CORN HEAD

Operator's Manual

4000 & 5000 SERIES

Harvestec

2013. 1.351.709
Dear Customer,

The following is some useful information provided to help ensure efficient and safe operation of this corn head.

This manual gives some information for both the flute roll machines (4000 series) and the knife roll machines (5000 series). If there is no separate instruction, apply it to both machine type series.

Read this manual carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage.

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

Since the corn head is universal type carefully read your combine specifications and follow the combine manufacturer’s recommendations for usage, set-up and operation of the combine.
# TABLE OF CONTENTS

1. SAFETY ................................................................................................................................. 4
2. OPERATION AND FUNCTION ......................................................................................... 13
3. IDENTIFICATION AND SPECIFICATIONS ................................................................. 16
   3.1. Identification ..................................................................................................................... 16
   3.2. Specifications .................................................................................................................. 17
4. SHIPPING CONDITIONS .................................................................................................. 18
5. MOUNTING THE CORN HEAD ON THE COMBINE .................................................. 20
6. RUN-IN PROCEDURE .......................................................................................................... 27
7. SETUP PROCEDURE AND ADJUSTMENT OF THE CORN HEAD ......................... 28
8. HARVESTING ...................................................................................................................... 40
9. ROW SPACING ADJUSTMENT ......................................................................................... 42
10. MOUNTING TO ANOTHER TYPE OF COMBINE ......................................................... 44
11. MAINTENANCE AND LUBRICATION ............................................................................ 45
   - Lubricant change frequency ................................................................................................. 48
   - Oil level check frequency .................................................................................................... 48
12. TROUBLE SHOOTING ....................................................................................................... 53
13. OFF-SEASON STORAGE OF YOUR CORN HEAD ....................................................... 54
14. WARRANTY, SERVICE, SPARE PARTS ORDER .......................................................... 54
15. LUBRICATION CHART ....................................................................................................... 55
1. SAFETY

This is the safety-alert symbol. When you see this symbol on your machine or in this manual carefully read the message that follows, and be alert to the possibility of personal injury or death.

Follow recommended precautions and safe operating procedures.

UNDERSTAND SIGNAL WORDS
A signal word – DANGER, WARNING, or CAUTION – is used with the safety-alert symbol. DANGER identifies the most serious hazards.
DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

FOLLOW SAFETY INSTRUCTIONS
Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new components and repair parts include current safety signs.
SAFETY

GENERAL SAFETY GUIDELINES

1. **ALLOW ONLY** trained and experienced operators to operate THIS machine. Operating this equipment safely requires the full attention of the operator. Do not wear entertainment headphones while operating this machine.

2. **ALWAYS DISENGAGE** header drive, shut off the engine and remove key before servicing, adjustment, maintenance and lubrication of the corn head.

3. **STAY CLEAR** of the header when it is in operation.

4. **DO NOT OPEN** safety shields or covers while the corn head is running.

5. **ENGAGE** the lock on the feeder lift cylinder before doing any work under or around the corn head.

6. **CHOPPER KNIVES** must not be installed without security locking pins.

7. **WORN or DAMAGED CHOPPER KNIVES** must be replaced before operation of the corn head. Radial clearance between knife and bushing must be properly maintained. See details in this manual.

8. **NEVER** remove the warning labels from the machine. If they become damaged or illegible order replacement parts as shown in the Figures.

9. **NEVER** remove the safety hydraulic valve of the folding corn heads, located on the upper horizontal beam.

10. **NEVER** close or open the folding corn head when it is in operation.
Carefully read Operator’s Manual before handling the machine. When operating, always observe safety instructions.
SAFETY

FRONT SIDE
One amber reflecting strip is located on each plate of the header extremity light guard facing forward.
FIG A: Two decals are located on the front side of the header rear sheet (on each side of the feeder opening).

![FIG A](image1.png)

REAR SIDE
One red and one orange reflector strip is located on the plate of the header extremity light guard facing rearward.
FIG B. Two decals are located on the rear side of the header back sheet (on each side of the feeder opening).

![FIG B](image2.png)
FIG. C: Two decals are located on the rear of the end shields. 
NOTE: Four-row Corn Head will have one or two decals depending on the quantity of drive shafts.

