Residue Management Improvement Parts

for all John Deere* Series, Case-IH* 2200/2400 Series, and NH* 96c, 98c, and 996 Series Corn Heads


www.calmercornheads.com

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Meet Marion Calmer: Farmer, Inventor, Researcher

Marion Calmer, a farmer, inventor and researcher from western Illinois, is the CEO of Calmer Corn Heads, Inc. and founder of Calmer’s Ag Research Center, the largest independently funded, farmer-run Ag research center in the United States. He is credited with inventing the world’s first single chain, narrow row corn head for 12- and 15-inch rows, along with building the world’s largest corn heads. As the owner of more than a dozen patents that have helped revolutionize the Ag industry in America, Marion’s top priority is to help other farmers maximize their potential profits through research and innovation.

Having spent thousands of hours doing on-farm research, along with modifying and inventing farm machinery, Marion has dedicated his life to helping the American farmer. Some of his accomplishments include:

- Being named one of agriculture’s 25 most influential people
- Being voted as one of the 40 No-Till Legends
- Building the world’s largest corn heads (32-row, 15-inch corn head was world’s first! 30-row, 12-inch corn head was world’s first!)
- Inventing corn head technology that has been voted to the No-Till Product of the Year list 5 times by American farmers
- Receiving the “Public Image of Agriculture” Award out of 200,000 farmers in the U.S. (1996)
-Winning the 2014 Farm Industry News FinOvation Award for the top attraction at the 2013 Farm Progress Show
- Serving on the 2014 Farm Bill Advisory Board

Get MORE than you bargained for with Calmer’s patented BT Chopper® Replacement Stalk Rolls

**Agronomic Advantages**
- Unmatched Residue Decomposition
- Warmer Soils
- Drier Soils
- Increased Earthworm Populations
- Reduced Nitrogen Penalty
- Easier Planting
- Higher Yields

**Mechanical Advantages**
- Compatible with all Tillage Systems
- 25% Less Hp Needed than with Chopping Heads
- Superior Cornstalk Flow to Engagement
- Better Ear Separation

“"I saw the Calmer BT Choppers at a farm show and decided to give them a try. Harvest was great, and I actually experienced better performance and residue results than Calmer had advertised!”

John Frick
GRAFTON, ND

“I never dreamed how good BT Choppers would do. My corn head has never performed like this! Gorgeous!”

Scott Sheets
BOURBON, IN

Find us on Facebook!
Follow us on Twitter @CalmerCornHeads

1920: Woodhull, Illinois’ Water Reservoir
Marion Calmer’s Grandfather Ansker Calmer and Uncle Barney Calmer with the first corn sheller on a solid rubber tired Model T truck.

2013: Woodhull, Illinois’ Water Reservoir
Marion Calmer and his brother Danavin in front of the world’s first 32-row, 15-inch Calmer Corn Head.
JD 40/90 Series Corn Heads
Calmer’s residue management improvement parts will help reduce your excessive residue build-up and butt shelling problems!

STEP 1
Install Calmer BT Chopper® Stalk Rolls and Weed Knives
The most important components when upgrading a corn head are reliable, effective stalk rolls. Calmer’s BT Chopper® Stalk Rolls have a patented revolving window in combination with 10 razor sharp knives that chop, cut, and shear corn stalks into confetti-like residue for unmatched residue to soil contact and superior decomposition. As a result, you can count on being able to more effectively manage residue with your tillage and planting operations.

STEP 2
Install Calmer™ 6-Tooth Gathering Chain Drive Sprockets and 9-Tooth Idler Sprockets
By slowing down just the gathering chain by 25% with Calmer’s smaller 6-Tooth Driver, trash intake can be reduced by as much as 60%. The larger patented 9-Tooth Idler pushes the gathering chain lugs further into the center line of the row unit, improving its grabbing ability when harvesting down corn.

STEP 3
Install Calmer™ Multi-Zone Beveled Stripper Plates
The contour of Calmer’s Hard Surfaced Multi-Zone Beveled Stripper Plates emulates the butt of the ear of corn, which helps reduce butt shelling while simultaneously allowing husks and leaves to pass through the stripper plate gap onto the ground, not into the combine.

In my humble opinion, Marion Calmer’s technology has changed the way corn will be grown worldwide for the rest of time.

Paul Harvey
ABC Radio Network Broadcaster

With Calmer’s Trash Reduction Kits, harvesting in frozen fields was no problem. The stalks splinter and shatter in both directions. There were no problems with dozing at the end of the fields, and the down corn was easy to pick. No popping ears! We should have upgraded our 893 sooner!

Jon Vosburg
Lewistown, IL

JD 40/90 Series Corn Heads
Calmer’s residue management improvement parts will help reduce your excessive residue build-up and butt shelling problems!
No Feeding Chamber

These overlapping flutes spin at 950 RPMs, creating a wall of rotating steel and restricting the entry of the cornstalk. By examining a used 6-fluted stalk roll we can see the first 2-inches of the flutes are worn out. The balance of the flutes indicates minimal wear (See photo below). Stripper plate wear also confirms this theory.

