

313 Corn Attachment



OPERATORS MANUAL 313 Corn Attachment

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ENGLISH



TO THE PURCHASER

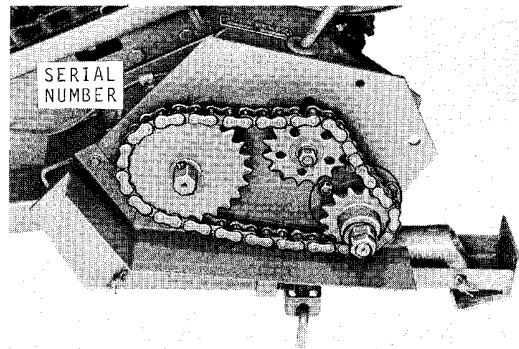
This manual contains valuable information on how to operate and adjust the John Deere 313 Corn Attachment.

This John Deere Corn Attachment is designed to handle a wide range of crop conditions. Field conditions vary from year-to-year, from day-to-day, and even from hour-to-hour and different varieties of corn present widely different harvesting problems. A careful study of adjustments on your corn attachment and what they will accomplish under varying conditions will allow you to reap many benefits and economies that this corn attachment can provide.

Your new corn attachment will do quality work in direct proportion to the care you use in operating it. Operate, adjust and service the attachment according to the instructions in this manual.

If you need information not covered in this manual, see your John Deere dealer. He has the latest information on how to get the best service from your corn attachment and can give you prompt service in the field or in his shop.

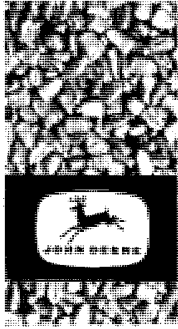
When in need of parts, go to your John Deere dealer. He carries genuine John Deere parts for your Corn Attachment. Be prepared to give him the serial number of your corn attachment and the year purchased. Record this information in the space at the right when you receive your corn attachment.



The serial number is on the left-hand side of the corn attachment.

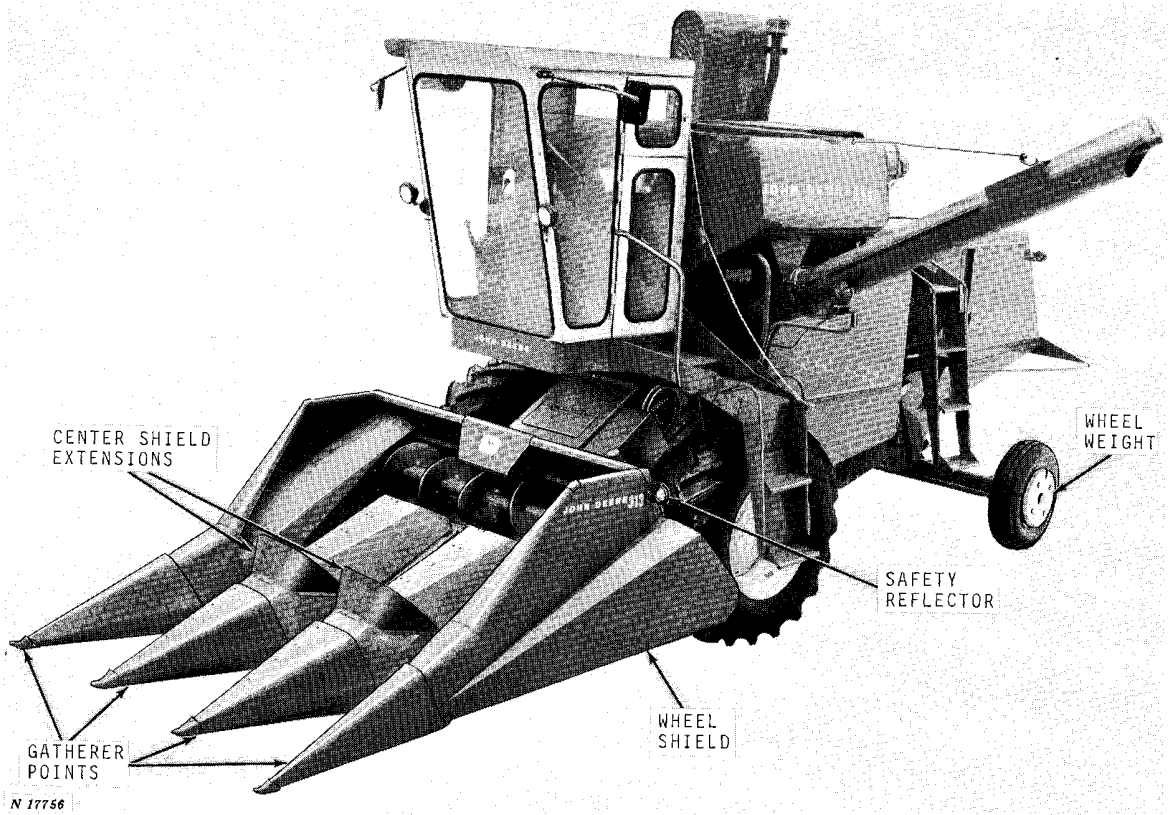
Serial Number

Date Purchased



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John Deere 313 Corn Attachment on 45 Combine