FIG. D: Two decals are located at the ends on the rear side of the header back panel above the drive shafts.
<table>
<thead>
<tr>
<th><strong>SAFETY</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Do not feed crop material into machine by hand or attempt to manually unplug machine while it is running.</strong> The stalk rolls can feed the crop material faster than you can release your grip on it.</td>
</tr>
<tr>
<td><strong>Be aware that the corn head attached to feeder can unexpectedly drop. Stay clear from beneath this area and always engage feeder lift cylinder safety stop before going under header or feeder.</strong></td>
</tr>
<tr>
<td><strong>Machines equipped with chopper are susceptible to objects being thrown out unexpectedly. Do not stay close to an operating machine. Follow instructions on use and maintenance of chopper knives.</strong></td>
</tr>
<tr>
<td><strong>Movable or stationary parts that can result in pinching action are identified with this symbol. Do not touch these zones (as these parts can still go into motion) until their proper fastening is ensured.</strong></td>
</tr>
<tr>
<td><strong>1.315.438</strong> 2 Decals</td>
</tr>
<tr>
<td><strong>1.315.440</strong> 2 Decals</td>
</tr>
</tbody>
</table>
SAFETY

Engage feeder lift cylinder safety stop before going under header or feeder

Never attempt to open or remove shield while the engine is running. Keep every shield in its place. Avoid direct contact of your hand, leg, any part of your body or cloth with rotating or moving machine parts or elements.

| 1.326.701 | 1 Decals |
|           | 1.326.705 | 2 Decals |

WARNING

To ensure adequate clearance always lower header before folding wings.

| 1.355.485 | 2 Decals |
## LIST OF ACTIVE MACHINE PARTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Active machine part</th>
<th>Danger</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Snapping units, gathering chains</td>
<td>Snatch, entanglement</td>
</tr>
<tr>
<td>2.</td>
<td>Gathering auger</td>
<td>Cutting, entanglement</td>
</tr>
<tr>
<td>3.</td>
<td>Outside shields</td>
<td>Nip, bruise</td>
</tr>
<tr>
<td>4.</td>
<td>Side chain drive</td>
<td>Snatch, entanglement</td>
</tr>
<tr>
<td>5.</td>
<td>Drive shafts</td>
<td>Entanglement</td>
</tr>
<tr>
<td>6.</td>
<td>Inner space between combine and corn head</td>
<td>Crushing</td>
</tr>
<tr>
<td>7.</td>
<td>Stalk chopper</td>
<td>Cutting, impact from unexpected flying objects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(shreddings)</td>
</tr>
<tr>
<td>8.</td>
<td>Shields, snouts</td>
<td>Slipping, stumbling</td>
</tr>
<tr>
<td>9.</td>
<td>Lifted machine</td>
<td>Crushing</td>
</tr>
</tbody>
</table>

![Diagram of machine parts](image-url)
Illustration below shows placement of safety messages
2. **OPERATION AND FUNCTION**

**Function**

The Harvestec corn head can be mounted on most combine makes, for harvesting corn in row spacing from 50cm (20”) to 100cm (40”). Corn ears are detached from the corn stalks as is shown on the illustration below. The corn stalk enters the area between the snapping rolls (1,2) which counter-rotate relative to each other, and are pulled downwards between the snapping plates (3) by the rolls (1,2). This downward directing action causes the corn ears (5) to impact the snapping plates (3), detaching the ear from the stalk in the process. The detached ears are moved rearward by the gathering chains (6) into the gathering trough (7) and are conveyed to the combine feeder house by the cross auger conveyor (8). Corn stalks are discharged downward by the snapping rolls (1,2).

If the corn head is equipped with optional stalk chopper, the stalks are chopped into small fragments by this chopper, situated under the snapping rolls.

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**Attention!**

The corn head can only fulfil its function if attached to the combine. For safe corn head performance, it is essential to respect the instructions on the use of the corn head and its operation when mounted to the corn combine. Only qualified operators should operate the machine.
Operation
The corn head is driven from the drive shaft of the combine feeder house through a universal drive shaft or chain shaft coupling. Power is transmitted from the drive shaft by a chain encased in an oil bath to a through shaft of the snapping units. Torque limiting clutches transmit power from the through shaft to each snapping unit.

