

# **235 CORN ATTACHMENT**



## **OPERATORS MANUAL 235 CORN ATTACHMENT**

OMN159167 B8    English

**OMN159167 B8**

LITHO IN THE U.S.A.  
ENGLISH





# TO THE PURCHASER

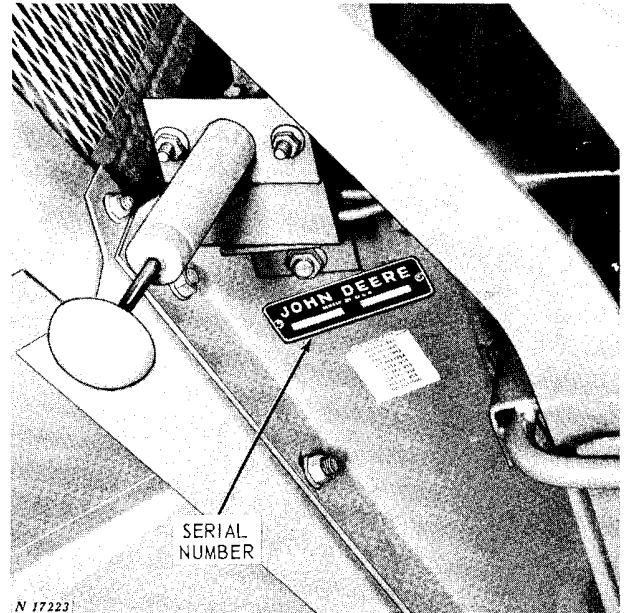
This manual contains useful information on how to operate your new John Deere 235 Corn Attachment.

A corn attachment must be built to handle a wide range of conditions. Field conditions vary from year-to-year, from day-to-day, and even from hour-to-hour. 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.

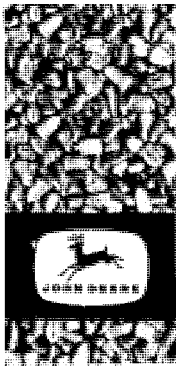
When in need of parts, go to your John Deere dealer. He carries genuine John Deere parts for your 235 Corn Attachment. Be prepared to give him the serial number of your corn attachment and the year purchased. Record this information in the space at the right when you receive your corn attachment.



The serial number is on the left-hand side of the corn attachment, directly below the multi-lubricator.

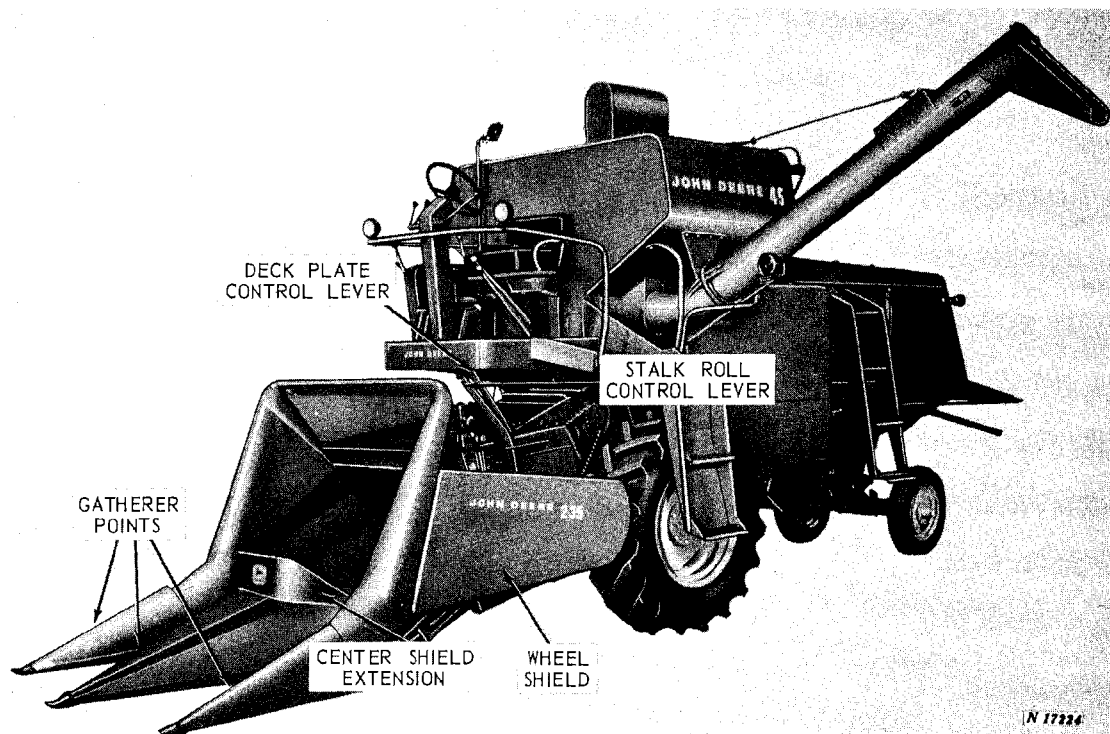
*Serial Number* . . . . .

*Date Purchased.* . . . . .