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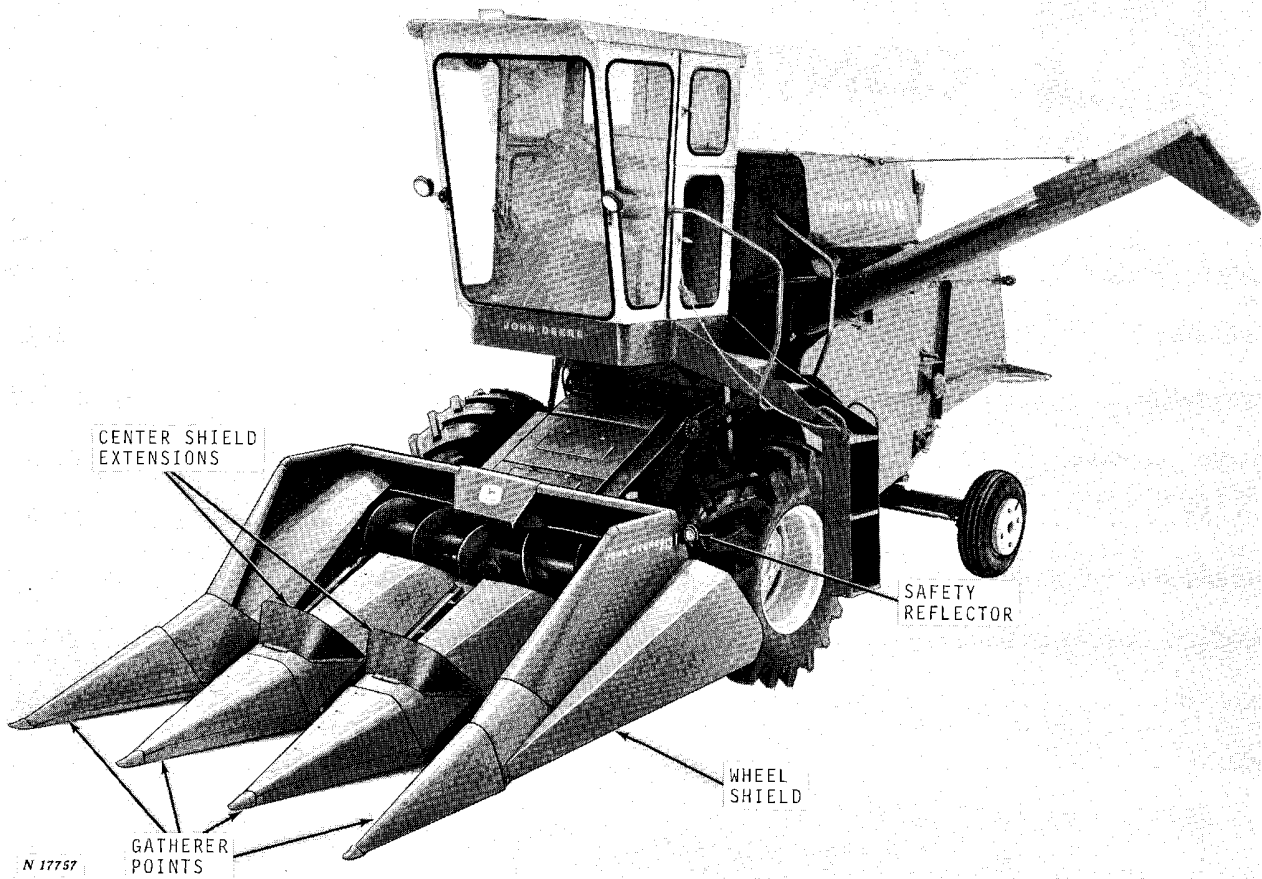
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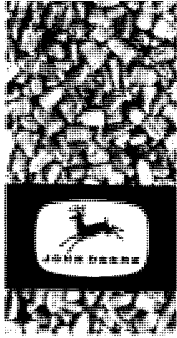
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John Deere 313 Corn Attachment on 55 Combine



SPECIFICATIONS

John Deere Combine Model

required 45 Serial 35001 and up
55 Serial 39350 and up

NOTE: 45 Combines below Serial 46001 must be equipped with front axle reinforcements. Two rear guide wheel weights must be used on all 45 Combines. It is recommended that the 45 Combine be equipped with a 60 or 74-inch rear axle. All combine drive wheel tire sizes are approved except 13.6 x 26 6-ply tires.

Center-to-center distance between snapping units 28, 30 or 32 inches

Row width handled 28, 30 or 32 inches

Gatherer points Floating type, hinged above gatherer chains

Number of gatherer chains per snapping unit 2

Type of gatherer chain . . Endless steel roller chain (no master connecting link)

Minimum clearance between gatherer chains and ground 0 inch

Distance gatherer chains ahead of fluted stalk rolls 10 inches

Gatherer chain speed Shipped set for 305 fpm (feet per minute).
Additional sprockets are provided for 260 fpm and 350 fpm (feet per minute).

Length of fluted stalk rolls less points 18 inches

Length of stalk rolls with points 26-1/2 inches

Stalk roll adjustment Shim adjusted

Deck plate adjustment Bolt adjusted

Gatherer chain adjustment . . . Spring loaded-self adjusting

Conveyor from gatherers to combine . . Full width cross auger and feed paddles

Approximate weight of corn attachment
For 45 Combine 2570 pounds
For 55 Combine 2720 pounds

Approximate over-all width for storage 9 feet, 4 inches

Approximate over-all length for storage 11 feet

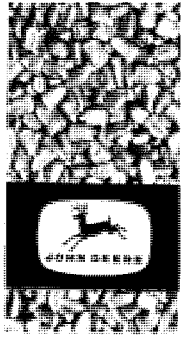
Approximate over-all width on Combine 9 feet, 4 inches

Approximate over-all length on Combine 24 feet, 10 inches

ATTACHMENTS

Corn Cob Mix See page 17
For other attachments available for the Combine, see your John Deere dealer.

(Specifications and design subject to change without notice)



OPERATION

PROPER INSTALLATION

Be sure corn attachment is properly installed on combine. Improper installation can cause inferior work and damage to corn attachment and combine. After corn attachment is completely installed, check over entire machine, being sure shields, sprockets, chains, and all other parts are properly attached, and adjustments made as instructed. Be sure all nuts, pins, and keys are tight and cotter pins are spread. Make sure slip clutches are set properly and free from paint or grease.

IN THE FIELD

Take pride in doing the best job possible under all conditions. Pick end rows first and then disk down end rows for a smoother ride and ease of handling. Follow rows carefully; set gatherer points and lower corn attachment to pick up down and leaning stalks. Pick so it will not be necessary to pick odd or guess rows.