The gathering auger is chain driven through a torque limiting clutch from the left side snapping unit drive (or from both sides of 8-row -wide and 12-row corn heads).

Consider and follow each of the following sequence guidelines before starting operation of the corn head:

- after a short sound signal start the engine of the combine
- after ensuring that no one is close to the corn head and combine, lower the corn head into operation position using the combine “lower” function switch.

1. Operate the corn head only in the specified harvesting position
2. Engage the feeder house drive clutch (of the combine) and begin harvesting.
3. Operate at a ground speed that does not exceed that suitable for the combine and corn head capacity and ground conditions.
4. Emergency stop
During harvesting be aware of unexpected events that may take place requiring immediate shutdown of the forward movement or feeder house drive of the combine.
Such events could be:
- accident
- foreign materials in the crop (irrigation pipe, gas tube, rocks etc.) which could enter the corn head
- excessive crop loading (action of torque limiting clutches)
- clogging or blockage
- other breakdown or fault
The corn head has no specific emergency stop system. The emergency stop is actuated using the combine systems located in the combine operator’s cab. Understand and respect the relevant instructions of the combine emergency stop procedures as related to the corn head and its drives.

Never leave the combine cab while corn head is in operation.

Non-conforming use:

The corn head is designed only for harvesting in the direction of planting (row dependant) and for the specified row widths. Harvesting performance can greatly deteriorate if the corn head is used in other conditions for which it is not intended. Deterioration in performance can result if:

- The corn head is positioned too high or too low during harvesting
- The corn head is used to harvest crops other than corn.
- Excessive ground speed

Normal harvesting speed is 6-7 km/h (3.6 to 4.3 mph). Higher speed can result in higher grain loss and reduction in stalk chopping performance.
3. IDENTIFICATION AND SPECIFICATIONS

3.1. Identification

The universal mounting of the corn head permits it to be attached to specific combine types with the appropriate mounting kit. A mounting kit is assembled to the corn head at the factory as ordered.

A data plate is located on the left side of the machine’s upper beam.

The model number refers to the following: for example: HARVESTEC 4308

- 4308 8-row fixed frame with 30” row spacing
- 4308C 8-row fixed frame with 30” row spacing and stalk chopper
- 4308FC 8-row folding frame with 30” row spacing and stalk chopper
### 3.2. Specifications

#### 3.2.1. Dimensions

<table>
<thead>
<tr>
<th>Row Spec</th>
<th>Model #</th>
<th>Chop</th>
<th>Weight</th>
<th>Width</th>
<th>Length</th>
<th>Height</th>
<th>Height in shipping condition</th>
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<td>12R22</td>
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<td>3980</td>
<td>8756</td>
<td>7620</td>
<td>25</td>
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</tr>
</tbody>
</table>

#### 3.2.2. Gearbox Lubricant: EP-00 (liquid) grease, and SAE 80W-140 standard lubricating oil.

#### 3.2.3. Pitch of the gathering auger: 560 mm (22”).

#### 3.2.4. Input shaft speed of the snapping unit drive: 490-510 rpm

#### 3.2.5. Length of chopped stalk: average 70 mm, depending on crop conditions.

#### 3.2.6. Adjustment of the snapping plate: central in-cab control switch.

#### 3.2.7. Available row spaces: 20” – 22” – 28” – 30” (50.8 cm – 56 cm – 70 – 76.2 cm) with addition of specified snouts and dividers.
4. **SHIPPING CONDITIONS**
The corn head is delivered mounted on a shipping skid suitable for handling by forklift. Lifting rings are also provided suitable for overhead lifting.

Ensure that the lifting equipment is adequate for the weight indicated on the serial data plate. When using a forklift under the skid, ensure that the forks are spaced evenly about the centerline of the corn head. Recommended position of the forks is indicated, as shown in the photo below.
When using a crane, the lifting cable is to be attached to the lifting rings on the bar which is attached to the upper end of the snapping units. The lift points are indicated with a label on the bar.

When lifting with a crane, the cables must be long enough such that the angle between them does not exceed 90°. The minimum cable length to meet this requirement is:
- for 6 and 8-row fixed and folding frame: 1100 mm (44”)
- the 12-row fixed and folding frame: 2500 mm (98”)

The cable length should be equal on both sides.