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*John Deere 235 Corn Attachment on 45 Combine*

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# SPECIFICATIONS

John Deere Combine Model  
required . . . . . 45, 55, or 95

*(NOTE: It is recommended that the 45 Combine be equipped with a 60 or 74-inch rear axle. It is also recommended that the 95 Combine not be used on 38-inch rows.)*

Number of rows . . . . . 2

Center-to-center distance between  
snapping units . . . . . 39 inches

Row widths handled . . . . . 38 and 40 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 inches

Distance gatherer chains ahead of  
fluted stalk rolls . . . . . 10 inches

Gatherer chain speed . . . . . Shipped set for 279  
fpm (feet per minute)  
Additional sprocket provided for 326 fpm (feet  
per minute)

*NOTE: A sprocket can be obtained from your  
dealer for 373 fpm (feet per minute).*

Length of fluted stalk rolls . . . . . 30 inches

Length of stalk rolls  
with points . . . . . 38-1/2 inches

Stalk roll adjustment . . . . . By operator from  
combine platform

Deck plate adjustment . . . . . By operator from  
combine platform

Gatherer chain adjustment . . . . . Spring loaded-  
self adjusting

Trash paddle . . . . . Full width of attachment

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

Approximate weight of corn attachment

235 for 45 Combine . . . . . 1,775 pounds

235 for 55 Combine . . . . . 1,790 pounds

235 for 95 Combine . . . . . 1,825 pounds

Approximate over-all width  
for storage . . . . . 6 feet 4 inches

Approximate over-all length  
for storage . . . . . 10 feet

Approximate over-all width on  
55 and 95 Combines . . . . . 8 feet 11 inches

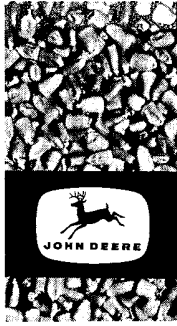
Approximate over-all width on  
45 Combine . . . . . 8 feet 5 inches

Approximate over-all length on  
45, 55, and 95 Combines . . . . . 25 feet

Attachments for combine . . . . . Corn cob mix

*NOTE: 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, 55 Combine Serial 83001 and up, and 95 Combine Serial 35001 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.

## 4 Operation

**CAUTION:** Never clean, lubricate, or adjust corn attachment or combine while either is in motion. Be sure to stop the combine engine. Keep 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 a square 40 by 40 inches. Make a count several places in the field and average the count.

If you find an average of 20 kernels per square you are losing one bushel per acre; 80 kernels per square 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

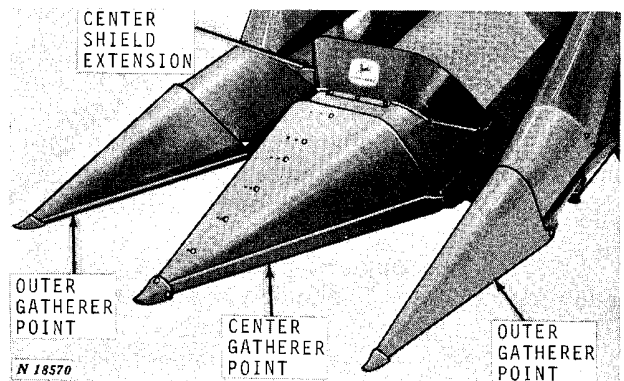
Mark off 133 feet (about 43 normal walking steps for an adult man) along one row. Each good sized ear (about 3/4 pound) represents one bushel of ear corn lost per acre.

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 EXTENSION

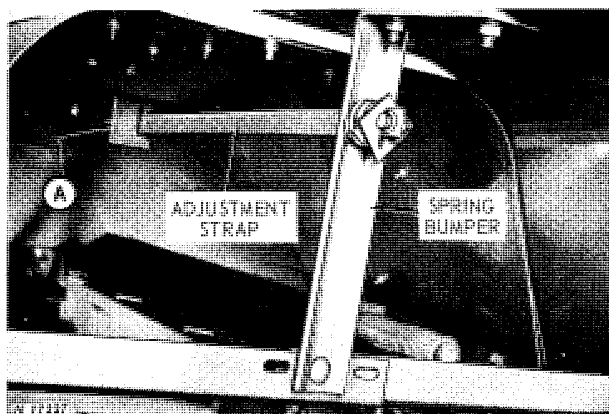


In normal conditions operate with the gatherer points just touching the ground.

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

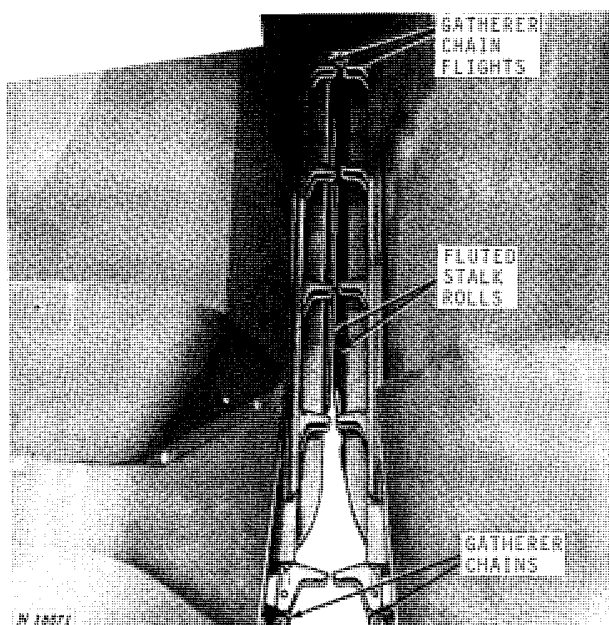
In muddy conditions or in snow, raise and lock gatherer points high enough to prevent the points from scooping material into the throat opening, thereby clogging the opening.

On all gatherer points, make sure the spring is located on adjustment straps just below spring bumper. The spring helps absorb the shock loads.



The gatherer points are hinged to follow the contour of the ground. They can also be raised or lowered and locked in any one of a number of positions by repositioning bolt "A" in one of the holes in the adjustment strap.

S



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.

