C Series Corn Header

Operator's Manual
214901 Revision A

The harvesting specialists.
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 regarding the C-series corn heads.

**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 can be mounted to many models of combines,** carefully read your combine specifications and follow the combine manufacturer’s recommendations for usage, set-up and operation of the combine.
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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 decals are located near specific hazards. General precautions are listed on CAUTION safety decals. 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 decals. Keep safety decals in good condition. Replace missing or damaged safety decals. Be sure new components and repair parts include current safety decals.
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 service, 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 back of the corn head.

10. **NEVER** close or open the folding corn head when it is in operation.
SAFETY DECALS

Carefully read Operator’s Manual before operating the machine. When operating, always observe safety instructions.

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

![FIG A](image)

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 DANGER decals are located on the rear side of the header back sheet (on each side of the feeder opening).

![FIG B](image)
FIG. C: Two DANGER decals are located on the rear of the end shields.

FIG. D: Four DANGER decals are located at the ends on the rear side of the header back panel above the drive shafts and on the hinged shields at both sides.
FIG. E: Two WARNING decals are located on the hinged shields at both sides.

FIG E (chopper models only)

FIG. F and FIG. G: Two WARNING decals are located on the hinged shields at both sides.

FIG F (chopper models only)  FIG G  11670W1
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 clothing with rotating or moving machine parts or elements.

To ensure adequate clearance always lower header before folding wings.
# 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>8.</td>
<td>Shields, snouts</td>
<td>Slipping , stumbling</td>
</tr>
<tr>
<td>9.</td>
<td>Lifted machine</td>
<td>Crushing</td>
</tr>
<tr>
<td>10.</td>
<td>Hydraulics</td>
<td>High-pressure fluid injection</td>
</tr>
</tbody>
</table>
Illustration below shows placement of safety decals

The figure shows the placement of machine safety decals.

Attention! The figure shows only the labels on one side of the header, but in reality the decals must be placed symmetrically on both sides.

Type Numbers:
C3006C
C3008
C3008C
C3012C
C3012CF
C2212C
C3006
C2208
C2208C
C3008F
C3008CF
C2012
C2012C
C2212
C3012
C3012F
2. **OPERATION AND FUNCTION**

The MacDon corn head can be mounted on most combines. 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 auger trough (7) and are conveyed to the combine feeder house by the cross auger (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, located under the snapping rolls.

![Illustration of corn head and stalk chopper](image)

**Attention!**

For safe corn head operation, it is essential to respect the instructions on the use of the corn head when mounted to the combine. Only qualified operators should operate the machine.
Operation
The corn head is driven from the combine feeder shaft through a universal drive shaft or chain shaft coupling. Power is transmitted from the drive shaft by gears encased in an oil bath to a shaft which passes through the snapping unit. Torque limiting clutches transmit power from the shaft to each snapping unit.

The auger is chain driven through a torque limiting clutch from the left side snapping unit drive (or from both sides of large corn heads).

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

- after a sounding horn 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 combine feeder drive 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. Perform an emergency stop

During harvesting be aware of unexpected events that may take place requiring immediate shutdown of the forward movement or combine feeder drive. 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.

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.
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 corn head upper beam.

![Data Plate Image]

The model number refers to the following: for example: MacDon C3012CF
- C3012 12-row fixed frame with 30” row spacing
- C3012C 12-row fixed frame with 30” row spacing and stalk chopper
- C3012CF 12-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>Chopper</th>
<th>Weight</th>
<th>Transport Width</th>
<th>Width</th>
<th>Length (mm)</th>
<th>Length in shipping condition (mm)</th>
<th>Height (mm)</th>
<th>Height in shipping condition (mm)</th>
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<td>C3006</td>
<td>No</td>
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<td></td>
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<td>4800</td>
<td>4609</td>
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<td>2970</td>
<td>1100</td>
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<td></td>
<td>C2212C</td>
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<td>3780</td>
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<td>9150</td>
<td>9180</td>
<td>30.1</td>
<td>2970</td>
<td>1100</td>
<td>1449</td>
</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: 550 rpm

3.2.5. Length of chopped stalk: average 50 mm, depending on crop conditions.

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

3.2.7. Available row spacing: 20” – 22” – 30” (50.8 cm – 56 cm – 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.

![Diagram of forklift lifting rings and recommended fork position](image)

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:

- 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 from the shipping position and install parking stands in their retracted position
- Carefully lower the corn head 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.