After picking several rounds, stop corn attachment and check to be sure grease is reaching all bearings. Check machine to be sure bolts are tight and chains are adjusted to proper tension.

ADJUST MACHINE PROPERLY

Successful operation, quality of work, and length of life of corn attachment depend greatly upon adjusting corn attachment and combine to meet specific field conditions, and on proper lubrication.

After several rounds, check adjustments on corn attachment and combine to be sure you are getting the best possible sample of corn in the grain tank.

HARVEST EARLY

Early harvesting, before corn gets too dry, keeps field losses low. Agricultural engineers

suggest that when early maturing corn reaches 26 to 27 percent moisture, farmers with dryers can start harvesting. If you're equipped to store high moisture corn, harvesting can start when corn is at 30 percent moisture.

If corn is to be sold without drying, it is best to wait until moisture content is down slightly below 20 percent. For safe storage in anything but an air tight silo, moisture should not exceed 14 percent.

Early harvesting will also eliminate troubles and disagreeable features that accompany frozen ground, extremely cold weather, and dried out, frozen, and rotten cornstalks.

DRIVE CAREFULLY

The combine should travel in same direction that field was last cultivated. Drive combine carefully so corn attachment will stay on rows. Raise corn attachment when crossing end of field.

Listen for slipping clutches and watch for deep furrows, rocks, or other obstructions which gatherer points may strike.

If unit begins to plug, do not slow down combine engine. Keep engine at operating speed and decrease ground speed with variable speed control or by disengaging foot clutch until unit has cleared itself.

CORN ATTACHMENT HEIGHT CONTROL (45 Combine Serial 46001 and up, and 55 Combine Serial 83001 and up)

The combine has an adjustment to control speed of lowering corn attachment. If the corn attachment is lowering at too slow or fast a rate of speed, refer to your combine operator's manual for adjusting control valve that controls speed of drop.

Never clean, lubricate, or adjust corn attachment or combine while either is in motion. Be sure to stop the combine engine. Too much care cannot be taken keeping hands and clothing away from moving parts.

CHECK GROUND SPEED

In average conditions, the corn attachment will do best work when traveling at a moderate rate of speed.

In well standing corn the forward movement of the machine should be approximately the same as the rearward movement of the gatherer chain flights, so the flights gently assist in the movement of stalks into the stalk rolls.

If the ground speed is too fast, the chains push stalks forward and knock off the ears. If the ground speed is too slow, the chains jerk the stalks back into the unit, possibly breaking the stalks or knocking off the ears.

FIELD LOSSES

As the season progresses, field losses will increase. The corn dries out, causing more shelling, and stalks become brittle, causing more ear drop.

However, these losses can be reduced to a minimum by keeping your machine in proper adjustment, following the rows carefully, and harvesting at the proper speed according to yield and field conditions.

ESTIMATING SHELLED CORN LOSS

Count the number of kernels around a hill in an area 30 by 53-1/3 inches. Make a count several places in the field and average the count.

If you find an average of 20 kernels per area you are losing one bushel per acre; 80 kernels per area would mean a loss of four bushels per acre.

Be sure to clear away all husks and leaves and shake any remaining kernels from husks.

ESTIMATING EAR CORN LOSS

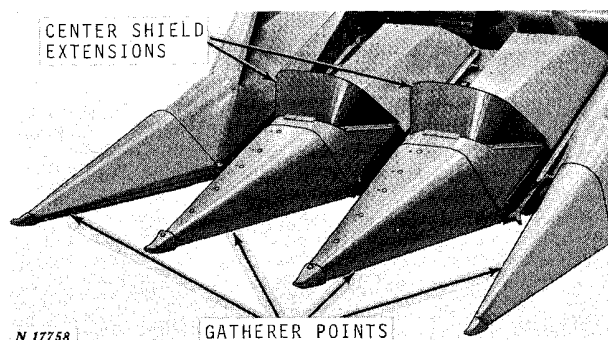
Mark off 133 feet (about 43 normal walking steps for an adult man) along one row. Each good sized ear (about 3/4 pound) represents one bushel of ear corn lost per acre.

Make the test several places throughout the field for a more accurate check. Be sure to kick the husks and stalks to avoid missing ears that are hidden.

To get the most accurate check on the efficiency of your corn attachment, estimate the ear corn loss before, as well as during and after the field is harvested, because some ears drop off the stalks before harvest.

GATHERERS

GATHERER POINTS AND CENTER SHIELD EXTENSIONS

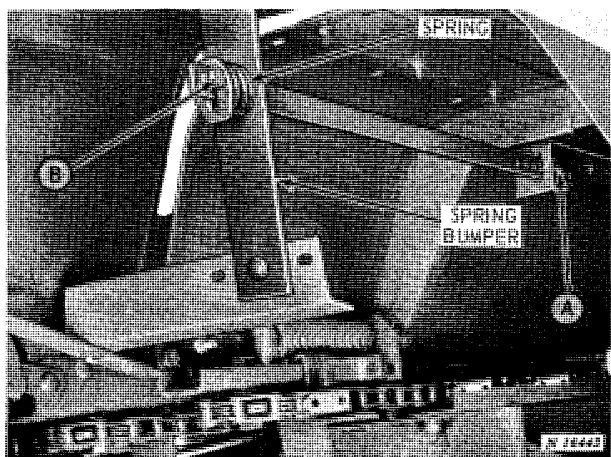


In normal conditions operate with the gatherer points just touching the ground.

The center shield extensions are designed to catch falling ears in well-standing corn. When picking in down corn, the center shield extensions can be removed if they are interfering with the flow of material into the unit.

In muddy conditions or in snow, adjust the gatherer points to prevent the points from scooping material into the throat opening, thereby clogging the opening.

