2.2 - Left Draper Drive Belt Tension

The left draper has two different drive belts, The tension adjusters are shown in the illustration below. The tensioner should be adjusted so the tension gauge is in line with the washer.

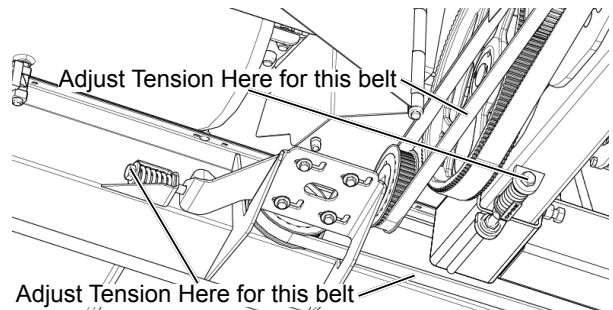


Fig. 90 - Left Draper Drive Belt Tensioner

If adjusting the 1st left hand draper drive belt, you will need to loosen the two lock bolts prior to adjustment. Remember to retighten the bolts when the belt is properly tensioned.

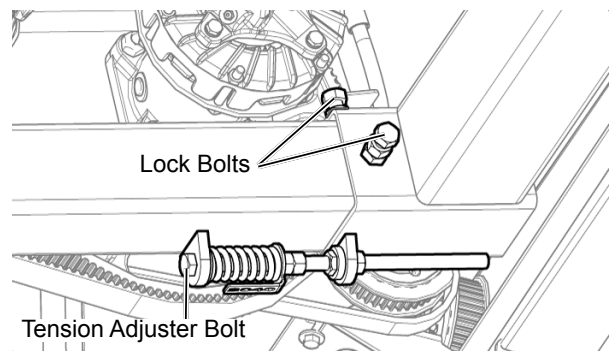


Fig. 91 - Left Draper 1st Drive Belt Tension Lock Bolts

13.2.3 - Center Draper Drive Belt Tension

The center draper drive belt (and tension adjuster) are located between the left side of the subframe and the strut next to it. To adjust the drive belt tension, loosen the jam nut, turn the bolt until desired tension is reached (indicator flush with washer) then retighten the jam nut.

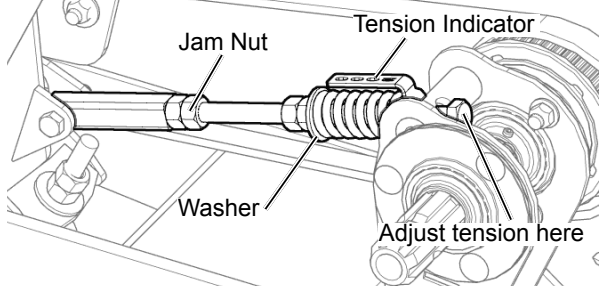


Fig. 92 - Center Draper Drive Belt Tensioner

13.2.4 - Right Draper Drive Belt Tension

The right draper drive belt tension adjuster is located to the right of the subframe where the drive shaft meets the header as shown below. The tensioner should be adjusted so the tension gauge is in line with the washer as shown.

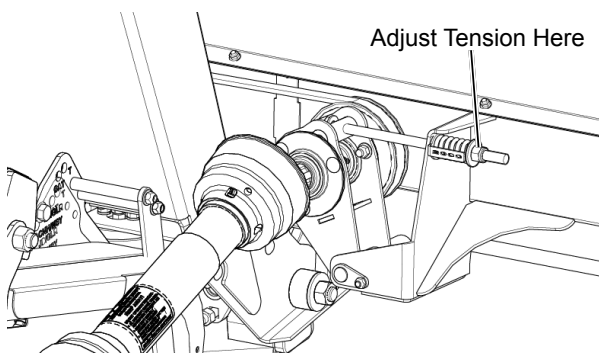


Fig. 93 - Right Draper Drive Belt Tensioner

13.2.5 - Knife Drive Belt Tension

1. Loosen the five indicated bolts.

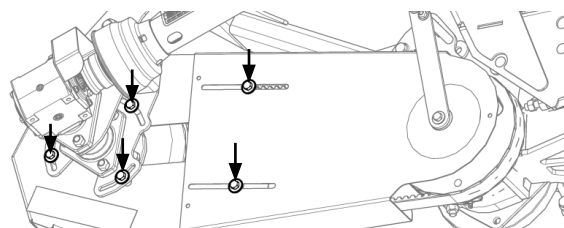


Fig. 94 - Loosen bolts

2. Remove the acorn nut and loosen the jam nut from the tension adjustment rod.
3. Loosen the pivot nut to allow the assembly to move.
4. The knife belt should deflect by about 1/4" (6.4 mm) when pushing on it with 75 lbs (34 kg) of force.

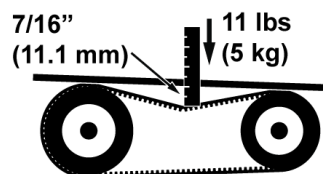


Fig. 95 - Knife Belt Tension Measure

- To increase belt tension, tighten the tension adjustment nut.
- To decrease belt tension, loosen the tension adjustment nut.

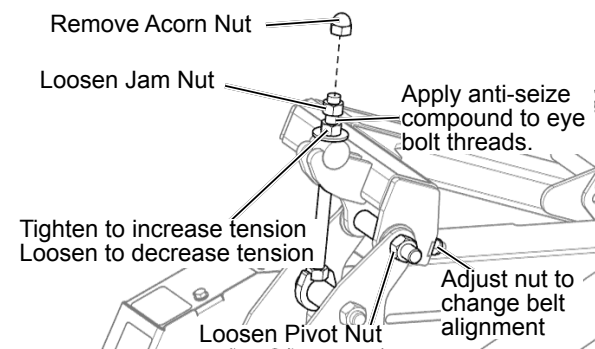


Fig. 96 - Knife Drive Belt Tension Adjustment

5. When tensioned, retighten the acorn nut, jam nut, pivot nut and the five nuts. Use anti-seize compound on eye bolt.
6. If the knife belt is not tracking in the center of the roller, you can adjust its alignment via the nut indicated in Fig. 96.

13.3 - 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.

13.3.1 - Knife Drive Belt Replacement

1. Remove the knife drive pto shaft from the knife drive assembly.

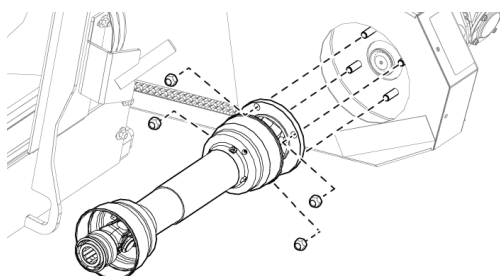


Fig. 97 - Remove PTO Shaft from Knife Assembly

2. Remove the two indicated screws and remove the shield as shown.

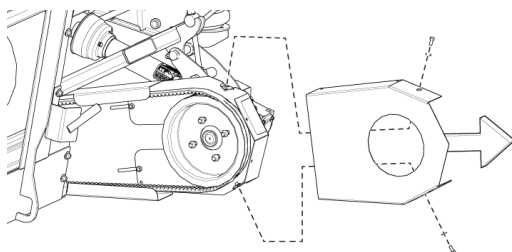


Fig. 98 - Remove Knife Belt Cover Shield

3. Loosen the five indicated bolts.

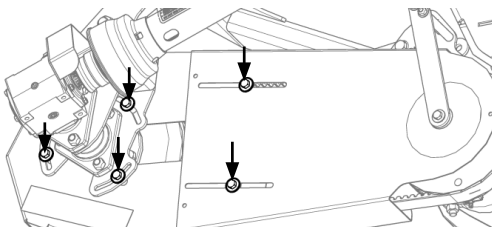


Fig. 99 - Loosen bolts

4. Loosen the belt tension by backing off the pivot nut and loosening the nuts on the eye bolt as shown.

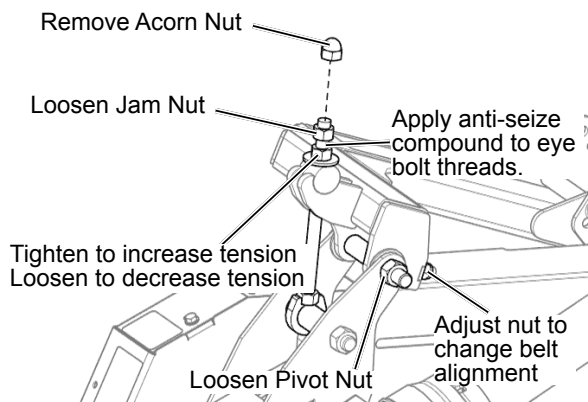


Fig. 100 - Knife Drive Belt Replacement

5. Remove the belt from the two pulleys then install the new replacement belt.

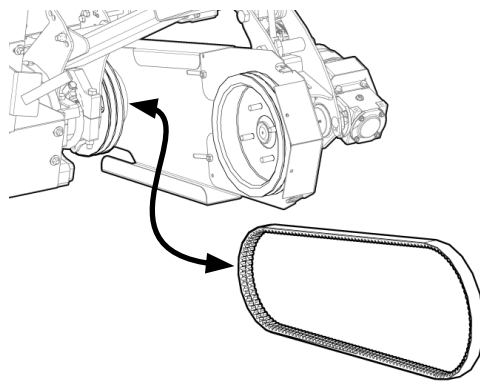


Fig. 101 - Replace Knife Drive Belt

6. Reinstall the Knife Drive Cover Shield and PTO Shaft.
7. Ensure the new knife belt is properly tensioned by following the directions section 13.2.5 on page 66. All fittings must be properly re-tightened after this procedure is complete.