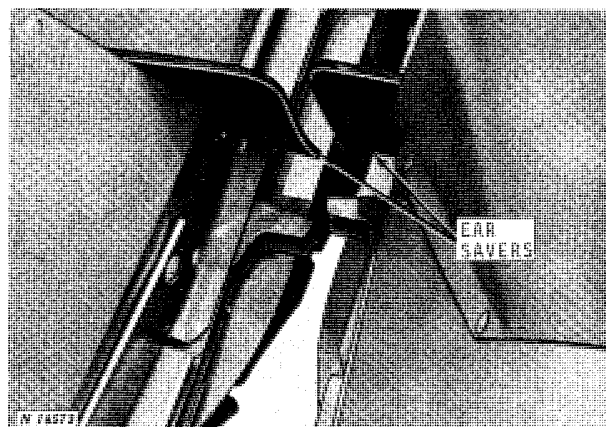
Maximum efficiency is obtained from gatherer chains, when the gatherer flights are approximately opposite one another as shown above.

**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 27 for instructions.

Oil the gatherer chains daily. See page 19.

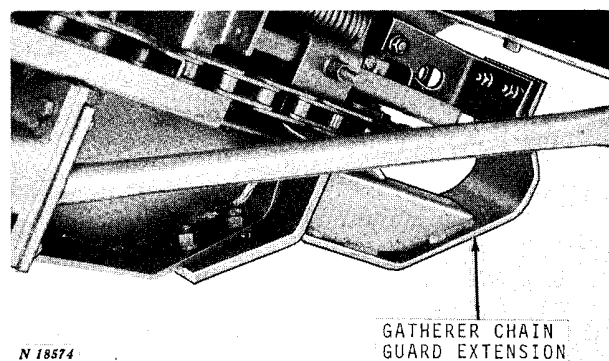
#### EAR SAVERS



Ear savers prevent loose ears from sliding out over the gatherer chains.

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

#### GATHERER CHAIN GUARD EXTENSIONS (Special Equipment)



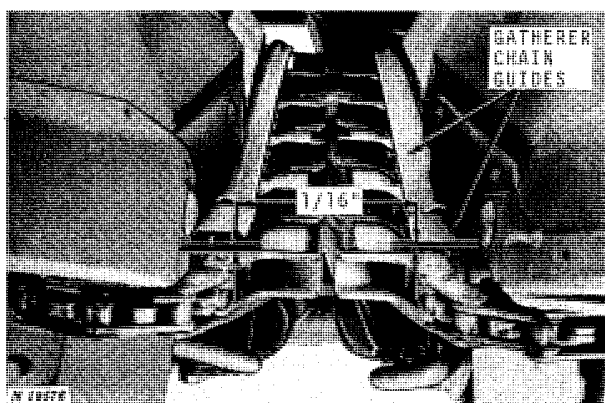
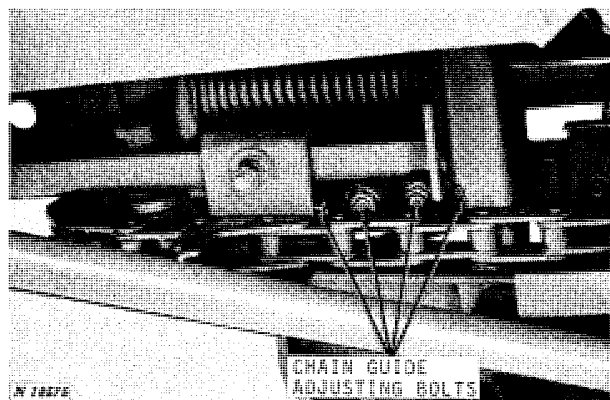
Gatherer chain guard extensions are available as special equipment.

The extensions keep the gatherer chains from striking the ground. Installation instructions are provided with the extensions.



## 6 Operation

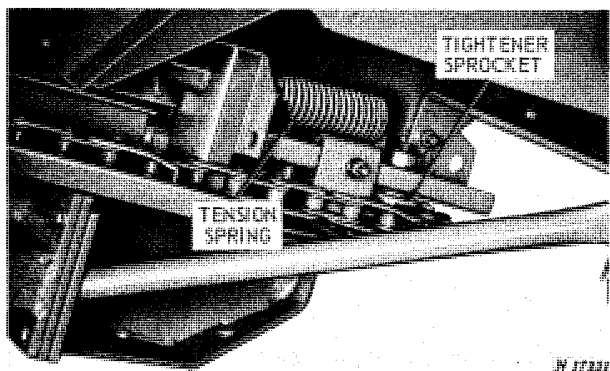
### GATHERER CHAIN GUIDES



The gatherer chain guides are designed to help keep the gatherer chains in alignment.

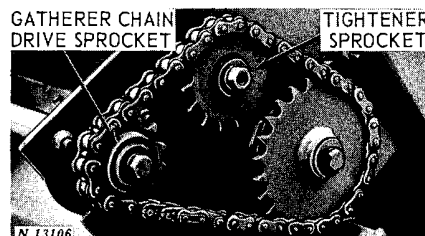
To adjust the gatherer chain guides, loosen the gatherer chain guide adjusting bolts on the gatherer support frame. The lip on the outer edge of each guide should be adjusted to clear the gatherer chain approximately 1/16-inch in vertical position. The guides should also be in alignment with one another and moved in until they just touch the side bars of the gatherer chain.