The Evidence

Intermeshing stalk rolls with 6 flutes have continuous overlap in the entry area. When rotating at normal speeds, these intermeshing flutes prevent the cornstalk from engaging easily with the flutes. This hesitation allows stalks and ears to pass below the corn head without being processed. This makes the field look like it was plucked, not picked. (See photo on the left)

The Results

To demonstrate, we put a cornstalk in front of an OEM stalk roll’s knife chamber. Because it does not have a revolving window, the cornstalk cannot engage with the flutes and ultimately bends over. (See photo below)

Calmer’s Patented Open Window Creates A Feeding Chamber

Install Calmer’s Patented BT Chopper® Stalk Rolls

The Evidence

Calmer’s patented open windows allow the cornstalks to feed easily from the spiral area into the 17 1/2-inch knife chamber, which allows for the entire cornstalk to be processed. This makes for longer stalk roll life and reduces low ear snap and the bulldozing of stalks at the end rows. Because this open window guarantees 100% traction the first time a blade touches the stalk, this ultimately means increased profits for you!

The Results

To demonstrate, we put a cornstalk in front of the Calmer BT Chopper® Stalk Roll. Because of its patented open window, the stalk stays vertical and is easily received and engaged by its 10 razor sharp blades.

Cornstalks CAN travel easily into this roll with an open window.

Calmer BT Choppers® explode stalk stubs for quicker residue decomposition and less tire wear!
Non-Agressive Flutes Result in Long Stalks That Limit Residue to Soil Contact

Factory stalk rolls are knife to knife and utilize a 1/8” to 1/4” air gap between blades. This gap is too wide which results in a slow or late pull of cornstalks, especially on a damp or rainy day. As a result, the amount of cornstalks consumed through the rolls is less than needed. This contributes to the gathering chain pushing and hair pinning the top portion of the stalk between the stripper plates and row frame, causing cornstalks to hairball.

Tall stalks left in the field will be slow to decompose.

Residue from factory rolls is hard to plant into.

Calmer BT Chopper® residue is easier to plant into.

Knife-to-Knife Stalk Rolls
92% residue cover on 06/25/2014

Calmer BT Chopper® Stalk Rolls =
78% residue cover on 06/25/2014

10 Overlapping Razor Sharp Flutes Chop, Cut and Shear Cornstalks into Confetti for Residue to Soil Contact

Install Calmer’s Patented BT Chopper® Stalk Rolls

The top pair of knives maintain grasp and control (Zone A below). This prevents the upper portion of the stalk from floating in the row unit and eventually ending up in the combine. The other center pair of knives chop, cut and shear cornstalks into confetti-like residue. (Zone B below)

Less Blowing of Leaves and Husks
The cornstalk stubble left from Calmer BT Choppers® acts like a snow fence by preventing the blowing of leaves and husks on dry windy days.

Calmer BT Choppers® achieve instant residue to soil contact by chopping and shearing cornstalks at the roll, while simultaneously exposing the pith for superior residue decomposition.

Note: The spirals and open windows have been removed.

Zone A: Knives maintain grasp and control of the stalk. Zone B: Overlapping knives chop, cut and shear.
**PROBLEM**

**Excessive Gathering Chain Speed**

With the introduction of BT corn genetics, today’s corn hybrids are taller, drier, and therefore more brittle during harvest time. Prior to 2008, corn heads utilized row units with speed ratios from the 1960s that used fast gathering chain speeds. These fast gathering chain speeds often cause the gathering chain lug to shear or break off the top of the plant before the stalk rolls have a chance to pull it below the stripper plates. The gathering chain lug then takes the broken portion of the plant and pushes it into the cross auger, eventually resulting in a LARGE PILE OF FLUFF. (See photo below)

**The Evidence**

The first indication that the gathering chain was running too fast was confirmed during kill stops. Examinations of the large pile of fluff indicated it was composed mostly of the top portion of the corn plant broken or sheared off by the gathering chain lug. (See photo below)

The second indication that the gathering chain was running too fast was corn stalks hair pinning at the top of the stripping tunnel on a wet or damp day. This happens because the gathering chain lug forces the top portion of the corn plant over the row unit frame.

**SOLUTION**

**Slow Down Gathering Chain Speed By 25%**

Install Calmer’s Patented 6-Tooth Gathering Chain Drive Sprockets

This slows down just the gathering chains by a full 25% and reduces trash intake by an average of 60%! Calmer’s smaller 6-Tooth Drive Sprocket allows the stalk rolls to make additional revolutions and make more of the plant disappear below the stripper plates before the gathering chain lug can break it off. We suggest that you have the oil bath in overdrive (the larger sprocket on the back (driver) and the smaller sprocket on the front (driven)). Install Calmer’s Patented 9-Tooth Idler Sprockets for the following three reasons:

1. They take up excessive slack created by the 6-tooth driver, so a standard 48 roller chain can be used.
2. The bigger diameter reduces wear on the idler block.
3. The bigger diameter increases the gathering chain lug’s grabbing ability in down corn.

**The Results**

We converted half of our test corn head with Calmer’s 6-Tooth Drive Sprockets, leaving the other half with the factory 8-tooth sprockets. We did multiple kill stops at normal ground speeds, bagged the loose trash on both halves, weighted it, and compared the difference. The reduction of trash intake was visible from the windshield of the combine and confirmed by the test data.

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<th>Ounces of Trash with 8-Tooth</th>
<th>Ounces of Trash Reduced</th>
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<td>100</td>
<td>60</td>
<td>60% Average</td>
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“During multiple kill stops on a dry afternoon, the Calmer 6-Tooth Sprockets reduced trash intake and stalk breakage by as much as 78% in 15% moisture corn. Harvesting speeds increased from 3 to 6 mph.”

