



**OPERATOR'S MANUAL**



**CASE IH\* 4000 &  
NEW HOLLAND\* 980CR  
SERIES CORN HEADS**

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## INTRODUCTION

Thank you for purchasing Calmer's BT Chopper® Upgrade Kit for your corn head. We hope you will get many years of productive use from it. The purpose of this upgrade kit is to improve your corn head's performance and accelerate corn residue decomposition. All product users must read and understand this manual prior to equipment operation. This manual is considered part of your machine and should remain with the machine at all times. Do not allow anyone to operate or maintain this equipment who has not fully read and comprehended this manual. Failure to follow the recommended procedures may result in personal injury or death or equipment damage.

Information in this manual is designed to help owners and operators to obtain the best results and safe operation from their investment. The life of these products depends largely on the care it is given and we suggest that the manual should be read and understood and referred to frequently. If for any reasons you do not understand the instructions and safety requirements, please contact us at any time. The intent of this manual is to provide guidelines to cover general use and to assist in avoiding accidents and injuries.

There may be times when circumstances occur that are not covered in the manual. At those times it is best to use common sense and contact our factory.

The requirements of safety cannot be emphasized enough in this publication. We urge you to make safety your top priority when using and maintaining this equipment.


## WARRANTY

Calmer has been in business since 2004 and has an excellent reputation for quality and workmanship. Please contact us (the manufacturer) if you feel a component has not lasted to your expectation. These concerns will be handled on a case-by-case basis. Please contact our factory directly at (309) 629-9000 for replacement parts.



### **SAFETY**

Read and understand this manual and all safety signs before maintaining and operating. Review the safety instructions and precautions annually.

**TAKE NOTE!  THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.**



## **THIS SYMBOL MEANS: ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

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



**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 which, 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.



**CAUTION:** Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

**NOTICE** is used to address safety practices not related to personal safety.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions of how it works.**



### **SAFETY SIGNS**

Sharp Objects signs are placed on the exterior of all stalk roll boxes. Reference the danger sign on the left, and understand the cutting dangers with the enclosed product.



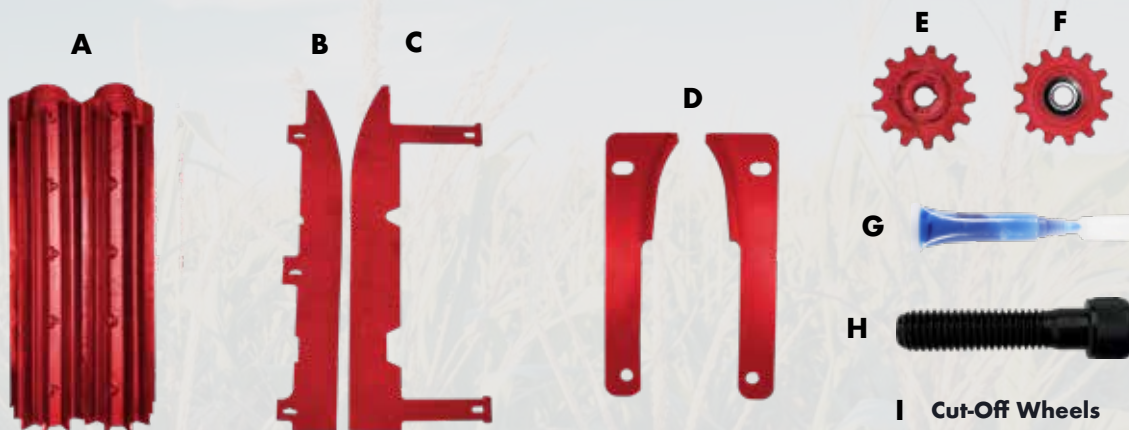
### **BEFORE OPERATION**

- Carefully study and understand this manual.
- Do not wear loose-fitting clothing which may catch on moving parts.
- Always wear protective clothing and substantial shoes.
- Always wear provided cut-resistant gloves when installing stalk rolls.

## THE CALMER UPGRADE KIT INCLUDES THE FOLLOWING PARTS PER ROW:

Your reference for left and right stalk rolls is from your perspective while sitting in the combine cab looking at the corn head.