13.3.2 - Feed Auger Belt Replacement

1. Open the side shield as described in section 13.13 on page 81.
2. Remove the left draper first drive belt as described in section 13.3.3 on page 68.
3. Loosen the feed auger belt tension by loosening the indicated bolt.

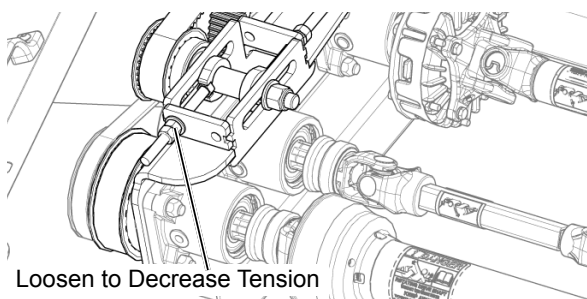


Fig. 102 - Feed Auger Drive Belt Adjustment

4. Take note of the belt orientation and how it is fed through the pulleys. Remove the old belt and install the new belt.
5. Reinstall the first draper belt.
6. Ensure the tension is properly adjusted for both belts as described in section 13.2 on page 65.

13.3.3 - Left Draper First Drive Belt Replacement

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

1. Loosen the two lock bolts shown in Fig. 91 on page 65.
2. To replace the first left draper belt, tighten the indicated bolt to decrease belt tension to allow you to slide the old belt off the pulleys.

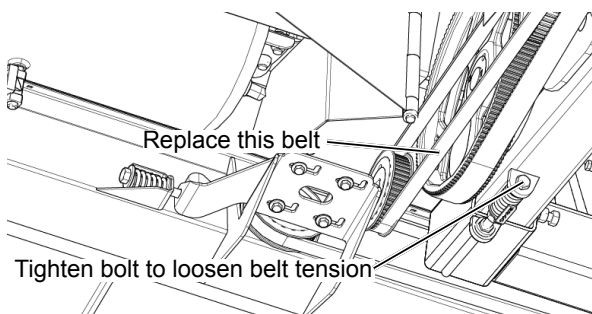


Fig. 103 - Remove the First Left Draper Belt

3. Install the new belt on the pulleys and ensure the belt tension is properly set as described in section 13.2.2 on page 65.
4. Retighten the two lock bolts.

13.3.4 - Left Draper Second Drive Belt 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

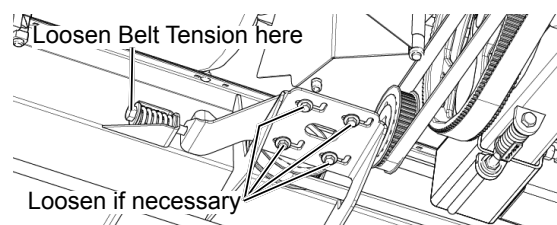


Fig. 104 - Left Draper Drive Belt Loosen Tension

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

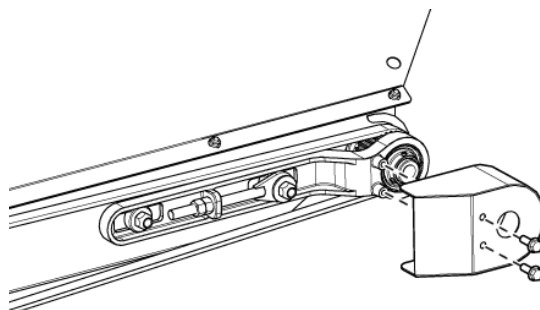


Fig. 105 - Remove left draper drive belt cover

4. Install the new belt and reinstall the cover.
5. Ensure the belt tension is properly set as described in section 13.2.2 on page 65.

13.3.5 - Right Draper Drive Belt Replacement

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. Disconnect the right hand draper pto shaft from the draper pulley assembly.

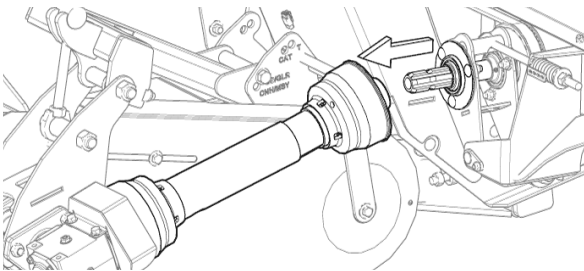


Fig. 106 - Disconnect pto shaft from draper pulley

3. Remove the pin securing the draper pulley assembly.

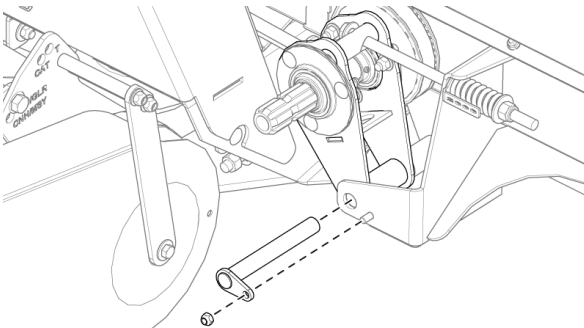


Fig. 107 - Remove Pin from Draper Pulley Assembly

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

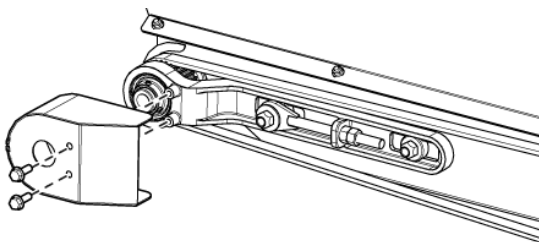


Fig. 108 - Remove Right Draper Drive Belt Cover

5. Install the new belt and reinstall the cover.
6. Resecure the belt tension assembly with the pin that you had previously removed.
7. Ensure the belt tension is properly set as described in section 13.2.4 on page 66.
8. Resecure the pto to the draper pulley assembly.

13.3.6 - Center Draper Drive Belt Replacement

To replace the center draper drive belt, loosen off the jam nut, turn the adjuster bolt clockwise to reduce belt tension until the belt can be removed from its rollers. Install the new drive belt and tension it as described in section 13.2.3 on page 66.

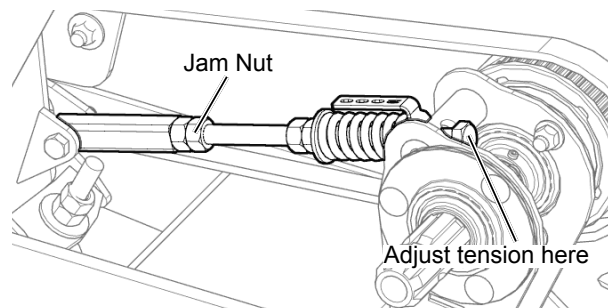


Fig. 109 - Center Draper Drive Belt Tensioner

13.4 - PTO (Drive Shaft)

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

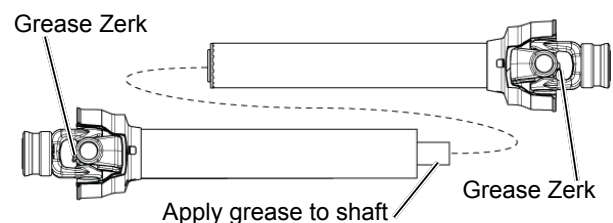


Fig. 110 - Drive Shaft Grease Points



IMPORTANT!

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

13.5 - Speed Sensors

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.

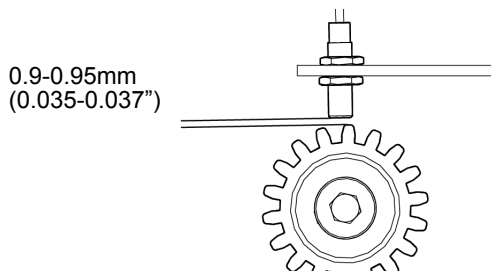


Fig. 111 - Speed Sensor Spacing

13.6 - Drapers

13.6.1 - Side Draper Belt Tension

NOTE:

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

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

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



WARNING!

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

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

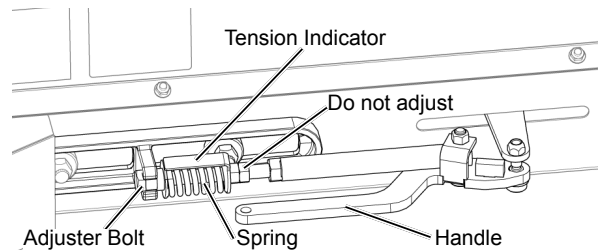


Fig. 112 - Draper Tension Adjustment

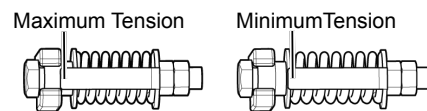


Fig. 113 - Tension Indicator Position

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

13.6.2 - Side Draper Belt Tracking

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

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

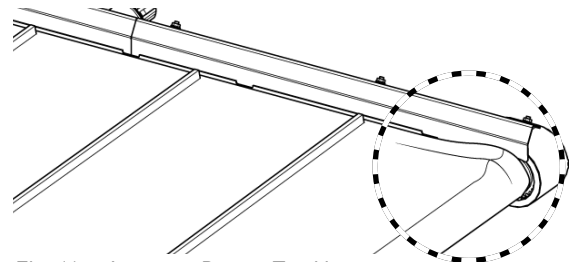


Fig. 114 - Improper Draper Tracking

2. The drive roller must be at exactly 90 degrees to the draper frame.
3. If adjustment is required, first release the draper belt tension handle shown in Fig. 112.