5.1. Mounting the corn heads on the combine

5.1.1 John Deere 60, 70 and s 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.
5.1.2. CASE IH 1000-2000

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.

5.1.3. CIH Flagship & Legacy; NH CR & CX; similarly MF 9000, & 9500 Series; R55/65/75, R66/76, & S Series

Adjust the position of the latch retainer (1) to ensure that the proper position is not attainable, change the original supplied as an attachment.
5.1.4. 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.

5.1.5. Claas Lexion 500, 600 and 700 series
5.2. Other steps following the securing of the adapter on the combine

Attach the Snouts
Place the central snouts onto the rear divider pins (1). For easier mounting, first loosen the rear divider pin which is secured by a hex bolt (2), secure the central snouts from the outside with Allen-head bolts (3) and then tighten the loosened hex bolts. Refer to the parts manual.

Adjust the arm which is used for central snout support (4), to the desired height and then secure it with a hex bolt (5) and a lock nut (6). If finer adjustment is needed, this can be done with a nut in the back (7). The recommended settings can be found at chapter 7.7.

The outer snouts are installed in a similar way. The outer LH and RH snout supports are unique and must be installed correctly to properly contact the underside of the snouts.

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.
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 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.

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 lift function.
The schematic below illustrates the hydraulic system of the folding corn head.
The right order of the cylinders movement during folding is the following:

1. The locking cylinders (D1, D2) and plastic hinged dividers cylinders (B1, B2) has to extend until the end position.
2. After 1. point the lifting cylinders (A1, A2) must fold the wings.

If the lifting cylinders start before the other cylinders (D1, D2, B1, B2) reach their end positions, then the pressure relief valve’s adjuster screw has to be turned a half turn clockwise. After this re-attempt the folding. Repeat this steps until the previously mentioned order is achieved.
6. **RUN-IN PROCEDURE**

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

Prior to the trial run, perform a full lubrication procedure as described in Section 1 "Maintenance and Lubrication”. Gearboxes are filled with lubricant at the factory but levels should be checked before beginning the trial run.

Start the combine and engage the drive with the engine speed at low idle, and run the corn head 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 gearboxes, bearings and drive units. No irregular overheating should occur.
7. **SETUP PROCEDURE AND ADJUSTMENT OF THE CORN HEAD**

7.1. **Frame**

The corn head is provided with parking stands which must always be used when it 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. Auger

The 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 on larger corn heads. In some conditions it may be necessary to change the speed of the auger. The driver sprocket can be reversed to provide an alternate speed to suit field conditions:

- **High speed** - 16 tooth (factory)
- **Low speed** - 14 tooth (alternate for lodged corn)

Fix frame header: for adjusting the auger use the following screws - no. 3 and no. 6.
Folding header: the auger cannot be adjusted!

Gap between flighting and auger pan at minimum clearance
Check factory setting 1.0” – 1.25” (25 mm – 32 mm)
Check clearance at both ends of auger and adjust if necessary

1. Chain drive connecting link
2. Adjusting plate nuts
3. Auger raising / lowering with M12 nuts
4. Chain tensioner setting
5. Chain guidance
6. Auger fore/aft adjusting bolt.
Augers will come standard from factory with full flighting installed.
Options include fingers and paddles in place of full flighting.
Fingers are required in very dry, fluffy corn where positive conveyance to the feederhouse is needed.
Paddles can be put over the fingers if wrapping becomes problematic.

<table>
<thead>
<tr>
<th>Finger Type</th>
<th>Full Flighting Type</th>
</tr>
</thead>
</table>

7.3. Timings of the auger:

7.3.1. Double Auger timing

Flighting should be offset by 180° for paddles and fingers.
To adjust:
Remove auger chain and adjust rotation of auger until desired position, or turn driveline on one side of header only until desired position is achieved.
7.3.2. Folding wing timing

Distance between flighting should be set in a way that maintains the “continuity” of the auger flighting.

The distance between the flighting should be 21”-23”.
Ensure the wing is engaging the center section when checking timing.
To adjust timing, remove the dog coupler on wing and rotate it in the appropriate direction on the hex shaft and reinstall.
7.3. **Input Gearbox Drive**

The input gearboxes are connected by a double joint coupling drive or shaft (1) depending on the combine. The gearbox assemblies (2) are selected to provide a nominal snapping unit input speed of 550 rpm for each combine. Gearboxes can be exchanged as necessary.