Marion Calmer

Left side of corn head is equipped with Calmer’s 6-Tooth Drive Sprockets and has little trash.

Right side of corn head is equipped with factory 8-tooth Drive Sprockets and has significantly more trash.
High Leaf Intake, Butt Shelling, and Unhusked Ears

**PROBLEM**

Straight Stripper Plates

Factory straight stripper plates are not formed to match the natural shape of the bottom side of the corn ear. During ear separation, the plant leaves engage with these straight stripper plates causing them to be unnecessarily torn from the stalk.

Because factory straight stripper plates do not emulate the rounded butt of the corn ear, they do not allow the ear shank to get close enough to the stalk roll to grasp the ear shank. This results in the husk staying attached to the ear, sending it and more material into the combine to handle.

**The Evidence**

The cornstalk leaves and ear husks are mixed in with yellow ears during kill stop examinations. (See photo below on right)

Multi-Zone Beveled Stripper Plates

Install Calmer’s Hard Surfaced Multi-Zone Beveled Stripper Plates

These multi-zone beveled stripper plates are straight in the front retrieving area to reduce ear wedging and beveled in the stripping area to allow the stalk rolls to engage more ear shanks, husks, and leaves, reducing trash intake by an average of 33%. These beveled stripper plates have a weld hardened surface for extended life.

**The Results**

We installed Calmer’s multi-zone beveled stripper plates on half of our test head, while the other half remained equipped with factory straight stripper plates. The stripper plate gaps were set the same on both sides of the corn head during testing. We did multiple kill stops at normal ground speeds on a dry afternoon, bagged any loose trash on both sides, weighed it, and compared the difference. Here were our findings:

- On the side of the corn head equipped with Calmer’s multi-zone beveled stripper plates, trash was reduced by an average of 33%
- Harvesting speeds increased significantly
- There was no noticeable change in header loss

I put Calmers on a 1290 and ran it side-by-side with a competition 18 row, 20-in corn head. There was no comparison. Calmer was so much better. Better feeding and better chopping!

John Liniger
SYCAMORE, OH

<table>
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<tr>
<th>Time</th>
<th>Ounces of Trash with Straight Stripper</th>
<th>Ounces of Trash with Beveled Stripper Plates</th>
<th>Ounces of Trash Reduced</th>
<th>Percentage of Trash Reduced</th>
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<td>4:30</td>
<td>59</td>
<td>38</td>
<td>21</td>
<td>36%</td>
</tr>
</tbody>
</table>

33% Average

Calmer’s beveled stripper plate push more kernels toward the cob, reducing butt shelling.
To reduce ear toss
Stay on the fast sprocket for feeder chain speed when harvesting. Move cross auger back as close as possible to the feeder chain drum. Add half and/or full links to the feeder chain to extend toward the cross auger. This reduces the dead air space between the feeder chain and cross auger flighting. This also reduces the height of the pile of ears between the cross auger and the feeder house, along with reducing back feeding and ear toss. Some older John Deere corn heads use rubber flaps and no reverse flighting. The performance of these older augers is poor. It is recommended that you remove the rubber flaps. If necessary, add reverse flighting to the center of the auger. The short section of reverse flighting can be purchased from John Deere (RH part #H206301, LH part #H206302) and welded on. (See photo below on the right)

Setting stripper plates
Begin with normal settings of 1 1/8-inch gap at the front and 1 3/16-inch gap at the rear, then adjust accordingly to ensure plates are 1/16” wider than the diameter of the largest cornstalk node.

Used gathering chain tighteners occasionally lock-up
This is caused when the spring vibrates and augers itself into the hole between the bolt and the flat strap. This can be fixed by removing the idler bolt and adding a second washer (enclosed) at the bottom of the pipe spacer, which is identical to the washer at the top of the pipe spacer. Apply anti-seize or lubricant to the bolt threads for future adjustments.

Corn head angle is very important!
The angle of the corn head should be between 23-25 degrees for optimum performance in standing corn. The angle should be set to 20 degrees in down/lodged corn. Put 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 (included with all stalk roll and residue management upgrade kit purchases) on the stripper plate and read the angle. If the angle is too steep, pull the top of the corn head toward the combine or push the bottom out, or a combination of both.

Sieve settings – Marion’s recommendations:
In Corn: The bottom sieve is not needed. There is no part of the cob or 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 auger. The bottom sieve is now functioning as a wind board and helps direct the air blast to the front of the top sieve where it is needed for cleaning. During corn harvest there should be nothing in the return elevator but the chain and paddle. I would suggest a couple of kill stops to confirm this. The top sieve is now the cleaning sieve and has plenty of capacity to perform this function without losing kernels out the back. I open and close the top sieve as kernel size and moisture change to remove 95% of the cobs from the grain tank. Sieve loss should be less than separator loss.

Plastic gathering chain paddles attached to the gathering chain lugs will improve gathering and conveying performance in down corn.

Adjust auger to 1 3/4-inches clearance between flighting and tray at the tightest point to reduce ear slicing. Also adjust rearward as far as possible.
**JD 600 Series Corn Heads**

Calmer’s residue management improvement parts will help reduce your excessive residue build-up and butt shelling problems!