4. Loosen the lock nut and reposition the drive roller via the adjustment nut. Re-engage the draper tension handle shown in Fig. 112.

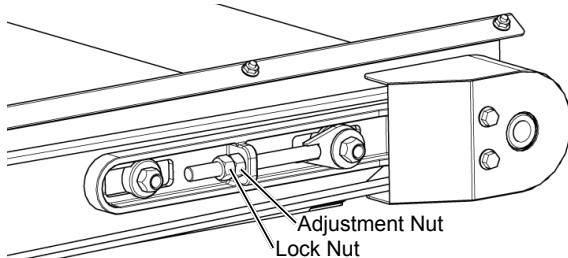


Fig. 115 - Center Draper Tension Adjustment

5. Once satisfied with drive roller alignment, re-tension the draper drive belt as described in section 13.3.

13.6.3 - Center Draper Belt Tension



WARNING!

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



NOTE:

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

1. To tension the center draper, locate the two tensioners on each side of the center draper on the underside of the header.
2. Loosen the 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.

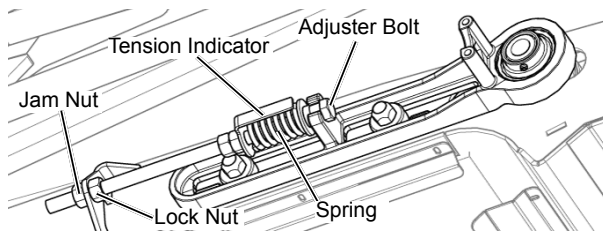


Fig. 116 - Center Draper Tension Adjustment

13.6.4 - Draper Installation

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

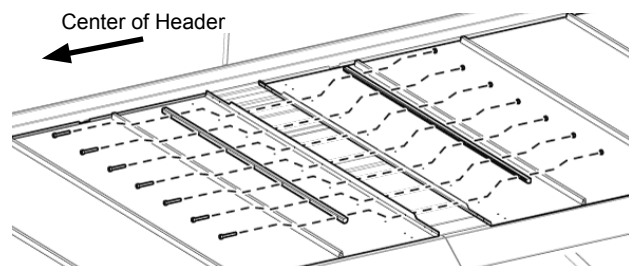


Fig. 117 - Installing Draper Connector Bar

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

13.6.5 - Remove & Install Center Draper Belt

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

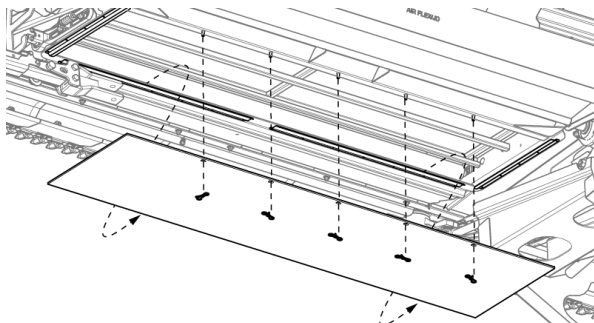


Fig. 118 - Remove Center Draper Cleanout Panel

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

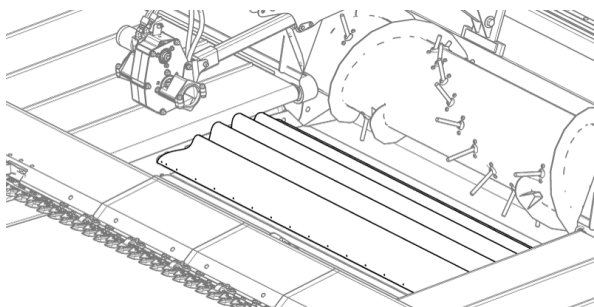


Fig. 119 - Unroll new draper onto center deck

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 rods. Insert the bolts from the feed auger side of the center draper deck.

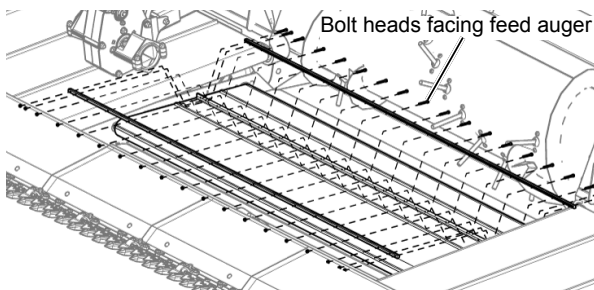


Fig. 120 - Secure Draper With Connector Bars

13.7 - Reel

13.7.1 - Set Reel Safety Stops

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

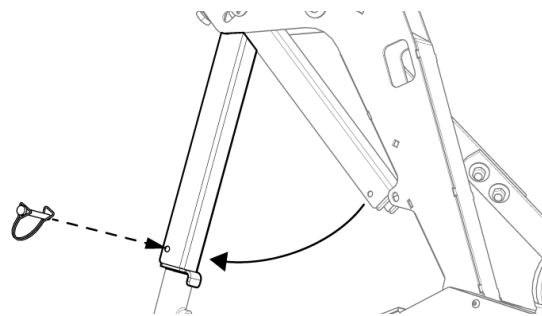


Fig. 121 - Reel Arm Safety Stop

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

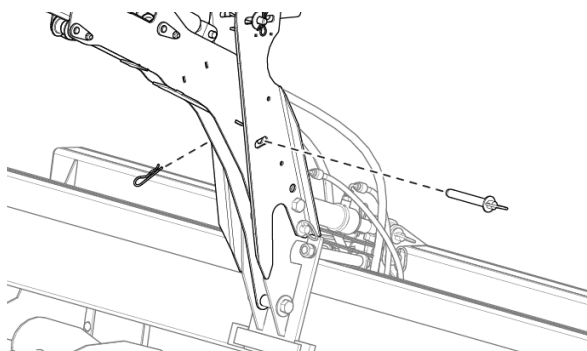


Fig. 122 - Center Reel Arm Lock Pin

13.7.2 - Minimum Reel Height and Leveling Reel

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

1. Fully lower table. Fully lower reel.
2. Adjust finger pitch to maximum extension to set clearance.
3. Position reel fingers as close to cutterbar & feather plates as possible, using fore/aft cylinders.

4. Using a wrench to rotate the 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 2" (5 cm) along full length of reel.

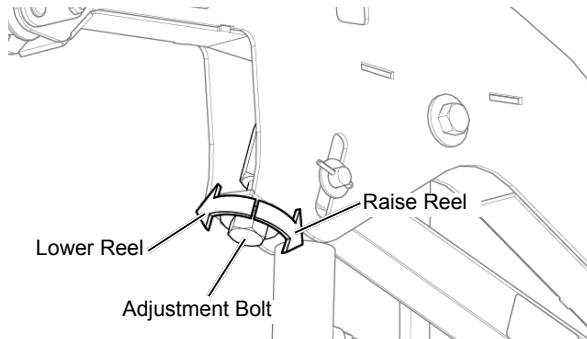


Fig. 123 - Reel Height Adjustment Bolt

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

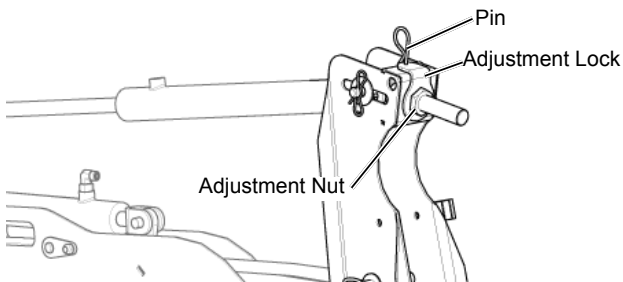


Fig. 124 - Center Reel Arm Height Adjustment

STOP IMPORTANT!

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

13.7.3 - Rephasing Reel Cylinders

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

13.7.4 - Finger Pickup Settings

! WARNING!

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

STOP IMPORTANT!

Maintain a minimum of 2" (5 cm) of clearance between the tips of the reel tines and the cutter bar/feather plates during operation. If harvesting low or downed crops, the clearance can be reduced to 1" but will run the risk of cutting the reel tines in the knife. This damage is not covered under warranty.

Reel to knife clearance must be readjusted whenever finger pitch is changed. Failure to do so may cause damage to the header.

1. Pull and rotate lock pin to one side so it is disengaged from reel.
2. Lift the handle up for less aggressive tine pitch.

