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# 8000 SERIES GRAIN DRILLS



## OPERATORS MANUAL 8000 SERIES GRAIN DRILLS

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ENGLISH



# To The Operator



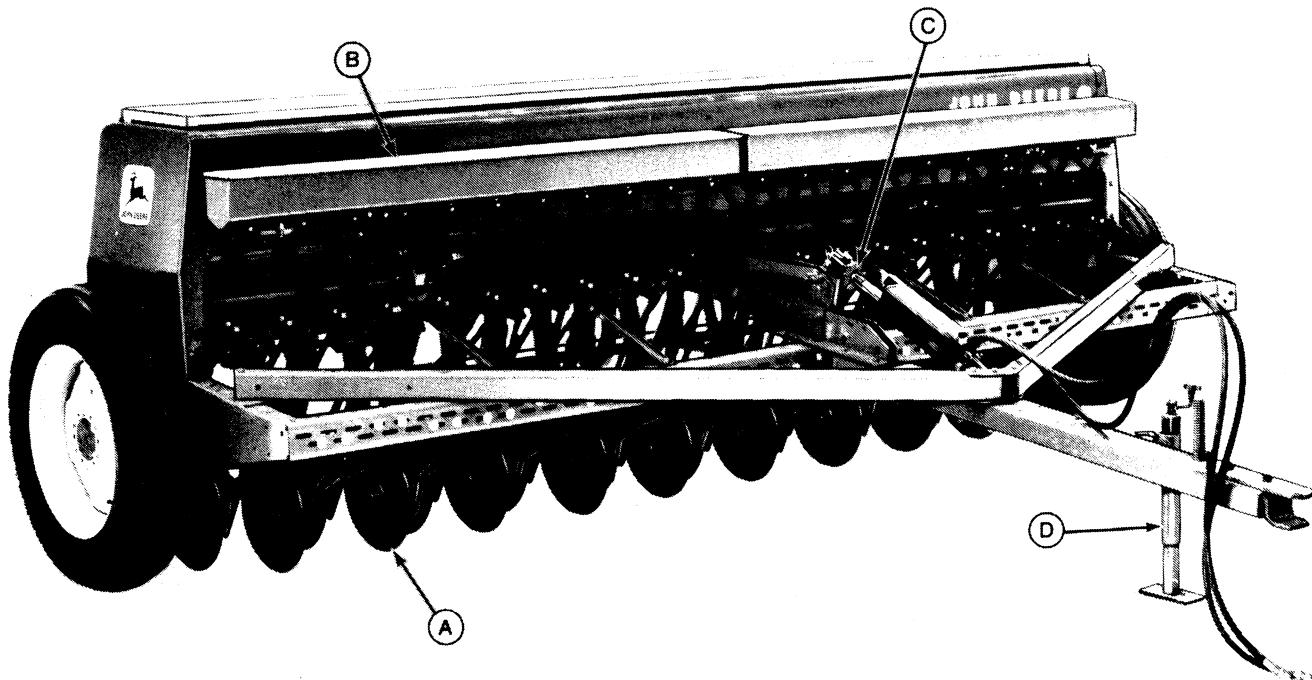
This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

"Right-hand" and "left-hand" sides are determined by facing in the direction the drill will travel when in use.

Record your model and serial numbers on page 64.

Your warranty appears on your copy of the purchase order copy which you should have received from your dealer.

Measurements are shown with their respective Metric equivalents in parentheses throughout this operator's manual. These equivalents are the SI (International System) Units of Measure.



832243

A—Double Disk Openers

B—Grass Seed Attachment

C—Hydraulic Lift

D—Hitch Jack

John Deere 8250, 12-Foot (3.7 m) Grain Drill with Grass Seed Attachment



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# SAFETY

## Operate Safely

DO NOT operate grain drill without reading this operator's manual.

DO NOT operate grain drill with more than one person on the tractor.

DO NOT allow anyone to ride on the drawbar of the tractor, or on the grain drill.

DO NOT operate close to a ditch or creek.

Slow down when turning.

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Hearing protective devices (such as ear muffs or plugs) can effectively protect against loud noises.

When you are exposed to noise which is objectionable or uncomfortable, it is recommended that you wear a suitable hearing protective device.

Drive slowly over rough ground.

Shift the tractor into a lower gear when operating on steep slopes.

If your tractor is equipped with a Roll-Gard Safety Canopy and seat belt be sure to keep your seat belt fastened when operating or transporting the grain drill.



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## Avoid Fires

DO NOT refuel with the tractor engine running.

DO NOT smoke or use a lantern when refueling.

There are several references in this manual to the use of diesel fuel as a cleaning agent. Be careful when cleaning with this fuel so that it does not ignite. Use only in a well ventilated area and away from any sparks or flames.

## Transport Safely

Always raise the openers and secure the lift mechanism. If hydraulic lift, install locking pin (bold arrow).

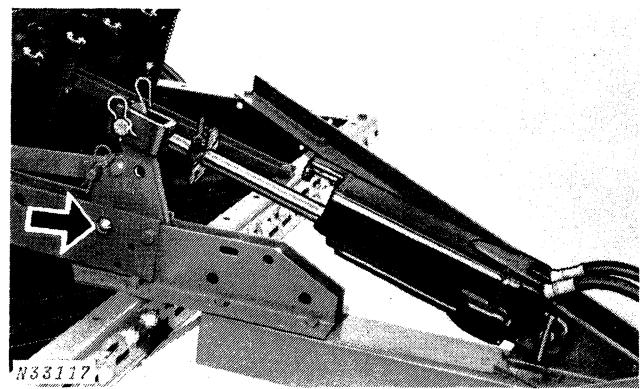
Always raise the jack stand before transporting.

Shift the tractor into a lower gear when transporting down steep slopes or hills.

**DO NOT** transport unless the grain drill reflectors and tractor SMV emblem are easily visible from the rear.

When towing the grain drill on a road or highway at night or during the day, use necessary lights and devices for adequate warning to operators of other vehicles. In this regard, check local governmental regulations. Various safety lights and devices are available from your John Deere dealer.

Stop slowly.



## Practice Safe Maintenance

Always lower openers before working on or under them, unless specifically told to do otherwise.

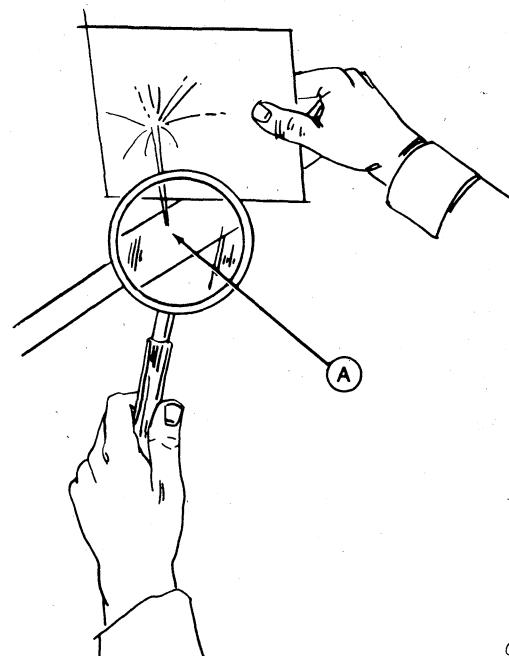
Replace any guards or shields removed for servicing.

Block the wheels so the drill remains stationary.

Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes and hoses are not damaged.

Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.



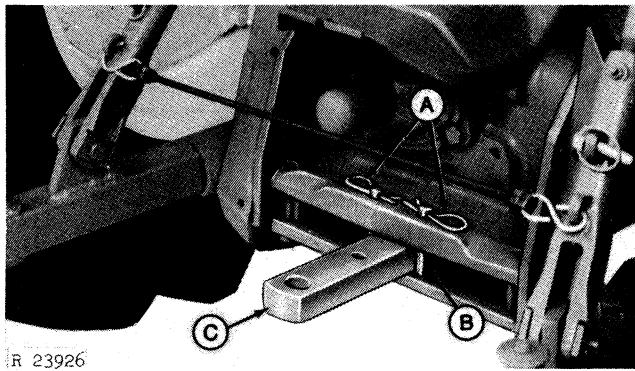
A—Pin Hole Leak

G1031?



# Preparing For Use

## PREPARING TRACTOR

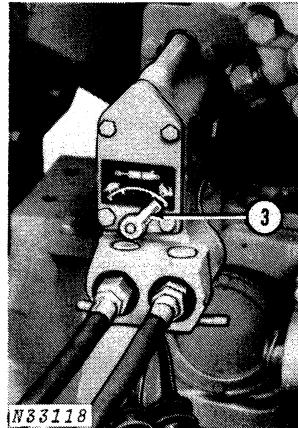


1. Lock the drawbar in the center with locking pins (B) and Quik-Tatch pins (A).
2. Secure or remove the lift links.

**⚠ CAUTION: Make sure the master shield and PTO guard are installed.**

A—Quik-Tatch Pins  
B—Locking Pin  
C—Drawbar

3. If drill is equipped with hydraulic lift, turn the tractor metering valve clockwise to the "Fast" position.

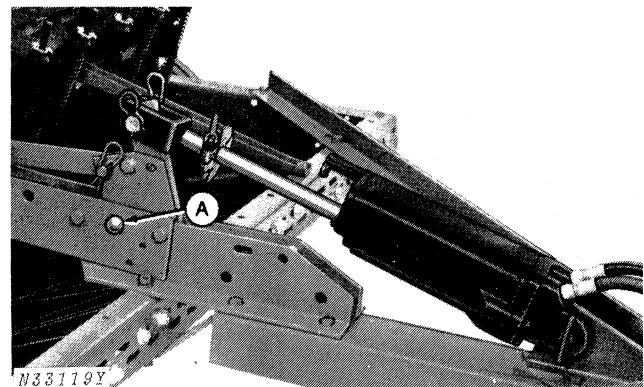


## PREPARING DRILL

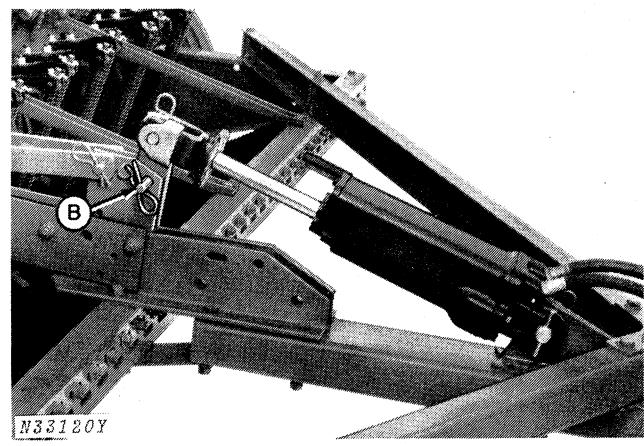
1. If equipped with hydraulic lift, install the hydraulic cylinder as shown, positioning the lock pin in either the transport position (A) OR the field position (B).

When the pin is in the transport position, the hydraulic cylinder can be removed for other use, and the drill can still be transported.

Route the hoses through the spring support in preparation for tractor hook up.

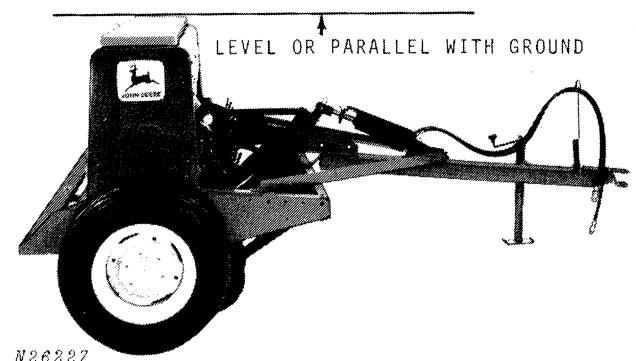
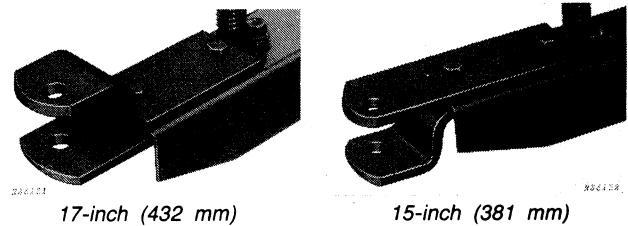


Transport Position



Field Position

2. Position drill hitch clevis straps AND/OR tractor drawbar to level drill.

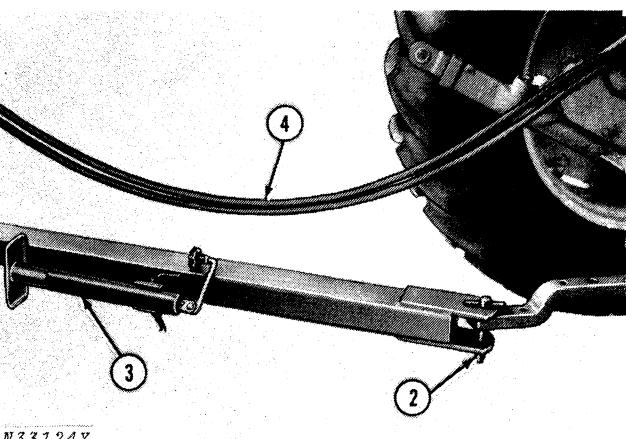
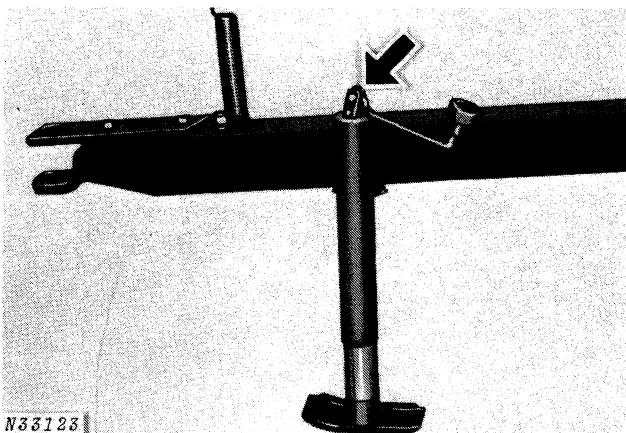


3. Check for correct tire air pressure as shown.

**IMPORTANT: Incorrect air pressure affects seed-ing rates.**

4 ply tires—28 psi (1.9 bar) (1.9 kg/cm <sup>2</sup> )
6 ply tires—32 psi (2 bar) (2 kg/cm <sup>2</sup> )

## ATTACHING DRILL TO TRACTOR



Multiple Hitch Illustrated

1. Use the jack stand to align the drill hitch with the tractor.

2. Back the tractor and pin the hitch to the drawbar.
3. Unpin the jack stand, turn it 90 degrees, and repin it in field position.
4. If drill is equipped with hydraulic lift, plug the hoses into the tractor outlets.