### Case IH 4000/NH 980CR Upgrade Kit



- A (2) BT Chopper® Stalk Roll Shells
- B (1) Left Manual Stripper Plate
- C (1) Right Hydraulic Stripper Plate
- D (2) Spiral Grass Knives
- E (2) 13-Tooth Accelerator Drive Sprockets

- F (2) 13-Tooth Idler Sprockets
- G (1) Medium-Strength Threadlocker Tube
- H (20) 3/8" - 16 x 1 3/4" Socket Head Cap Screws
- I (2) Cut-Off Wheels

### THE FULL CALMER UPGRADE KIT INCLUDES THE FOLLOWING PARTS PER HEAD:

(2) CUT-RESISTANT GLOVES



**OIL BATH SPROCKETS**  
(1 pair for 6-row heads,  
2 pairs for 8+ row heads)



- (1) Pair of Goggles
- (2) 5/16" Hex Bits
- (1) Template for Modifying Row Units
- (2) Oil Bath Gaskets  
(1 for 6-row heads)
- (1) Paint Stick

## STEP 1

# Disassembly of Current Components

**! DANGER:** Ensure the corn head is secured properly, combine lift cylinder stops are in place, equipment is turned off, and the parking brake is engaged before attempting any adjustments. Be sure to follow all manufacturer's safety procedures when setting up and working on the corn head.

1. Attach the corn head to your combine in accordance with the instructions in the manufacturer's owner's manual. **It is critical to lock the lift cylinder in the raised position before making any further adjustments.**
2. Raise and secure or remove the corn head dividers and hoods.
3. Remove gathering chains. Factory sprockets must be removed if installing Calmer Gathering Chain Sprockets.
4. Remove chain guides.
5. Remove stripper plates.
6. Remove weed knives.
7. Remove stalk roll blades from square stalk roll shaft. (Do NOT remove entire shaft.)

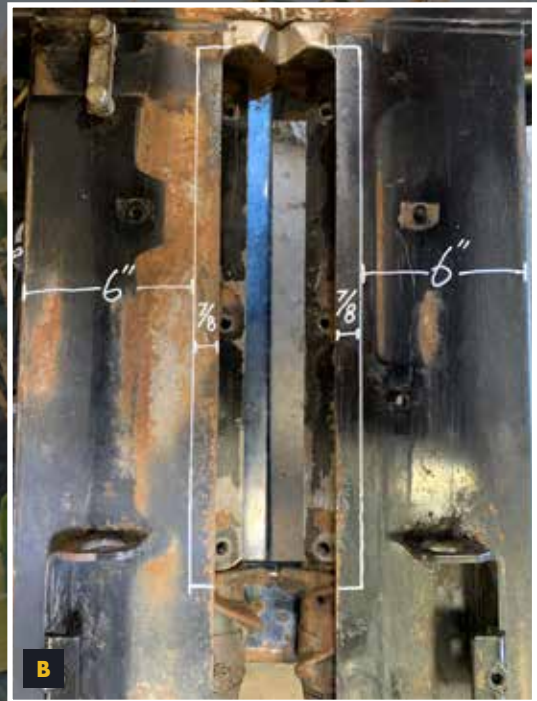
**! CAUTION:** Inspect all parts to be reassembled and replace excessively worn components as necessary.

**! IMPORTANT:** Inspect all stalk roll shafts, bearings and check for backlash. Correct, replace or repair as necessary. Failure to do so will void warranty!

## Modifying Row Frames

### STEP 2

1. Use template provided with your kit to mark the appropriate modification lines on the row frame unit (Image A) OR mark vertical line 6" from the outside of the row unit, which is approx. 7/8" from the inside edge of the row unit. (Image B)