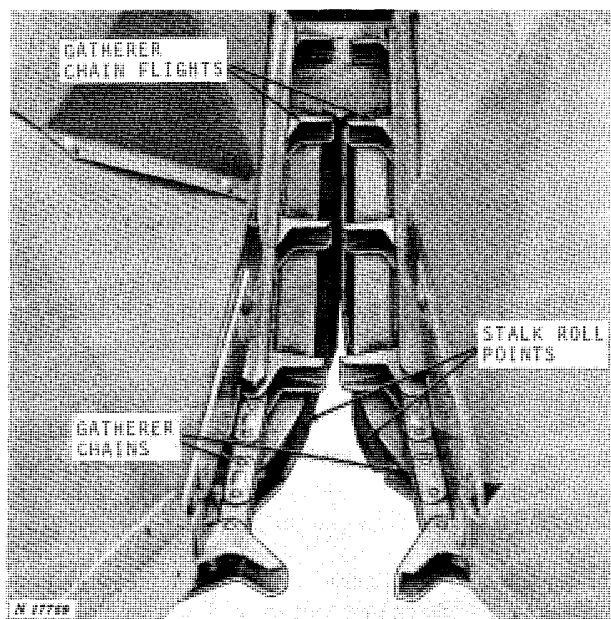
6 Operation



The gatherer points can be raised and locked in any one of a number of positions by repositioning bolts "A" and "B."

Make sure the spring is located on the adjustment straps just below the spring bumper. The spring helps absorb the shock loads.

GATHERER CHAINS



The gatherer chains run well beyond the points of the fluted stalk rolls. The chains can be run touching the ground if necessary to bring low hanging ears and down stalks into the stalk rolls.

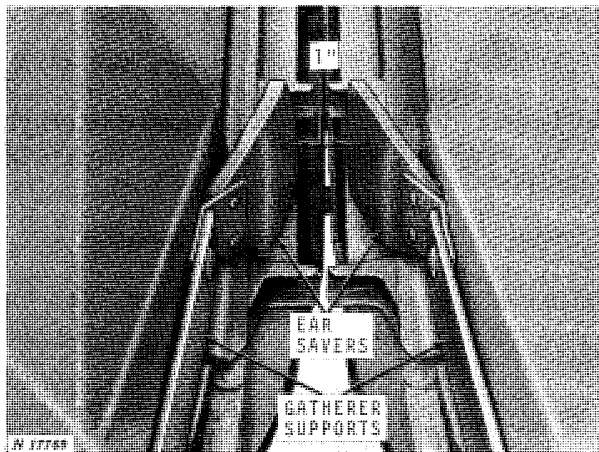
Maximum efficiency is obtained from gatherer chains, when the gatherer flights are approximately opposite one another as shown above.

CAUTION: Be careful to avoid rocks and other obstructions in the row when running gatherers close to the ground.

To replace worn or broken gatherer chain links, see page 31 for instructions.

Oil the gatherer chains daily. See page 23.

EAR SAVERS



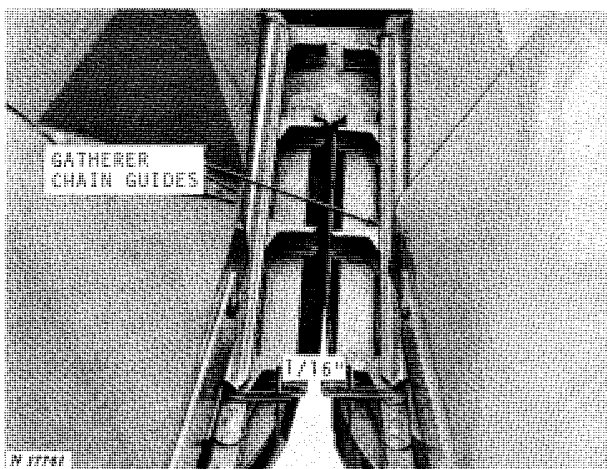
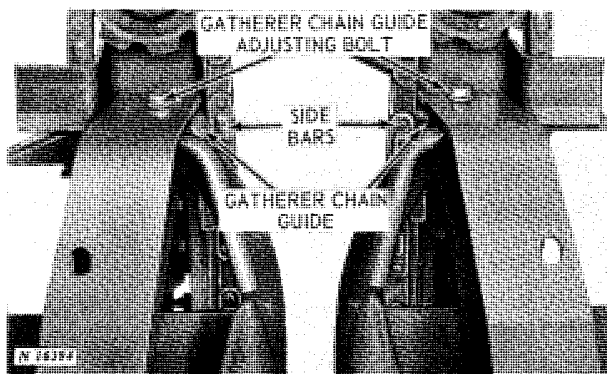
Ear savers provided can be installed to prevent loose ears from sliding out over the gatherer chains.

The ear savers should always be spaced so the rear ends are at least one inch apart.

In down corn or if stalks tend to plug up at the gatherer throat opening, remove ear savers from the corn attachment.

To install ear savers, remove the 3/8 inch carriage bolts that secure the inner and outer gatherer sheets to the gatherer supports. Insert sheet metal part of ear saver between support frame and bottom of gatherer sheet. Assemble the 3/8 inch carriage bolt through gatherer support frame, ear saver and gatherer sheet and secure with nut.

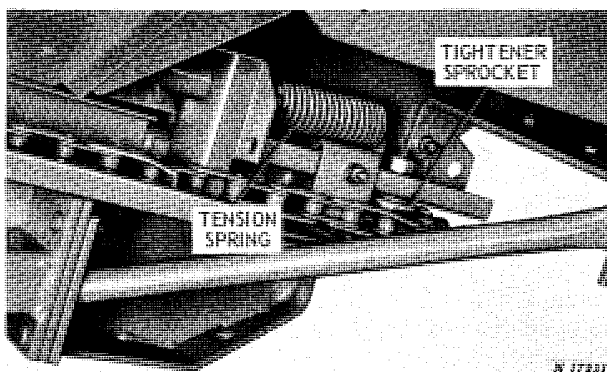
GATHERER CHAIN GUIDES



To adjust the gatherer chain guide, loosen the gatherer chain guide adjusting bolt on gatherer support frame.