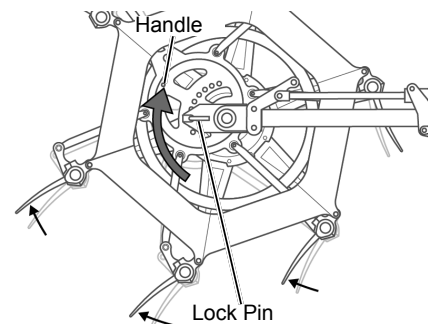


Fig. 125 - Less Aggressive Tine Pitch

3. Lower the handle for more aggressive tine pitch.

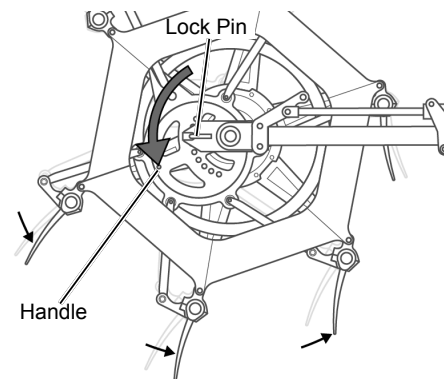


Fig. 126 - More Aggressive Tine Pitch

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 tine pitch.
6. Readjust reel height and reel fore/aft in order to maintain a minimum safe knife clearance (2" (5 cm)).

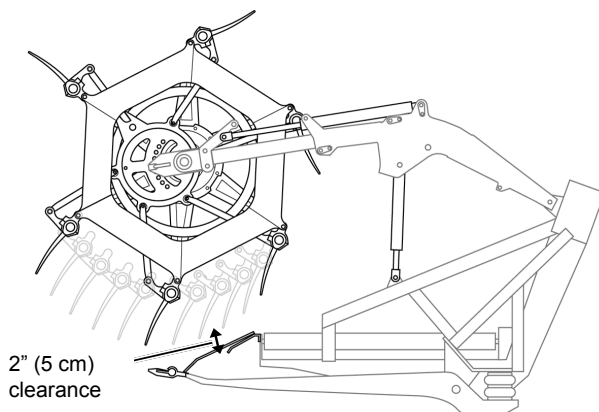


Fig. 127 - Reel Tine Clearance

13.7.5 - Automatic Reel Speed

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

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

NOTE:

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

13.7.6 - Reel Speed Sensor Adjustment

The reel speed sensor (and all other speed sensors) need to be adjusted so that the face of the sensor is touching the rotating trigger, and then unscrew 1.5 turns (1 turn = 1mm). On the reel speed sensor, the rotating trigger is the teeth on the small reel drive gear. This is adjustable externally without any disassembly requirements. When adjusting the speed sensors, unplug the connecting wire so that the body of the sensor can spin in or out to its required position without twisting the wire. When done, tighten the jam nut and reconnect the wire. A 3/4" wrench is required for the speed sensor jam nuts.

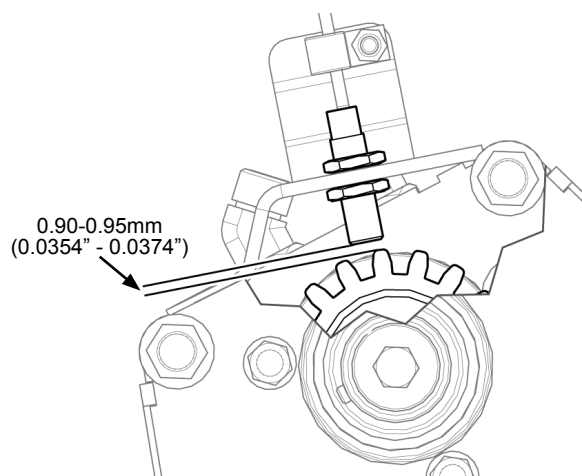


Fig. 128 - Reel Speed Sensor Adjustment

13.8 - Knife

13.8.1 - 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 tin shield that covers the flywheel.
3. Run a long bolt or rod through the alignment hole of the two flywheels to keep them aligned with each other.

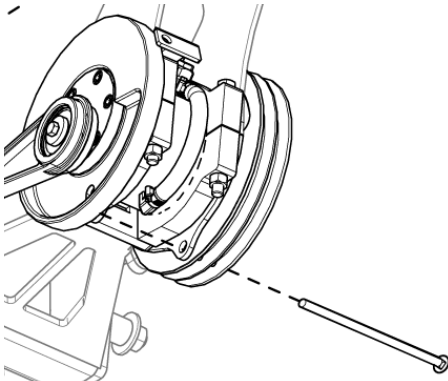


Fig. 129 - Align Drive Plates with a Bolt

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

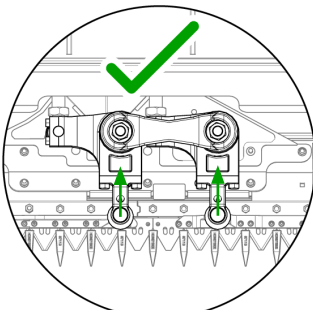


Fig. 131 - Correct Timing - Bell Cranks Aligned

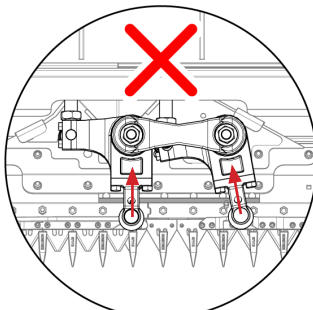


Fig. 130 - Incorrect Timing - Bell Cranks Not Aligned

6. Loosen the drive arm jam nuts
7. Disconnect the two knife drive arms from each of the two knife drive flywheels as illustrated.

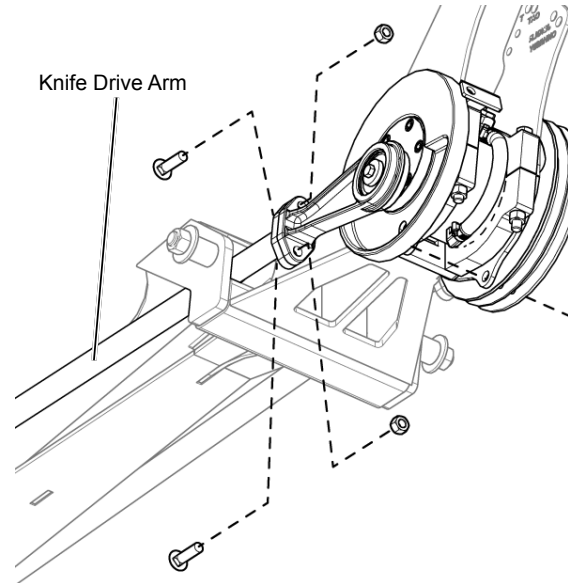


Fig. 132 - Disconnect both Knife Drive Arms

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

13.8.2 - Knife Section Service Kit

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

Kit contains all necessary hardware, sections and instructions.

13.8.3 - Cutterbar Maintenance

For optimal performance and durability of knife:

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

13.8.4 - Replacing Cutterbar Knife

WARNING!

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.

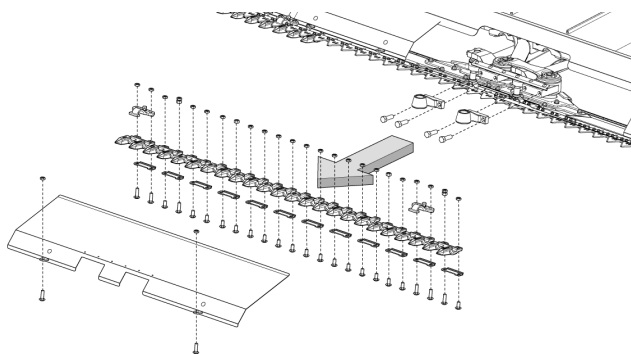


Fig. 133 - Cutter Bar Knife Servicing

1. Remove feather plate section at knife head location.
2. Remove center guards and 3 guards left and right of center.
3. Unbolt knife head bearing housing from bell crank.



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.

4. Wearing protective gloves, lift and pull knife head out from guards and extract full length of knife assembly.
 - On right knife assembly, lift knife head and withdraw assembly to left.
 - On left knife assembly, lift knife head and withdraw assembly to right.
5. Reverse the above process to reinstall knife assemblies.
6. Reinstall guards and reset knife hold-downs.
7. Reinstall feather plate section.



IMPORTANT!

Lubricate the knife head

13.8.5 - 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.

1. Position knife so hold-downs and guard tangs do not inhibit section removal.
2. Remove the nuts from the knife section.
3. Remove and discard knife section.
4. Replace any damaged cap screws, you may need to move the knife side to side to make the bolt holes accessible.
5. Install knife section and nuts.
6. Tighten nuts to specification.