## DETACHING DRILL FROM TRACTOR

1. Back the drill into your storage area.
2. Turn the jack stand to the vertical position and take the load off the drawbar. Remove hitch pin.
3. If drill is equipped with hydraulic lift, disconnect the hoses. Install dust plugs in the tractor outlets.
4. Pull the tractor forward.



# Transporting

The drill can be transported by hauling it on a trailer or by towing it.

Reduce speed when transporting over rough ground.

Transporting with seed and/or fertilizer in the drill is not recommended as it will cause settling and packing of the material.

Be familiar with the width of your drill, especially if transporting with multiple hitches.

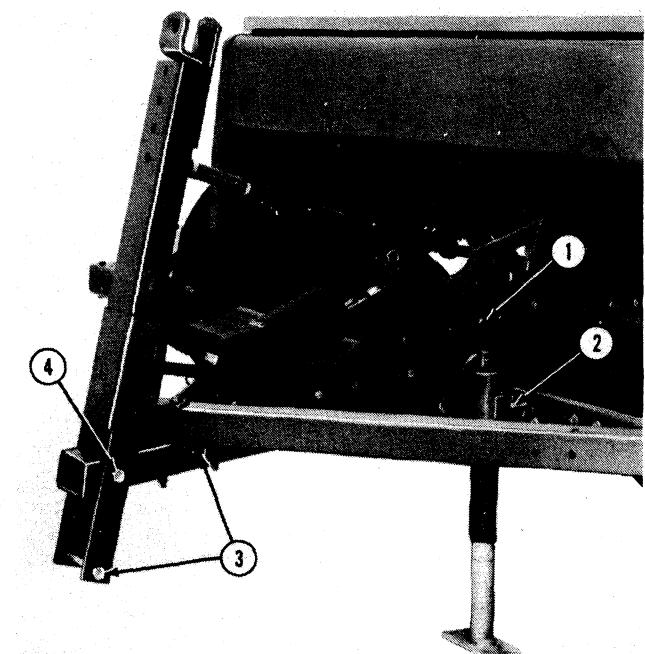
If tractor has Roll-Gard® Safety Canopy, keep your seat belt fastened when transporting.



**CAUTION:** When transporting the grain drill, use accessory lights and devices for adequate warning to the operators of other vehicles. In this regard, check local governmental regulations. Various safety lights and devices are available from your John Deere dealer.

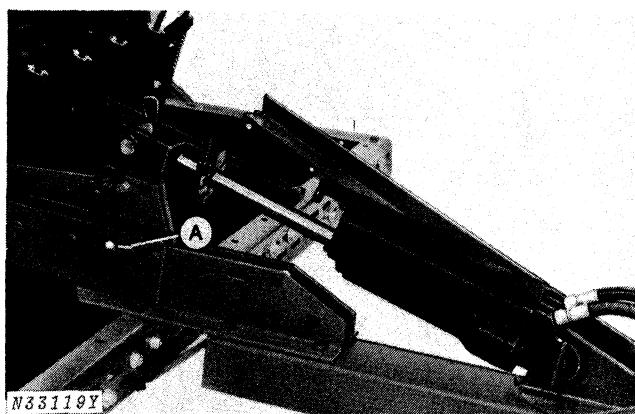
## HAULING DRILL ON A TRAILER

1. Install lock pin in transport position and pull drill on trailer.
2. Place hitch jack on front frame and pin in place.
3. Remove folding tongue rear bolt and fold tongue. Replace bolt in tongue as shown.
4. Tighten folding tongue front bolt tight enough to hold tongue in transport position.
5. Block and chain drill securely to trailer bed.

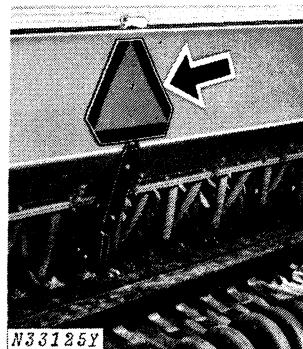


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## TOWING DRILL



Raise the openers. If equipped with hydraulic lift, install the lock pin in the transport position (A).



Keep the tractor SMV emblem in place and clean.

If the tractor SMV is missing or obscured, obtain an SMV from your John Deere dealer and install on the rear of the drill.

Make sure the drill safety reflectors—amber on front, red on rear—are clean and in place.

Never transport the grain drill faster than 10 mph (16 kmh).



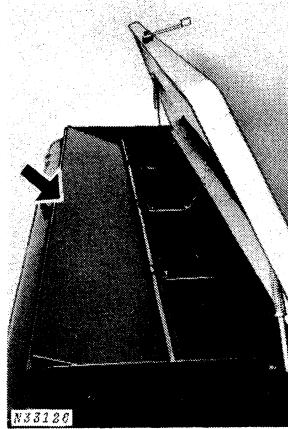
# Field Operation and Adjustments

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## SPILL SHIELDS

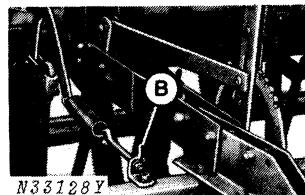
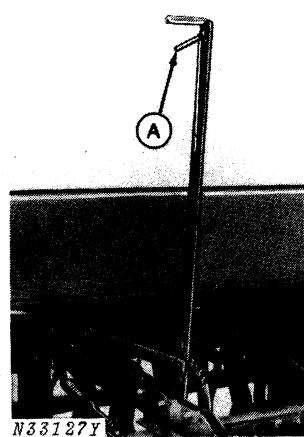
When filling the grain or fertilizer box, turn the shield back on the box not being filled or over the space between the two openings.

To prevent packing, fill only in the field.



8250, 8300, 8350

## OPTIONAL HAND LIFT LEVER



Pull up on the spring loaded lock (A), then move the lever into the desired notch for opener penetration.

To make lifting and lowering easier, turn the helper spring adjusting nut (B) clockwise.

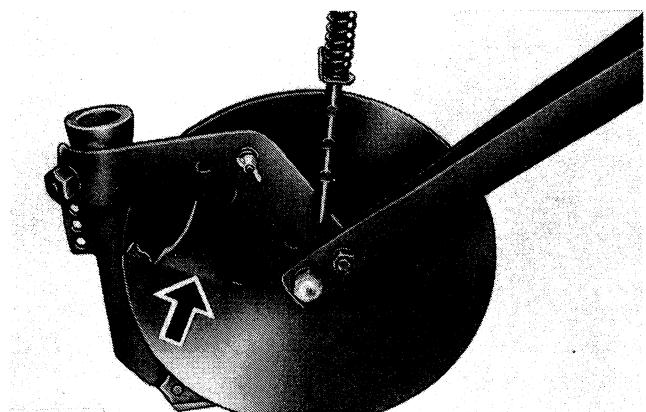
**A—Lock**  
**B—Adjusting Nut**

## SINGLE DISK OPENER

### Adjusting Inside Scraper (Attachment)

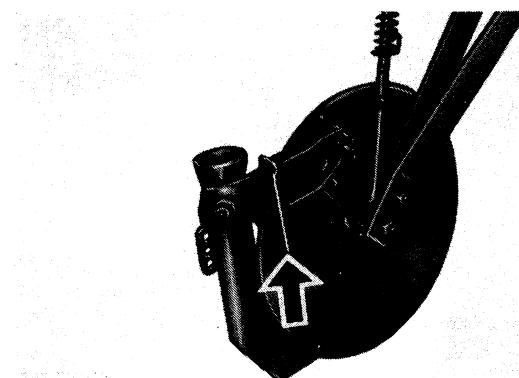
Use only when necessary to keep the disk clean.

Adjust to the contour of the disk with just enough tension to clean without preventing the disk from turning.



*Operating Position*

Place in storage position when not needed.



*Storage Position*

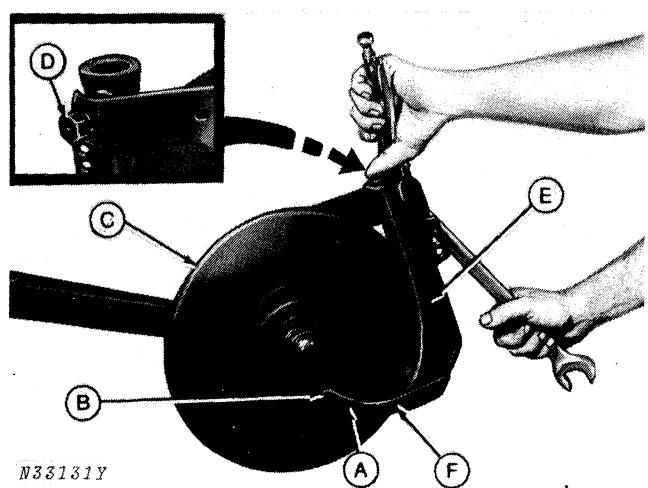
### Adjusting Toe Scraper

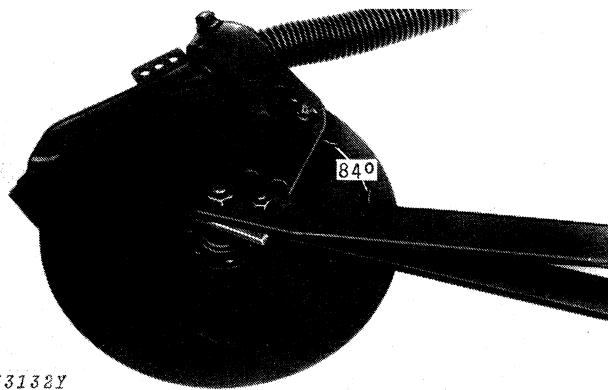
Check adjustment by placing your hand against inside of blade (C) and pushing toward scraper to simulate soil pressure. The blade should contact the tip (B) lightly with the scraper heel (F) lightly touching or up to 0.08 inches (2 mm) away from the blade.

Loosen adjusting nut (D) to reposition the scraper. Hold the boot with locking pliers when tightening the nut.

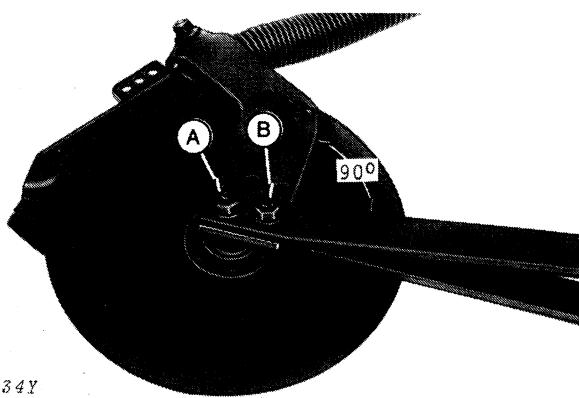
A—Toe Scraper  
B—Toe Scraper Tip  
C—Blade

D—Adjusting Nut  
E—Boot  
F—Toe Scraper Heel

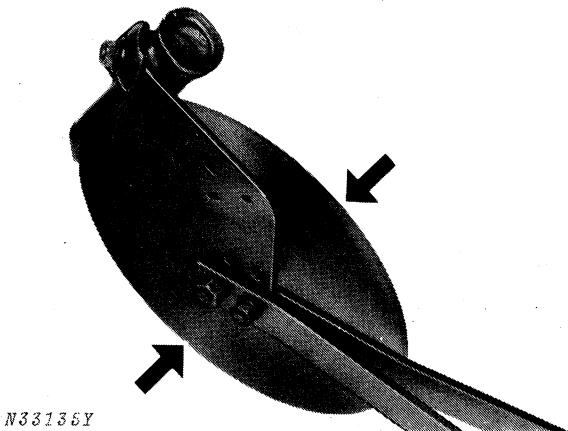




Short Drawbar-Factory Setting



Long Drawbar-Factory Setting



## Adjusting Boot

Initially set the boot support as illustrated—84 degrees for the short drawbar and 90 degrees for the long drawbar.