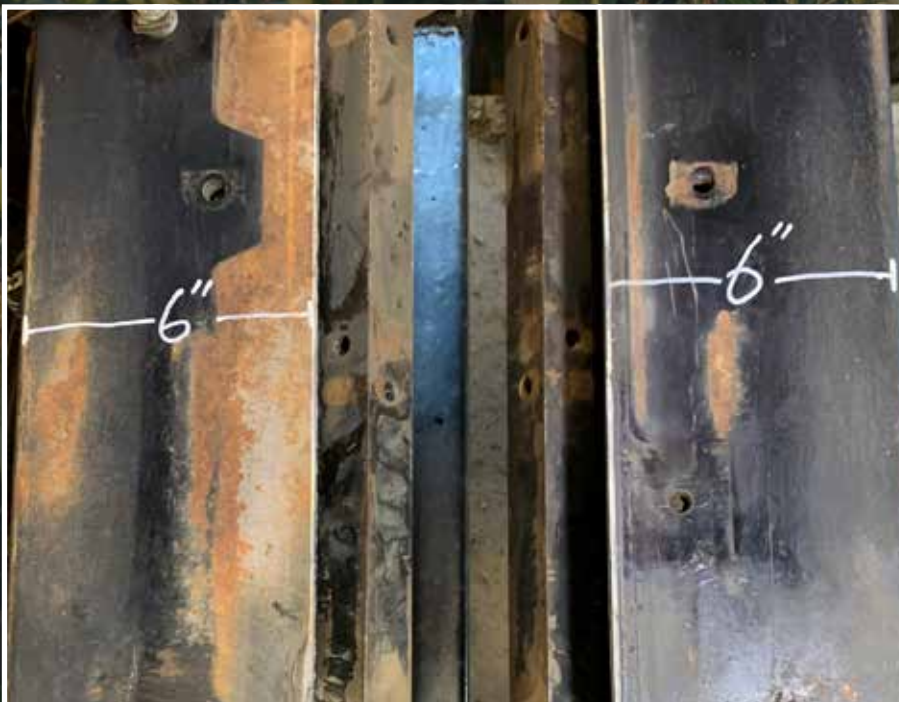


**! NOTE: The following step requires the use of an angle grinder and cut-off wheel.**

**! DANGER: YOU MUST READ THE MANUFACTURER'S OWNER'S MANUAL COVERING PROPER OPERATING AND SAFETY PROCEDURES PRIOR TO MODIFICATION! IF YOU HAVE ANY QUESTIONS, CALL OUR FACILITY AT (309) 629-9000 OR HIRE A QUALIFIED PROFESSIONAL TO INSTALL YOUR KIT.**

**! WARNING: WHILE MODIFYING THE ROW UNIT, YOU MUST WEAR THE PROTECTIVE GOGGLES PROVIDED WITH YOUR KIT TO HELP PROTECT AGAINST SERIOUS EYE INJURIES!**

2. Cut off the row unit with a cut-off wheel or plasma cutter from the rear of the stalk roll spiral to the top of the row unit, even with the top "V" plate. (See below image)
  - a. If using a plasma cutter, cover the square stalk roll shaft to protect it from damage. **If your corn head is connected to the combine, ensure the negative battery terminal is disconnected.**
  - b. Do not cut-off "V" plate at the top of the row unit.



3. Grind metal burrs near the top of the row unit and along the sides of the row frame to ensure no material is hanging down. (See images below.)



## STEP 3

# Modifying Stalk Roll Spirals

**!** **DANGER: YOU MUST READ THE MANUFACTURER'S OWNER'S MANUAL COVERING PROPER OPERATING AND SAFETY PROCEDURES PRIOR TO MODIFICATION! IF YOU HAVE ANY QUESTIONS, CALL OUR FACILITY AT (309) 629-9000 OR HIRE A QUALIFIED PROFESSIONAL TO INSTALL YOUR KIT.**

**!** **WARNING: WHILE MODIFYING THE ROW UNIT, YOU MUST WEAR THE PROTECTIVE GOGGLES PROVIDED WITH YOUR KIT TO HELP PROTECT AGAINST SERIOUS EYE INJURIES!**

1. Mark each stalk roll spiral in both locations shown in below pictures. There should be marks on 4 places on each spiral. (See "Before" images below.)

### BEFORE



2. Cut spirals where marked on each nose cone (Image A) and smooth surface where the horizontal cut is made to remove the nose cone "fin." (Image B)

**IMAGE A**



**IMAGE B**



## Installing Calmer BT Chopper® Stalk Roll Shells

Stalk rolls are marked on the left (L) and right (R) shells and should be installed as a set, as packaged by Calmer.