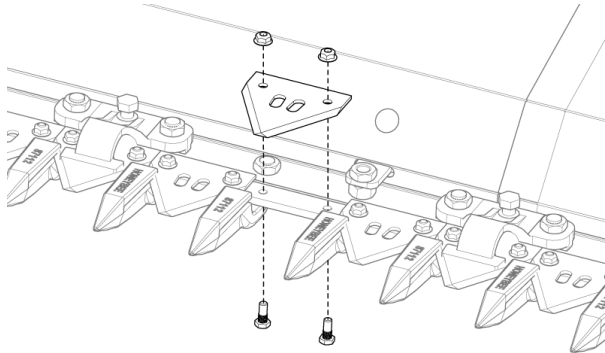


Fig. 134 - Replace Knife Section

13.9 - Dividers

13.9.1 - Standard Divider

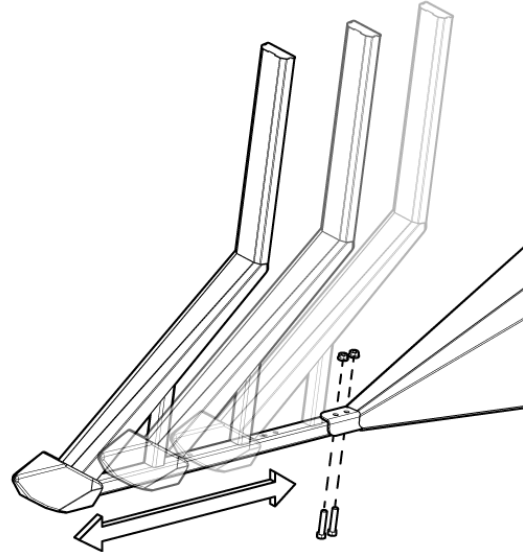


Fig. 135 - Standard Divider - 3 Possible Positions

The standard crop divider has three possible positions.

When cutting at 10" or lower, the divider should be fully retracted.

When cutting at 18" above the ground, the divider should be fully extended.

13.9.2 - Divider Pipes

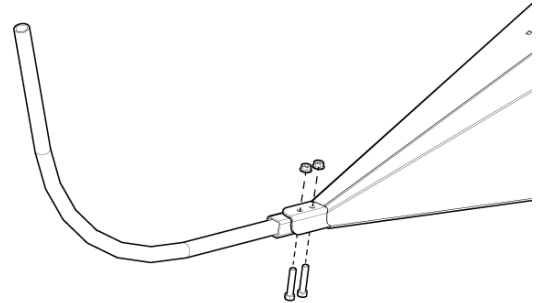


Fig. 136 - Divider Pipe

The divider pipe is generally used with busy or tangled crops

13.9.3 - Divider Airbag Float Setting

Divider float settings are set in the factory and should not need adjustment, the only exception is after end paddle component replacement or servicing.

When using the standard divider (see below), the end of the paddle should feel like it weighs approximately 40 lbs (18.1 kg) when you lift up on the end.

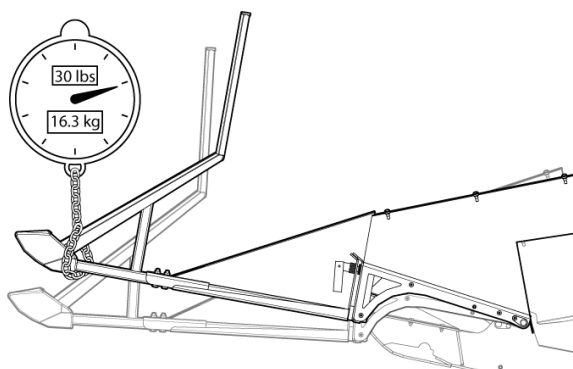


Fig. 137 - Crop Divider Float Settings

In some situations you may need to adjust the divider float settings, such as when you service or replace divider float components.

You can increase the float of the divider by turning the indicated knob. Do this sparingly however as the only way to release pressure from the divider float is to physically unscrew the air line.

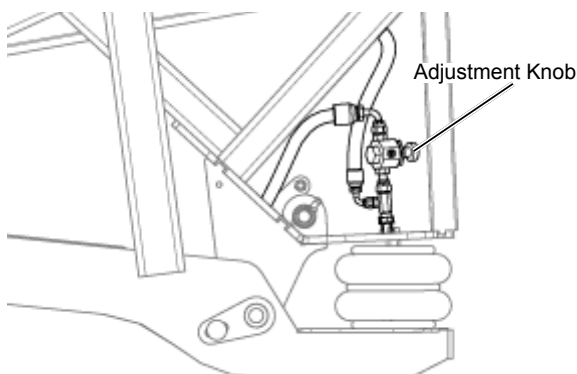


Fig. 138 - Divider Float Air Bag Regulator

13.9.4 - Divider Spring Float Setting

In ideal conditions, the divider float should be set so the divider feels like it weighs approximately 30 lbs (16.3 kg).

To adjust the float, simply remove the divider cover, release the lock plate from the bolt head and:

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

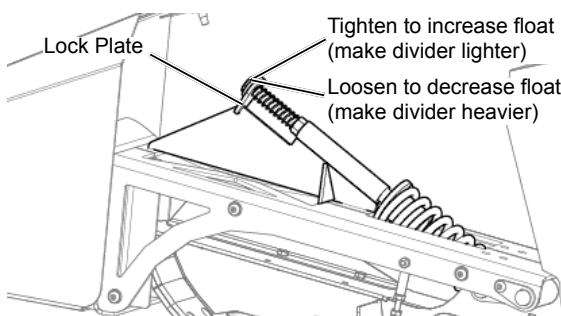


Fig. 139 - Divider Spring Float Adjustment

13.9.5 - 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.

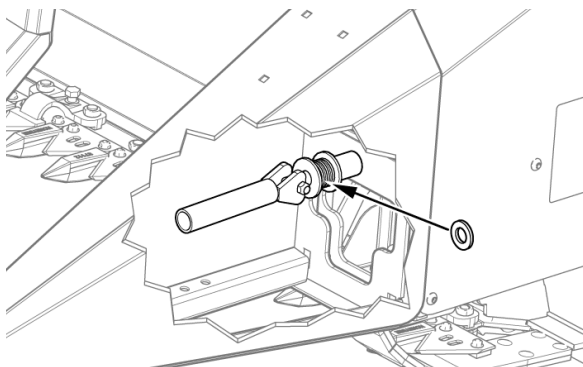


Fig. 140 - Add washer to tighten loose handle

13.10 - Feed Auger

13.10.1 - 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 in Fig. 141.

To adjust the finger timing:

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

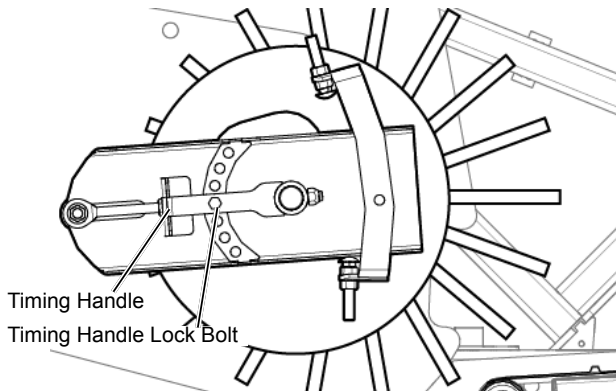


Fig. 141 - Feed Auger Drum Clearances



IMPORTANT!

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

13.10.2 - 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.

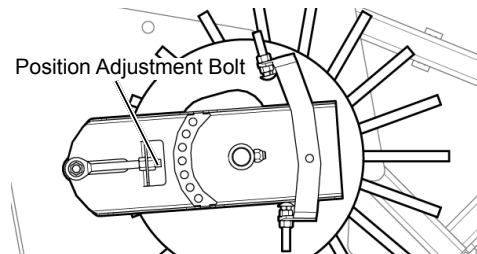


Fig. 142 - Feed Auger Drum Position

13.10.3 - Feed Auger Interior Access

To access the interior of the feed auger drum, rotate the drum until the access hatches are visible, remove the 2 screws holding each hatch in place, then pull the hatches away.

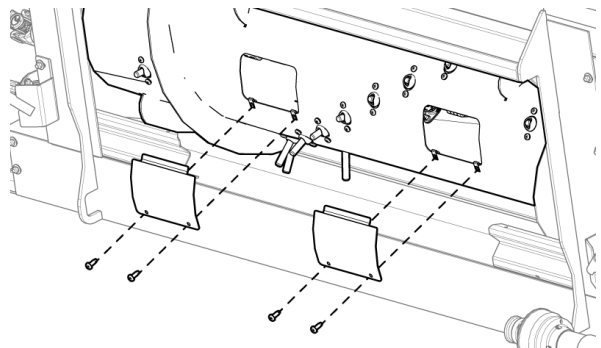


Fig. 143 - Feed Auger Drum Interior Access

13.10.4 - 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.

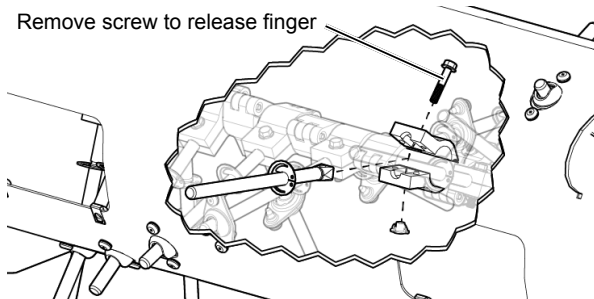


Fig. 144 - Replace Feed Auger Fingers

13.10.5 - 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 screws securing the finger guide.

Remove the finger as described in section 13.10.4 on page 80.

Reinstall the finger along with the new guide.