### GATHERER CHAIN TENSION



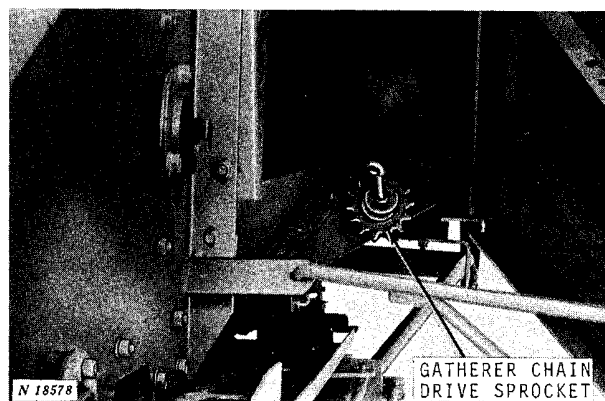
The gatherer chain tension is automatically controlled by a spring-loaded mechanism. Keep the sliding mechanism free from dirt and foreign material which could restrict the tightener sprocket movement. See page 28 for relieving tension on gatherer chains.

### GATHERER CHAIN DRIVE SPROCKETS



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

The corn attachment is shipped from the factory with a 12-tooth gatherer chain drive sprocket installed, which is recommended for use when traveling at approximately 2-1/2 miles per hour.



In addition, a 14-tooth gatherer chain drive sprocket is provided with the corn attachment to increase the gatherer chain speed. This sprocket is located behind the right-hand outer gatherer sheet as illustrated above. When changing the gatherer chain drive sprocket, re-install the sprocket removed back in this location for future use.

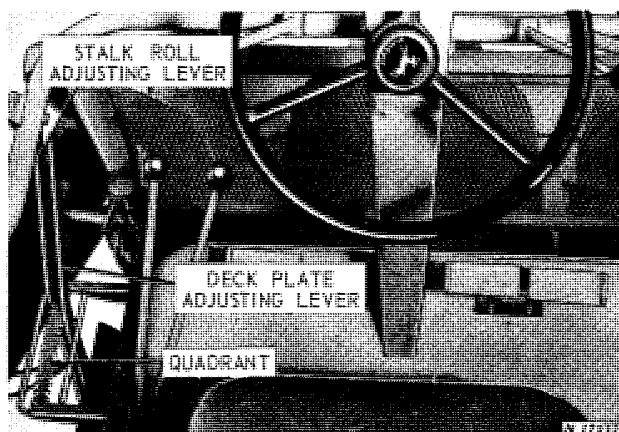
**IMPORTANT:** In down corn conditions, it is recommended that the combine travel speed be reduced and the 12-tooth gatherer chain drive sprocket be used.

## STALK ROLLS

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

**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. Deck plate adjustment is explained on pages 9 and 10.

### ADJUSTING LEVER



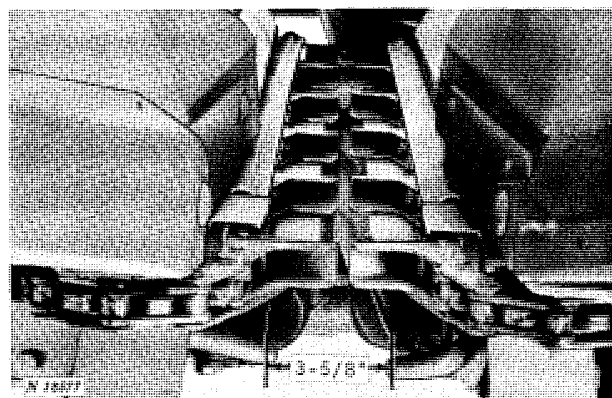
Roll spacing can be changed from the operator's platform with the stalk roll adjusting lever. The outside lever controls the roll spacing of both row units simultaneously.

Push the lever forward to open the rolls; pull it rearward to close the rolls.

The stalk rolls should be open far enough so the ears are normally snapped off after they have traveled at least halfway up the deck plates.

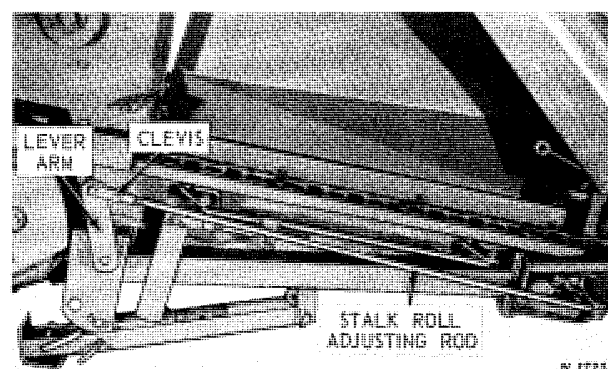
**CAUTION:** Do not use a cornstalk or stick to clean stalk rolls of an ear or trash while corn attachment is operating. If for any reason the corn attachment should become clogged, stop the combine engine and then remove obstacle. Keep hands completely away from stalk rolls while machine is in motion.

### STALK ROLL SPACING



Normal stalk roll point spacing is 3-5/8 inches at the front, center-to-center of points as shown.

### ADJUSTING STALK ROLL LEVER LINKAGE

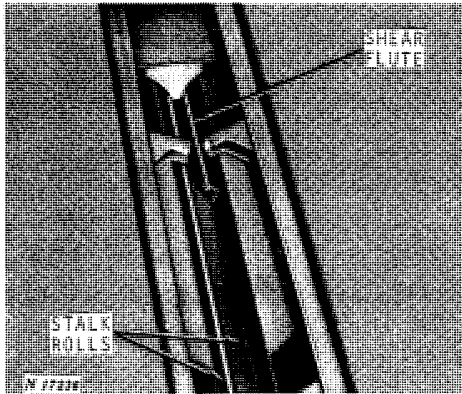


To adjust stalk roll adjusting lever linkage, remove the pin which holds the clevis to the lever arm. Turn the clevis on the stalk roll adjusting rod to lengthen or shorten the rod as required. Lengthen the rod and clevis assembly to increase the distance between stalk rolls; shorten the assembly to decrease the distance. After adjusting, connect the clevis to the lever arm on both sides of the attachment and pull the lever to the rear of the quadrant. Measure the space between stalk roll points to be sure the spacing is correct.