**NOTE: Only use a cable with specified capacity that meets the weight of the machine.**

When lifting a 12-row corn header use four cables as shown in the photo below.
5. **MOUNTING THE CORN HEAD ON THE COMBINE**

While the corn head is mounted on shipping stand
- Remove the parking stands (and snouts if attached to corn head) from their stored shipping position and install parking stands in their retracted (transport) position
- Carefully lower the machine to horizontal position with a cable attached to lifting hooks.
- Remove the shipping skid after the machine is resting securely in horizontal position.

The corn head is shipped from the factory with mounting kit installed as ordered. If the corn head will be mounted to a different combine than ordered, remove the factory installed mounting kit and install the required mounting kit as recommended for your combine with all the specified drive line shielding.

After the above operation and with the specified mounting kit securely attached to the Corn Head, engage and securely attach the Corn Head to the combine according to Combine Manufacturer’s instructions. Engage the feeder lift cylinder safety stop and secure the lower latches.

**John Deere**

*9000 series*

Insert the spring pivot pin (2) of the feeder house into the hole of the retainer plate (1) which is assembled on the lower support. If required, adjust the pin alignment.
CASE IH

Adjust the nuts on the U-bolts (1) as required to provide adequate clamping force. Refer to the combine Operator’s Manual for the correct adjustments and latching methods.

New Holland (CR & CX)

Adjust the position of the latch retainer (1) to ensure that the feeder house lever is fully engaged. If the proper position is not attainable, change the original arm of the feeder house with the arm supplied as an attachment.
MF 8500 Series

Adjust the nuts on the U-bolts (1&2) as required to provide adequate clamping force (3). Refer to the combine Operator’s Manual for the correct adjustments and latching methods.

MF 8680; 8780; 9000 Series
Gleaner R; Gleaner C
MOUNTING TO THE COMBINE

**Claas Mega, Claas Dominator, Claas Lexion**

**Remove the Lifting Bar**

Remove the lifting bar from the snapping unit ONLY after the corn head is properly attached and secured to the combine, and the combine feeder lift cylinder stop is engaged,
MOUNTING TO THE COMBINE

**Attach the Snouts**
Assemble the snout at the front attaching points using the pivot bolts supplied. Use Loctite 243 to fix the pivot bolts adequately. Required torque value is 100 Nm.

**Connect Header Drive Shafts**
Connect the drive shafts and ensure that the protective shields are properly in place and that all rotating parts are adequately shielded. The shafts are installed at the factory with protective shielding as supplied by the shaft Manufacturer.
Position the protective shield of the drive shaft, according to the combine’s operator’s manual, after connecting to the feeder drive shaft.

To prevent the rotation of the header drive shaft shield, attach both original chain restraints to the corn head.
MOUNTING TO THE COMBINE

Connect the electric snapping plate adjuster according to the following figure.

The plug is connected to pin numbers 1 and 7.

Connect the hydraulic system (for folding corn heads)

The hydraulic source is typically the combine reel fore/aft function.
The schematic below illustrates the hydraulic system of the folding corn head.
6. **RUN-IN PROCEDURE**

A 20 minutes “trial run” is suggested after the initial mounting.

Prior to the trial run, perform “lubrication procedure” as described in Section 1.1. "Maintenance and Lubrication”. Gearboxes and chain cases are filled with oil at the factory but oil levels should be checked in the sight gage before beginning the trial run.

Start the combine and engage the drive with the engine speed at low idle, and run it slowly. Avoid starting the drive at high engine speed as the inertia load from acceleration can be 8-10 times more than the load from steady speed operation. High-speed start-up may cause damage to the drive system and safety clutches.

After the slow speed start, increase the engine speed to a medium level and listen for abnormal sounds. If no irregularity is observed, the engine speed can be increased to maximum level for about 10 minutes.

When the trial run has been completed, shut off the engine, remove the key and check the temperature of the drive elements, bearings and drive units. No irregular overheating should occur.
7. SETUP PROCEDURE AND ADJUSTMENT OF THE CORN HEAD

7.1. Frame
The machines are provided with parking stands, which must always be used when the machine is to be disconnected from the combine. Before detaching the corn head from the combine, adjust the parking stand position such that the distance between the ground and the lower support of the corn head is about 30 cm (12 inches). Adjust the stand position by removing and replacing the retaining pin, and re-installing the hairpin.