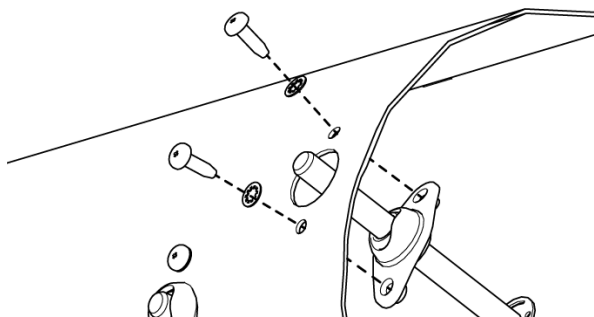


Fig. 145 - Replace Feed Auger Finger Guide

13.11 - 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.

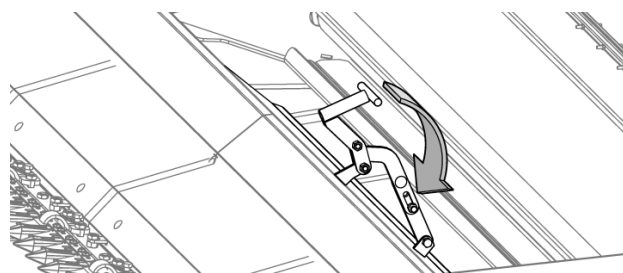


Fig. 146 - Open Rock Trap at Center Draper

STOP 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.

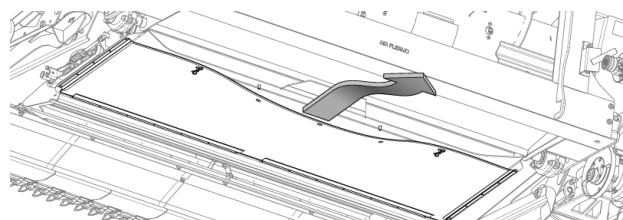


Fig. 147 - Open Center Cleanout to Remove Debris

13.12 - Permanent Bushings

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

See section 15.2 on page 88 or bushing locations.

13.13 - Open Side Shields

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.

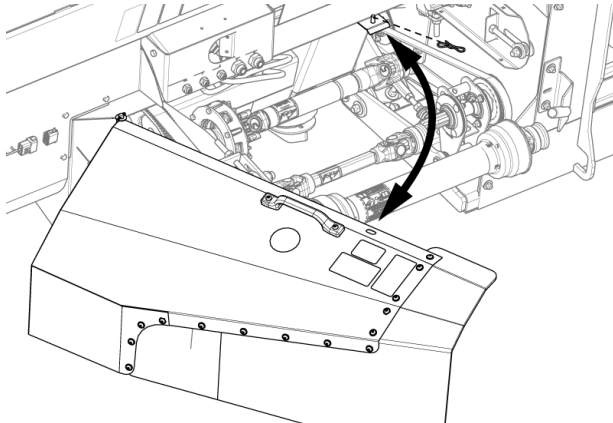


Fig. 148 - Open Side Shield

13.14 - FLEX Header Height Control Sensor Bar Alignment

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

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

The sensor contacts at each end (A and B) should be adjusted so they are touching the roller. The remaining four contacts (C, D, E, F) should be spaced approximately 0.07" (1.8mm) away from the roller. This allows the ends to react first.

The design of the contacts may vary.

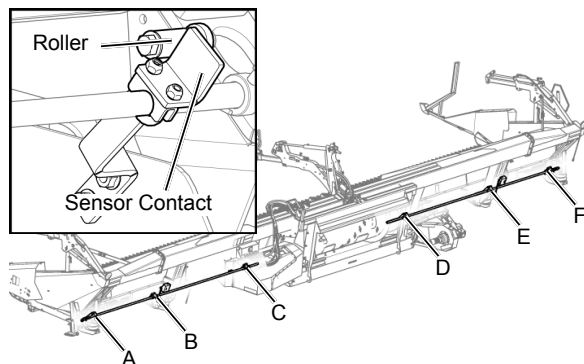


Fig. 149 - FLEX HHC sensor contact positions

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

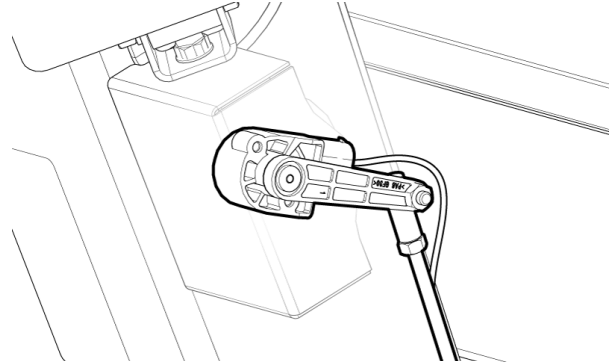


Fig. 150 - HHC Sensor Alignment

13.15 - Checking for Air Leaks

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

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

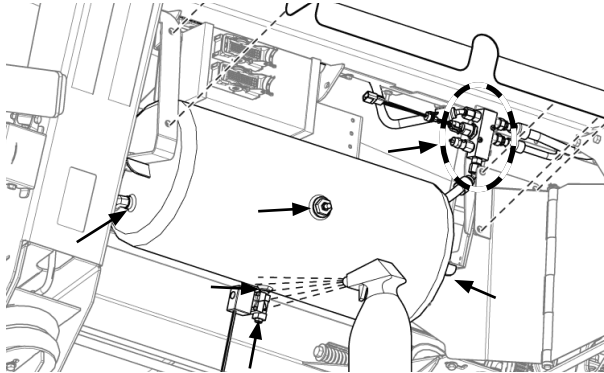


Fig. 151 - Check Air Tank for Leaks

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

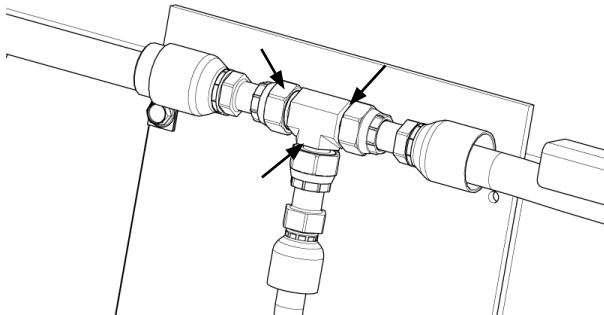


Fig. 152 - Check T Fittings On Front Side of Struts for Leaks

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

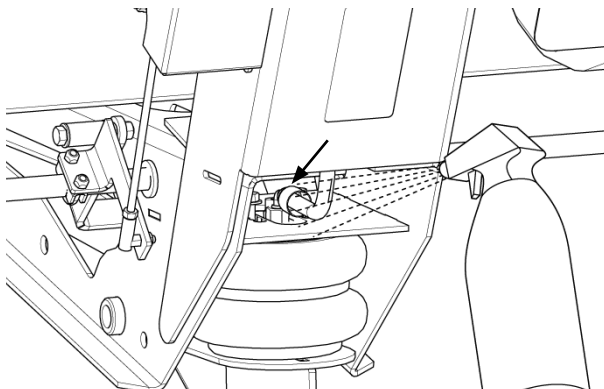


Fig. 153 - Check Airbag Fittings for Leaks

13.16 - Lubrication

13.16.1 - Grease

It is extremely important that you are aware of ALL lubrication points on the header.

There are 4 grease points on the front knife assembly that must be greased every 10 hours (typically: daily).

The rest of the grease points are on the drive line shafts (5) and yokes (10), lubricated every 50 hours (typically: weekly).

There are no grease points on the reel system.

The only other grease points are the transport wheel bearings, that should be repacked once a year if used on roads.

Use grease based on NLGI consistency numbers and expected air temperature range during service interval.

The following grease is recommended: NLGI Performance Classification GC-LB. GC-LB means bearing and chassis-load bearing. #2 EP GC-LB is the most common grade of automotive grease. EP = Extreme Pressure fortified, which is desirable.



IMPORTANT!

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

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

13.16.2 - Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual. Consult your dealer to obtain information and recommendations.

Synthetic lubricants may be used if they meet the requirements as shown in this manual.

The temperature limits and service intervals shown in this manual apply to both conventional and synthetic lubricants.

Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

13.16.3 - Lubricant Storage

Your equipment can operate at top efficiency only when clean lubricants are used.

Use clean containers to handle all lubricants. Dirty lubricant = grinding paste!

Store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and dirt accumulation.

Make certain that all containers are properly marked to identify their contents.

Properly dispose of all old containers and any residual lubricant they may contain.

13.16.4 - Mixing of Lubricants

In general, avoid mixing different brands or types of oil. Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements.

Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

Consult your dealer to obtain specific information and recommendations.

13.16.5 - Reel Lubrication



IMPORTANT!

Do NOT add grease to the zerks on each end of the main reel tube. There are plastic bushings inside this assembly and the grease will shorten their lifespan.