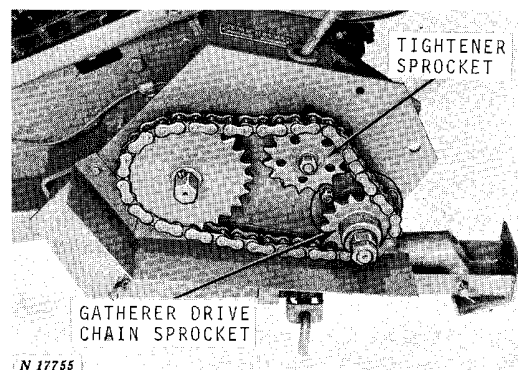
Adjust the gatherer chain guide so that lip on outer edge of guide clears the gatherer chain approximately 1/16-inch in vertical position. The guide should be moved in until it just touches the side bars of the gatherer chain.

GATHERER CHAIN TENSION



The gatherer chain tension is automatically controlled by a spring loaded mechanism. Keep the sliding mechanism free from dirt and foreign material which could restrict the tightener sprocket movement. See page 32 for relieving tension on gatherer chains.

GATHERER DRIVE CHAIN SPROCKETS



The gatherer chain speed should closely approximate the ground travel speed of the combine.

The corn attachment is regularly equipped with a 14-tooth gatherer chain drive sprocket, which is recommended for use when traveling at approximately 3 miles per hour.

A 12-tooth sprocket and a 16-tooth sprocket can be obtained as special equipment.

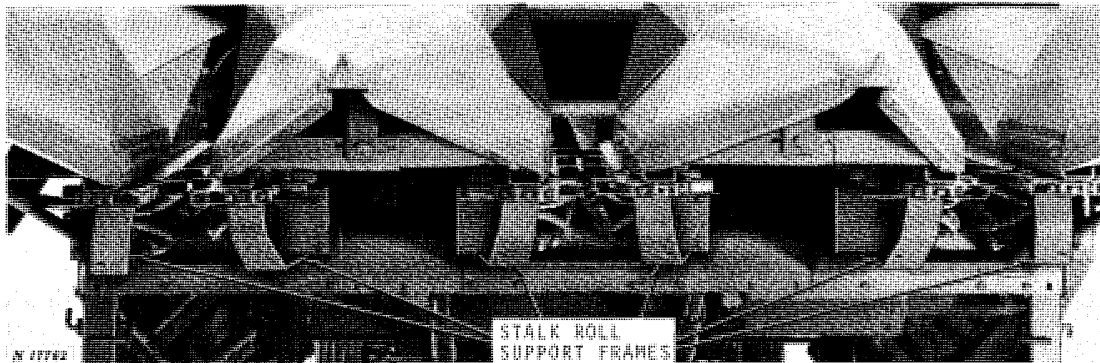
If a slower combine travel speed is desired, decrease the gatherer chain speed by installing the 12-tooth gatherer drive sprocket (N14273N).

If a faster combine travel speed is desired, increase the gatherer chain speed by installing the 16-tooth drive sprocket (AN12709N).

To change the drive sprocket, disconnect the drive chain. Remove the attaching nuts and washer from the drive shaft. Remove sprocket and install the new gatherer chain drive sprocket. Add or remove links in chain if necessary when changing sprockets.

IMPORTANT: In down corn conditions, it is recommended that combine travel speed be reduced and the 12-tooth gatherer drive sprocket be used.

STALK ROLLS



The stalk rolls pull the cornstalks down so the ears will be snapped on the deckplates.

Stalk roll and deck plate spacing need not be changed for most field conditions. However, for variations in field conditions stalk rolls and deck plates can be adjusted.

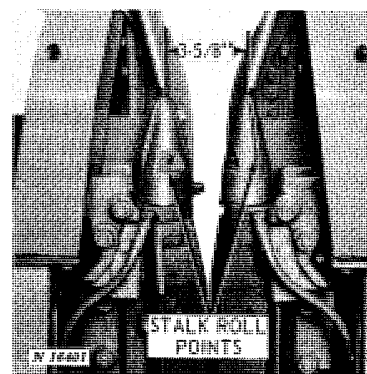
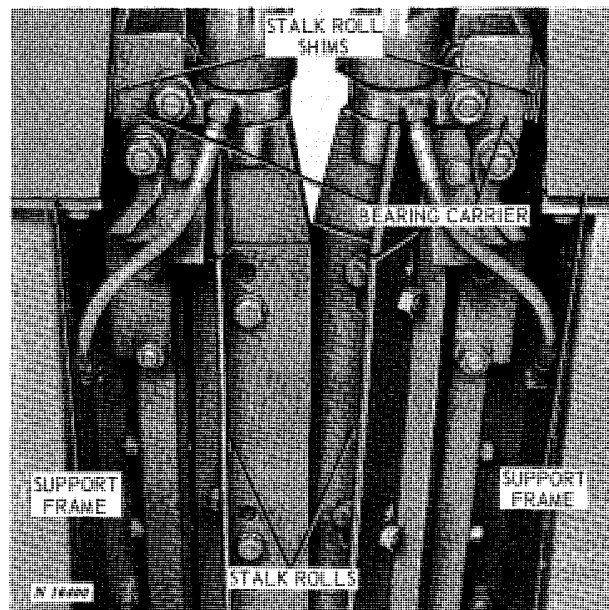
Spacing of all stalk rolls must be the same to obtain the maximum efficiency of the corn attachment.

To make stalk rolls more aggressive, move the stalk rolls in by removing shim on outside of stalk roll support frame and placing it between stalk roll bearing carrier and stalk roll support frame as shown above.

CAUTION: Check to be sure stalk rolls do not come in contact with one another when moved in.

To make stalk rolls less aggressive, move stalk rolls out by removing shims from between bearing carrier and stalk roll support frame. Shims removed can be attached to outside of stalk roll support frame for future use.

Do not use a cornstalk or stick to clean stalk rolls of an ear or trash while corn attachment is operating. If for any reason the corn attachment should become clogged, stop the combine engine and then remove obstacle. Keep hands completely away from stalk rolls while machine is in motion.