**STEP 1**

**Install Calmer BT Chopper® Stalk Rolls and Weed Knives**

The most important components when upgrading a corn head are reliable, effective stalk rolls. *Calmer’s BT Chopper® Stalk Rolls* have a patented revolving window in combination with 10 razor sharp knives that chop, cut, and shear corn stalks into confetti-like residue for unmatched residue to soil contact and superior decomposition. As a result, you can count on being able to more effectively manage residue with your tillage and planting operations. **Available for new or old shaft.**

**STEP 2**

**Install Calmer™ Multi-Zone Beveled Stripper Plates**

The contour of *Calmer’s Hard Surfaced Multi-Zone Beveled Stripper Plates* emulates the butt of the ear of corn, which helps reduce butt shelling while simultaneously allowing husks and leaves to pass through the stripper plate gap onto the ground, not into the combine.

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**OEM Residue**  
**BT Chopper® Residue**

Side-by-side comparison just 7 months after harvest shows superior residue decomposition when using *Calmer BT Chopper® stalk rolls compared to OEM stalk rolls.*

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Calmer Weed Knives are made special to run with *Calmer BT Chopper® stalk rolls on the factory old frame only (sprocket will be 8-tooth system)*

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*“Corn is getting too tough for us and we had many problems planting through the trashy residue. We heard about your product and how it chops the stalks. We put the whole kit on both of our 6-row heads with stalk stompers. We know we’ll save a pass in the spring. They pay for themselves!”*

Allen Peters  
EASTERN PA
No Feeding Chamber

These overlapping flutes spin at 950 RPMs, creating a wall of rotating steel and restricting the entry of the cornstalk. By examining a used 8-fluted stalk roll we can see the first 2-inches of the flutes are worn out. The balance of the flutes indicates minimal wear (See photo below). Stripper plate wear also confirms this theory.

The Evidence

Knife-to-knife stalk rolls with 8 flutes have continuous overlap in the entry area. When rotating at normal speeds, these flutes prevent the cornstalk from engaging easily (see all photos). This hesitation allows stalks and ears to pass below the corn head without being processed. This makes the field look like it was plucked, not picked. (See photo on the left)

The Results

To demonstrate, we put a cornstalk in front of an OEM stalk roll’s knife chamber. Because it does not have a revolving window, the cornstalk cannot engage with the flutes and ultimately bends over. (See photo below)

Calmer’s Patented Open Window Creates A Feeding Chamber

Install Calmer’s Patented BT Chopper® Stalk Rolls

The Evidence

Calmer’s patented open windows allow the cornstalks to feed easily from the spiral area into the 17 1/2-inch knife chamber, which allows for the entire cornstalk to be processed. This makes for longer stalk roll life and reduces low ear snap and the bulldozing of stalks at the end rows. Because this open window guarantees 100% traction the first time a blade touches the stalk, this ultimately means increased profits for you!

The Results

To demonstrate, we put a cornstalk in front of the Calmer BT Chopper® Stalk Roll. Because of its patented open window, the stalk stays vertical and is easily received and engaged by its 10 razor sharp blades.

Cornstalks CAN travel easily into this roll with an open window.
Non-Agressive Flutes Result in Late Pull

Factory stalk rolls are knife to knife and utilize a 1/8” to 1/4” air gap between blades. This gap is too wide which results in a slow or late pull of cornstalks, especially on a damp or rainy day. As a result, the amount of cornstalks consumed through the rolls is less than needed. This contributes to the gathering chain pushing and hair pinning the top portion of the stalk between the stripper plates and row frame, causing cornstalks to hairball.

Residue from factory rolls is hard to plant into.

Calmer BT Chopper® residue is easier to plant into.

Calmer BT Chopper® Stalk Rolls = 92% residue cover on 06/25/2014

10 Overlapping Razor Sharp Flutes Chop, Cut and Shear Cornstalks into Confetti for Residue to Soil Contact

Factory Stalk Rolls

Install Calmer’s Patented BT Chopper® Stalk Rolls
The top pair of knives maintain grasp and control (Zone A below). This prevents the upper portion of the stalk from floating in the row unit and eventually ending up in the combine. The other center pair of knives chop, cut and shear cornstalks into confetti-like residue. (Zone B below)

Less Blowing of Leaves and Husks
The cornstalk stubble left from Calmer BT Choppers® acts like a snow fence by preventing the blowing of leaves and husks on dry windy days.

Calmer BT Choppers® achieve instant residue to soil contact by chopping and shearing cornstalks at the roll, while simultaneously exposing the pith for superior residue decomposition.

Residue from factory rolls is hard to plant into.

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Calmer BT Chopper® Stalk Rolls = 92% residue cover on 06/25/2014

Zone A: Knives maintain grasp and control of the stalk.
Zone B: Overlapping knives chop, cut and shear.

Note: The spirals and open windows have been removed.
High Leaf Intake, Butt Shelling, and Unhusked Ears

PROBLEM

Straight Stripper Plates
Factory straight stripper plates are not formed to match the natural shape of the bottom side of the corn ear. During ear separation, the plant leaves engage with these straight stripper plates causing them to be unnecessarily torn from the stalk.

Because factory straight stripper plates do not emulate the rounded butt of the corn ear, they do not allow the ear shank to get close enough to the stalk roll to grasp the ear shank. This results in the husk staying attached to the ear, sending it and more material into the combine to handle.

The Evidence
The cornstalk leaves and ear husks are mixed in with yellow ears during kill stop examinations. (See photo below on right)

Multi-Zone Beveled Stripper Plates
Install Calmer’s Hard Surfaced Multi-Zone Beveled Stripper Plates
These multi-zone beveled stripper plates are straight in the front retrieving area to reduce ear wedging and beveled in the stripping area to allow the stalk rolls to engage more ear shanks, husks, and leaves, reducing trash intake by an average of 33%. These beveled stripper plates have a weld hardened surface for extended life.