The input gearbox drive does not require any additional adjustment.
7.4. Snapping units

7.4.1. Snapping rolls adjustment

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 62 mm (2.45”) between the two bearing housings as shown in the illustration below. This distance can be increased or decreased by using washers as required.

Two sealed double ball bearings are used to support the spiral end of the snapping roll. The bearings are protected by a labyrinth filled with grease. The labyrinth can be flushed by adding grease through the grease nipple. The distance (0.5-1mm) is for reference only, because design dimensions of the parts ensure the correct gap.
7.4.2. Snapping plate adjustment

The nominal factory setting is 27 mm (1-1/16”) at the front and 32 mm (1-1/4”) at the rear. For proper operation, the snapping plate gap should be 5 mm (3/16”) tighter at the front than at the rear. The in-cab snapping plate adjusting mechanism can change the gap to 9 mm (5/16”) tighter and 10 mm (3/8”) wider than the nominal position. Set the mechanism as follows:

- Set the in-cab snapping plate adjusting mechanism to the minimum snapping plate gap.
- Refer to the figure below. Adjust the fixed snapping plate (2) relative to the movable snapping plate (1) to provide a gap of 18 mm (3/4”) at the front (dimension A) and 23 mm (15/16”) at the rear (dimension B) by loosening the retaining bolts (3). When the adjustment is correct retighten the bolts. Repeat for all remaining row units.
- In-cab operation should result in the nominal gap of 27 mm (1-1/16”) at the front and 32 mm (1-1/4”) at the rear in the mid-range of travel.

The Snapping Plate Indicator Cable’s top should be lubed to prevent off-season freezing.
7.4.3. Vine knife adjustment

The gap between the vine knives and the stalk rolls should not exceed 1 mm (.04”). This gap should be set on one rib and all rib clearances should be checked by the rotation of the rolls to ensure there is no interference. Adjustment is made by loosening the M-8 screws (3). Relief holes are provided to make a fine adjustment.
7.4.4. Gathering chain adjustment

The gathering chain tension is maintained automatically by an enclosed spring on the front idler. A tool is provided to compress the spring for service.

How to use the Gathering chain remover tool:
1. Install the Gathering chain remover and fix it in the holes on the bottom of the Snapping unit frame.
2. Take the arm of the Gathering chain remover into the carriage (marked surface)!
   Press the long arm of the remover, and fix the remover!
   Remove the gathering chain!
**7.4.5. Gearbox timing and backlash adjustment**

Snapping roll gear timing is done by visually aligning the hex shafts as shown below. The backlash can be determined by rotating one gear relative to the other. There should be 1° of free rotation between the gears. The backlash can be increased by adding gasket shims as shown in the Parts Catalog.
7.5. **Header Drive Shafts**

The Walterscheid brand drive shafts require lubrication every 250 operating hours. Remove the shaft annually and grease it according to the label instructions provided by the shaft manufacturer on the shaft cover.

7.6. **Clearance lights**

Clearance lights position must be changed from shipping to field position. Simply remove four nuts on U-bolt clamps securing tube and rotate light 90 degrees.
7.7. Plastic snout adjustment

Lower the combine feeder until the distance between the skid shoe of the snapping unit and the ground is 8 cm (3-1/4”).

Adjust major position of snout with cross bolt
Ensure bolt head is facing gathering chain
Fine tune snout with eye bolt until front of snout just touches the ground

Manufacturer and Distributor are not responsible for incorrect snout adjustment.
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 harvesting.
- The corn head should be operated only when in harvesting position and in proper working condition.

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

**ALWAYS STAY CLEAR** of the corn head while in operation. Bystanders should always be at least 30 m (100 ft.) from the corn head while in operation.

1. After 1 hour of initial operation, stop the machine, remove the combine key, and check the following:
   a. Temperature of all gearboxes (maximum 60 degrees C or 170 F)
   b. Loose parts or hardware
   c. Tension of all chains
   d. General visual inspection

   If this inspection reveals any abnormality, determine the cause of the abnormality or contact your dealer for assistance.

- If the crop is severely laid or lodged it may be necessary to remove one or both of the rubber ear savers from the rear of the snouts to improve feeding to the row units.
8.1. Stalk chopper

The stalk chopper (1) cuts the stalks directly under the snapping rolls (2) with special knives. The stalk chopper drive can be disengaged by turning the hex knob (3) 180 degrees.

Then chopper knives can be reversed when worn. When knife replacement is necessary replace the bushings, bolts and safety wires as well. Consult the parts manual for further information.
9. **ROW SPACING ADJUSTMENT**

The row unit spacing must match the corn row spacing for optimum performance. This is of greater importance with wider corn heads. Improper matching can result in premature wear of the snapping roll front supports and the leading edge of the snapping plates. The row unit spacing is not adjustable.

