



OPERATOR'S MANUAL



AGCO 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.

AGCO Electric Upgrade Kit

A B B C



- A (2) BT Chopper® Stalk Rolls
- B (2) Electric Adjust Stripper Plates (Short-Tab) or
- B (2) Electric Adjust Stripper Plates (Long-Tab)
- C (2) Grass Knives

AGCO Manual Upgrade Kit

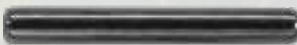
A B C



- A (2) BT Chopper® Stalk Rolls
- B (2) Manual Adjust Stripper Plates (Long-Tab)
- C (2) Grass Knives



(16) 3/8" – 16 x 1 3/4"
SOCKET HEAD CAP SCREWS



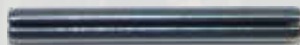
(6) 3/8" x 2 3/4" ROLL PINS



(1) TUBE MEDIUM-STRENGTH
THREADLOCKER



(2) 5/16" – 18 x 1 3/4"
LOW-PROFILE SOCKET HEAD
SCREWS (FOR SPIRALS)



(2) 5/16" x 2 1/2"
ROLL PINS (FOR SPIRALS)

(1) 5/16" HEX BIT

(1) 5/32" HEX BIT



(1) STRIPPER PLATE SPACER KIT



(2) CUT-RESISTANT GLOVES

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 chain guides.
4. Remove idler blocks.
5. Remove stripper plates.
6. Remove weed knives.
7. Remove spiral weed knives/skid plates. (See pictures below)



- ! 8.** Remove stalk roll flutes and spirals. See following section for further instructions.

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

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

Removing and Installing Stalk Roll Spirals

STEP 2

1. Unbolt and remove OEM stalk roll flutes.
2. Grind-off the heads of both rivets using a flap wheel sanding attachment on a hand grinder to remove the factory stalk roll spirals.

Notice: The rivets are tapered and must be removed by driving a punch against the narrow end. The narrow end can be identified by the lack of the expansion grooves, which should not be visible after sanding.

Shown right, the left rivet is the wide end and the right rivet is the narrow end, which is the end to drive a punch against. The expansion grooves are smallest on the narrow side of the rivet.



3. Rotate the spirals so the narrow ends of the rivets are facing up.
4. Support and/or block the spirals from the ground and drive out the rivets using a suitable punch.
5. Drive the spirals off the shafts.
6. Wire brush the stalk roll shafts.
7. To install the spirals, slide the left spiral on the left shaft. Add medium-strength threadlocker to provided 5/16" – 18 x 1 3/4" low-profile socket head cap screws, and install in the countersunk hole. Torque to 15 lb-ft.
8. Drive 5/16" x 2 1/2" slotted roll pin in the remaining hole using a suitable punch.
9. Repeat steps for the right spiral.

Notice: The spirals are self timing. See image to the right.



STEP 3

Installing Calmer BT Chopper® Stalk Rolls



Rolls are marked on the left (L) and right (R) spirals and must be installed as a set, from the same box, as packaged from Calmer.

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

! DANGER: 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. Follow the outlined procedure below and stay out from underneath the unbolted/unsupported stalk roll shells at all times! **DO NOT TRY AND CATCH A FALLING STALK ROLL SHELL!**

NOTICE: 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!

1. Remove and discard the 4 shipping bolts per roll. **Do not reuse these bolts!**
2. From the top of the corn head, install a left half shell on the left shaft, aligning the (3) 3/8" holes on the shell with the (3) 3/8" holes on the shaft.
3. Drive in (3) 3/8" x 2 3/4" slotted roll pins until flush on the opposite side of the shaft.