**! NOTE:** Stalk rolls are to be installed from your perspective while sitting in the combine cab, looking at the corn head.

**! CAUTION:** BT Choppers® are extremely sharp! Make sure that you are wearing the gloves provided with your order and that you handle the stalk rolls with extreme care!

**! CAUTION:** Stalk rolls may fall off during assembly. Always follow the outlined procedure and stay out from underneath the unbolted stalk roll shells. **DO NOT TRY TO CATCH A FALLING STALK ROLL SHELL!**

1. Remove and discard the shipping bolts in each roll. **Do not reuse these bolts!**

**! CAUTION:** Do not hit the stalk roll shell blades with a hammer. Chipped blades resulting from improper installation will void warranty!

**! IMPORTANT:** The shells are designed to be installed so the seams of both rolls are both horizontal or both vertical, depending on the rotation of the rolls. Stalk rolls are improperly installed if one is horizontal and one is vertical.

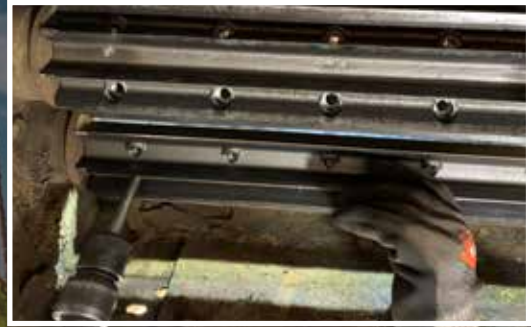
2. From the bottom of the corn head, install one shell on the right stalk roll shaft by aligning and holding the front of the roll with the square shaft and driving the roll onto the square shaft with an air hammer, ensuring the front, middle and back of the shell fits firmly on the shaft. (See images at the top of the next page.)



3. Rotate shaft 180 degrees to install the other half stalk roll shell on the right shaft. Repeat steps with air hammer to ensure the front, middle and back of second half shell is fully secured on the shaft. (See below images.)



4. Install 3/8" – 16 x 1 3/4" bolts with medium-strength threadlocker and hand tighten to ensure the right stalk roll is secure before installing rolls on the left side.
5. Install 1st half stalk roll shell on the left square shaft. Similar to step 2, install one shell on the square shaft by holding and aligning the front of the roll with the square shaft and driving the roll onto the shaft with an air hammer, ensuring the front, middle and back of the shell fits firmly on the shaft. (See images on the top of next page.)



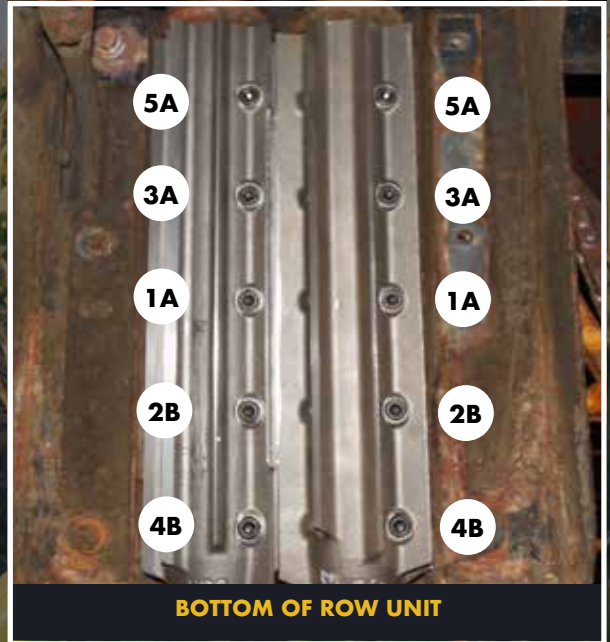
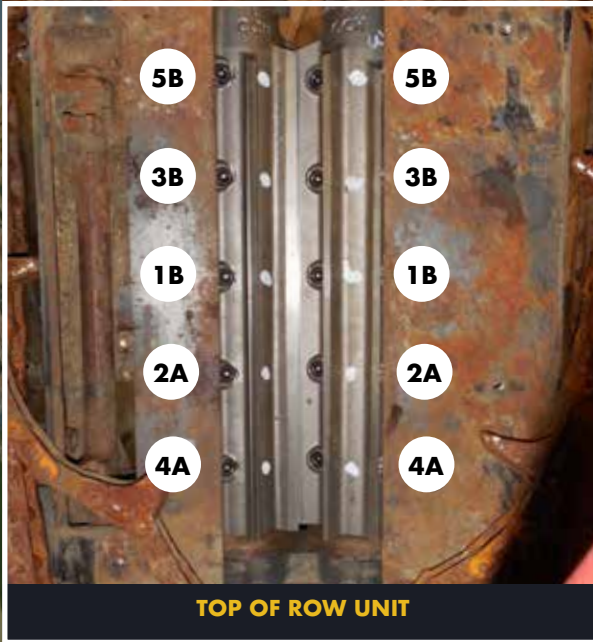
6. Rotate shaft 180 degrees to install the other half stalk roll shell on the left shaft. Repeat steps with air hammer to ensure the front, middle and back of second half shell is fully secured on the shaft. (See below images.)