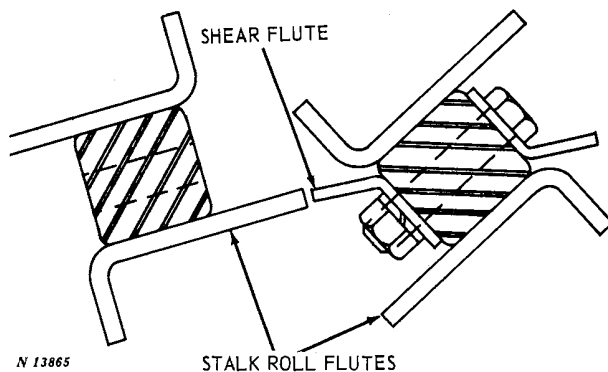
## 8 Operation

### 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 smoothly and there will be no clashing when the rolls are turned.



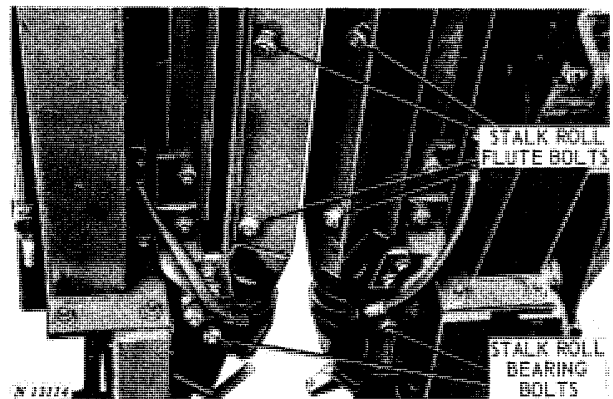
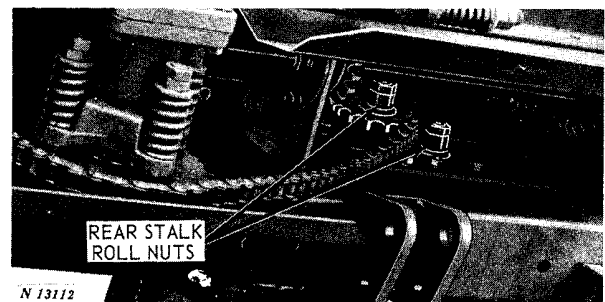
The shear flutes on the stalk rolls are designed to cut off any stalks that may reach the upper end of the stalk rolls.



The shear flute must be positioned so it is directly opposite a stalk roll flute as shown above. If not, the flutes must be timed as follows:

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 roll until the

shear flute is directly opposite one of the stalk roll flutes as illustrated above.



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 the stalk rolls. Tighten all nuts and bolts securely.

### STALK ROLL BOLTS

Periodically check the nuts on the bolts through the stalk roll bearing 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.

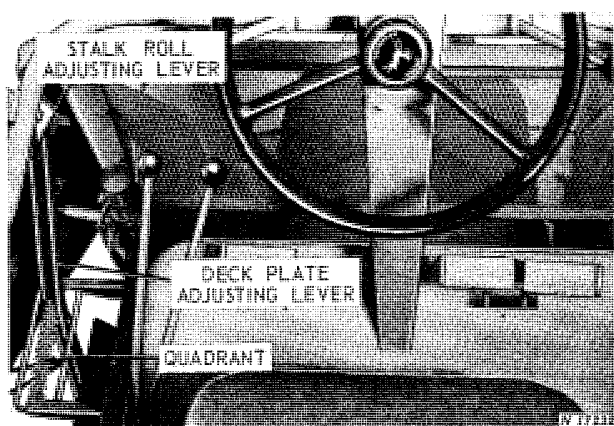
At the same time, check the nuts holding the stalk roll flutes in place. They must be tight at all times. Tighten these bolts to 85 ft-lbs torque.

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

## DECK PLATES

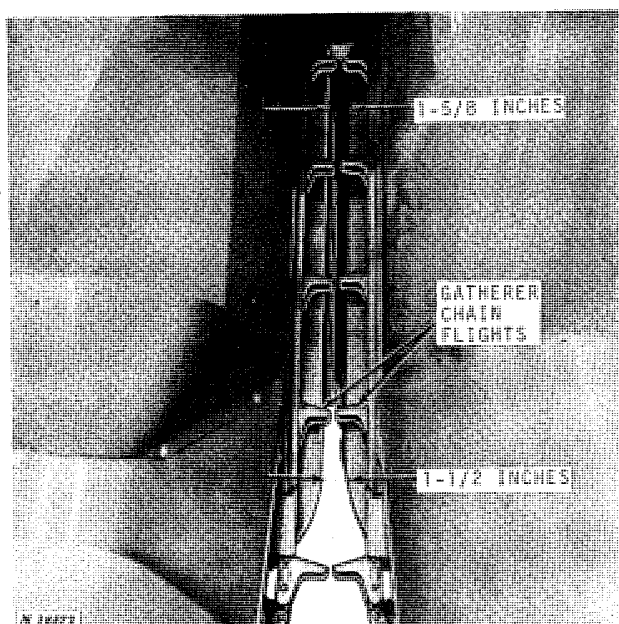
The deck plates snap ears from the stalks as the stalks are pulled down by the stalk rolls. The deck plate spacing can be adjusted to meet varying crop conditions by moving the inside lever accessible from the combine operator's platform. To minimize amount of trash and stalks taken into the combine, deck plates should be open as far as possible without causing shelling.