Loosen the disk bolt (A) and the drawbar clamp bolt (B) to make any adjustment.

Tighten the disk bolt to 105 ft-lbs (143 Nm [14.5 kgm]) and the drawbar clamp bolt to 85 ft-lbs (115 Nm [12 kgm]).

For varying field conditions, the boot support can be adjusted as desired.

A—Disk Bolt  
B—Clamp Bolt

**IMPORTANT:** Any time the boot support has been adjusted or the two bolts loosened, push the top of disk TOWARD boot support or push bottom AWAY FROM support to remove all slack from bolt holes.

## Check Scraper Adjustment, Page 11.

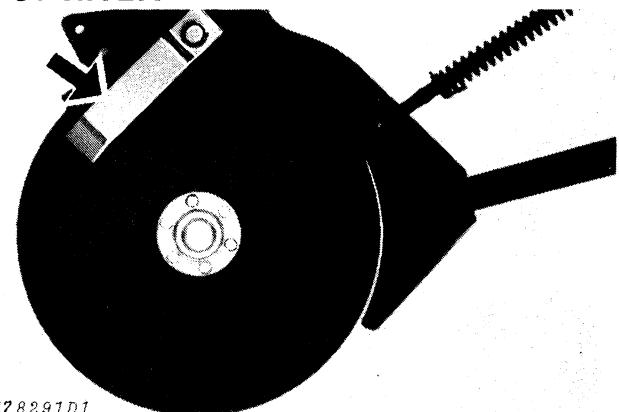
If the carriage bolts securing the front of the drawbar to the main frame are loosened (not necessary for boot adjustment), make sure to adjust them properly when assembling, see "Adjusting Drawbar."

## DOUBLE DISK OPENER

### Adjusting Outside Scrapers (Attachment)

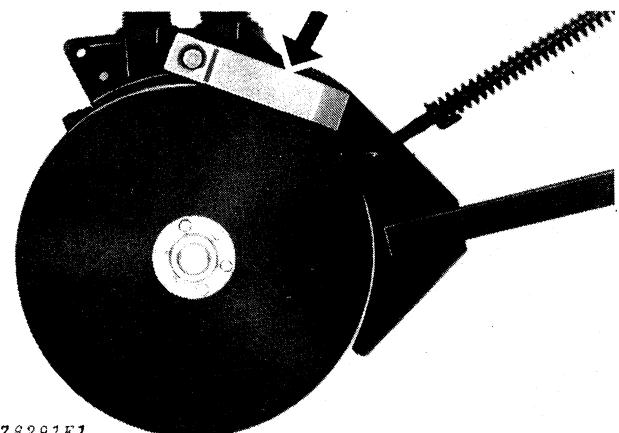
Use only when necessary to keep the disks clean.

Adjust to the contour of the disks with just enough tension to clean without preventing the disks from turning.



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Operating Position



N78291E1

Storage Position

### Adjusting Inside Scrapers

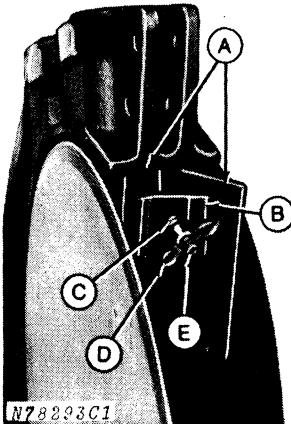
The scrapers (A) are necessary to prevent dirt build-up and allow even seed distribution.

Keep them tight but do not prevent the blades from turning. Tighten with the adjusting nut (D).

To remove scrapers from boot, turn stud (E) 90 degrees to pull out.

When installing new scrapers, turn nut (D) down on stud until 3/8-inch (10 mm) of threads are exposed.

A—Spacer              C—Spacing              E—Stud  
B—Clip              D—Adjusting Nut



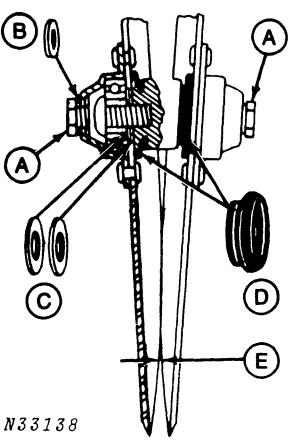
N78293C1

### Check Disk Blades

The blades must turn freely. Check by holding one stationary and rotating the other one. The blades must "barely touch" at point (E). Check by pulling a thin sheet of paper between them, at that point, without tearing it.

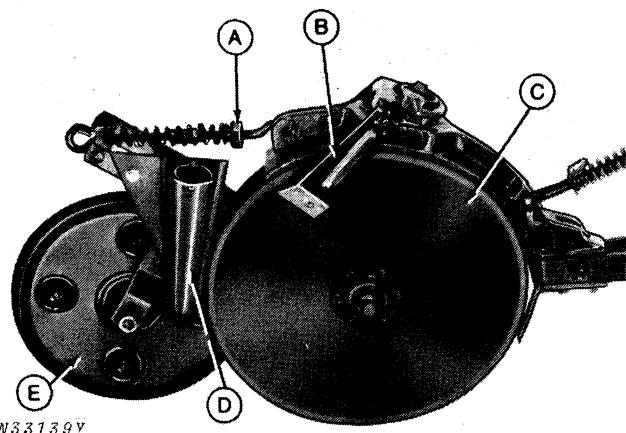
Most new openers need two spacer washers (C) on each bearing screw (G) while worn blades may require none. See page 48 for disassembly.

A—Bearing Plug      D—Seal  
B—Washer              E—"Barely Touch"  
C—Spacer              F—Bearing Screw



N33138

## GAGE-O-MATIC OPENER



N33139Y

See Double-Disk Opener for adjusting outside scraper and for checking disk blades.

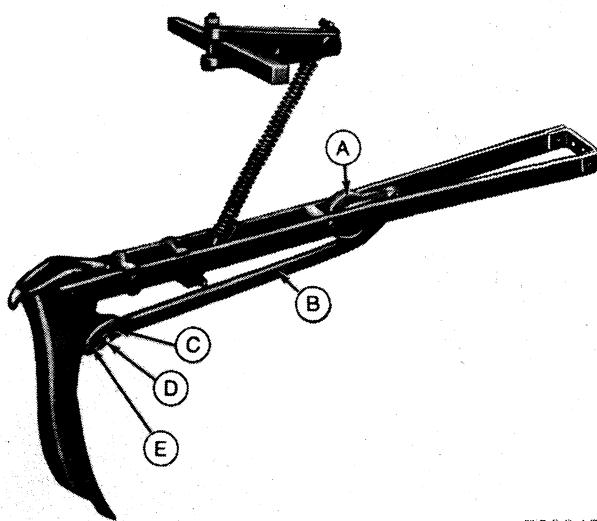
### Adjusting Firming Wheel Tension

Turn the compression nut (A) to increase down pressure on the firming wheel. Suggested for use in low moisture soils.

A—Compression Nut  
B—Outside Scraper  
C—Blade

D—Fertilizer Tube  
E—Firming Wheel

## HOE OPENER



N32247

A—Trip Spring  
B—Spring Link  
C—Shallow Penetration  
D—Normal Penetration  
E—Deep Penetration

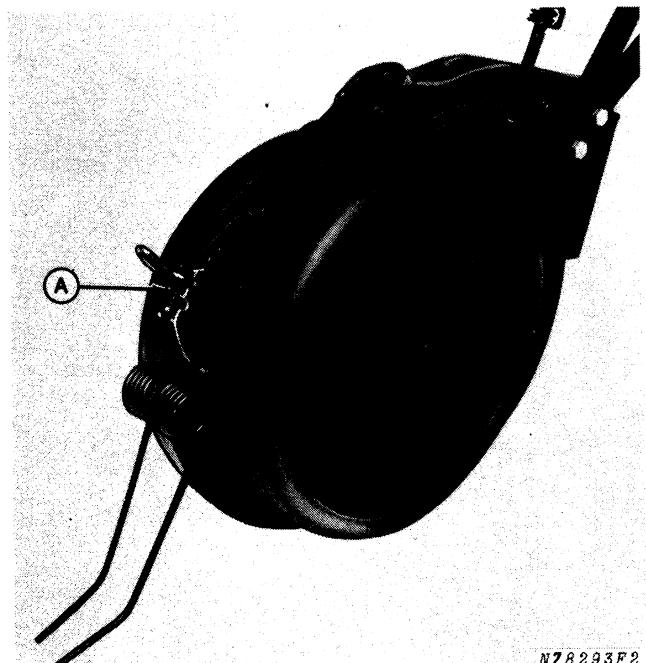
## TRU-VEE OPENER ATTACHMENT

Use the Tru-Vee Opener Attachment on double disks where precision drilling depth is desired. Tru-Vee openers can be used on row spacings of 10-inches or above. Ten-inch spacing requires zig-zag pattern.

### Depth Adjustment

To decrease drilling depth: Move depth adjustment arm (A) forward and pin in position.

To increase drilling depth: Move depth adjustment arm (A) rearward and pin in position.

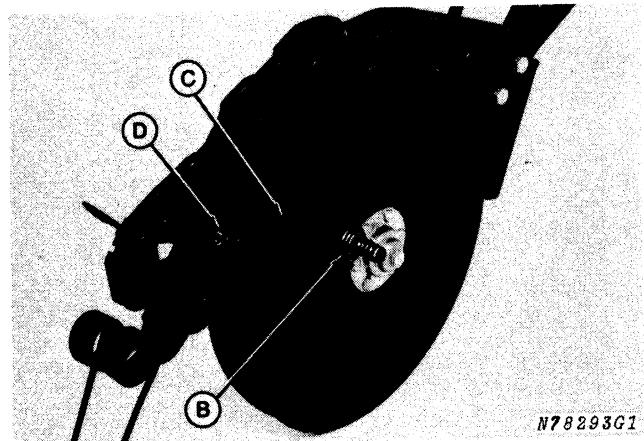


**A—Depth Adjustment Arm**

To prevent a buildup of dirt or trash between gauge wheels and opener, be certain wheels are positioned correctly against disk blades.

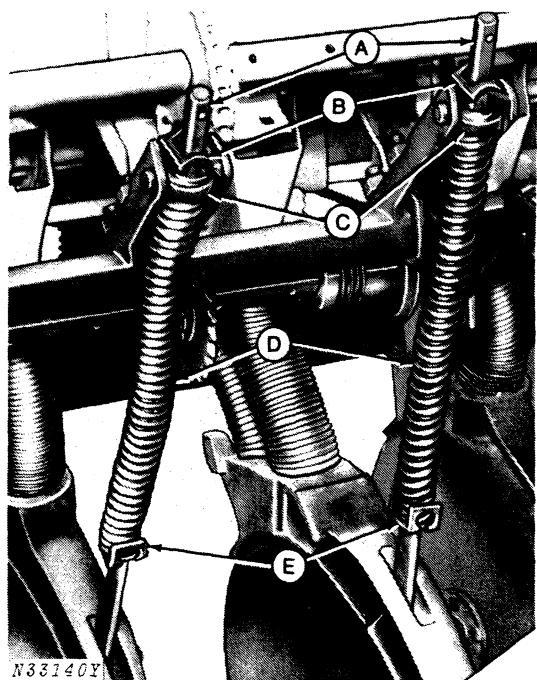
Gauge wheel tires should just touch the blades at their closest point. Add or remove shims (B) to adjust.

When replacing gauge wheel arms (C), tighten slotted nut (D) to 100-120 inch lbs. (11-14 Nm [1.1-1.4 kgm]) torque and install cotter pin.



**B—Shims  
C—Gauge Wheel Arm  
D—Slotted Nut**

## OPENER DOWN PRESSURE



N33140Y

A—Pressure Spring Rod  
B—Collar  
C—Swivel  
D—Pressure Spring  
E—Pressure Adjustment Washer

Down pressure can be increased by rotating the special locking washer (E) and moving it (while compressing the spring) to a higher notch on the pressure rod.

The lowest or next lowest notch usually provides satisfactory down pressure for most conditions. Rocky, cloddy, or poorly prepared ground may require more pressure. Use no more pressure than necessary.

Pressure is correct when the opener penetrates to the desired depth WITHOUT the collar (B) striking the swivel (C).