7. Install all bolts with medium-strength threadlocker and hand tighten to ensure left stalk roll is secure.

8. After hand tightening all bolts, torque bolts to 55 lb-ft, alternating from top to bottom of the corn head and middle to ends of the rolls in the order shown.

**\*Tightening order: 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B, 5A, 5B** (See below photo showing tightening order, starting from the middle and working toward the ends.)



## STEP 5

# Reassembly of Components

Reinstall all components in accordance with the manufacturer's owner's manual in reverse order of the disassembly steps.

**!** **NOTE:** Factory grass knives should **NOT** be reinstalled. Instead, install Calmer Spiral Grass Knives to prevent the back wrapping of grasses around the threaded spiral.

**!** **NOTE:** When reinstalling gathering chain sprockets, install Calmer's 13-Tooth Drive and 13-Tooth Idler Sprockets in place of factory sprockets (if purchased) to better synchronize gathering chain speed to stalk roll speed. If your corn head has a bracket directly below the top drive sprocket, you must remove the bracket and cut off the two metal support stubs. This bracket will not be used with Calmer drive sprockets. See the before and after pictures below for reference.



**!** **When reinstalling stripper plates, follow the recommended stripper plate adjustments:** Begin with normal settings of 1 1/8" gap at the front and 1 3/16" gap at the rear, then adjust accordingly to ensure plates are 1/16" wider than the diameter of the 3rd cornstalk node above the brace root. Position stripper plates so the center gap between the edge of the stripper plates is located over the center of the stripping tunnel/stalk rolls. Failure to do so will void warranty.

**NOTE:** To minimize the amount of trash and stalk intake, the stripper plates must be open 1/16-inch wider than the diameter of the 3rd cornstalk node above the brace root.

**CAUTION:** Corn head angle must be adjusted to 23-25 degrees in standing corn and 20 degrees in down/lodged corn for maximum performance and to avoid excessive wear on components. Failure to do so will void warranty!

## Installing Oil Bath Sprockets

STEP 6

The Case IH 4000 Series corn head was designed to run very fast, which can increase trash intake, butt shelling and ear toss problems. To resolve this issue, install Calmer's 24-Tooth Driver and 32-Tooth Driven Oil Bath Sprockets with # 60 double chain or Calmer's 24-Tooth Driven Oil Bath Sprockets with # 80 double chain (sprocket combination varies by corn head).

By making this adjustment, cornstalks will travel further up the row unit so the ear is stripped from the stalk at the proper time and location instead of doing more work near the front of the row unit. This change will also help increase the longevity of the corn head. **Calmer Oil Bath Sprockets are not available for CASE IH 4000 or NH 980CR folding corn heads or for 20- and 22-inch corn heads.**



*(1 pair for 6-row heads,  
2 pairs for 8+ row heads)*

**OIL BATH  
SPROCKETS**

**!** **NOTE:** New oil bath gaskets are provided with the Calmer Upgrade Kit and must be installed when switching to Calmer Oil Bath Sprockets. 1 gasket is supplied for 6-row corn heads, and 2 gaskets are supplied for 8-row corn heads and bigger.