### ADJUSTING LEVER



The deck plate adjusting lever controls and operates the outside deck plates. Move the adjusting lever forward to open the deck plates and rearward to close the deck plates.

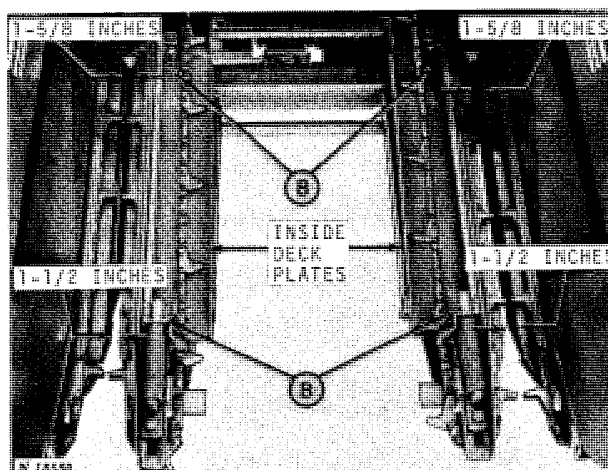
### DECK PLATE SPACING



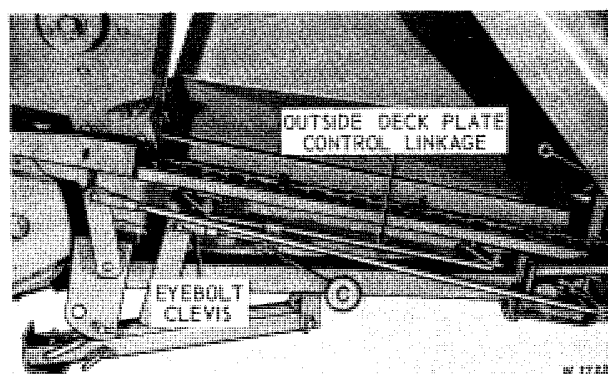
Deck plates should be spaced 1-1/2 inches apart at the front and 1-5/8 inches apart at the rear when deck plate adjusting lever is in the middle of the quadrant.

If deck plate spacing is incorrect, follow the procedure below to adjust deck plate spacing.

1. Place deck plate lever in middle of quadrant.



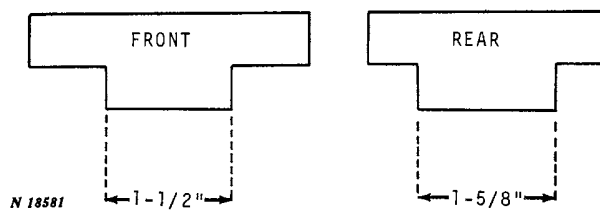
2. Loosen bolts "B" on inside deck plates.



3. Loosen linkage on the outside deck plates at "C."

## 10 Operation

### DECK PLATE SPACING—Continued



4. Make a set of blocks as shown above. Place blocks between deck plates and position deck plates so the gatherer chain flights will protrude over the edge of the deck plates equally on both sides.

*NOTE: Deck plates must always be spaced  $1/8$ -inch wider apart at the rear than at the front.*

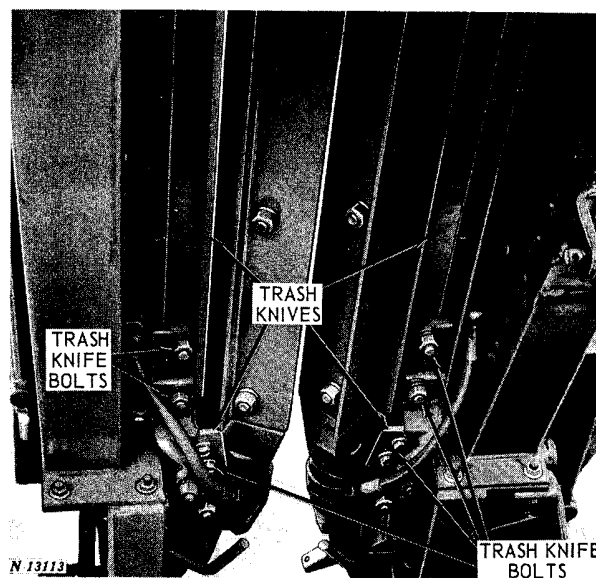
5. Tighten bolts "B" on inner deck plates. See illustration on page 9.



6. Adjust eyebolt clevis so the drilled pin can be installed without changing the deck plate spacing on the outside of the unit.

*NOTE: Check spacing at rear of deck plates. Make sure opening is  $1/8$ -inch wider at rear than at front. If it isn't, loosen bolt at "A". Move bell crank out to increase spacing between rear of deck plates. Push plate in to decrease deck plate spacing. After adjusting, tighten bolt at "A" securely.*

### TRASH KNIVES



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

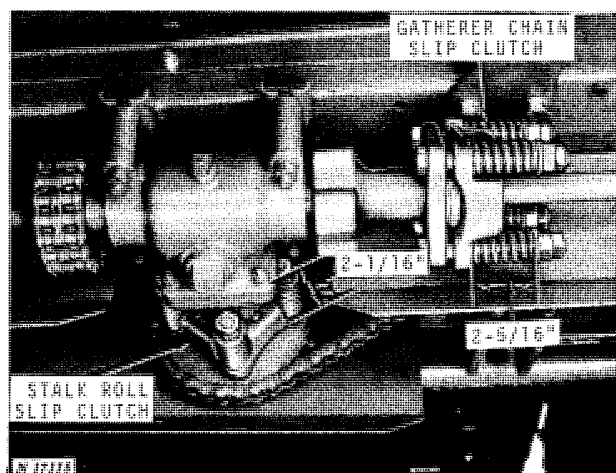
Knives should be set as close as possible to the rolls without striking the flutes. Adjusting slots are provided in the brackets at the ends of the knife supports.