The Results
We installed Calmer’s Hard Surfaced Multi-Zone Beveled Stripper Plates on half of our test head, while the other half remained equipped with factory straight stripper plates. The stripper plate gaps were set the same on both sides of the corn head during testing. We did multiple kill stops at normal ground speeds on a dry afternoon, bagged any loose trash on both sides, weighed it, and compared the difference. Here were our findings:

- On the side of the corn head equipped with Calmer’s multi-zone beveled stripper plates, trash was reduced by an average of 33%
- Harvesting speeds increased significantly
- There was no noticeable change in header loss

The stripper plates make for smoother feeding, are less row sensitive and great for slopes and curves. Last fall things went smooth with my 600 series rolls and this spring, residue was easy to manage with the planter.

Calmer’s Beveled Stripper Plates emulate the rounded butt of an ear. This does a better job of displacing the energy that causes butt shelling.

Mike Shaw
OGDEN, IA

<table>
<thead>
<tr>
<th>Time</th>
<th>Ounces of Trash with Straight Stripper</th>
<th>Ounces of Trash with Beveled Stripper Plates</th>
<th>Ounces of Trash Reduced</th>
<th>Percentage of Trash Reduced</th>
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33% Average

Calmer’s beveled stripper plates push more kernels toward the cob, reducing butt shelling.
**Profitable Corn Head Adjustments and Modifications**

**Oil bath settings**

For Variable Speed Feeder Houses, Leave at Factory Settings (outlined below)

The 600 series corn head should have the oil bath in underdrive, the large sprocket on the front (driven), and the small sprocket on the rear (driver). Please refer to the following 600 series corn head gear ratios:

- Chopping Corn Head - 24 Driver; 27 Driven
- Non-Chopping Corn Head - 30 Driver; 33 Driven

For Fixed Speed Feeder Houses Only

The 600 corn head should have the oil bath in overdrive, the large sprocket on the back (driver), and the small sprocket on the front (driven). Please refer to the following 600 corn head gear ratios:

- Non-Chopping Corn Head - 33 Driver; 30 Driven
- Chopping Corn Head - 27 Driver; 24 Driven

**Check lube level in gear boxes**

Check the gear box lubricant level at inspection plug. Lubricant must be approximately 38 mm (1 1/2-inches) below the top of the inspection hole. Using the grease fitting on the bottom of the gear box, fill with JD recommended corn head grease to appropriate level. Do not overfill! Use Type 0 (zero) extreme pressure lubricant.

**Calibrate Gathering Chain Speed to Match Ground Speed**

- To calibrate RPMs, all Calmer 600 orders come with a yellow colored paddle to bolt on a center gathering chain lug.
- Raise the corn head, put combine in park, engage threshing motor to full speed. Count revolutions for 1 minute.
- Use the chart below to calibrate gathering chain RPMs to match ground speed.

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</table>

**To reduce ear toss**

Stay on the fast sprocket for feeder chain speed when harvesting. Move cross auger back as close as possible to the feeder chain drum. Add half and/or full links to the feeder chain to extend toward the cross auger. This reduces the dead air space between the feeder chain and cross auger flighting. This also reduces the height of the pile of ears between the cross auger and the feeder house, along with reducing back feeding and ear toss.

Some older John Deere corn heads use rubber flaps and no reverse flighting. The performance of these older augers is poor. It is recommended that you remove the rubber flaps. If necessary, add reverse flighting to the center of the augers. The short section of reverse flighting can be purchased from John Deere (RH part #H206301, LH part #H206302) and welded on. (See photo below on the right)

**Setting stripper plates**

Begin with normal settings of 1 1/8-inch gap at the front and 1 3/16-inch gap at the rear, then adjust accordingly to ensure plates are 1/16” wider than the diameter of the largest cornstalk node.

**Used gathering chain tighteners occasionally lock-up**

This is caused when the spring vibrate and augers itself into the hole between the bolt and the flat strap. This can be fixed by removing the idler bolt and adding a second washer (enclosed) at the bottom of the pipe spacer, which is identical to the washer at the top of the pipe spacer. Apply anti-seize or lubricant to the bolt threads for future adjustments.

**Corn head angle is very important!**

The angle of the corn head should be between 23-25 degrees for optimum performance in standing corn. The angle should be set to 20 degrees in down/lodged corn. Put 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 (included with all stalk roll and residue management upgrade kit purchases) on the stripper plate and read the angle. If the angle is too steep, pull the top of the corn head toward the combine or push the bottom out, or a combination of both. (See photo below on the right)

Adjust auger to 1 3/4-inches clearance between flighting and tray at the tightest point to reduce ear slicing. Also adjust rearward as far as possible.

**Sieve settings – Marion’s recommendations:**

**In Corn:** The bottom sieve is not needed. There is no part of the cob or 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 auger. The bottom sieve is now functioning as a wind board and helps direct the air blast to the front of the top sieve where it is needed for cleaning. During corn harvest there should be nothing in the return elevator but the chain and paddle. I would suggest a couple of kill stops to confirm this. The top sieve is now the cleaning sieve and has plenty of capacity to perform this function without losing kernels out the back. I open and close the top sieve as kernel size and moisture change to remove 95% of the cobs from the grain tank. Sieve loss should be less than separator loss.