*Gasket for non-folding corn  
heads (Part #84977588)*

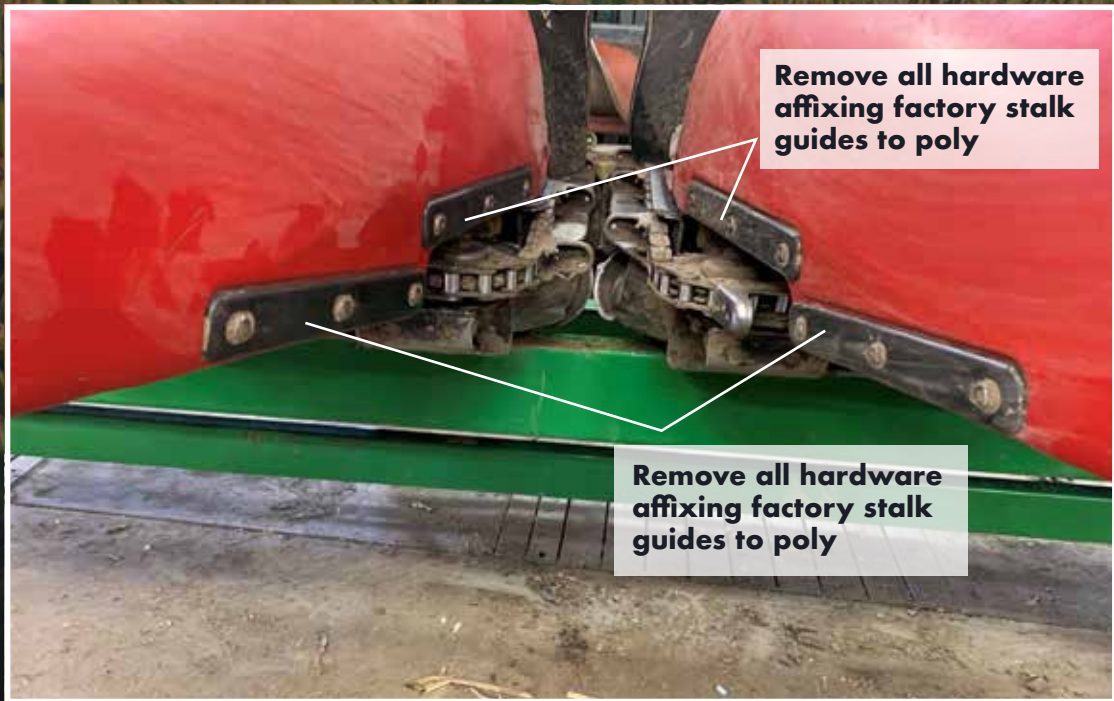
**OIL BATH  
GASKET**

# HELPFUL CORN HEAD SETTINGS & ADJUSTMENTS

## Installing Stalk Guides on Poly

If you are having problems with the feeding of cornstalks into the row unit or dealing with flagged cornstalks, we recommend removing the current factory black stalk guides along the corn poly and replacing with aftermarket stalk guides (Part # KFCN - 01401), which you can purchase from Poly Tech Industries by calling 1-800-542-7659.

1. Remove hardware and factory stalk guides. You will reuse the bolts to install new stalk guides. Washers used for factory stalk guides will NOT be reused. (See below image.)



2. Reinstall stalks guides with factory bolts. With the bevel facing forward, toward the front of the corn head, install the longest stalk guides closest to the end of the poly dividers. With the bevels facing forward, install the shorter stalk guides in location closest to the row unit. (See below image.)

**! NOTE: The bevel on all stalk guides must face forward, toward the front of the corn head**

**! NOTE: Do not reuse factory washers as they are not necessary to reinstall new guides.**



# HELPFUL CORN HEAD SETTINGS & ADJUSTMENTS

**Marion's Recommended Sieve Adjustments for Corn:** I personally disagree with the suggested sieve settings in many owner's manuals. Below is what I've found to be most successful throughout my years of farming.