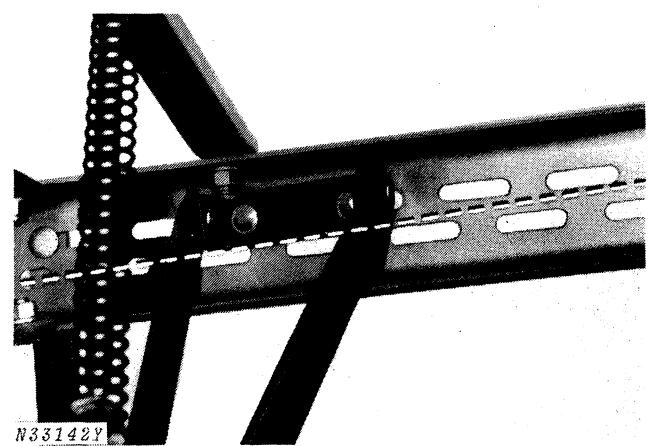
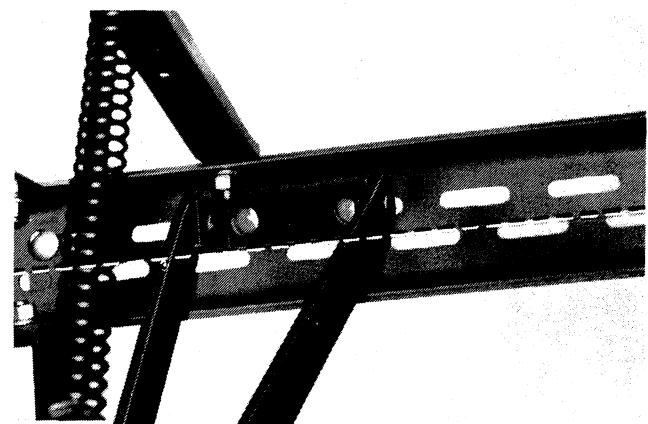
The top of the rod has two holes for adjusting opener depth in relation to each other. Move the cotter pin and collar (B) to the top hole for the openers which are to run in the tractor tracks. Adjust spring pressure after making this adjustment.

**IMPORTANT: Install cotter pins with head toward pressure shaft to prevent loss.**

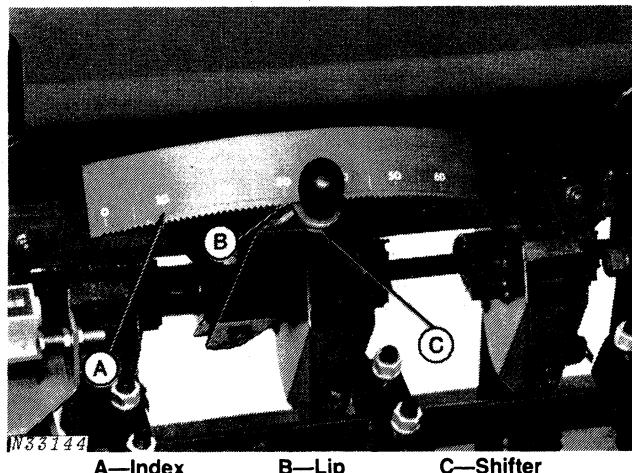
**NOTE:** When top hole in pressure rod is used, opener ground clearance is reduced when in raised position.

## DRAWBAR

The drawbar yoke MUST BE PARALLEL with the slots in the front frame channel to set the correct angle of the disk. Reposition if necessary.



## SEEDING WITH FLUTED-FEED DRILLS



**EXAMPLE: 8-Inch (0.2 m) Row Spacing**

Seed	Quantity Per Acre (Hectare)	Notch
Barley	34 lbs (37 kg)	12
Vetch	14 lbs (16 kg)	4
Millet	52 lbs (58 kg)	16
Approximate Notch Set		32

### Checking Grain Feeds



**CAUTION:** Be careful when using diesel fuel so that it does not ignite. Use only in well-ventilated areas away from any sparks or flames.

Before adding seed, raise openers (to disengage clutch) and turn feed shaft(s) (bold arrow) with a wrench in direction feeds normally turn. If it turns hard, loosen moving parts with diesel fuel.

Turn daily during the season. When using treated seed, turn whenever drill has been standing for an hour or more.

### Setting Grain Shifter

The lip (B) of the feed shaft shifter is the indicator. To obtain desired setting, move shifter lever (A) down, five or more notches if possible, to an index setting lower than the desired setting. Move lever back slowly to one notch above the desired setting; then place lever back to desired notch.

**IMPORTANT:** The seed rate charts are only approximate pounds per acre (kilograms per hectare). Set the shifter higher or lower after "Checking Quantities Drilled", page 37.

### Using Mixtures

If mixing seeds, select the shifter setting from the proper row spacing chart that will give the desired quantity for EACH KIND of seed. Add the shifter settings together and set the shifter in the notch that represents the total of all the settings. See example.

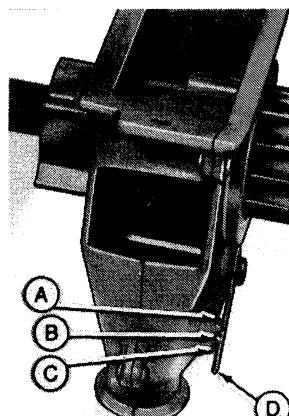
Set the shifter higher or lower after "Checking Quantities Drilled", page 37.

**NOTE:** When your particular seed is not shown on the seed chart, select a seed of comparable weight and size in determining shifter setting.

## Setting Feed Cup Gates

Set the feed gate latch (D) in one of the three positions for the particular seed being drilled. Set all feed cups identically. Improper setting will result in uneven drilling, wrong quantities being drilled, and crushing of seed.

- A—Wheat, oats, barley, rye, flax, rice, and similar seeds.
- B—Small peas, common beans, soybeans, corn, and larger quantities of items listed in "A" above.
- C—Large peas, soybeans, kidney beans, and lima beans.
- D—Latch

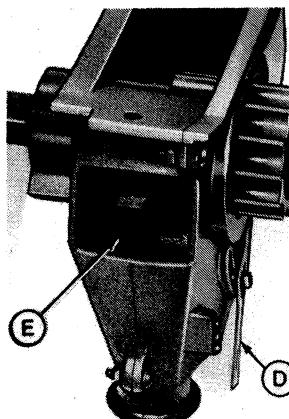


N33145  
Latch Set in Position "C"

## Cleaning Cups

Remove latch (D) from its retaining tooth and open feed gate (E) as wide as possible. This will allow dirt and trash (and dropped bolts) to fall out.

**NOTE:** Repair kit AN161511 is available to repair a broken latch or gate.



N33146  
E—Feed Gate

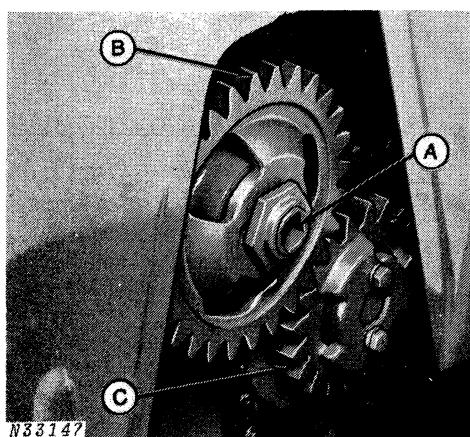
## Feed Shaft Speed

The seeding rates shown in the seed charts CAN BE DOUBLED by reversing the 20 and 28 tooth gears in the end(s) of the box.

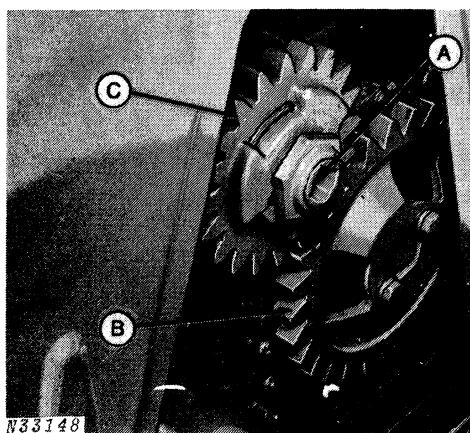
The gears are factory set in the slow speed position.

Use the slow speed drive whenever possible for maximum efficiency and to minimize wear. Use the fast speed drive for drilling larger quantities.

**IMPORTANT:** If drill has drive gears in both ends of box, make sure they are the same.



N33147  
Slow Speed



N33148  
A—Feed Shaft  
B—28 Tooth Gear  
C—20 Tooth Gear

## **SEEDING CHARTS FOR FLUTED FEED DRILLS**

**IMPORTANT:** The rates shown in the charts are only to be used as a guide. See "Checking Quantities Drilled" for accuracy.

1. The charts are based on drills with slow speed drive. DOUBLE the rates for fast speed drive.
  2. The charts are based on drills with either 7.60 x 15-inch rib-implement tires OR 7.50 x 20-inch double-rib tires.
  3. If drill is equipped with 7.60 x 15-inch double-rib tires, multiply the chart rate by 0.94.
  4. If drill is equipped with 7.50 x 20-inch rib-implement tires; multiply by 1.03.
  5. Drill row spacing can be changed by using feed stops (attachments) see page 58.



## **22 Field Operation and Adjustments**

## SEEDING WITH DOUBLE-RUN DRILLS

### Checking Grain Feeds

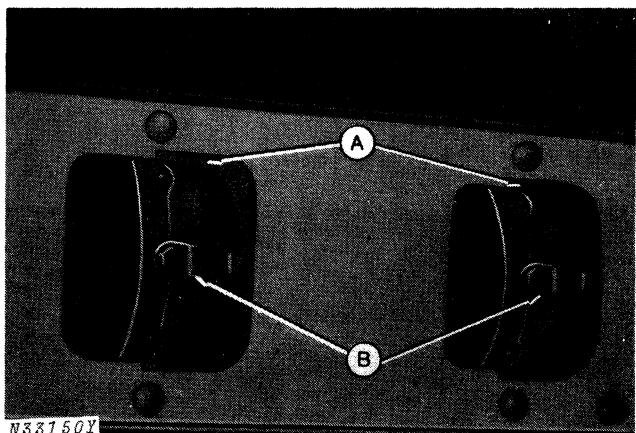
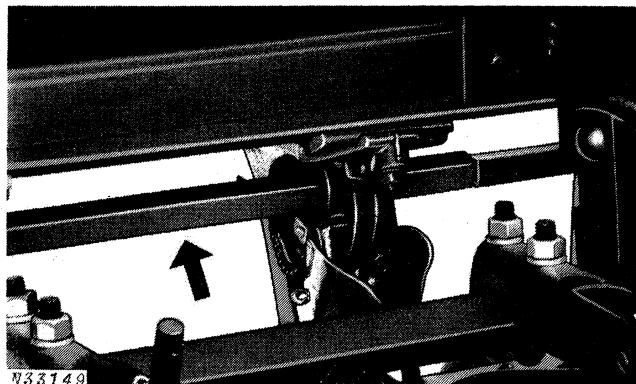
**CAUTION:** Be careful when using diesel fuel so that it does not ignite. Use only in well-ventilated areas away from any sparks or flames.

Before adding seed, raise openers (to disengage clutch) and turn feed shaft(s) (bold arrow) with a wrench in direction feeds normally turn. If it turns hard, loosen moving parts with diesel fuel.

Turn daily during the season. When using treated seed, turn whenever drill has been standing for an hour or more.

### Setting Feed Cups

Position the feed cover (A) over the side of the feed cup wheel NOT USED by loosening the latch (B). The proper side of the wheel to use is determined by seed size and quantity, see seeding charts pages 22-25.

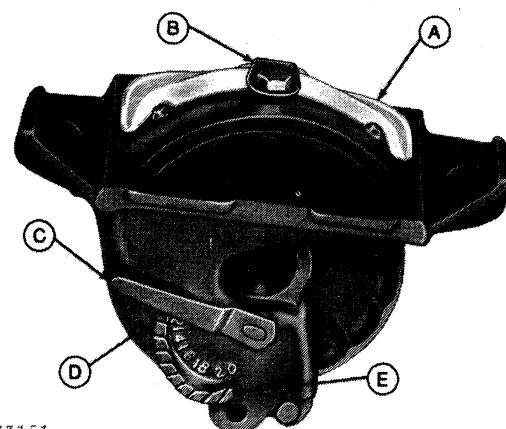


A—Cover  
B—Latch

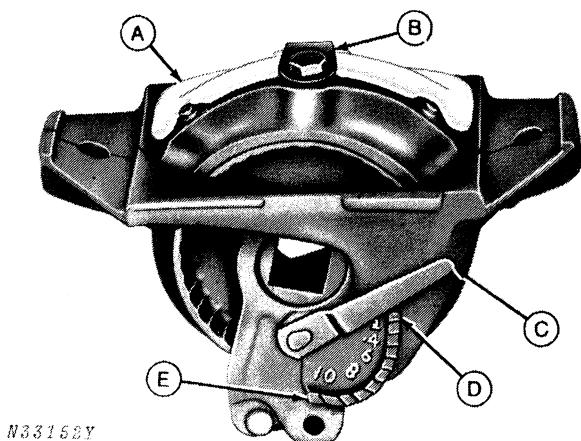
Position the lock lever (C) in the proper notch (on the side of the wheel to be used) as shown in the seeding charts. Each side has 10 different positions for the lever; the higher the number, the greater the rate of coverage. Set all cups identically.