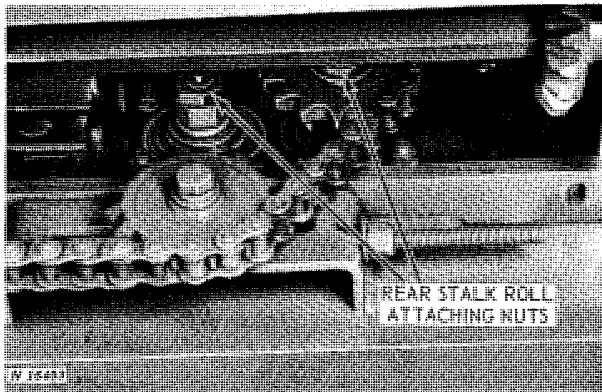
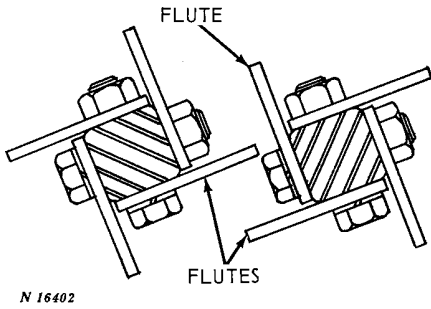


Normal stalk roll point spacing is 3-5/8 inches at the front, center-to-center of points as shown. To obtain the 3-5/8 inch dimension between stalk roll points, add or remove shims between bearing carrier flange and inside stalk roll support frame.

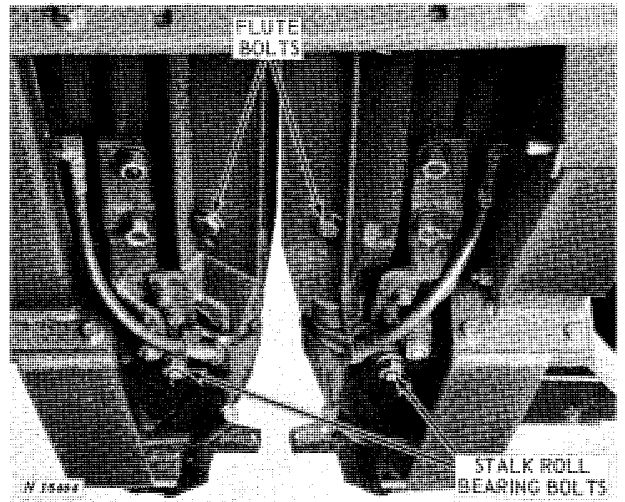
TIMING STALK ROLLS

If the stalk rolls are not in time, the flutes may break off the stalks. When timed properly, the flutes on the rolls will alternate and there will be no clashing when the rolls turn.

If stalk rolls are removed from the corn attachment, they must be timed after they are installed in the corn attachment.



To time the stalk rolls, remove the two nuts from the rear end of either roll (preferably the roll without the drive sprocket).



Remove the bearing bolt at the front of the same roll. Pull the free roll down until the gears are out of mesh. Turn the free roll until one flute on the roll is centered between two flutes on opposite mating roll as illustrated.

When the rolls are timed properly, slide the roll back into place. Replace the front stalk roll bearing bolt and nut and the two nuts and lock washer at the rear of stalk rolls. Tighten all nuts and bolts securely.

STALK ROLL BOLTS

Periodically check the nuts on the bolts through the stalk roll bearing carrier assembly located at the front of the stalk rolls. These nuts should be tight at all times. If the bolt is not tight, tighten it to a minimum of 85 ft-lbs torque.

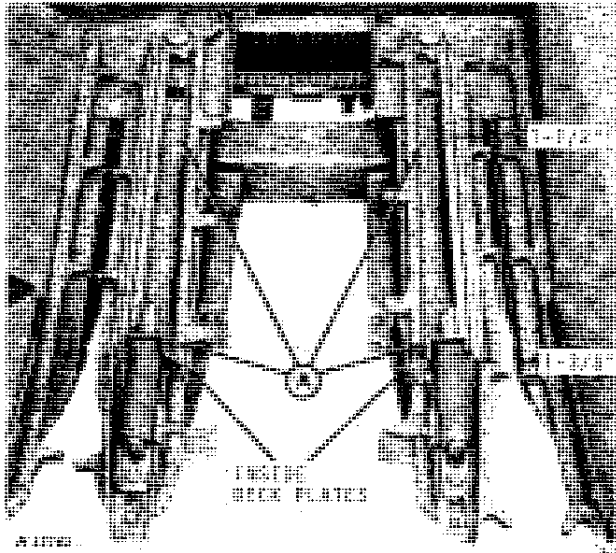
At the same time, check the nuts holding the stalk roll flutes in place. They must be tight at all times. Tighten these bolts to 85 ft-lbs torque.

IMPORTANT: Use only 1/2 Inch x 2-1/4 Inch high-strength bolts to hold the flutes to the rolls.

DECK PLATES

The deck plates snap ears off the stalks as the stalks are pulled down by the stalk rolls. The deck plate spacing can be adjusted to meet varying crop conditions.

DECK PLATE SPACING



Inside Deck Plates with Shield Removed

For most conditions, deck plates should be spaced 1-1/2 inches apart at the rear and 1-3/8 inches apart at the front. The space between deck plates should always be 1/8-inch wider at the rear than at the front.

To change spacing of deck plates, loosen the bolts at "A" and move the deck plates the necessary amount. Inside and outside deck plates are adjusted the same.

IMPORTANT: The center of the space between deck plates should be located over the center of space between stalk rolls.

Increase the deck plate spacing if the stalks and ears are larger than average. Decrease the spacing if the stalks and ears are smaller than average. Too wide of spacing for a given condition will allow the ears to come in contact with the stalk rolls causing ear butt and tip shelling.

A good method of checking to see if the plates are set too far apart is to take the tip of an average size ear of corn and see if it will fit far enough between the deck plates to come in contact with the stalk rolls. If it does come in contact, decrease the deck plate opening.