7.2. Gathering auger
The gathering auger is driven through a torque-limiting clutch that can disengage excessive loads on the drive. This clutch is located on the left-hand side, but an additional clutch is located on the right hand side in the case of larger corn heads with center bearing.

In some conditions it may be necessary to change the speed of the gathering auger. An additional sprocket is available to permit changing the auger speed to match field conditions.
In some cases it may be necessary to adjust the torque of the clutch to higher value. This can be done by tightening the clutch spring bolts which can be accessed through a window on the side cover shield. **Tighten each spring bolt 1/6 revolution only and evaluate the performance. Repeat if necessary taking care not to over tighten the springs.**

In case of friction-disk replacement, tighten all 6 bolts to coil bind position! Loosen all 6 bolts 1 full turn! Adjust further as necessary required!

Finger or auger type discharges are available for the auger “feed section” at the combine feeder to satisfy the combine and field requirements. Only the auger type discharge is available for larger corn heads with center auger bearing.
To adjust the auger, loose the 3 hex. nuts (2) and use the hex. head bolt (3) to move the auger into adequate position. There is an access window (4) in the frame to ease the adjusting procedure. If you want to lift the auger without rearward movement, use only one bolt (5) in the medial hole of the bracket (6) to enable the whole assy to turn around this axis.
7.3. Chain Case Drives

Sprockets are installed at the factory to match the combine mounting kit such that the speed of the snapping unit input shaft is about 500 rpm. This sprocket selection should provide optimum performance in normal conditions.

Replaceable sprockets are available to permit change of speeds to satisfy varying harvesting conditions.

Do not over tighten the drive chain. Adjust the idler only to remove slack in the chain. Check chain tension after the first 50 hours, then in every 150 hours.

To tension the chain:
- Put the corn head into harvesting position
- Remove the chain access cover to expose the idler
- Loosen the clamping bolts (1)
- Adjust the nuts (2)
- Apply RTW Silicone sealant to the cover and housing joint surfaces and replace the cover
- Check to ensure there is no leakage
Initial factory fill is 3 litres of SAE 80W-140 oil (optionally SAE 80W-90 can be used). Recommended oil level is mid-position on the window of the oil level indicator on the chain case cover.
7.4. Snapping units

7.4.1. Adjustment of the snapping rolls

Three important settings must be observed when installing or adjusting the snapping rolls.

7.4.1.1. Distance between snapping roll shafts

Adjust the shafts parallel to each other by setting 57-59mm (2.25 inches) between the two bearing housings as shown in the illustration (below). This distance can be increased or decreased by using a washer spacer, as required.

![Diagram of snapping unit shafts](image)

7.4.1.2. Labyrinth seal

**4000 Models (fluted roll):** Two needle bearing are used to support the spiral end of the snapping roll. Two gasket rings and labyrinth seal protect it. This seal is effective only if the distance between the stationary bearing block and the rotating snapping roll does not exceed 1 mm (.04 inches)

![Diagram of labyrinth seal](image)

Ensure that the snapping rolls can turn freely and do not touch the stationary bearing block. Adjust the clearance distance to between 0.5 and 1 mm (.02 and .04 inches). Install seals such that the springs of the seal face externally to prevent ingress of dust, water and other foreign material into the needle bearings.

**5000 Models (knife roll):** Two sealed double ball bearings are used to support the spiral end of the snapping roll, and a labyrinth seal protect them. The labyrinth can be cleaned by adding grease through the grease nipple. The distance (0.5-1mm) cannot be adjusted by design, it has to be checked only, because design dimensions of parts ensure the correct gap.
7.4.1.3 Alignment

The supporting bearing block is mounted on the snapping roll frame with slotted holes. Set the position visually.