**Bottom Shoe Sieve:** Run wide open. Try this one round to gauge effectiveness.

**Top Chaffer Sieve:** Close until sample in the grain tank is clean.

**Reason:** When harvesting corn, the bottom sieve is not needed. There is no part of the kernel that needs to be re-threshed! Therefore, the bottom sieve should be wide open. This allows the kernels to fall directly into the clean grain auger.

## Results of my Recommended Sieve Settings:

1. More capacity
2. More air to top sieve
3. Less separator loss
4. Less cracks in dry corn
5. Less grinding in wet corn
6. Less plugging of return elevator in wet corn

**Corn Head Angle:** A properly adjusted corn head angle is critical to its performance. For optimum performance and to retain Calmer's warranty on parts, the corn head angle **MUST** be set between 23-25 degrees in standing corn and 20 degrees in down/lodged corn.



Protractor placed on stripper plate to measure corn head angle

**Setting Your Corn Head Angle:** Place the combine on a level surface then lower the corn head until the row unit frame is 2 inches off the ground. Place a magnetic protractor directly on the stripper plate and read the angle. If the angle is too steep, pull the top of the corn head toward the combine, push the bottom out, or a combination of both.

**Setting Gathering Chain Speed to Match Ground Speed:** Begin calibration with initial gathering chain speed of 55 RPMs. If butt shelling is a problem, slow down the corn head speed until

it starts to bulldoze cornstalks, then speed back up until bulldozing stops. Note: If RPMs are too fast, trash intake and butt shelling increase. If RPMs are too slow, you may experience poor stalk chop, row unit bulldozing and ear loss.

### Reducing Ear Toss:

1. For minimal ear toss, the feeder house chain must be running at maximum speed. Adjust the corn head speed to conditions in the transmission or in the oil bath.
2. Cross auger should be horizontally adjusted rearward, as close to the feeder house chain and rear stripper/stripping tunnel as possible. This will improve the transfer of material from cross auger to the feeder house chain, ultimately reducing ear toss. (Note: Adding half and/or full links to lengthen the feeder house chain will move it closer to the auger.)

**Cross Auger Flighting:** Cross auger should be vertically adjusted to have 1 3/4-inch clearance between the auger flighting and tray at the tightest point. This significantly reduces ear slicing which is a cause of cracked kernels in the grain tank. When you turn on the end rows, there should be a layer of ears between flighting and the tray.



**Gear Box Lubricant:** See manufacturer's owner's manual for proper lubricant specifications.







*"Thank you for purchasing Calmer Products to improve your corn head and residue management capabilities on your farm."*

**Marion Calmer**  
CEO – Calmer  
President – Calmer Ag Research Center  
Owner/Operator – Calmer Farms



**P.O. Box 9 | Alpha, IL 61413 | (309) 629-9000 | fax (309) 629-9001**  
**[www.CalmerCornHeads.com](http://www.CalmerCornHeads.com)**

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The replacement parts comprising and the methods associated with Calmer's Residue Management Program are covered by the following patents issued by the United States Patent and Trademark Office: 7,886,510, 8,171,708, 8,220,237, 8,464,505, 8,857,139, 8,863,487, 9,554,511, 9,560,804, 9,668,414, 10,039,232, 10,045,483

### **Calmer Limited Warranty**

*Calmer warrants our parts 100%. This warranty is good throughout the first season after purchase of the part. What this means is that if the part breaks within the first season of use, we will replace the part with a new one without charge to you. Calmer pays for the shipping both ways as well. In the alternative, if you wish, we will refund to you all of the money you paid to Calmer for the part. If the Calmer part does not work in a manner that you expected, we promise that we will work with you to adjust settings and to see if we can obtain satisfactory performance. In the end, if the Calmer part does not work on your farm to your complete satisfaction, we will refund your purchase price.*

*Disclaimers: Calmer is not responsible for and does not warrant as to consequential damages or any other types of damages that may be claimed as a result of part breakage or unsatisfactory performance. In other words, except as stated herein all other warranties or liabilities, expressed or implied, oral or statutory, including any warranty of merchantability or fitness for a particular purpose are expressly denied.*

**TO OBTAIN WARRANTY SERVICE:  
CALL 309-629-9000**

**FOR EMERGENCY REPAIRS:  
CALL 309-368-1182**

**September 2022**