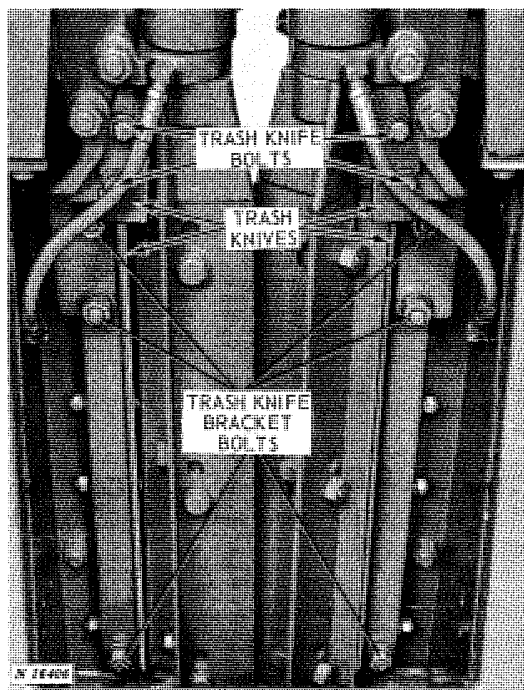
CAUTION: Shut off combine engine before placing hands near stalk rolls.

If deck plates are set too close together, stalks may tend to break off and plug at the gatherer throat opening and overload the combine.

IMPORTANT: Proper adjustment of the stalk rolls and deck plates is necessary to obtain maximum performance from the corn-attachment and to hold field losses to a minimum.



TRASH KNIVES



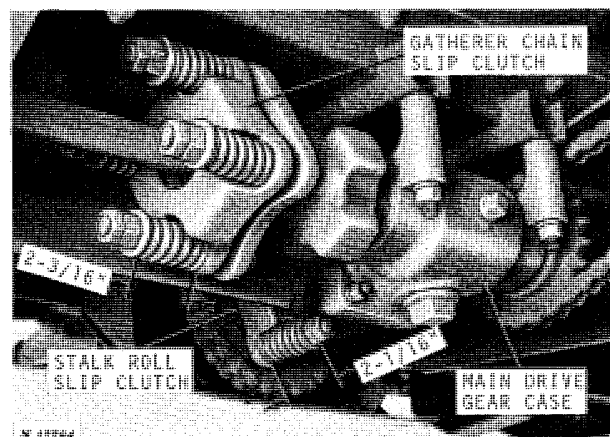
Trash knives prevent weeds and trash from wrapping around the stalk rolls.

The knives should be set as close as possible to the rolls without striking the flutes. Adjusting slots are provided in the brackets at the ends of the knife supports.

To adjust, loosen the bolts and move the brackets and knives to the desired position.

Adjust each trash knife to within 1/16 inch of the highest flute. A small trash knife is provided for the tapered section of the roll. Adjust the small knife so it also is within 1/16-inch of the highest flute.

SLIP CLUTCHES



Slip clutches act as safety devices to protect the machine.

Should a clutch slip when the corn attachment is in operation, stop immediately, determine the cause, and correct it. Do not set the clutch under greater tension to correct the difficulty. Slip clutches are to be set for ordinary work without slipping. Clutches should be disassembled and cleaned at least once each season.

IMPORTANT: Check to be sure slip clutch jaws are free from paint or grease to insure proper working order.

SLIP CLUTCH SETTINGS

The normal length of the stalk roll slip clutch spring is 2-1/16 inches. The normal length of the gatherer chain slip clutch spring is 2-3/16 inches. Measure the length of the spring only. Make sure all four springs on each slip clutch are set exactly the same.

IMPORTANT: Do not tighten nuts to the point where the clutch will not slip. Make sure the two nuts are jammed together to hold position of spring.

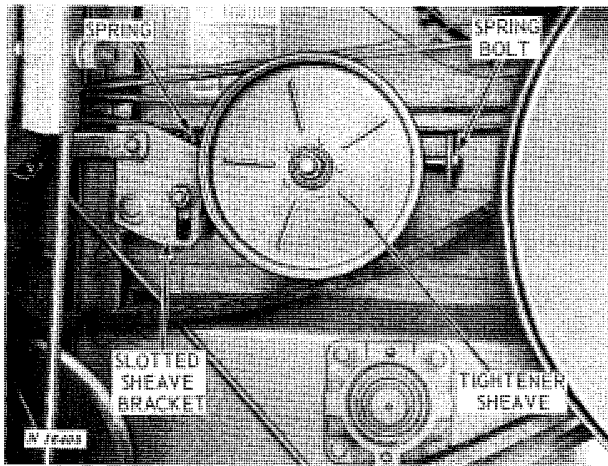
NOTE: The springs on the gatherer chain slip clutch are not interchangeable with the springs on the stalk roll slip clutch. The gatherer chain slip clutch spring is lighter than the stalk roll spring.

CORN ATTACHMENT DRIVE THROW-OUT MECHANISM

The corn attachment drive can be engaged or disengaged by the cutting platform throw-out lever on the 45 Combine and the cutting platform electric clutch throw-out switch on the 55 Combine Serial 55-78001 and up. The drive on the 55 Combine Serial below 55-78001 cannot be disengaged.

The drive on the 45 Combine can be disengaged at row ends if it is desired to stop the corn attachment and keep the separator operating.

ADJUSTING TIGHTENER SHEAVE ON 45 COMBINE



Adjust the bolt in the spring behind the sheave so the sheave is held in position when the drive is engaged.

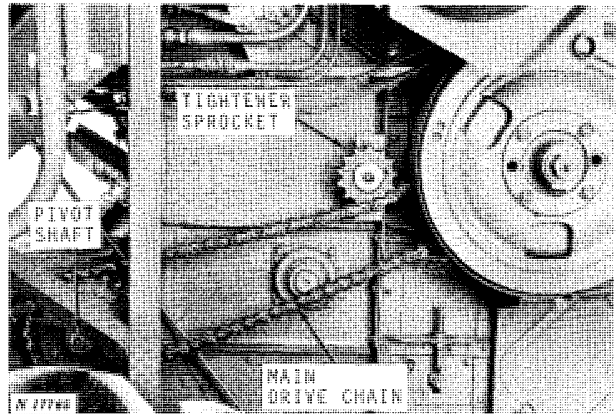
Adjust the throw of the tightener sheave by loosening the nut in the slotted sheave bracket and moving the sheave up or down as necessary to provide proper belt tension when the corn attachment drive is engaged.