10. **MOUNTING TO ANOTHER TYPE OF COMBINE**

The mounting kits for various combines are shown in the parts manual. Order the relevant mounting kit from your dealer.

---

When mounting the corn head to another type of combine always use all of the protective shields. Ensure that the lower latch attachment and drive connections are secure.
11. MAINTENANCE AND LUBRICATION

11.1. Frame

The frame of non-folding corn heads does not require any special maintenance. The folding mechanism of the folding corn head should be greased with Liton Ep2 or equivalent quality grease once a season. Grease the fitting until grease extrudes from the sides of the parts shown on the picture (marked with “A”).

11.2. Auger

The auger drive chain(s) should be greased every 25 hours, and the chain tension should be checked daily. The chain tension is proper if the chain bends 13-19 mm (0.5” – 0.75”) at the showed position (“A”). Clean debris out every day!
11.2.1. Folding corn head - snapping unit connecting clutches

The clutch jaws should be greased every 50 hours with Liton Ep2.

11.2.2. Folding corn head - auger connecting clutches

Grease the surfaces of the clutch jaws every 50 hours with Liton Ep2.
Before unfolding the corn head into the harvesting position ensure that the auger connecting clutch drive jaws are as shown below.
11.3. INPUT GEARBOXES

SAE 80W-140 oil (0.9l) is used for lubrication. To check the oil level, remove the level plug (1) with the corn head in harvesting position. Check the oil level annually, more often if leakage is detected. The drain and filling plugs (2) are on the main casting of the gearbox, but filling can also be done through the level plug or breather ports.
The location of the breather depends on the final position of the gearbox. The breather should be placed in the cover hole above the oil level plug.

11.4. DRIVE COMPONENTS

11.4.1. U-joint shafts:

- The U-joints should be greased every 250 hours.
- Grease the sliding surfaces of the U-joint shafts and cross shafts annually.

11.4.2. Chain couplings

- Grease annually
11.5. SNAPPING UNIT

11.5.1. Gearboxes

<table>
<thead>
<tr>
<th></th>
<th>Main gearbox</th>
<th>Chopper gearbox</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE 80W-140 oil</td>
<td>-</td>
<td>0.26 kg (0.3 l)</td>
</tr>
<tr>
<td>EP-00 liquid grease</td>
<td>2.5 kg (2.5 l)</td>
<td>-</td>
</tr>
</tbody>
</table>

Check frequency

- Start of every harvest, or when leakage detected
- 50 hours, or when leakage detected

Inspect gearboxes daily to detect any leakage which may cause failure.

Snapping unit main gearbox:
Stalk chopper gearbox:

To check lubricant levels:
- Lower corn head to the ground
- Unscrew the dipstick
- Wipe the dipstick, then replace it but do not screw it back in
- Wait, then remove the dipstick
- The lubricant level should be midway between the minimum and maximum warning lines.
Chopper knives

- Check knife condition daily.
- Never operate with damaged knives.
- The radial clearance between the knife and bushing should not exceed 1 mm (.04”). If clearance exceeds 1 mm (.04”), change both the knife and bushing.
- Knives must be changed only in pairs because of the high rotational speed and balance requirements.
- The knife support bolts should be checked daily and kept tight.

Neither the Manufacturer nor Distributor assumes any responsibility for wear or failure resulting from improper maintenance or lubrication.
11.5.2. Snapping roll

The front bearings are lubricated with Liton Ep2 and sealed on both sides by the bearing manufacturer. A greased labyrinth is provided to protect the bearings. Grease the front fitting every 250 operating hours, or once a season until grease extrudes from the labyrinth. This will ensure flushing of the old grease and fully replacing it with new grease.

Ensure that the snapping roll knife retaining bolts are kept tight at all times.

Check the clearance between snapping rolls knife edges
Factory setting (1 mm)
11.5.3. Gathering chain

- Lubricate daily using synthetic or vegetable grease or oil.
- Check daily for abnormal wear.