4. Repeat steps 1-3 for the right shell. See photo below.



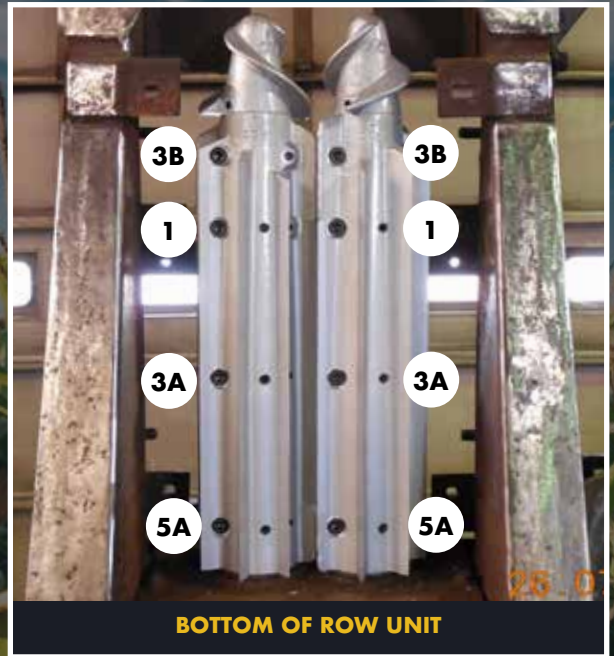
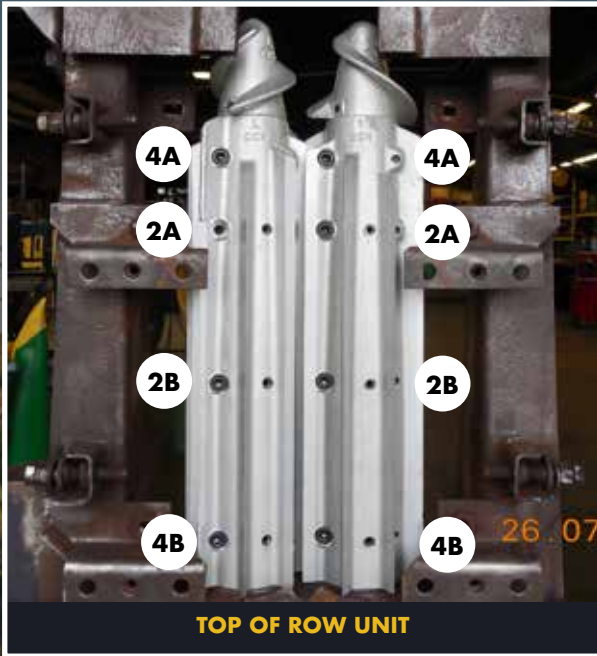
5. Clean the 3/8" – 16 x 1 3/4" bolts, apply medium-strength threadlocker and from the bottom of the head, install the remaining left half shell using the prepared bolts. Hand tighten only!
6. Repeat step # 5 for the remaining right half shell.
7. After hand tightening all bolts, use a suitable punch to finish driving the roll pins. Note: if the roll pins do not insert properly, the bolts may be too tight.

NOTICE: Do no hit the stalk roll shells with a hammer. Chipped blades resulting from improper installation will void warranty!

Notice: 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. See photo below.



8. Torque bolts to 25 lb-ft, alternating from top to bottom of the corn head and middle to ends of the rolls in the order shown. Tightening order: 1, 2A, 2B, 3A, 3B, 4A, 4B, 5A. Recheck all bolts when complete.



Installing/Adjusting Calmer Stripper Plates

STEP 5

**ELECTRIC ADJUST
MULTI-ZONE
BEVELED STRIPPER
PLATES**



**MULTI-ZONE
BEVELED
STRIPPER
PLATES**

**MANUAL ADJUST
MULTI-ZONE
BEVELED STRIPPER
PLATES**

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. Ensure stripper plate gap is centered over the stalk rolls.

Installing Stripper Plates: Install idler blocks to Calmer Stripper Plates using the spacer kit hardware Calmer provides with the kit. Factory hardware will be reused for short-tab manual plates only!

With the electric plate or one manual plate installed and in the open position, move it towards the center of the row unit until the edge of the plate is half of the desired width from the centerline of the row unit (tighten down manual plate here). Next, insert a block that matches the desired plate gap between the two plates (1 1/8" gap at the front and 1 3/16" gap at the rear). Then slide the manual plate in tight to the block and tighten down to set it in place.

For Electric Plates Only: Once the stripper plates are at the desired gap, mark the gauge on the frame or write down the value given in the cab for future reference. This is the ideal spot for the electric stripper plates to match your initial settings.



STRIPPER PLATE SPACER KIT



**INSTALL CALMER SPACER
KIT AS SHOWN**

STEP 5

Final Assembly

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

NOTICE: DO NOT reinstall factory grass knives/skid plates. These parts inhibit the feeding of stalks at the front of the row unit. If you purchased Calmer Grass Knives, reinstall to ensure at least 1/4" clearance between the stalk roll nose cones and the grass knives.



**CALMER
GRASS
KNIVES**

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.

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.



Protractor placed on stripper plate to measure corn head angle

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.

MAINTENANCE RECORD

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



"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



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www.CalmerCornHeads.com

*Trademarks are not owned by, affiliated with, or under license to Calmer and used solely for the utility of Calmer products mentioned herein.

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**

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