13.16.6 - Lubrication Interval Chart

		10 Hours	50 Hours	200 Hours
A	Grease knife head bearings @ zerk (top side) x2 NOTE: Pump grease into the zerks until the old grease is purged out of the bottom of the bearing. This may take 4-5 pumps. Add grease slowly to allow the old grease to purge.	•		
B	Grease knife bell crank bearings @ zerk (bottom side) x2 NOTE: Pump grease into the zerks until the old grease is purged out of the bearing. This may take 6-7 pumps. Add grease slowly to allow the old grease to purge.	•		
C	Lubricate Drive Shaft Yokes @ zerk (1 per cross kit = 10)		•	
D	Lubricate Telescoping Drive Shafts (5 shafts)		•	
E	Check Main Knife Bearing housing Oil Level		•	
F	Check RH Side Draper Gearbox Oil Level		•	
G	Check LH Side Draper Gearbox Oil Level		•	

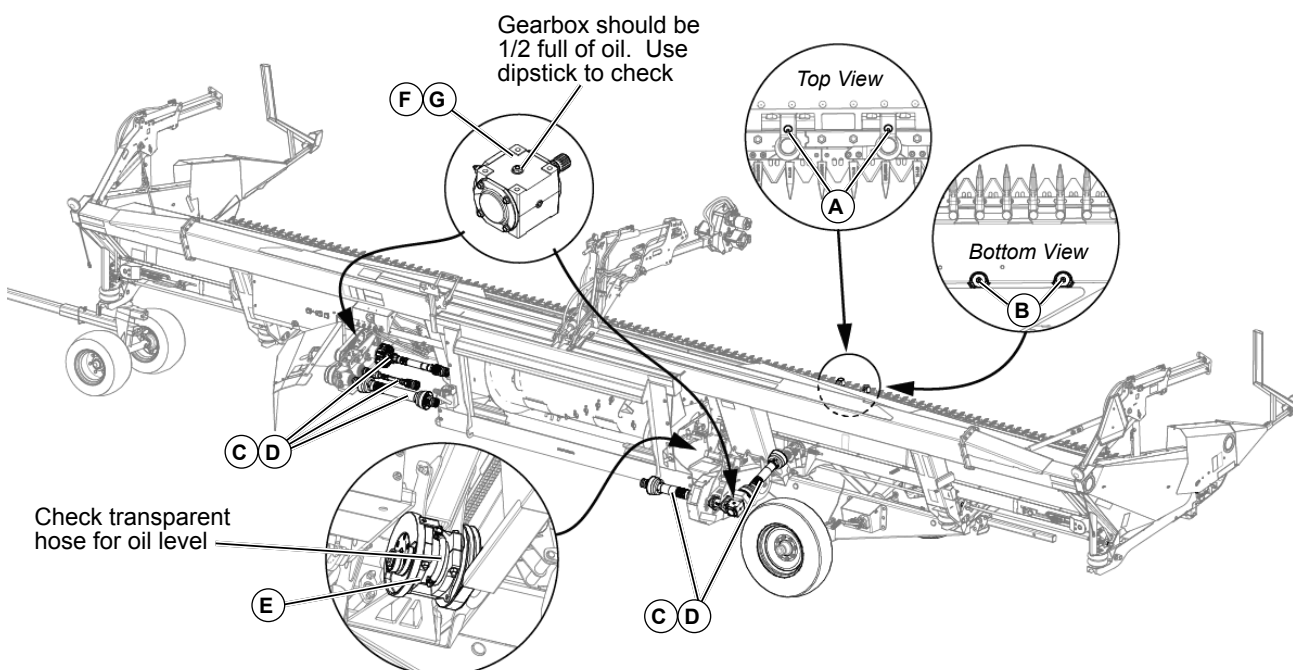


Fig. 154 - Lubrication Locations

All other rotating elements on this product use sealed bearings and IGUS permanent bushings (not shown in the illustration above). These must be replaced if worn. They are designed with a multi-year service life, but may require occasional replacement due to uneven wear. Typically, loose = worn. Consult your dealer to obtain specific information and recommendations.



IMPORTANT!

To avoid equipment damage and system contamination, always clean grease fittings before and after lubrication. If a grease fitting is damaged or missing, replace it immediately. When checking oil levels, always clean area around plugs before removal. Always tighten plugs securely.

14 - Support

General Information & Sales	
E-Mail:	sales@honeybee.ca
Website:	http://www.honeybee.ca
Phone:	(306) 296-2297

Parts & Service	
Parts E-Mail:	parts@honeybee.ca
Service E-Mail:	service@honeybee.ca
Phone:	1 (855) 330-2019

Your Local Dealership	
E-Mail:	
Phone:	
Notes:	

Equipment manuals and service information can be found on our website:

<http://www.honeybee.ca>

Informational Videos can be found here:

<http://www.honeybee.ca/videos-airFLEX.php>

15 - Appendix

15.1 - AGCO Adapter Plate Bezels

If using an AGCO combine, the header adapter plat may require modification. Refer to the illustration below to familiarize yourself with the key components involved.

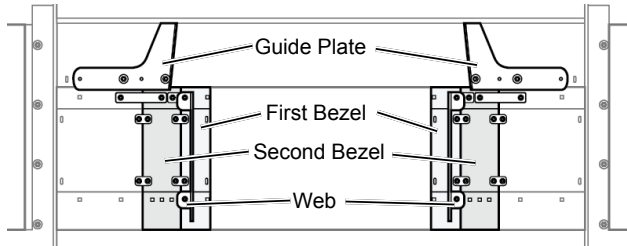


Fig. 155 - AGCO Bezels

In addition to the components above, there are also long and short sections of flat bar used to reinforce the connections.

Layout 1:

All hardware used. Note guide plate position.

Layout 2:

All hardware used. Note the position of the top guide plate (moved towards the outer edge of the subframe).

Layout 3:

Guide plates are removed, along with the first bezels. The hardware and short support bar holding the first bezels in place should also be removed. The web is repositioned to the remaining bezel.

Layout 4:

Guide plates and bezels are removed, both webs are moved towards the outer edge of the subframe. The short support bar is used at the top

Layout 5:

No guide plates are used, both bezels are removed and both webs are moved further towards the outer edge of the subframe (as indicated to the right). The short support bar is used at the top

Layout 6:

All hardware is used. Note the position of the guide plates. They will have to be cut to fit properly.

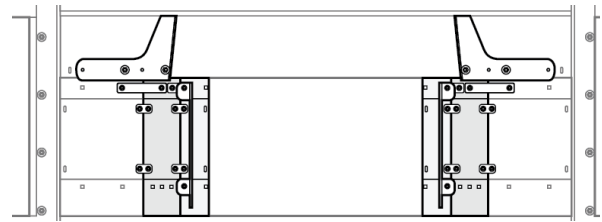


Fig. 156 - AGCO Bezel - Layout 1

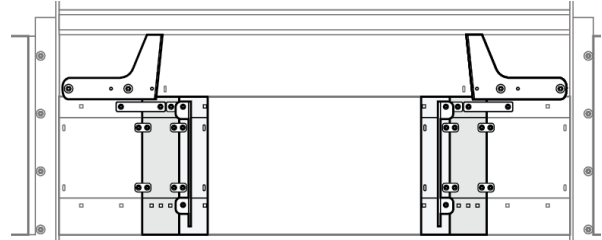


Fig. 157 - AGCO Bezel - Layout 2



Fig. 158 - AGCO Bezel - Layout 3



Fig. 159 - AGCO Bezel - Layout 4



Fig. 160 - AGCO Bezel - Layout 5

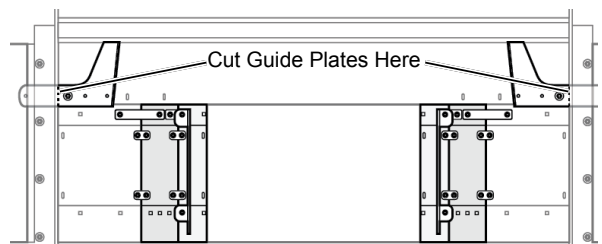


Fig. 161 - AGCO Bezel - Layout 6

15.2 - Permanently Lubricated IGUS 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

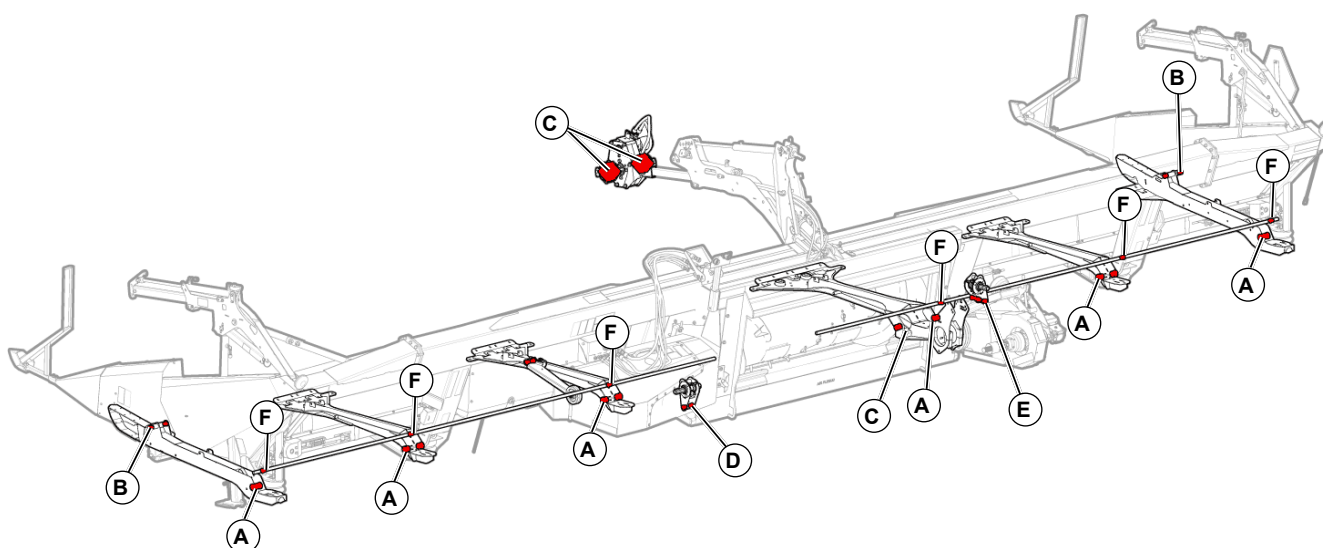


Fig. 162 - Permanent Bushing Locations

15.3 - 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, and the CAN1 connector is unused.