The corn head Pre-harvesting and Pre-delivery inspection checklists are at the end of the operator’s manual.
Please verify the corn heads condition before the first running procedure following the Pre-delivery inspection.
Please verify the corn heads condition before each harvesting following the Pre-harvesting inspection.
12. ELECTRICAL SCHEMATICS

12.1. JD electrical schematic
12.2. CNH electrical schematic
12.3. AGCO electrical schematic
13.4. CLAAS Lexion electrical schematic
13.5. CIH 1000 and 2000 series
14. **TROUBLE SHOOTING**

14.1. **A large quantity of ears builds up between the auger and feeder.**

This can result from improper adjustment of the combine for corn harvesting operation, including threshing component speed, concave clearance or angle of the feeder front face. Ensure that the combine is adjusted for corn harvesting in accordance with the instructions and settings as recommended in the combine operator’s manual.

14.2. **In laid or lodged corn stalks, the stalks do not feed properly into the snapping rolls.**

Remove only 1 ear saver per row initially, then second ear saver only if necessary.

14.3. **Row unit becomes plugged while harvesting laid or lodged corn stalks.**

Check the tension of the gathering chain.

14.4. **Stalks, grass or weeds wrap on the snapping roll.**

Reduce gap of vine knives.

See “Set-up and Adjustment procedure” section 4.3.

14.5. **Auger does not rotate.**

Check setting of the auger drive torque limiting clutch.

See “Set-up and Adjustment procedure” section 4.2.

14.6. **Ears are broken or split in the auger.**

Reduce the rotational speed of the auger using the optional sprocket.

See “Set-up and Adjustment Procedure”, section 4.2.

14.7. **Difficulty in keeping the corn head properly on the row.**

Check that corn head row spacing matches the corn row spacing.
15. **OFF-SEASON STORAGE OF YOUR CORN HEAD**

When harvesting is completed, thoroughly clean the corn head and remove all remaining stalks. Carefully inspect the corn head 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. Repair or replace any damaged or missing parts, including safety labels.

Lubricate the slides on the gathering chain front idlers. 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.

16. **WARRANTY, SERVICE, SPARE PARTS ORDERING**

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

The Manufacturer and Distributor assume no responsibility for failures, wear, or poor performance resulting from improper maintenance, setting, 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 manual.
17. LUBRICATION CHART

<table>
<thead>
<tr>
<th>#</th>
<th>Type</th>
<th>Qty.</th>
<th>Lubrication table</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Liton EP2</td>
<td>250 h</td>
<td>look at the operator’s manual</td>
<td>250 h</td>
</tr>
<tr>
<td>2</td>
<td>Liton EP2</td>
<td>250 h</td>
<td>look at the operator’s manual</td>
<td>50 h</td>
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<tr>
<td>3</td>
<td>Liton Ep2</td>
<td>250 h</td>
<td>look at the operator’s manual</td>
<td>50 h</td>
</tr>
<tr>
<td>4</td>
<td>Liton EP2</td>
<td>250 h</td>
<td>look at the operator’s manual</td>
<td>250 h</td>
</tr>
<tr>
<td>5</td>
<td>Liton EP2</td>
<td>50 h</td>
<td>look at the operator’s manual</td>
<td>50 h</td>
</tr>
<tr>
<td>6</td>
<td>Liton EP2</td>
<td>250 h</td>
<td>look at the operator’s manual</td>
<td>250 h</td>
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<tr>
<td>7</td>
<td>Liton EP2</td>
<td>250 h</td>
<td>look at the operator’s manual</td>
<td>10 h</td>
</tr>
<tr>
<td>8</td>
<td>Liton EP2</td>
<td>250 h</td>
<td>look at the operator’s manual</td>
<td>50 h</td>
</tr>
<tr>
<td>9</td>
<td>Gearbox oil</td>
<td>250 h</td>
<td>look at the operator’s manual</td>
<td>0.3 l</td>
</tr>
<tr>
<td>10</td>
<td>Gearbox oil</td>
<td>10 l</td>
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<td>0.45 l</td>
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<td>11</td>
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<td>0.9 l</td>
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<td>12</td>
<td>SAE 80W-140</td>
<td>250 h</td>
<td>look at the operator’s manual</td>
<td>0.9 l</td>
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<tr>
<td>13</td>
<td>SAE 80W-140</td>
<td>250 h</td>
<td>look at the operator’s manual</td>
<td>0.9 l</td>
</tr>
</tbody>
</table>
18. **PRE-DELIVERY & PRE-HARVESTING INSTRUCTIONS**

18.1 Pre-delivery inspection

Please verify using the checkboxes below that the corn head is properly set up for harvesting. Check the following and adjust if necessary.