DRIVE CHAINS

Roller drive chains should be just tight enough so they do not slap or climb sprockets.

Tightener sprockets can be adjusted to compensate for chain wear and stretch. In addition, extra offset links are provided in each chain to permit shortening as chains wear or stretch.

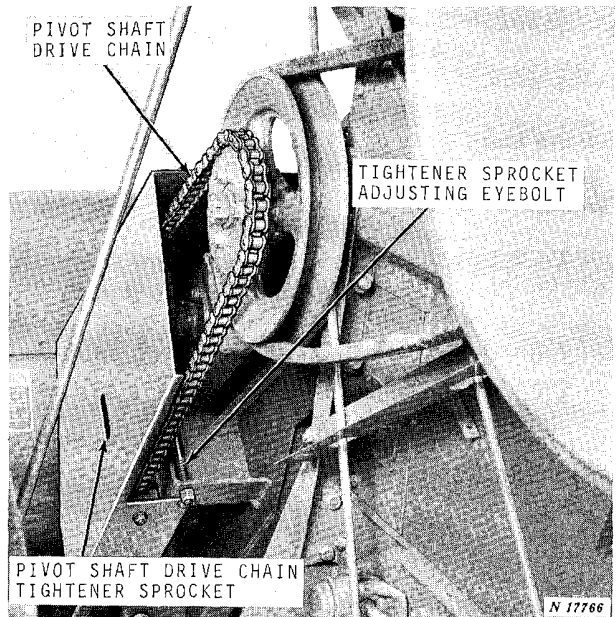
MAIN DRIVE CHAIN ON 55 COMBINE



The main drive chain on the 55 Combine connects to the inside sprocket on the corn attachment pivot shaft.

Adjust the main drive chain by moving the tightener sprocket on the combine.

PIVOT SHAFT DRIVE CHAIN



Pivot Shaft Drive Chain on 45 Combine

To adjust the pivot shaft drive chain, loosen tightener sprocket through slot in shield. Adjust nut on tightener sprocket eyebolt until desired chain tension is obtained.

IMPORTANT: Always raise the corn attachment before adjusting the tension of pivot shaft drive chain.



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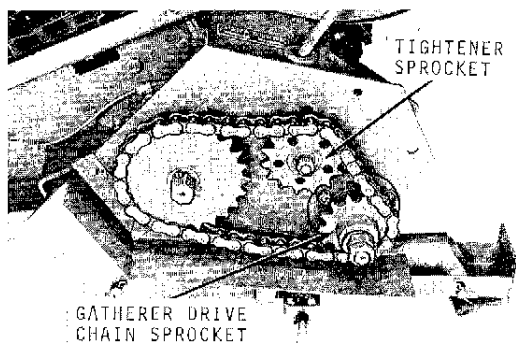
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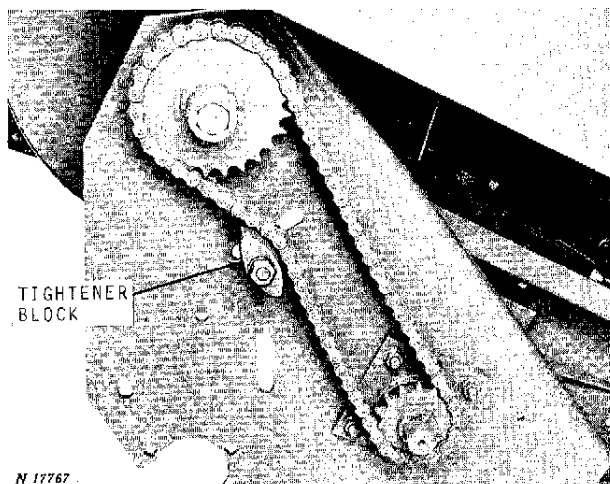
GATHERER DRIVE CHAIN



The gatherer drive chain is on the left-hand side of the corn attachment.

Adjust tightener sprocket on gatherer drive chain until desired chain tension is obtained.

CROSS AUGER DRIVE CHAIN



The cross auger drive chain is on the right-hand side of the corn attachment.

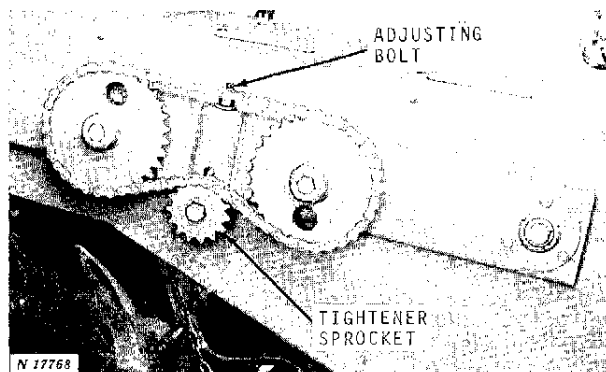
Adjust the tightener block until desired chain tension is obtained.

STALK ROLL DRIVE CHAIN



To adjust the stalk roll drive chain, raise corn attachment and lower the safety stands (page 15) into position. The stalk roll drive chain tightener is located on the right hand side of the corn attachment. Loosen the tightener sprocket attaching bolt. Adjust the chain tension by turning the nut on the eyebolt to position the tightener sprocket.

FEED PADDLE DRIVEN CHAIN ON 55 COMBINE



The feed paddle driven chain on the right-hand side of the feeder house is adjusted by removing the shield, loosening the tightener sprocket attaching bolt, and adjusting the adjusting bolt until desired chain tension is obtained.

IMPORTANT: Replace the shield after chain is adjusted.

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