The BeeBox should be installed next to the combine's Valve Controller.

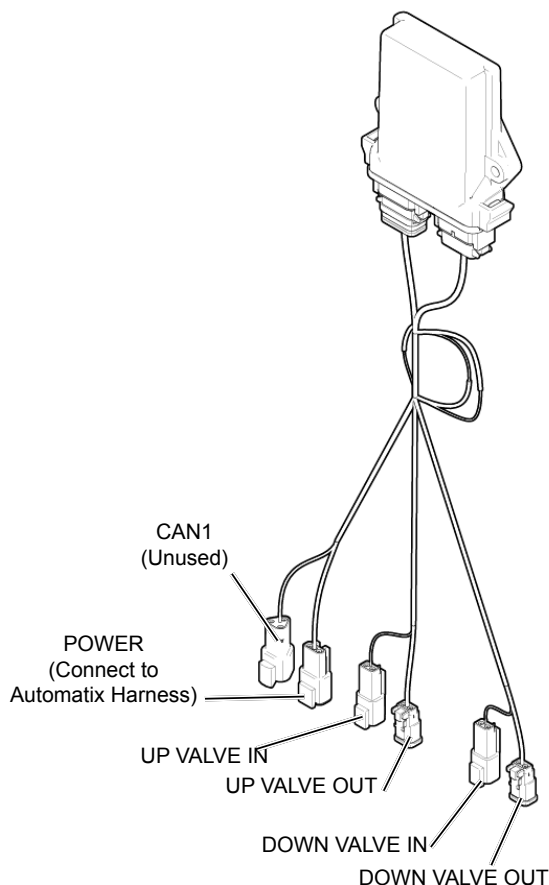


Fig. 163 - BeeBox - For 'Bang-Bang' Style Control Valve Combines

15.4 - (UNC) Unified Inch Bolt and Screw Torque Values

Size	SAE Grade 1				SAE Grade 21				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Lubricated ²		Dry ³		Lubricated ²		Dry ³		Lubricated ⁴		Dry ³		Lubricated ²		Dry ³	
	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.
1/4	3.7	33	4.7	42	6	53	7.5	66	9.5	84	12	106	13.5	120	17	150
5/16	7.7	68	9.8	86	12	106	15.5	137	19.5	172	25	221	28	20.5	35	26
3/8	13.5	120	17.5	155	22	194	27	240	35	26	44	32.5	49	36	63	46
7/16	22	194	28	20.5	35	26	44	32.5	56	41	70	52	80	59	100	74
1/2	34	25	42	31	53	39	67	49	85	63	110	80	120	88	155	115
9/16	48	35.5	60	45	76	56	95	70	125	92	155	115	175	130	220	165
5/8	67	49	85	63	105	77	135	100	170	125	215	160	240	175	305	225
3/4	120	88	150	110	190	140	240	175	300	220	380	280	425	315	540	400
7/8	190	140	240	175	190	140	240	175	490	360	615	455	690	510	870	640
1	285	210	360	265	285	210	360	265	730	540	920	680	1030	760	1300	960
1-1/8	400	300	510	375	400	300	510	375	910	670	1150	850	1450	1075	1850	1350
1-1/4	570	420	725	535	570	420	725	535	1280	945	1630	1200	2050	1500	2600	1920
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2140	1580	2700	2000	3400	2500
1-1/2	990	730	1250	930	990	730	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For plastic insert or crimped steel type lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Replace fasteners with the same or higher grade. If higher grade fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

1 Grade 2 applies for hex cap screws (not hex bolts) up to 6 in. (152 mm) long. Grade 1 applies for hex cap screws over 6 in. (152 mm) long, and for all other types of bolts and screws of any length.

2 "Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or 7/8 in. and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.

3 "Dry" means plain or zinc plated without any lubrication, or 1/4 to 3/4 in. fasteners with JDM F13B, F13E or F13H zinc flake coating.

4 "Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or 7/8 in. and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.

15.5 - Metric Bolt and Screw Torque Values

Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated ¹		Dry ²		Lubricated ¹		Dry ²		Lubricated ¹		Dry ³		Lubricated ¹		Dry ²	
	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.
M6	4.7	42	6	53	8.9	79	11.3	100	13	115	16.5	146	15.5	137	19.5	172
M8	11.5	102	14.5	128	22	194	27.5	243	32	23.5	40	29.5	37	27.5	47	35
M10	23	204	29	21	43	32	55	40	63	46	80	59	75	55	95	70
M12	40	29.5	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	46	80	59	120	88	150	110	175	130	220	165	205	150	260	190
M16	100	74	125	92	190	140	240	175	275	200	350	255	320	235	400	300
M18	135	100	170	125	265	195	330	245	375	275	475	350	440	325	560	410
M20	190	140	245	180	375	275	475	350	530	390	675	500	625	460	790	580
M22	265	195	330	245	510	375	650	480	725	535	920	680	850	625	1080	800
M24	330	245	425	315	650	480	820	600	920	680	1150	850	1080	800	1350	1000
M27	490	360	625	460	950	700	1200	885	1350	1000	1700	1250	1580	1160	2000	1475
M30	660	490	850	625	1290	950	1630	1200	1850	1350	2300	1700	2140	1580	2700	2000
M33	900	665	1150	850	1750	1300	2200	1625	2500	1850	3150	2325	2900	2150	3700	2730
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2770	4750	3500

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For stainless steel fasteners or for nuts on U-bolts, see the tightening instructions for the specific application. Tighten plastic insert or crimped steel type lock nuts by turning the nut to the dry torque shown in the chart, unless different instructions are given for the specific application.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class. Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

1 "Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.

2 "Dry" means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B, F13E or F13H zinc flake coating.

3 "Dry" means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B, F13E or F13H zinc flake coating.

16 - Quick Start

COMBINE H/H SETTINGS

- Set feed house face plate to correct angle
- Set Header Height sensitivity as high as possible while still preventing hunting for both lift and lateral tilt.
- Header Height Raise Rate should be ~6 seconds.
- Header Height drop rate should be as fast as necessary without causing ground impact (~7 seconds).
- Calibrate Header Height

FLEX

- Air pressure set between 42 and 60 PSI.
- Tilt table all the way back (Tilt cylinder retracted and cutterbar at correct cut angle)
- Cutting Height Set Point should be ~1-2 inches above ground

RIGID

- Air pressure ~90 PSI (full cutterbar lock up)
- Tilt table all the way forward (Tilt cylinder extended, cutterbar at correct cut angle)
- Set point on center alarm adjusted to within 1/2 - 1/3 of overall cut height (minimum 3 inches).

LODGED/DOWN CROP:

- Reel fully extended and lowered so tines pick up crop below the cutter bar. Note: High finger wear will result from this configuration.
- Before extending the reel, ensure there is a minimum of 2" (5 cm) clearance to the cutterbar when the reel is positioned above it.
- Cam adjusted to: more aggressive = adjustment handle down to holes 6 or 7.

BUSHY/RIPE CROP:

- Reel retracted and positioned so that the fingers clean the knife. Keep a minimum clearance of 2" (5 cm) between the reel and the cutter bar.
- Cam adjusted to: less aggressive = adjustment handle up to holes 4 or 3.

NORMAL CROP:

- Reel positioned directly above cutter bar with fingers low enough to clear the cutter bar. Keep a minimum clearance of 2" (5 cm) between the reel and the cutter bar.
- Cam adjusted to: middle position = adjustment handle in middle position at hole 5.

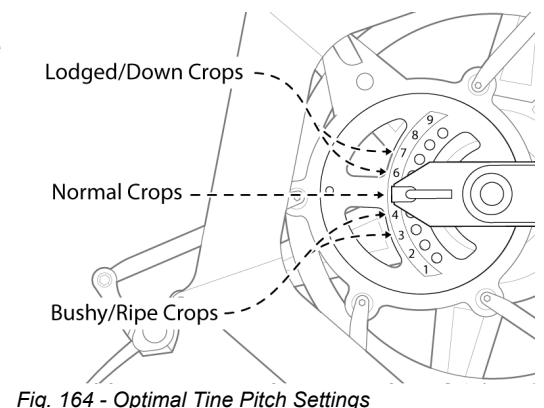


Fig. 164 - Optimal Tine Pitch Settings



Honey Bee

Harvest Faster

2015 AirFLEX Operator Manual

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