“*The above information reflects my reasoning and train of thought. This is the way I have been setting my combine for the past 30 years. Call me on my cell with any questions: (309) 368-1182*”

Marion Calmer

**Bolt onto center gathering chain lug.**

**Arrow points to where the yellow gathering chain lug should be bolted to the gathering chain.**

**Use a protractor to achieve the correct corn head angle.**
Case-IH 2200/2400 Series and NH 96c, 98c, and 996 Series Corn Heads

Calmer’s residue management improvement parts will help reduce your excessive residue build-up and butt shelling problems!

**STEP 1**

**Install Calmer BT Chopper® Stalk Rolls and Weed Knives**

The most important components when upgrading a corn head are reliable, effective stalk rolls. Calmer’s BT Chopper® Stalk Rolls have a patented revolving window in combination with 10 razor sharp knives that chop, cut, and shear cornstalks into confetti-like residue for unmatched residue to soil contact and superior decomposition. As a result, you can count on being able to more effectively manage residue with your tillage and planting operations.

**STEP 2**

**Install Calmer™ Multi-Zone Beveled Stripper Plates**

The contour of Calmer’s Hard Surfaced Multi-Zone Beveled Stripper Plates emulates the butt of the ear of corn, which helps reduce butt shelling while simultaneously allowing husks and leaves to pass through the stripper plate gap onto the ground, not into the combine.

Left: BT Choppers® explode stalks and expose pith for maximum decomposition and less tire wear. Right: Rotary blades leave stalks in-tact, resulting in slower decomposition and increased wear on tires.
The Evidence
Cantilevered stalk rolls with 4 flutes have too much overlap in the entry area. When rotating at normal speeds, these intermeshing knives have no entry window and therefore prevent the cornstalk from engaging easily with the flutes. This hesitation allows stalks and ears to pass below the corn head without being processed in the row unit.

The Results
To demonstrate, we put a cornstalk in front of an OEM stalk roll's knife chamber. Because it does not have a revolving window, the cornstalk cannot engage with the flutes and ultimately bends over. (See photo below)

Calmer’s Patented Open Window Creates A Feeding Chamber
Install Calmer’s Patented BT Chopper® Stalk Rolls
The Evidence
Calmer’s patented open windows allow the cornstalks to feed easily from the spiral area into the 17 1/2-inch knife chamber, which allows for the entire cornstalk to be processed. This makes for longer stalk roll life and reduces low ear snap and the bulldozing of stalks at the end rows. Because this open window guarantees 100% traction the first time a blade touches the stalk, this ultimately means increased profits for you!

The Results
To demonstrate, we put a cornstalk in front of the Calmer BT Chopper® Stalk Roll. Because of its patented open window, the stalk stays vertical and is easily received and engaged by its 10 razor sharp blades.

Cornstalks Still Standing After Harvest

No Feeding Chamber

Calmer BT Choppers® explode stalk stubs for quicker residue decomposition and less tire wear!

Also available for NH 96c, 98c, and 996 series corn heads.
Long, Unprocessed Stalks Are Slow to Decompose

PROBLEM

Non-Agressive Flutes Result in Long Stalks That Limit Residue to Soil Contact

- Cornstalks did not travel into the knife chamber.
- Tall stalks left in the field will be slow to decompose.
- Residue from factory rolls is hard to plant into.
- Knife-to-Knife Stalk Rolls = 92% residue cover on 06/25/2014

SOLUTION

10 Overlapping Razor Sharp Flutes Chop and Shear Allowing Residue to Soil Contact

- Calmer BT Chopper® Stalk Rolls
  The top pair of knives maintain grasp and control (Zone A below). This prevents the upper portion of the stalk from floating in the row unit and eventually ending up in the combine. The other center pair of knives chop, cut and shear cornstalks into confetti-like residue. (Zone B below)

- Less Blowing of Leaves and Husks
  The cornstalk stubble left from Calmer BT Choppers® acts like a snow fence by preventing the blowing of leaves and husks on dry windy days.

- Calmer BT Choppers® achieve instant residue to soil contact by chopping and shearing cornstalks at the roll, while simultaneously exposing the pith for superior residue decomposition.

- Calmer BT Chopper’s® Cut, Chop and Shearing Area

- Also available for NH 96c, 98c, and 996 series corn heads

- Note: The spirals and open windows have been removed.

- Zone A: Knives maintain grasp and control of the stalk.
- Zone B: Overlapping knives chop and shear.

Install Calmer’s Patented BT Chopper® Stalk Rolls
- Residue from factory rolls is hard to plant into.
- Knife-to-Knife Stalk Rolls = 92% residue cover on 06/25/2014
- Calmer BT Chopper® residue is easier to plant into.
- 06/25/2014
High Leaf Intake, Ear Jamming In Down Corn

**PROBLEM**

**Complete Front to Back Bevel**

Factory stripper plates are beveled all the way from the front to the back, which can result in ear lodging in down corn.

**The Evidence**

The cornstalk leaves and ear husks are mixed in with yellow ears during kill stop examinations. (See photo below on the right)

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**Multi-Zone Beveled Stripper Plates**

**Install Calmer's Hard Surfaced Multi-Zone Beveled Stripper Plates**

These multi-zone beveled stripper plates are straight in the front retrieving area to reduce ear wedging and beveled in the stripping area to allow the stalk rolls to engage more ear shanks, husks, and leaves, reducing trash intake by an average of 33%. These beveled stripper plates have a weld hardened surface for extended life.