<table>
<thead>
<tr>
<th>✔ Item</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIFTING BAR AND OTHER PACKAGING ARE REMOVED</td>
<td>5.2. Other steps following the securing of the adapter on the combine</td>
</tr>
<tr>
<td></td>
<td>7. SETUP PROCEDURE AND ADJUSTMENT OF THE CORN HEAD</td>
</tr>
<tr>
<td>LOWER LATCHES PROPERLY CONNECTED TO COMBINE FEEDER</td>
<td>5.1. Mounting the corn heads on the combine</td>
</tr>
<tr>
<td>CORN HEAD IS LEVEL</td>
<td>7.7. Plastic snout adjustment</td>
</tr>
<tr>
<td>DRIVE SHAFTS PROPERLY CONNECTED TO COMBINE FEEDER</td>
<td>5.2. Other steps following the securing of the adapter on the combine</td>
</tr>
<tr>
<td>ELECTRIC AND HYDRAULICS PROPERLY CONNECTED</td>
<td>5.2. Other steps following the securing of the adapter on the combine</td>
</tr>
<tr>
<td></td>
<td>15. Electrical schematics</td>
</tr>
<tr>
<td>SNAPPING PLATE ADJUSTMENT</td>
<td>7.4.2. Snapping plate adjustment</td>
</tr>
<tr>
<td>GATHERING CHAIN PROPERLY TENSIONED</td>
<td>7.4.4. Gathering chain adjustment</td>
</tr>
<tr>
<td>DRIVE CHAINS PROPERLY TENSIONED</td>
<td>11.2. Auger</td>
</tr>
<tr>
<td>SNOUTS AND DIVIDERS ADJUSTED AND SECURED</td>
<td>7.7. Plastic snout adjustment</td>
</tr>
<tr>
<td>SAFETY SHIELDS SECURED</td>
<td>-</td>
</tr>
<tr>
<td>GEARBOX LUBRICANT TO PROPER LEVELS</td>
<td>12. INPUT GEARBOXES</td>
</tr>
<tr>
<td></td>
<td>14. SNAPPING UNIT</td>
</tr>
<tr>
<td>FOLDING/UNFOLDING OPERATION (IF APPLICABLE)</td>
<td>5.2. Other steps following the securing of the adapter on the combine</td>
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<tr>
<td>SNAPPING ROLL CLEARANCES</td>
<td>7.4.1. Snapping rolls adjustment</td>
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<td></td>
<td>14.1.1. Snapping roll</td>
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<td>ALL NUTS AND BOLTS ARE SECURED</td>
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<td>FREE ROTATION OF CHOPPER KNIVES (IF APPLICABLE)</td>
<td>14.1. Gearboxes - Chopper knives</td>
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<td>TEST RUN FOR 30 MINUTES</td>
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</table>
### 18.1 Pre-Harvesting inspection

Please verify using the checkboxes below that the corn head is properly set up for harvesting. Check the following and adjust if necessary.

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<th>✔️</th>
<th>Item</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOWER LATCHES PROPERLY CONNECTED TO COMBINE FEEDER</td>
<td>5.1. Mounting the corn heads on the combine</td>
</tr>
<tr>
<td></td>
<td>CORN HEAD IS LEVEL</td>
<td>7.7. Plastic snout adjustment</td>
</tr>
<tr>
<td></td>
<td>DRIVE SHAFTS PROPERLY CONNECTED TO COMBINE FEEDER</td>
<td>5.2. Other steps following the securing of the adapter on the combine</td>
</tr>
<tr>
<td></td>
<td>ELECTRIC AND HYDRAULICS PROPERLY CONNECTED</td>
<td>5.2. Other steps following the securing of the adapter on the combine</td>
</tr>
<tr>
<td></td>
<td>SNAPPING PLATE ADJUSTMENT, IF NEEDED CLEANING</td>
<td>7.4.2. Snapping plate adjustment</td>
</tr>
<tr>
<td></td>
<td>SNOUTS AND DIVIDERS ADJUSTED AND SECURED</td>
<td>7.7. Plastic snout adjustment</td>
</tr>
<tr>
<td></td>
<td>FOLDING/UNFOLDING OPERATION (IF APPLICABLE)</td>
<td>5.2. Other steps following the securing of the adapter on the combine</td>
</tr>
<tr>
<td></td>
<td>ALL LUBRICANTS HAVE BEEN CHECKED</td>
<td>11. MAINTENANCE AND LUBRICATION</td>
</tr>
<tr>
<td></td>
<td>TEST RUN (30 MINS)</td>
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</tbody>
</table>
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