### Cleaning Cups

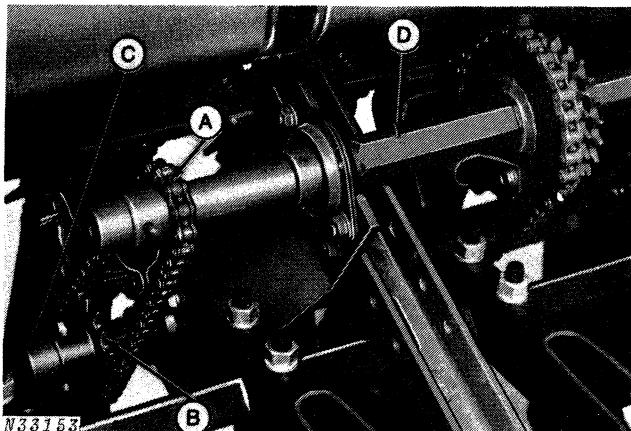
Move the lock lever into the highest numbered notch. Disengage drive clutch and turn feed shaft(s) with a wrench until all seed is out.



Large Side of Feed Wheel-Right-hand Side



A—Cover  
B—Latch  
C—Lock Lever  
D—Smallest Quantity  
E—Largest Quantity



*Slow Speed Illustrated*

## Feed Shaft Speed

Feed shaft speed is determined by drive sprocket combinations. There are 12 different speeds available for each side of the feed wheel.

SLOW SPEED (Drive 1 through 6 on the charts, pages 26-29) and FAST SPEED (Drive 7 through 12 on the charts) are determined by the 12-tooth sprocket (A) and 17-tooth sprocket (B).

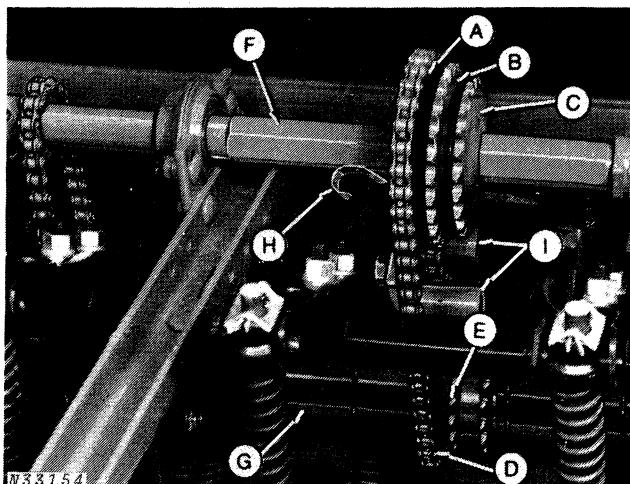
The drive sprockets are factory assembled in the slow speed position. They can be easily switched by pulling both cotter pins.

- A—12-Tooth
- B—17-Tooth
- C—Drive Shaft
- D—Countershaft

A graduated increase in speed (from slow to fast) is possible with the 28, 25, 22, 21, and 15-tooth sprockets (A, B, C, D, and E). The countershaft sprockets are easily moved by pulling the detent lever up. Loosen the chain tightener (I) before moving sprockets.

See illustrations, page 25, for the correct sprocket positions for the 12 available drive speeds.

- A—28-Tooth
- B—25-Tooth
- C—22-Tooth
- D—21-Tooth
- E—15-Tooth
- F—Countershaft
- G—Power Tube
- H—Detent Lever
- I—Chain Tightener



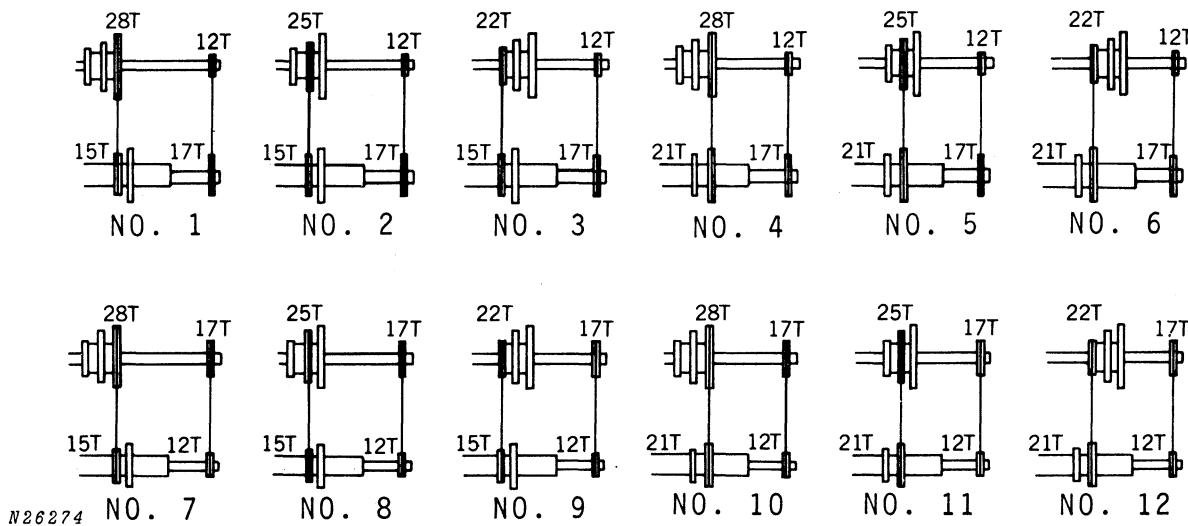
*Drive Number 4 Illustrated*

## SEEDING CHARTS FOR DOUBLE-RUN DRILLS

**IMPORTANT:** The rates shown in the charts are only to be used as a guide. See "Checking Quantities Drilled" for accuracy.

1. The charts are based on drills with either 7.60 x 15-inch rib-implement tires OR 7.50 x 20-inch double-rib tires.
2. If drill is equipped with 7.60 x 15-inch double-rib tires, multiply the chart rate by 0.94.
3. If drill is equipped with 7.50 x 20-inch rib-implement tires, multiply the chart rate by 1.03.
4. Drill row spacing can be changed by using additional feed covers (attachments), see page 57.

### SPROCKET POSITION FOR DRIVE NO. USED



**26 Field Operation and Adjustments**

		POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 6-INCH (152 MM) ROW SPACING SMALL SIDE OF FEED WHEEL																					
Type of Seed		Wheat			Rye			Sorghum			Flax			Buck-wheat		Sudan Grass		Millet		Wheat Grass		Alfalfa	
Lock Lever Position		7	8	10	7	8	10	6	7	8	5	8	10	8	9	8	10	4	6	8	10	2	4
Drive Number	1	12 (13)	16 (18)	24 (27)	10 (11)	12 (13)	19 (21)	8 (9)	10 (11)	13 (15)	5 (6)	11 (12)	17 (19)	13 (15)	18 (20)	13 (15)	20 (22)	5.5 (6.2)	9 (10)	1.6 (1.8)	4.5 (5.0)	5 (6)	7 (8)
	2	13 (15)	18 (20)	27 (30)	11 (12)	14 (16)	21 (24)	9 (10)	11 (12)	15 (17)	6 (7)	13 (15)	19 (21)	15 (17)	20 (22)	15 (17)	22 (25)	6.5 (7.3)	10 (11)	1.9 (2.0)	5 (6)	6 (7)	8 (9)
	3	15 (17)	20 (22)	31 (35)	12 (13)	16 (18)	24 (27)	10 (11)	13 (15)	17 (19)	7 (8)	15 (17)	22 (25)	17 (19)	22 (25)	17 (19)	25 (28)	7.5 (8.4)	12 (13)	2.2 (2.4)	5.8 (6.5)	7 (8)	9 (10)
	4	17 (19)	22 (25)	34 (38)	14 (16)	18 (20)	27 (30)	11 (12)	15 (17)	18 (20)	8 (9)	17 (19)	25 (28)	19 (21)	25 (28)	19 (21)	27 (30)	8 (9)	13 (15)	2.5 (2.8)	6.5 (7.3)	8 (9)	10 (11)
	5	19 (21)	25 (28)	38 (43)	16 (18)	20 (22)	30 (34)	12 (13)	17 (19)	20 (22)	9 (10)	19 (21)	28 (31)	22 (25)	28 (31)	21 (24)	30 (34)	9.5 (10.6)	15 (17)	2.9 (3.3)	7 (8)	9 (10)	12 (13)
	6	21 (24)	28 (31)	43 (48)	18 (20)	22 (25)	34 (38)	14 (16)	19 (21)	23 (26)	10 (11)	22 (25)	32 (36)	25 (28)	32 (36)	24 (27)	34 (38)	11 (12)	17 (19)	3.4 (3.8)	8 (9)	11 (12)	14 (16)
	7	24 (27)	32 (36)	48 (54)	20 (22)	25 (28)	39 (44)	16 (18)	21 (24)	26 (29)	12 (13)	25 (28)	37 (41)	28 (31)	36 (40)	27 (30)	38 (43)	12 (13)	19 (21)	3.9 (4.4)	9 (10)	12 (13)	16 (18)
	8	27 (30)	35 (39)	54 (61)	23 (26)	28 (31)	44 (49)	18 (20)	24 (27)	30 (34)	14 (16)	29 (33)	42 (47)	31 (35)	40 (45)	30 (45)	43 (48)	14 (16)	21 (24)	4.4 (4.9)	10 (11)	14 (16)	18 (20)
	9	31 (35)	40 (45)	62 (69)	26 (29)	32 (36)	50 (56)	20 (22)	27 (30)	34 (38)	16 (18)	33 (37)	48 (54)	35 (39)	45 (50)	34 (38)	48 (54)	16 (18)	24 (27)	5.1 (5.7)	12 (13)	16 (18)	20 (22)
	10	34 (38)	44 (49)	68 (76)	29 (33)	35 (39)	55 (62)	22 (25)	30 (34)	37 (41)	18 (20)	36 (40)	53 (59)	39 (44)	50 (56)	38 (43)	53 (59)	18 (20)	27 (30)	5.7 (6.3)	13 (15)	18 (20)	22 (25)
	11	38 (43)	49 (55)	76 (85)	33 (37)	40 (45)	62 (69)	25 (28)	34 (38)	42 (47)	20 (22)	41 (46)	60 (67)	44 (49)	56 (63)	43 (48)	59 (66)	20 (22)	30 (34)	6.5 (7.3)	14 (16)	20 (22)	25 (28)
	12	43 (48)	55 (62)	86 (96)	37 (41)	45 (50)	70 (78)	28 (31)	38 (43)	47 (53)	23 (26)	47 (53)	68 (76)	50 (56)	63 (71)	48 (54)	67 (75)	23 (26)	34 (38)	7.5 (8.4)	16 (18)	23 (26)	29 (33)
		POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 6-INCH (152 mm) ROW SPACING LARGE SIDE OF FEED WHEEL																					
Type of Seed		Wheat			Oats			Barley			Soy Beans			Cow Peas			Peas						
Lock Lever Position		11	13	15	14	16	18	12	14	16	14	15	16	12	14	16	18	20					
Drive Number	1	47 (53)	53 (59)	62 (69)	29 (33)	35 (39)	47 (53)	28 (31)	39 (44)	49 (55)	35 (39)	43 (48)	54 (61)	31 (35)	41 (46)	56 (63)	63 (71)	73 (82)					
	2	53 (59)	59 (66)	70 (78)	33 (37)	40 (45)	53 (59)	32 (36)	43 (48)	55 (62)	39 (44)	48 (54)	60 (67)	35 (39)	46 (52)	63 (71)	70 (78)	82 (92)					
	3	60 (67)	68 (76)	79 (89)	37 (41)	46 (52)	60 (67)	37 (41)	48 (54)	62 (69)	44 (49)	54 (61)	66 (74)	40 (45)	52 (58)	71 (80)	79 (89)	93 (104)					
	4	66 (74)	75 (84)	88 (99)	41 (46)	51 (57)	66 (74)	41 (46)	53 (59)	68 (76)	48 (54)	60 (67)	72 (81)	44 (49)	58 (65)	78 (87)	87 (98)	103 (115)					
	5	74 (83)	84 (94)	98 (110)	46 (52)	57 (64)	74 (83)	47 (53)	59 (66)	76 (85)	53 (59)	67 (75)	80 (90)	50 (56)	65 (73)	87 (98)	98 (110)	115 (129)					
	6	84 (94)	95 (106)	112 (126)	52 (58)	66 (74)	84 (94)	54 (61)	67 (75)	86 (96)	60 (67)	76 (85)	89 (100)	56 (63)	74 (83)	99 (111)	111 (124)	131 (147)					
	7	94 (105)	107 (120)	126 (141)	58 (65)	75 (84)	95 (106)	61 (68)	75 (84)	97 (109)	67 (75)	85 (95)	100 (112)	63 (71)	83 (93)	112 (126)	125 (140)	147 (165)					
	8	105 (118)	120 (135)	142 (159)	65 (73)	84 (94)	106 (119)	69 (77)	84 (94)	109 (122)	76 (85)	95 (106)	111 (124)	71 (80)	93 (104)	125 (140)	140 (157)	165 (185)					
	9	120 (135)	137 (154)	161 (180)	74 (83)	96 (108)	121 (136)	79 (89)	95 (106)	124 (139)	86 (96)	108 (121)	124 (139)	81 (91)	106 (119)	142 (159)	160 (179)	187 (210)					
	10	132 (148)	151 (169)	178 (200)	82 (92)	106 (119)	133 (149)	88 (99)	104 (117)	136 (152)	94 (105)	119 (133)	136 (152)	89 (100)	117 (131)	156 (175)	176 (197)	206 (231)					
	11	147 (165)	169 (189)	199 (223)	92 (103)	119 (133)	149 (167)	99 (111)	117 (131)	152 (170)	106 (119)	133 (149)	151 (169)	100 (112)	131 (147)	175 (196)	197 (221)	231 (259)					
	12	167 (187)	192 (215)	226 (253)	104 (117)	136 (152)	170 (191)	113 (127)	132 (148)	173 (194)	120 (135)	151 (169)	171 (192)	113 (127)	149 (167)	198 (222)	224 (251)	262 (294)					

**POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 7-INCH (178 MM) ROW SPACING  
SMALL SIDE OF FEED WHEEL**

Type of Seed	Wheat			Rye			Sorghum			Flax			Buck-wheat		Sudan Grass		Millet		Wheat Grass		Alfalfa		
Lock Lever Position	7	8	10	7	8	10	6	7	8	5	8	10	8	9	8	10	4	6	8	10	2	4	
Drive Number	1	10 (11)	14 (16)	21 (24)	8 (9)	11 (12)	16 (18)	7 (8)	9 (10)	11 (12)	4.5 (5.0)	10 (11)	14 (16)	11 (12)	15 (17)	11 (12)	17 (19)	5 (6)	8 (9)	1.4 (1.6)	4 (5)	4.5 (5.0)	6 (7)
	2	11 (12)	16 (18)	23 (26)	9 (10)	12 (13)	18 (20)	8 (9)	10 (11)	12 (13)	5 (6)	11 (12)	16 (18)	13 (15)	17 (19)	13 (15)	19 (21)	5.5 (6.2)	9 (10)	1.6 (1.8)	4.5 (5.0)	5 (6)	7 (8)
	3	13 (15)	18 (20)	26 (29)	11 (12)	13 (15)	21 (24)	9 (10)	11 (12)	14 (16)	6 (7)	13 (15)	19 (21)	15 (17)	19 (21)	15 (17)	21 (24)	6 (7)	10 (11)	1.9 (2.1)	5 (6)	6 (7)	8 (9)
	4	14 (16)	19 (21)	29 (33)	12 (13)	15 (17)	23 (26)	10 (11)	12 (13)	16 (18)	7 (8)	15 (17)	21 (24)	16 (18)	21 (24)	16 (18)	23 (26)	7 (8)	11 (12)	2.1 (2.3)	5.5 (6.2)	7 (8)	9 (10)
	5	16 (18)	21 (24)	33 (37)	13 (15)	17 (19)	26 (29)	11 (12)	14 (16)	18 (20)	8 (9)	17 (19)	24 (27)	18 (20)	24 (27)	18 (20)	26 (29)	8 (9)	12 (13)	2.5 (2.8)	6 (7)	8 (9)	10 (11)
	6	18 (20)	24 (27)	37 (41)	15 (17)	19 (21)	29 (33)	12 (13)	16 (18)	20 (22)	9 (10)	19 (21)	28 (31)	21 (24)	27 (30)	21 (24)	29 (33)	9 (10)	14 (16)	2.9 (3.3)	7 (8)	9 (10)	12 (13)
	7	21 (24)	27 (30)	42 (47)	17 (19)	21 (24)	33 (37)	14 (16)	18 (20)	23 (26)	10 (11)	22 (25)	32 (36)	24 (27)	30 (34)	23 (26)	34 (38)	10 (11)	16 (18)	3.3 (3.7)	8 (9)	10 (11)	13 (15)
	8	23 (26)	30 (34)	47 (53)	19 (21)	24 (27)	37 (41)	15 (17)	20 (22)	26 (29)	12 (13)	25 (28)	36 (40)	27 (30)	34 (38)	26 (29)	37 (41)	12 (13)	18 (20)	3.8 (4.3)	9 (10)	12 (13)	15 (17)
	9	26 (29)	34 (38)	53 (59)	22 (25)	27 (30)	42 (47)	17 (19)	23 (26)	29 (33)	14 (16)	28 (31)	41 (46)	30 (34)	39 (44)	30 (34)	41 (46)	13 (15)	21 (24)	4.4 (4.9)	10 (11)	14 (16)	17 (19)
	10	29 (33)	38 (43)	58 (65)	25 (28)	30 (34)	47 (53)	19 (21)	26 (29)	32 (36)	15 (17)	31 (35)	46 (52)	33 (37)	43 (48)	33 (37)	45 (50)	15 (17)	23 (26)	4.9 (5.5)	11 (12)	15 (17)	19 (21)
	11	33 (37)	42 (47)	65 (73)	28 (31)	34 (38)	53 (59)	21 (24)	29 (33)	36 (40)	17 (19)	35 (39)	51 (57)	37 (41)	48 (54)	37 (41)	50 (56)	17 (19)	27 (30)	5.5 (6.2)	12 (13)	17 (19)	22 (25)
	12	37 (41)	47 (53)	74 (83)	32 (36)	39 (44)	60 (67)	24 (27)	33 (37)	41 (46)	20 (22)	40 (45)	58 (65)	43 (48)	54 (61)	42 (47)	57 (64)	19 (21)	29 (33)	6.4 (7.2)	14 (16)	20 (22)	25 (28)

**POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 7-INCH (178 mm) ROW SPACING  
LARGE SIDE OF FEED WHEEL**

Type of Seed	Wheat			Oats			Barley			Soy Beans			Cow Peas			Peas		
Lock Lever Position	11	13	15	14	16	18	12	14	16	14	15	16	12	14	16	18	20	
Drive Number	1	40 (45)	45 (50)	53 (59)	25 (28)	30 (34)	40 (45)	25 (28)	33 (37)	42 (47)	30 (34)	37 (41)	46 (52)	27 (30)	35 (39)	48 (54)	54 (61)	63 (71)
	2	45 (50)	51 (57)	60 (67)	28 (31)	34 (38)	45 (50)	28 (31)	37 (41)	47 (53)	33 (37)	41 (46)	51 (57)	30 (34)	39 (44)	54 (61)	60 (67)	71 (80)
	3	51 (57)	58 (65)	68 (76)	31 (35)	39 (44)	51 (57)	32 (36)	42 (47)	53 (59)	37 (41)	47 (53)	57 (64)	34 (38)	45 (50)	61 (68)	68 (76)	80 (90)
	4	57 (64)	64 (72)	75 (84)	35 (39)	44 (49)	56 (63)	36 (40)	47 (53)	58 (65)	41 (46)	52 (58)	62 (69)	38 (43)	50 (56)	67 (75)	75 (84)	88 (99)
	5	63 (71)	72 (81)	84 (94)	39 (44)	49 (55)	63 (71)	40 (45)	51 (57)	65 (73)	46 (52)	58 (65)	68 (76)	43 (48)	56 (63)	75 (84)	84 (94)	99 (111)
	6	72 (81)	82 (92)	96 (108)	44 (49)	56 (63)	72 (81)	46 (52)	57 (64)	74 (83)	52 (60)	65 (73)	77 (86)	48 (54)	63 (71)	85 (95)	96 (108)	112 (126)
	7	81 (91)	92 (103)	108 (121)	50 (56)	64 (72)	81 (91)	53 (59)	64 (72)	83 (93)	57 (64)	73 (82)	86 (96)	54 (61)	71 (80)	96 (108)	108 (121)	126 (141)
	8	91 (102)	103 (115)	121 (136)	56 (63)	72 (81)	91 (102)	60 (67)	72 (81)	94 (105)	65 (73)	82 (92)	95 (106)	61 (68)	80 (90)	107 (120)	121 (136)	141 (158)
	9	103 (115)	117 (131)	138 (155)	63 (71)	82 (92)	104 (117)	68 (76)	82 (92)	106 (119)	73 (82)	93 (104)	107 (120)	69 (77)	91 (102)	121 (136)	137 (154)	160 (179)
	10	113 (127)	129 (145)	152 (170)	70 (78)	91 (102)	114 (128)	75 (84)	90 (101)	117 (131)	81 (91)	102 (114)	117 (131)	76 (85)	100 (112)	134 (150)	151 (169)	176 (197)
	11	126 (141)	145 (163)	171 (192)	79 (89)	102 (114)	128 (143)	85 (95)	100 (112)	131 (147)	91 (102)	114 (128)	130 (146)	85 (95)	112 (126)	150 (168)	167 (187)	198 (222)
	12	144 (161)	165 (185)	194 (217)	89 (100)	117 (131)	146 (164)	97 (109)	113 (127)	149 (167)	103 (115)	130 (146)	146 (164)	97 (109)	127 (142)	170 (191)	192 (215)	224 (251)

POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 8-INCH (203 MM) ROW SPACING  
 SMALL SIDE OF FEED WHEEL

Type of Seed	Wheat			Rye			Sorghum			Flax			Buck-wheat		Sudan Grass		Millet		Wheat Grass		Alfalfa		
Lock Lever Position	7	8	10	7	8	10	6	7	8	5	8	10	8	9	8	10	4	6	8	10	2	4	
Drive Number	1	9 (10)	12 (13)	18 (20)	7 (8)	9 (10)	14 (16)	6 (7)	7.5 (8.4)	10 (11)	4 (5)	9 (10)	13 (15)	10 (11)	13 (15)	10 (11)	15 (17)	4 (5)	7 (8)	1.2 (1.3)	3.5 (3.9)	4 (5)	5.5 (6.2)
	2	10 (11)	13 (15)	20 (22)	8 (9)	10 (11)	16 (18)	6.5 (7.3)	8.5 (9.5)	11 (12)	4.5 (5.0)	10 (11)	15 (17)	11 (12)	15 (17)	11 (12)	17 (19)	4.5 (5.0)	8 (9)	1.4 (1.6)	4 (5)	4.5 (5.0)	6 (7)
	3	11 (12)	15 (17)	23 (26)	9 (10)	12 (13)	18 (20)	7.5 (8.4)	10 (11)	12 (13)	5 (6)	11 (12)	17 (19)	13 (15)	17 (19)	13 (15)	19 (21)	5.5 (6.2)	9 (10)	1.7 (1.9)	4.5 (5.0)	5.5 (6.2)	7 (8)
	4	12 (13)	17 (19)	26 (29)	10 (11)	13 (15)	20 (22)	8 (9)	11 (12)	14 (16)	6 (7)	13 (15)	19 (21)	14 (16)	19 (21)	14 (16)	21 (24)	6 (7)	10 (11)	1.9 (2.1)	5 (6)	6 (7)	8 (9)
	5	14 (16)	19 (21)	29 (33)	12 (13)	15 (17)	23 (26)	9 (10)	12 (13)	16 (18)	7 (8)	15 (17)	21 (24)	16 (18)	21 (24)	16 (18)	23 (26)	7 (8)	11 (12)	2.1 (2.3)	5.5 (6.2)	7 (8)	9 (10)
	6	16 (18)	21 (24)	32 (36)	14 (16)	17 (19)	26 (29)	11 (12)	14 (16)	18 (20)	8 (9)	17 (19)	24 (27)	18 (20)	24 (27)	18 (20)	26 (29)	8 (9)	12 (13)	2.5 (2.8)	6 (7)	8 (9)	10 (11)
	7	18 (20)	24 (27)	36 (40)	15 (17)	19 (21)	29 (33)	12 (13)	16 (18)	20 (22)	9 (10)	19 (21)	28 (31)	21 (24)	27 (30)	20 (22)	29 (33)	9 (10)	14 (16)	2.9 (3.3)	7 (8)	9 (10)	12 (13)
	8	20 (22)	27 (30)	41 (46)	17 (19)	21 (24)	33 (37)	13 (15)	18 (20)	22 (25)	10 (11)	22 (25)	31 (35)	23 (26)	30 (34)	23 (26)	32 (36)	10 (11)	16 (18)	3.3 (3.7)	8 (9)	10 (11)	13 (15)
	9	23 (26)	30 (34)	46 (52)	20 (22)	24 (27)	37 (41)	15 (17)	20 (22)	25 (28)	12 (13)	25 (28)	36 (40)	26 (29)	34 (38)	26 (29)	36 (40)	12 (13)	18 (20)	3.9 (4.4)	9 (10)	12 (13)	15 (17)
	10	26 (29)	33 (37)	51 (57)	22 (25)	27 (30)	41 (46)	17 (19)	22 (25)	28 (31)	13 (15)	27 (30)	40 (45)	29 (33)	37 (41)	29 (33)	40 (45)	13 (15)	20 (22)	4.3 (4.9)	10 (11)	14 (16)	17 (19)
	11	29 (33)	37 (41)	57 (64)	25 (28)	30 (34)	46 (52)	19 (21)	25 (28)	31 (35)	15 (17)	31 (35)	45 (50)	33 (37)	42 (47)	32 (36)	44 (49)	15 (17)	22 (25)	4.9 (5.5)	11 (12)	16 (18)	19 (21)
	12	33 (37)	41 (46)	64 (72)	28 (31)	34 (38)	52 (58)	21 (24)	29 (33)	35 (39)	17 (19)	35 (39)	51 (57)	37 (41)	47 (53)	36 (40)	50 (56)	17 (19)	25 (28)	5.6 (6.3)	12 (13)	18 (20)	22 (25)

 POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 8-INCH (203 mm) ROW SPACING  
 LARGE SIDE OF FEED WHEEL

Type of Seed	Wheat			Oats			Barley			Soy Beans			Cow Peas			Peas		
Lock Lever Position	11	13	15	14	16	18	12	14	16	14	15	16	12	14	16	18	20	
Drive Number	1	35 (39)	40 (45)	46 (52)	21 (24)	26 (29)	35 (39)	21 (24)	29 (33)	36 (40)	26 (29)	32 (36)	41 (46)	24 (27)	31 (35)	42 (47)	47 (53)	55 (62)
	2	40 (45)	45 (50)	52 (58)	24 (27)	30 (34)	40 (45)	24 (27)	32 (36)	41 (46)	29 (33)	36 (40)	45 (50)	27 (30)	35 (39)	47 (53)	53 (59)	62 (69)
	3	45 (50)	51 (57)	60 (67)	27 (30)	34 (38)	45 (50)	28 (31)	36 (40)	46 (52)	33 (37)	41 (46)	50 (56)	30 (34)	39 (44)	53 (59)	60 (67)	70 (78)
	4	50 (56)	56 (63)	66 (74)	30 (34)	38 (43)	50 (56)	31 (35)	40 (45)	51 (57)	36 (40)	45 (50)	54 (61)	33 (37)	43 (48)	59 (66)	66 (74)	77 (86)
	5	55 (62)	63 (71)	74 (83)	34 (38)	43 (48)	56 (63)	35 (39)	45 (50)	57 (64)	40 (54)	50 (64)	60 (67)	37 (41)	49 (55)	65 (73)	74 (83)	86 (96)
	6	63 (71)	71 (80)	84 (94)	39 (44)	49 (55)	63 (71)	40 (45)	50 (56)	65 (73)	45 (50)	57 (64)	67 (75)	42 (47)	55 (62)	74 (83)	84 (94)	98 (110)
	7	71 (80)	80 (90)	95 (106)	44 (49)	56 (63)	71 (80)	46 (52)	56 (63)	73 (82)	50 (56)	64 (72)	75 (84)	47 (53)	62 (69)	84 (94)	94 (105)	110 (123)
	8	79 (89)	90 (101)	106 (119)	49 (55)	63 (71)	80 (90)	52 (58)	63 (71)	82 (92)	57 (64)	72 (81)	83 (93)	53 (59)	70 (78)	94 (105)	106 (119)	124 (139)
	9	90 (101)	103 (115)	121 (136)	56 (63)	72 (81)	91 (102)	59 (66)	71 (78)	93 (102)	65 (73)	81 (91)	93 (104)	61 (68)	79 (89)	106 (119)	120 (135)	140 (157)
	10	99 (111)	113 (127)	133 (149)	62 (69)	80 (90)	100 (112)	66 (74)	78 (87)	102 (114)	71 (80)	90 (98)	102 (114)	67 (75)	87 (98)	117 (131)	132 (148)	155 (174)
	11	111 (124)	127 (142)	149 (167)	69 (77)	90 (101)	112 (126)	74 (83)	87 (98)	114 (128)	79 (89)	100 (112)	113 (127)	75 (84)	98 (110)	131 (147)	148 (166)	173 (194)
	12	126 (141)	144 (161)	170 (191)	78 (87)	102 (114)	127 (142)	85 (95)	99 (111)	130 (146)	90 (101)	113 (127)	128 (143)	85 (95)	111 (124)	148 (166)	168 (188)	196 (220)

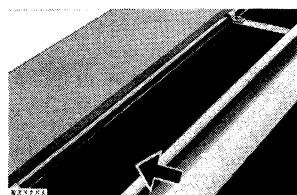
**POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 10-INCH (254 MM) ROW SPACING  
SMALL SIDE OF FEED WHEEL**

Type of Seed	Wheat			Rye			Sorghum			Flax			Buck-wheat		Sudan Grass		Millet		Wheat Grass		Alfalfa		
Lock Lever Position	7	8	10	7	8	10	6	7	8	5	8	10	8	9	8	10	4	6	8	10	2	4	
Drive Number	1	7 (8)	10 (11)	14 (16)	5 (6)	7 (8)	11 (12)	4.5 (5.0)	6 (7)	8 (9)	3 (4)	7 (8)	10 (11)	8 (9)	11 (12)	8 (9)	12 (13)	3.5 (3.9)	5.5 (6.2)	1.0 (1.1)	2.5 (2.8)	3 (4)	4 (5)
	2	8 (9)	11 (12)	16 (18)	6 (7)	8 (9)	13 (15)	5 (6)	7 (8)	9 (10)	3.5 (3.9)	8 (9)	11 (12)	9 (10)	12 (13)	9 (10)	13 (15)	4 (5)	6 (7)	1.1 (1.2)	3 (4)	3.5 (3.9)	5 (6)
	3	9 (10)	12 (13)	18 (20)	7 (8)	9 (10)	15 (17)	6 (7)	8 (9)	10 (11)	4 (5)	9 (10)	13 (15)	10 (11)	13 (15)	10 (11)	15 (17)	4.5 (5.0)	7 (8)	1.3 (1.5)	3.5 (3.9)	4 (5)	5.5 (6.2)
	4	10 (11)	13 (15)	20 (22)	8 (9)	10 (11)	16 (18)	6.5 (7.3)	9 (10)	11 (12)	4.5 (5.0)	10 (11)	15 (17)	11 (12)	15 (18)	11 (12)	16 (18)	5 (6)	8 (9)	1.5 (1.7)	4 (5)	4.5 (5.0)	6 (7)
	5	11 (12)	15 (17)	23 (26)	9 (10)	12 (13)	18 (20)	7 (8)	10 (11)	12 (13)	5.5 (6.2)	11 (12)	17 (19)	13 (15)	17 (19)	12 (13)	18 (20)	5.5 (6.2)	9 (10)	1.7 (1.9)	4.5 (5.0)	5.5 (6.2)	7 (8)
	6	13 (15)	17 (19)	26 (29)	11 (12)	13 (15)	20 (22)	8 (9)	11 (12)	14 (16)	6 (7)	13 (15)	19 (21)	15 (17)	19 (21)	14 (16)	20 (22)	6.5 (7.3)	10 (11)	2.0 (2.2)	5 (6)	6 (7)	8 (9)
	7	14 (16)	19 (21)	29 (33)	12 (13)	15 (17)	23 (26)	9 (10)	12 (13)	16 (18)	7 (8)	15 (17)	22 (25)	17 (19)	21 (24)	16 (18)	23 (26)	7 (8)	11 (12)	2.3 (2.6)	5.5 (6.2)	7 (8)	9 (10)
	8	16 (18)	21 (24)	33 (37)	14 (16)	17 (19)	26 (29)	10 (11)	14 (16)	18 (20)	8 (9)	17 (19)	25 (28)	19 (21)	24 (27)	18 (20)	26 (29)	8 (9)	13 (15)	2.6 (2.9)	6 (7)	8 (9)	10 (11)
	9	18 (20)	24 (27)	37 (41)	16 (18)	19 (21)	30 (34)	12 (13)	16 (18)	20 (22)	10 (11)	20 (22)	29 (33)	21 (24)	27 (30)	21 (24)	29 (33)	9 (10)	15 (17)	3.0 (3.4)	7 (8)	10 (11)	12 (13)
	10	20 (22)	26 (29)	41 (46)	18 (20)	21 (24)	33 (37)	13 (15)	18 (20)	22 (25)	11 (12)	22 (25)	32 (36)	23 (26)	30 (34)	23 (26)	32 (36)	10 (11)	16 (18)	3.4 (3.8)	8 (9)	11 (12)	13 (15)
	11	23 (26)	29 (33)	46 (52)	20 (22)	24 (27)	37 (41)	15 (17)	20 (22)	25 (28)	12 (13)	25 (28)	36 (40)	26 (29)	33 (37)	26 (29)	35 (39)	11 (12)	18 (20)	3.9 (4.4)	9 (10)	12 (13)	15 (17)
	12	26 (29)	33 (37)	52 (58)	22 (25)	27 (30)	42 (47)	17 (19)	23 (26)	28 (31)	14 (16)	28 (31)	41 (46)	30 (34)	38 (43)	29 (33)	40 (45)	13 (15)	20 (22)	4.5 (5.0)	10 (11)	14 (16)	17 (19)

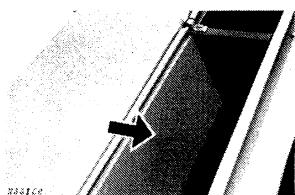
**POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 10-INCH (254 MM) ROW SPACING  
LARGE SIDE OF FEED WHEEL**

Type of Seed	Wheat			Oats			Barley			Soy Beans			Cow Peas			Peas		
Lock Lever Position	11	13	15	14	16	18	12	14	16	14	15	16	12	14	16	18	20	
Drive Number	1	28 (31)	32 (36)	37 (41)	17 (19)	21 (24)	28 (31)	17 (19)	23 (26)	29 (33)	21 (24)	26 (29)	32 (36)	19 (21)	25 (28)	34 (38)	37 (41)	44 (49)
	2	32 (36)	36 (40)	42 (47)	19 (21)	24 (27)	32 (36)	19 (21)	26 (29)	33 (37)	33 (37)	29 (33)	36 (40)	21 (24)	28 (31)	38 (43)	43 (48)	49 (55)
	3	36 (40)	41 (46)	48 (54)	22 (25)	28 (31)	36 (40)	22 (25)	29 (33)	37 (41)	26 (29)	32 (36)	40 (45)	24 (27)	32 (36)	43 (48)	48 (54)	56 (63)
	4	40 (45)	45 (50)	53 (59)	24 (27)	31 (35)	40 (45)	25 (28)	32 (36)	41 (46)	29 (33)	36 (40)	43 (48)	27 (30)	35 (39)	47 (53)	53 (59)	62 (69)
	5	44 (49)	50 (56)	59 (66)	27 (30)	34 (38)	45 (50)	28 (31)	36 (40)	46 (52)	32 (36)	40 (45)	48 (54)	30 (34)	39 (44)	53 (59)	59 (66)	69 (77)
	6	50 (56)	57 (64)	67 (75)	31 (35)	39 (44)	51 (57)	32 (50)	40 (64)	52 (58)	36 (40)	46 (52)	54 (61)	34 (38)	44 (49)	59 (66)	67 (75)	78 (87)
	7	56 (63)	64 (72)	76 (85)	35 (39)	45 (50)	57 (64)	37 (50)	45 (65)	58 (65)	40 (57)	51 (67)	60 (43)	38 (56)	50 (75)	67 (84)	75 (99)	88 (99)
	8	63 (71)	72 (81)	85 (95)	39 (44)	51 (57)	64 (72)	42 (47)	51 (57)	65 (73)	46 (52)	57 (64)	66 (74)	43 (48)	56 (63)	75 (84)	84 (94)	99 (111)
	9	72 (81)	82 (92)	97 (109)	44 (49)	58 (65)	73 (82)	48 (54)	57 (64)	74 (83)	52 (58)	65 (73)	75 (84)	49 (55)	64 (72)	85 (95)	96 (108)	112 (126)
	10	79 (89)	91 (102)	107 (120)	49 (55)	64 (72)	80 (90)	53 (59)	63 (71)	82 (92)	57 (64)	72 (81)	82 (92)	54 (61)	70 (78)	94 (105)	106 (119)	124 (139)
	11	89 (100)	102 (114)	120 (135)	55 (62)	72 (81)	90 (101)	60 (67)	70 (78)	92 (103)	64 (72)	80 (90)	91 (102)	60 (67)	78 (87)	105 (118)	118 (132)	138 (155)
	12	101 (113)	115 (129)	136 (152)	63 (71)	82 (92)	102 (114)	68 (76)	79 (89)	104 (117)	72 (81)	91 (102)	102 (114)	68 (76)	89 (100)	119 (133)	134 (150)	157 (176)

## FERTILIZER SYSTEM—8250 AND 8350 GRAIN DRILLS



Forward

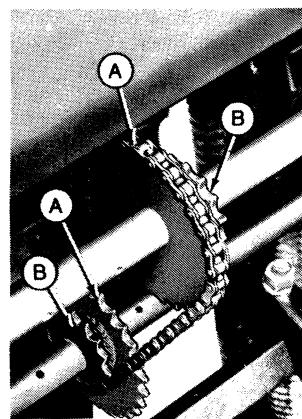


Rearward

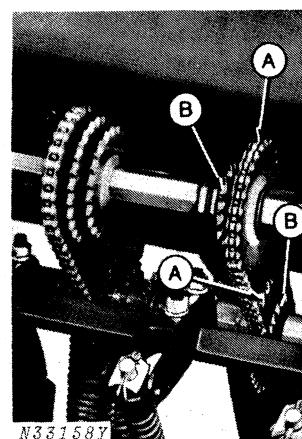
### Adjustable Box Partition

The partition (bold arrow) is factory assembled in the forward position and can be changed to the rear position by removing the lid(s) and attaching bolts. This is sometimes desirable so both compartments empty at the same time.