7.4.2 Snapping plate settings

The basic factory setting is 27-32 mm (1-1/16 to 1-1/4 inches). For proper operation, the snapping plate spacing should be 5 mm (3/16 inches) closer together at the front end than at the rear end. The central snapping plate adjusting mechanism can change the spacing from the nominal position 9 mm (1/4") closer together and 10 mm (3/8") farther apart. Based on the above data set the mechanism as follows:

- Set the in-cab adjustment to minimum position.
- Set the fixed snapping plate relative to the movable one (18 mm at the front and 23 mm at the back). It can be re-positioned by loosening the two retaining screws. After setting, tighten the screws.
- In-cab operation should result in the 27-32 mm distance. Effort should be made to set the same value on each row to ensure the same operation of all the snapping units. With regards to the dimension marks in the Figure, after the initial setting, A=18 and B=23; after the adjusting the central mechanism, A=27 and B=32.
7.4.3 Adjustment of vine knives

The knives are made of hardened spring steel. Proper adjustment will prevent material from wrapping on the snapping roll.

The gap between the vine knife and the stalk roll should not exceed 0.5 mm (.02 inches). This gap should be set on one rib and all rib clearances should be checked by the rotation of
the roll to ensure no interference. Adjustment is made by loosening the M-8 screws. To make a fine adjustment, 2 relief holes are provided.

7.4.4 Setting the chain tension of the gathering chain.

The basic setting of the compression spring length is 164 mm (6 ½"). Elongation of the chain after use will increase this value. The length dimension should be reset after 180-200 hours of operation if working in severe conditions.

When harvesting laid or lodged corn stalks with a loose chain, the feeding finger of the chain can jump over the stalks and lead to plugging of the snapping unit.
7.4.5. **Gearbox-Adjustment of the keyway position and gear backlash**

Alignment of gears can be determined by visually aligning the relative keyway positions as shown below.

The amount of gear backlash relative to the elementary tooth and can be measured by rotating the gear on one shaft relative to the gear tooth of the mating shaft. 1° of rotation sets the required backlash. The setting can be varied by adjusting the quantity of gasket shims (as shown in the Parts Catalog).

![Diagram showing keyway positions and gear backlash](image)

7.5. **Header Drive Shafts**

The “Walterscheid” drive shafts, if fitted, require lubrication every 250 operating hours.

At the beginning of each season, remove the PTO shaft and grease it according to the instructions on the label supplied on the shaft cover by the shaft manufacturer.
7.6. Adjustment of the snout position (Plastic Snouts)

Position the corn head, when mounted on the combine feeder house such that the distance between the skid shoe of the snapping unit and the ground is 8 cm (3 ¼”), and with skid shoe of the snout just touching the ground.

Adjust the snout linkage to this position.

To change the vertical position of the snout, loose the locking nut (1) and turn the adjuster nut.

Skid shoe is not adjustable.

Manufacturer and Distributor are not responsible for incorrect setting of snout position.
There are three available positions of the end snout (Fig. 1-3 – left end) which can be available by a lock nut and a hex. head bolt (1) used in the correct hole. Fig. 1 shows the snout in the center position and at once this is the innermost position and the factory assembled one in case of 20” and 22” machines. Fig. 3 shows the snout in the outermost position which available and this is the factory assembled position in case of 30” machines. Fig. 2 shows the snout in a half-way position and it can be eventuated by the hex. head bolt (1) used in the medial hole. Use Loctite 243 to fix the hex. head bolt.
8. **HARVESTING**
The corn head is ready for harvesting after completing the preceding instructions in this manual, which refer to Mounting, Run-in, and Set-up and Adjustment Procedure.

- Always be aware of the presence of the stalk chopper, if fitted, when putting the corn head into harvesting operation.
- The corn head should be used only when in functional condition and operating position.

Specified daily maintenance, correct settings and safe operation are required to ensure that the stalk chopper knives can operate properly and safely. Always consider possible circumstances where the knife can impact foreign material, stone or other objects laying on the ground. Any such impact can result in a piece separating from the hardened knife blade.

**ALWAYS STAY CLEAR** of the corn head while in operation. Bystanders should always be more than 30 m (100 ft) from the corn head while it is in operation.

- After 1 hour of initial operation, stop the machine, remove the combine engine key, and check the following:
  - Temperature of the drive gearboxes
  - Loose hardware,
  - Chain tension
  - General visual inspection

  If this inspection reveals any abnormal result, look for the cause of the abnormality or contact your dealer.