**The Results**

The straight edge at the beginning of **Calmer's Hard Surfaced Multi-Zone Beveled Stripper Plates** reduces ear wedging in down corn by allowing the lug of the gathering chain to clip the ear off closer to the stripper plates. The ear is then able to fall out the bottom of the stripper plates. (See photo below on the right)

"Beveled stripper plates REALLY work good! Bought the head with bad rolls, put Calmer's on and we just love it!"

Jeff Stahly
LAKE PARK, IA

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Factory plates are beveled in the front where they should be straight, which causes ear jamming in down corn.

Hairpinning caused by stripper plates and stalk rolls not performing well.

More yellow ears and less trash indicates the stalk rolls and stripper plates are performing properly.

Calmer’s muti-zone beveled stripper plates are closer to the lug which causes them to be sheared, and keeps them from lodging, especially in down corn.
**Proitable Corn Head Adjustments and Modifications**

**Oil bath settings: 2200**
The 2200 corn head should have the oil bath in overdrive, the large sprocket on the back (driver), and the small sprocket on the front (driven). **Please refer to the following corn head gear ratios:**
- 2206 and 2212 corn heads should be set to 28 Driver; 22 Driven, **low side of gearbox.**
- 2208 corn heads should be set to 34 Driver; 26 Driven, **low side of gearbox.**

**Oil bath settings: 2400**
The 2400 corn head should have the oil bath in 1 to 1 ratio. Run the feeder house speed wide open.

**Check lube level in gear boxes**
Check the gear box lubricant level at inspection plug. Lubricant must be approximately 38 mm (1 1/2-inches) below the top of the inspection hole. Using the grease fitting on the bottom of the gear box, fill with CASE-IH recommended corn head grease to appropriate level. **Do not overtill! Use Type 0 (zero) extreme pressure lubricant.**

**Calibrate Gathering Chain Speed to Match Ground Speed**
- To calibrate RPMs, all Calmer orders come with an orange colored paddle to bolt on a center gathering chain lug.
- Raise the corn head, put combine in park, engage threshing motor to full speed. Count revolutions for 60 seconds.
- Use the chart below to calibrate gathering chain RPMs to match ground speed.

<table>
<thead>
<tr>
<th>RPMs</th>
<th>MPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>2</td>
</tr>
<tr>
<td>40</td>
<td>3</td>
</tr>
<tr>
<td>54</td>
<td>4</td>
</tr>
<tr>
<td>67</td>
<td>5</td>
</tr>
</tbody>
</table>

**To reduce ear toss**
Stay on the fast sprocket for feeder chain speed when harvesting. Move cross auger back as close as possible to the feeder chain drum. Add half and/or full links to the feeder chain to extend toward the cross auger. This reduces the dead air space between the feeder chain and cross auger flighting. This also reduces the height of the pile of ears between the cross auger and the feeder house, along with reducing back feeding and ear toss. **When running on combines with variable speed feeder houses, run as close to wide-open as possible.**

**Setting stripper plates**
Begin with normal settings of 1 1/8-inch gap at the front and 1 3/16-inch gap at the rear, then adjust accordingly to ensure plates are 1/16" wider than the diameter of the largest cornstalk node.

**Corn head angle is very important!**
The angle of the corn head should be between 23-25 degrees for optimum performance in standing corn. The angle should be set to 20 degrees in down/lodged corn. Put 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 (included with all stalk roll and residue management kit purchases) on the stripper plate and read the angle. If the angle is too steep, pull the top of the corn head toward the combine or push the bottom out, or a combination of both. (See photo below on the right)

**Plastic gathering chain paddles**
attached to the gathering chain lugs will improve gathering and conveying performance in down corn.

**Adjust auger** to 1 ¾-inches clearance between flighting and tray at the tightest point to reduce ear slicing. Also adjust rearward as far as possible.

**Sieve settings – Marion’s recommendations:**
*In Corn:* The bottom sieve is not needed. **There is no part of the cob or 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 auger. The bottom sieve is now functioning as a wind board and helps direct the air blast to the front of the top sieve where it is needed for cleaning. During corn harvest there should be nothing in the return elevator but the chain and paddle. I would suggest a couple of kill stops to confirm this. The top sieve is now the cleaning sieve and has plenty of capacity to perform this function without losing kernels out the back. I open and close the top sieve as kernel size and moisture change to remove 95% of the cobs from the grain tank. **Sieve loss should be less than separator loss.**

**Reduce ear toss by moving cross auger back as close as possible to feeder chain drum.**

**Use a protractor to achieve the correct corn head angle.**
Maximize your Profit Potential with Calmer’s Custom Built Corn Heads!

As the maker of the world’s first single chain, narrow row corn head for 12- and 15-inch rows, along with the world’s largest corn heads, we’ve spent decades researching and developing patented technologies that give our products unrivaled residue management and harvesting capabilities. Available in a wide range of row spacing and widths, Calmer’s custom-built corn heads are manufactured to meet your unique harvesting needs!