## ADJUSTING TRASH KNIVES

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 it 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 set for ordinary work without slipping. Clutches should be disassembled and cleaned at least once each season.

## ADJUSTING SLIP CLUTCH

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  $2-5/16$  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.

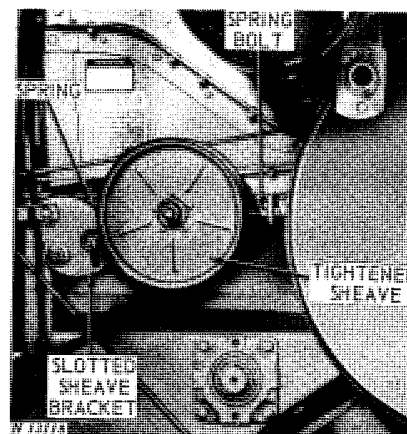
*NOTE: The springs on the gatherer chain slip clutch are not interchangeable with the springs on the stalk roll slip clutch. The gatherer chain slip clutch spring is lighter than the stalk roll spring.*

## 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 No. 55-78001 and up and the 95 Combine Serial No. 95-29001 and up. The drive on the 55 Combine Serial No. below 55-78001 cannot be disengaged, see page 36.

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.

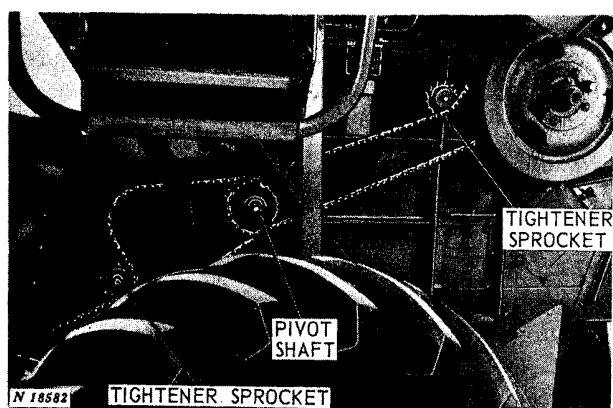
Adjust the throw of the tightener sheave by loosening the nut in the slotted sheave bracket and moving the sheave up or down as necessary to provide proper belt tension when the corn attachment drive is engaged.

## DRIVE CHAINS

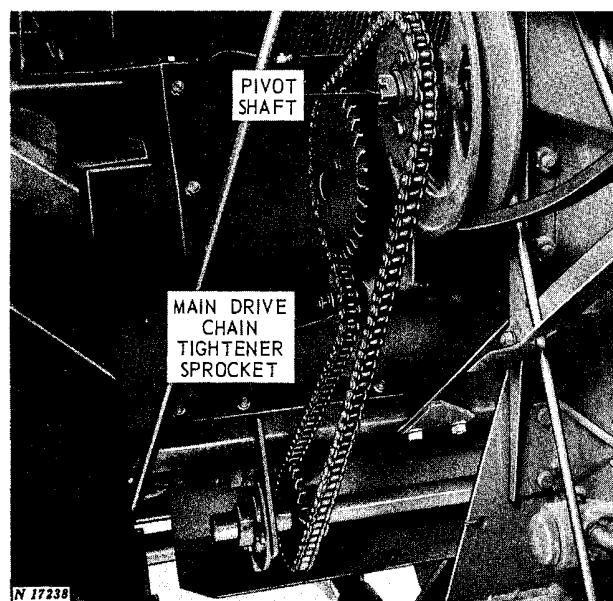
Roller drive chains should be just tight enough so they do not slap or climb sprockets.

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.

### ADJUSTING MAIN DRIVE CHAIN



235 Corn Attachment on 55 Combine



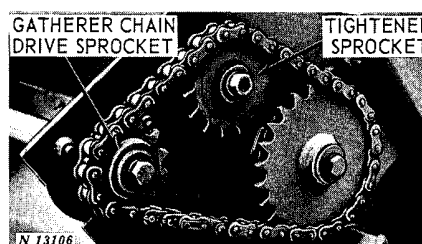
235 Corn Attachment on 45 Combine

If the corn attachment is mounted on a 55 or 95 Combine, adjust the chain between the combine beater shaft and the corn attachment pivot shaft by moving the tightener sprocket on the combine.

**IMPORTANT:** Raise the corn attachment before adjusting the tension of the pivot shaft drive chain.

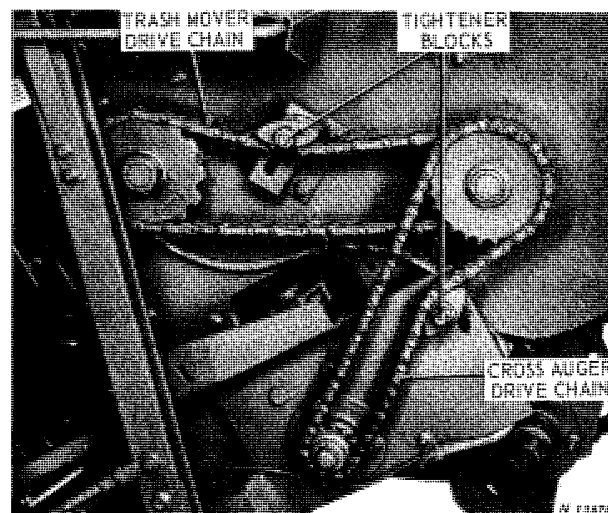
On all corn attachments, move the chain tightener sprocket in the slot to adjust tension of the chain which runs from the pivot shaft sprocket to the sprocket on the gear case shaft.