- If the crop is severely lodged or laid, remove the rubber ear saver from the divider.
**HSA-stalk chopper**

This specially constructed unit is integral with and driven from the snapping unit gearbox. This enables the high-speed knives to evenly chop corn stalks while they are being directly fed by the snapping roll.
9. **ROW SPACING ADJUSTMENT**

Matching of the corn head row-spacing to the corn rows is necessary for optimum performance, and is of greater importance with wider corn heads. Improper matching can result in premature wearing of the snapping roll nose supports, and the leading edges of the snapping plates.

Row-spacing of a 12 row header is not adjustable.

Central plastic snouts, bracket and shields are not adjustable. Order these parts as required.

The spacing of the snapping units can be adjusted as follows:

1. Remove the shields from the machine by disassembling the hinge rod
2. Remove side drive chain case
3. Remove drive hub and shaft
4. Remove shield plate (omitted if the corn head was originally assembled for row spacing of 80 cm (32 “))
5. Remove shields over drive couplers and loosen screws on drive unit coupler

6. Remove screws on snapping unit connection bracket

7. Loosen nuts on the clamp of the adjusting tube

9. Loosen snapping plate arms

When the above mentioned is completed the snapping units can be moved sideways to the correct position. After the adjustment of the row spacing, replace the elements in reverse order and replace the row-specific parts.

Observe the snapping plate set-up procedure in section 4.2.
10. MOUNTING TO ANOTHER TYPE OF COMBINE

The mounting kits for various combines are shown in the Spare Parts Catalog. Order the relevant mounting kit from your dealer.

When assembling to another type of combine, be sure to assemble all of the protective shields. Ensure that the lower attachments and drive shaft connection are securely in place.
11. MAINTENANCE AND LUBRICATION

11.1. Frame
The frame of the non-folding machines does not require any special maintenance.
The folding mechanism of the folding corn head should be greased once a season.

11.2. Gathering auger
The driving chain of the gathering auger should be greased every 50 hours, and the chain tension should be checked daily.
The drive jaw of the folding corn head should be greased daily.
Before folding into field operation, ensure that the position of the drive jaw is as shown in the figure.

**11.3. Drive Chain**

Main drive chains are enclosed in an oil bath. Check the chain tension (see 1, 2) and the oil level as described in Section 3.3 Setup Procedure and Adjustment.
11.4. Drive connecting elements

11.4.1 Drive Shafts:
   • Grease the drive shafts every 250 hours of operation.
     At the beginning of each season, remove the PTO shafts and grease them according to
     the instructions on the label supplied on the shaft cover by the shaft manufacturer.

11.4.2 Chain coupler connecting the feeder house shaft (Deere without 21T Spline)
   • Grease daily.

11.4.3 Clutch jaws joining snapping unit drives on the folding corn heads.
   • Grease the surface of the clutch jaws daily.

11.4.4 Clutch jaws of folding corn head auger
   • Grease surface of the clutch jaws every 50 hrs
11.5. Snapping unit

11.5.1. Main gearbox and chopper gearbox

<table>
<thead>
<tr>
<th>Lubricant change frequency</th>
<th>Main gearbox</th>
<th>Chopper gearbox</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP-00 (liquid) grease</td>
<td>every 5 years</td>
<td>every 5 years</td>
</tr>
<tr>
<td>quantity</td>
<td>3 kg (106 oz)</td>
<td>-</td>
</tr>
<tr>
<td>SAE 80W-140</td>
<td>-</td>
<td>0.6 kg (21 oz)</td>
</tr>
<tr>
<td>Lubricant level check</td>
<td>every 50 hours</td>
<td>every 50 hours</td>
</tr>
<tr>
<td>frequency</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Visually check gearboxes daily for signs of external leaks.
If leaks are apparent, check level daily.
If the lubricant level is too low add lubricant to the level between the min. and max.

Snapping unit gearbox - grease filling screw
Snapping Unit Gearbox - grease drain screw

**Dipstick position in gearboxes:**
Both snapping unit and chopper gearbox grease levels can be checked with a dipstick. The dipstick is integral with one of the bearing housing mounting screws. See the following photos. The grease level must be maintained between the minimum and maximum marks on the dipstick.
Procedure to check the grease level (field operating position):

1. First screw off the dipstick.
2. Clean the surface and fill back to base.
3. Wait a second and get out the dipstick.
4. See the level.