Advantages of a Calmer Corn Head
- Faster harvesting speeds
- Superior stalk chop
- Less butt shelling
- Less moving parts
- Less weight
- Lower maintenance requirements
- Less trash intake in both standing and down corn
- Increased gathering chain life
- Warmer soils
- Drier soils
- Less grain loss
- Less fuel needed
- More bushels per acre harvested per day
- Less trash intake in both standing and down corn
- Increased gathering chain life
- Less grain loss
- Less fuel needed
- More bushels per acre harvested per day

Calmer Corn Heads – Superior by Design

By design, Calmer Corn Heads help maximize your profit potential by enabling you to harvest faster and more effectively than ever before. Here’s how:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lightweight</td>
<td>Our patented single chain design in combination with our low-profile, super short poly hoods and dividers result in one of the lightest row units in the industry.</td>
</tr>
<tr>
<td>Multi-Zone Beveled Stripper Plates</td>
<td>The unique design of our stripper plates helps reduce ear wedging and allows our patented BT Chopper® Stalk Rolls to engage more corn leaves, shanks and husks in order to reduce trash intake and minimize horsepower requirements. Our stripper plates’ elongated design allows for more efficient harvesting of low hanging ears in down corn.</td>
</tr>
<tr>
<td>Calmer’s Patented BT Chopper® Stalk Rolls</td>
<td>Calmer’s patented BT Chopper® Replacement Stalk Rolls chop, cut and shear corn stalks into confetti-like residue for truly unrivaled residue management capabilities.</td>
</tr>
<tr>
<td>High-Profile, Shorter Snouts</td>
<td>Among the shortest on the market, our high-profile snouts make it easy to maneuver through narrow rows and around tight contoured areas.</td>
</tr>
<tr>
<td>Strategically Realigned</td>
<td>Calmer Corn Heads are realigned to allow superior material flow from the tray to the feeder house, reducing ear toss and allowing for maximum flow in high yielding and high-speed harvest conditions.</td>
</tr>
<tr>
<td>6-Tooth Drive Sprocket</td>
<td>The Calmer® 6-Tooth Drive Sprockets slow down gathering chains by 25%, reducing trash intake by as much as 60%.</td>
</tr>
<tr>
<td>Single Chain Design w/ Polyethylene Ear Guide</td>
<td>Calmer’s UHMW (Ultra High Molecular Weight) polyethylene ear guide forms a retaining wall to maintain engagement of the ears with the enlarged hardened steel gathering chain paddles. By utilizing Calmer’s single chain system, the second chain, chain guide, drive sprocket, drive shaft, idler block, idler sprocket and chain tension spring are eliminated, significantly reducing weight and maintenance.</td>
</tr>
</tbody>
</table>

Stainless steel back walls, trays and auger strippers are standard features on all Calmer Corn Heads.
Testimonials

But don’t just take our word for it! Here’s what people from around the nation are saying...

“\nIt’s all about the size of the residue. The BIGGER the particle, the SLOWER it’s going to degrade.\n
Dr. Fred Below
PROFESSOR OF PLANT PHYSIOLOGY
UNIVERSITY OF ILLINOIS

We plant wheat into cornstalks and we only disc 1 time. We can’t believe how the chopper grinds-up the stalks. The ride is a lot faster now.

Larry Hocking
MOUNT CARMEL, IL

Ran last fall. Perfect for no-tilling sunflowers the following year. There was bare soil and warmth and dryness.

Howard Sias
CHELSEA, MI

Bought the rolls and they are unreal. There is really nothing like these rolls – it was night and day difference.

Gail Radke
PARKSTON, SD

The stalk rolls are fantastic! What they did for us in the fall was really, really evident in the spring tillage. The residue was reduced considerably.

Dan Labertson
MARTELLE, IA

In my humble opinion, Marion Calmer’s technology has changed the way corn will be grown worldwide for the rest of time.

Paul Harvey
ABC RADIO NETWORK BROADCASTER

Calmer Corn Heads come equipped with Calmer’s patented BT Chopper® Stalk Rolls and Deluxe Residue Management Upgrade Kit.

Standard Features
- 12”, 15”, 20”, 22” and 30” row spacing
- Factory paint to match your combine
- Any color poly deck covers, dividers and wear points to match your combine
- Calmer’s BT Chopper® Stalk Rolls
- Stainless steel back wall, tray, and auger stripper
- Single or dual chain design
- Calmer’s patented 6-Tooth trash reducing drive sprockets for superior stalk ejection
- Outer row strippers offset 1/4-inch for reducing ear loss over the end divider
- Calmer realignment package for ear toss reduction and maximum horizontal flow rates
- Cross auger with 18-inch diameter and 26-inch pitch
- Cross auger adjusted with 1 3/4-inch clearance for reduced ear slicing and cracked kernels
- John Deere gathering chain tighteners
- High-performance gathering chain with 2.25 x 2.5-inch nylon paddles
- Calmer Multi-Zone Beveled Stripper Plates for unraveled husking and leaf ejection
- Oil bath with 80H heavy chain and 1 1/4-inch heavy duty driveline
- Telescoping PTO shafts
- Flashers
- Automatic header height control
- One year parts/labor warranty

Additional Options
- Hydraulic stripper plates
- Stubble lights
- Field tracker/Contour Master™
- Raw Sense (Auto Guidance)

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The information in this catalog reflects my expertise on the benefits of my Residue Management Improvement Parts and how the Calmer BT Chopper® is the most capable stalk roll system in the industry. These parts are Farmer Invented, Farmer Tested, and Farmer Proven to get you the results you really need, while making you money in the process.

Marion Calmer  
CEO – Calmer Corn Heads, Inc.  
President – Calmer Ag Research Center  
Owner/Operator – Calmer Farms