### ADJUSTING GATHERER DRIVE CHAIN



Remove the chain shield and check the tension of the gatherer drive chain. Adjust the tightener sprocket until the desired chain tension is obtained. Replace the chain shield.

### ADJUSTING TRASH MOVER AND CROSS AUGER DRIVE CHAINS



Remove the chain shield and check the tension of the trash mover drive chain. Adjust the tightener block to obtain proper chain tension. Replace the chain shield. Adjust the tightener block until the cross auger drive chain has the desired tension.





**Suggest:**

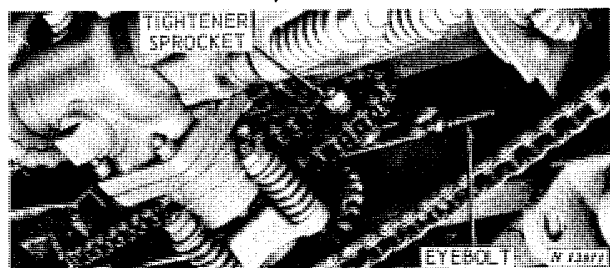
**If the above button click is invalid.**

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**Thank you so much for reading**

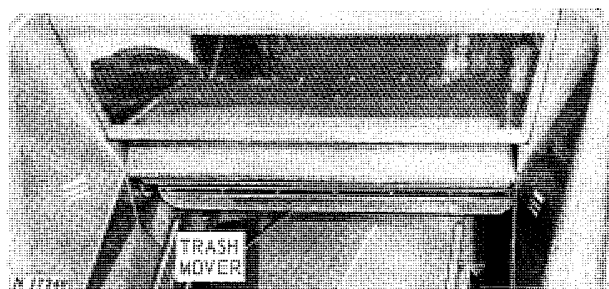


## ADJUSTING STALK ROLL DRIVE CHAIN



To adjust the stalk roll drive chain, raise the corn attachment. Lower the safety stands (page 14) into position. Loosen the tightener sprocket attaching bolt. Adjust the stalk roll drive chain tension by moving the nuts on the eyebolt which holds the tightener sprocket.

## TRASH MOVER



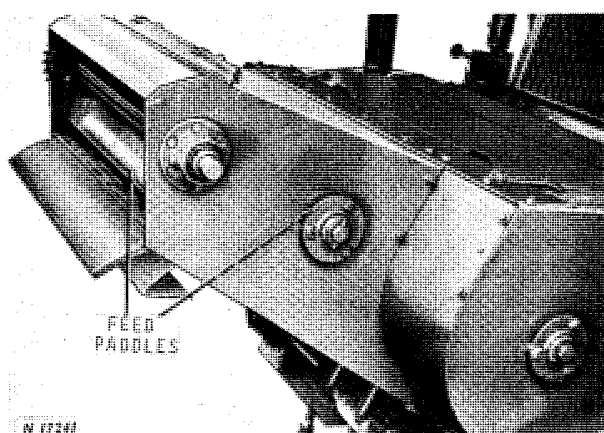
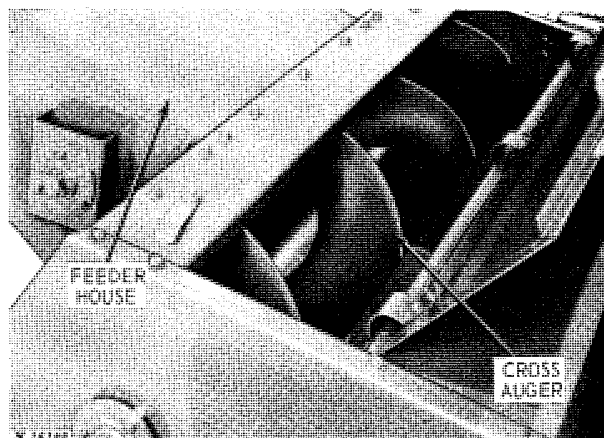
The trash mover is located directly above the gatherer chains. The trash mover starts trash and broken stalks into the cross auger housing. The rubber flaps should be replaced when worn.

When replacing, be sure the convex side of the flap comes in contact with the crop.

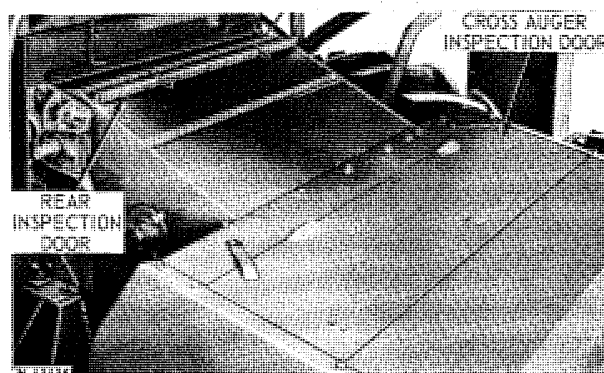
## CROSS AUGER AND FEED PADDLES

A high capacity cross auger, positioned behind the trash mover, positively directs the flow of material to the feed paddles.

From the cross conveyor, feed paddles move the corn into the combine. The feeder housing is the same width as the combine cylinder.



Feeder Housing for 55 Combine



The cross auger is covered with a large inspection door. This door is held in place by two spring clips. Keep the door closed during operation for the comfort of the operator.

An inspection door is also located at the rear of the feeder housing. This door is held in place by two spring locking pins.

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