Main gearbox

Chopper gearbox
Chopper knives and their mounting:

- Check knife condition daily.
- Never work with damaged knives.
- The radial clearance between knife and bushing should not exceed 1 mm (.04”). If clearance exceeds 1 mm (.04”), change both knife and bushing.
- Knives must be changed only in pairs because of their high rotational speed and balance requirements.
- Never operate the chopper without the specified locking pin at bottom end of knife support shaft.
- Tightness of the knife support bolts should be checked daily.

Neither the Manufacturer nor Distributor takes any responsibility for wear or failure resulting from improper maintenance or lubrication.

11.5.2 Snapping roll

11.5.2.1 On the 4000 series machines grease the needle bearing of the snapping roll daily
 Apply grease until it appears at the labyrinth seal. This will ensure flushing out the old grease and fully replacing with new grease.

The locations of the grease fitting of the snapping roll bearing
11.5.2.2 The 5000 series machines have sealed ball bearings in the front bearing houses. Grease the labyrinth – through the grease nipples – every 50 hours.

11.5.2.3 Flute and knife bolts

Check visually for wear the head of the bolts that fasten the snapping roll flutes or knives. Replace worn bolts before excessive wear prevents bolt removal.

- Check the bolts every 50 hours
- Replace only with the bolt as specified in the Parts Catalog. Bolt specification is shown below.

Hex. bolt specifications:

4000 series: 1-2: M10x25 / 10.9 – DIN933
3: M10x20 / 10.9 – DIN933
5000 series: M12x1.25x25 / 8.8 – DIN961

Quality: Rust protected
Torque values: M10: 63 Nm
M12: 95 Nm

Wear at the leading edge of the snapping roll flutes may be obvious after 350-700 acres of harvesting.
The degree and rate of wear will vary according to crop and soil conditions. This wear will not influence the function of the corn head.

11.5.3 Gathering chain

- Lubricate daily using synthetic or vegetable grease or oil.
- Check tension regularly according to section 4.4. “Set-up and Adjustment Procedure”.
12. TROUBLE SHOOTING

12.1 A large quantity of ears builds up between the gathering auger and feeder house. This can result from improper setting of the combine for corn harvesting operation, including improper concave spacing or improper angle of the feeder house front face. Ensure that the combine is set for corn harvesting in accordance with the instructions and settings as recommended in the combine Operator Manual.

12.2 In laid or lodged corn stalks, the stalks do not feed properly into the snapping unit. Remove the rubber ear savers. See section on Harvesting.

12.3 Snapping unit becomes plugged while harvesting laid or lodged cornstalks. Check the tension of the gathering chain. See “Set-up and Adjustment Procedure”, section 4.4.

12.4 Stalks, grass or weeds wrap on the snapping roll. Set gap of vine knives. See “Set-up and Adjustment procedure” section 4.3.

12.5 Gathering auger does not rotate. Check setting of the auger drive torque limiting clutch. See “Set-up and Adjustment procedure” section 4.2.

12.6 Ears are broken or split in the gathering auger. Reduce the rotational speed of the auger, using the replaceable sprocket available from Parts. See “Set-up and Adjustment Procedure”, section 4.2.

12.7 Difficulty in keeping the corn head properly on the row. Check that corn head row spacing matches the corn row spacing.
13. **OFF-SEASON STORAGE OF YOUR CORN HEAD**

When the harvesting is finished, thoroughly clean the machine and remove all remaining stalks. Carefully inspect the machine to ensure it will be in proper operating condition for the next season. Repaint any paint-damaged area to prevent rusting. If this is not possible, coat the unpainted area with rust protector. Lubricate the slides on the gathering chain front idler.

If possible, store the corn head in a covered place. If this is not possible, remove the gathering chains, grease them and store in a dry, covered area.

14. **WARRANTY, SERVICE, SPARE PARTS ORDER**

Contact your dealer or distributor about issues concerning warranty, or service.

The Manufacturer and Distributor take no responsibility for failures, wear, or poor performance resulting from improper maintenance, settings, storage or incorrect usage of the Corn Head.

The warranty does not apply to wear items.

When ordering spare parts, always identify the corn head by:
- type
- serial number
- part number as shown in the Parts Catalog.