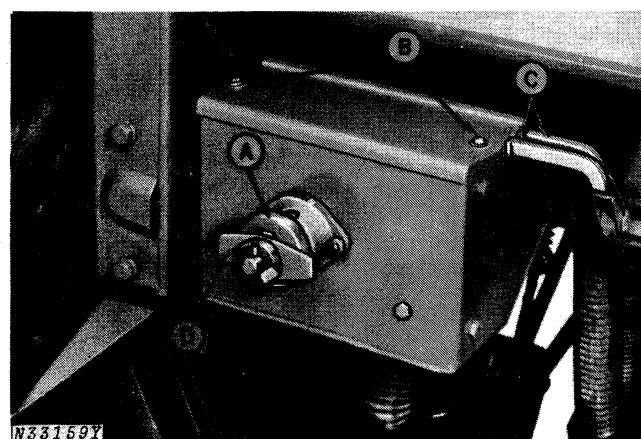
**IMPORTANT:** Keep fertilizer dry and break up lumps when filling the box.



Drive 1—Fluted Feed



Drive 1—Double Run



A—27-Tooth  
B—15-Tooth

A graduated increase in speed (from slow to fast) is made with the gear case speed selector (C). Turn lock (D) vertical, then pull out knob (A) to disengage gears. Move the speed selectors to the "Gear Case Setting" as shown on the charts for your desired pounds per acre (kilograms per hectare). Push knob in and turn lock horizontal.

*NOTE: Disengage gears, as above, when not distributing fertilizer.*

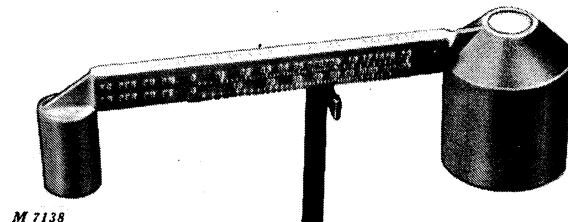
A—Knob  
B—Cover Screws  
C—Speed Selectors  
D—Lock

# FERTILIZER CHARTS

**IMPORTANT:** The rates shown on the charts are only to be used as a guide. See "Checking Quantities Drilled" for accuracy.

1. Rates are based on fertilizer having a density of 65 pounds per cubic foot (1.04 kilograms per cubic decimeter).
  2. Use density meter (illustrated) available from your dealer to determine density, or contact fertilizer dealer. Nitrogen fertilizers generally weigh less than high potash or phosphorus fertilizers. Fill meter's bucket with material, tap lightly, level material with top, balance on knife edge and take reading.
  3. Use conversion chart for other densities.

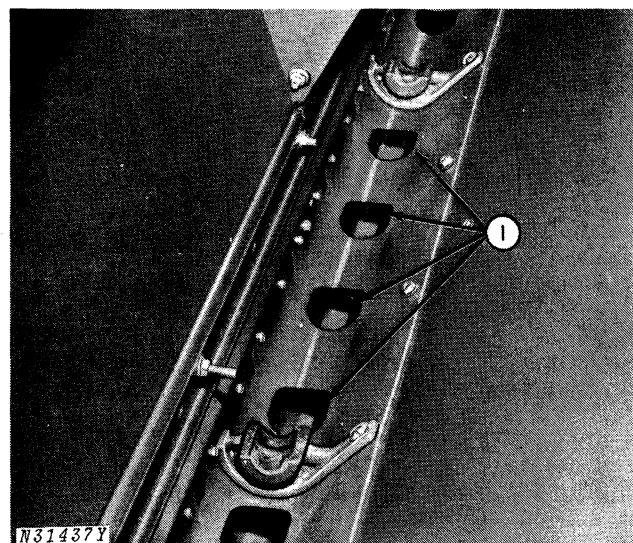
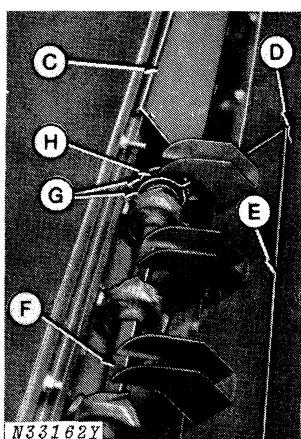
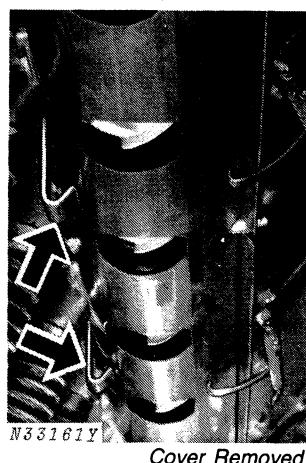
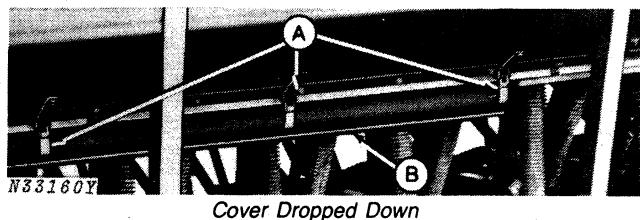
Example: To apply 100 lbs/acre (112 kg/hectare) with a density of 45 lbs/cu. ft. (0.72 kg/cu. dm.) multiply 100 (112) by conversion factor—1.45. Answer of 145 lbs/acre (162 kg/hectare). Locate 145 (162) in the fertilizer charts for your row spacing, then set the gear case speed selectors. For this example, with 7-inch (0.18 m) row spacing, set the gear case selectors in E5 and the feed shaft speed in Drive 1.



### *Density Meter*

<u>Density</u> lbs/cu. ft. (kg/cu. dm.)	<u>Conversion Factor</u>
45 (0.72)	1.45
50 (0.80)	1.30
55 (0.88)	1.20
60 (0.96)	1.10
65 (1.04)	1.00
70 (1.12)	0.93
75 (1.20)	0.87
80 (1.28)	0.81

		POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS IN DRIVE 2																				
Gear Case Setting		A1	B1	A2	C1	B2	A3	D1	C2	B3	A4	C3*	B5	C4	D3	E2	C5	D4	E3	D5	E4	E5
Row Spacing	6-INCH (0.15 m)	142	162	177	189	203	213	227	236	243	248	283	324	331	340	355	378	397	426	454	497	568
	(159)	(182)	(198)	(212)	(228)	(239)	(254)	(265)	(272)	(278)	(317)	(363)	(371)	(381)	(398)	(424)	(445)	(477)	(509)	(557)	(637)	
	7-INCH (0.18 m)	122	139	152	162	174	182	195	203	208	213	243	278	284	292	304	324	340	365	389	426	486
	(137)	(156)	(170)	(182)	(195)	(204)	(219)	(228)	(233)	(239)	(272)	(312)	(318)	(327)	(341)	(363)	(381)	(409)	(436)	(477)	(545)	
	8-INCH (0.20 m)	106	122	133	142	152	160	170	177	182	186	213	243	248	255	266	284	298	319	341	372	426
	(119)	(137)	(149)	(159)	(170)	(179)	(191)	(198)	(204)	(208)	(239)	(272)	(278)	(286)	(318)	(334)	(358)	(382)	(417)	(477)		
	10-INCH (0.25 m)	85	97	106	114	121	128	136	142	146	149	170	195	199	204	213	227	238	255	272	298	340
	(95)	(109)	(119)	(128)	(136)	(143)	(152)	(159)	(164)	(167)	(191)	(219)	(223)	(229)	(239)	(254)	(267)	(286)	(305)	(334)	(381)	



## Cleaning Fertilizer Box

Release all spring clips (A) to drop both bottom covers (B).

A—Spring Clips      B—Cover

The covers can be removed if desired by rotating them out of the hangers (bold arrow).

Remove baffle hold-down knobs. Tip left-hand baffle (E) to the rear (right-hand baffle fits UNDER left-hand baffle) and lift out, then tip and lift out other baffle. Remove bearing clamps (G) and bearing caps, then lift the feed shaft out of the drill.

C—Right-Hand Baffle  
D—Left-Hand Baffle Extension  
E—Left-Hand Baffle  
F—Feed Shaft  
G—Clamps  
H—Feed Shaft Bearing

Clean remaining fertilizer from box. If drill will not be used the following day, coat parts with diesel fuel, but avoid the rubber tubes.

Replace the feed shafts, clamps, and baffles. The right-hand baffle must be installed first. The baffle "ears" locate the feed wheels. Make sure they are not bent or erratic delivery will result.

*NOTE: Install baffles over feed wheels so the outer ends of the baffles are flush with the end panels of the fertilizer box.*

Replace bottom covers.

**IMPORTANT:** The outer end of either bottom cover MUST NOT contact the end panel hardware of the box or leakage will result.

I—Cleanout Holes

## SEEDING WITH GRASS SEED ATTACHMENT

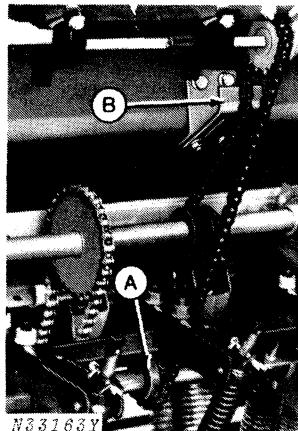
### Checking Feeds

**CAUTION:** Be careful when using diesel fuel so that it does not ignite. Use only in well-ventilated areas away from any sparks or flames.

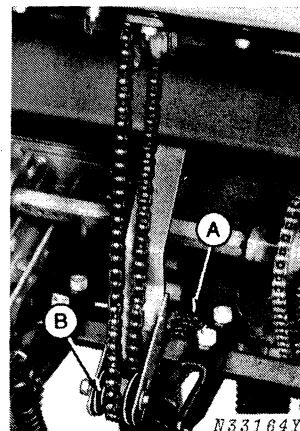
Before adding seed, turn feed shaft(s) with a wrench in the direction it normally turns. If it turns hard, loosen moving parts with diesel fuel. If unable to rotate shaft freely, remove spring pin in the drive sprocket (A) on fluted-feed drills OR loosen chain tightener (B) and remove drive chain on double-run drills.

Turn daily during the season. When using treated seed, turn whenever drill has been standing for an hour or more.

A—Drive Sprocket  
B—Chain Tightener



Fluted Feed



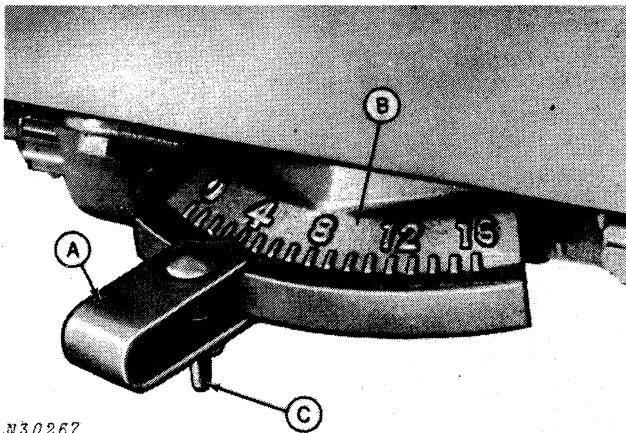
Double-Run

### Setting Feed Shifter

**IMPORTANT:** The seed rate charts are only approximate pounds per acre (kilograms per hectare). Set the shifter higher or lower after "Checking Quantities Drilled", page 37.

Determine the proper shifter setting from the rate charts. Loosen wing nut (C) and move the shifter lever one notch HIGHER than the desired setting, then bring the lever back to the correct setting. Tighten wing nut.

**NOTE:** If box is full and shifter is on zero, turn feed shaft with a wrench while positioning lever.



A—Shifter  
B—Index  
C—Wing Nut

### Using Mixtures

If mixing seeds, select the shifter setting from the proper row spacing chart that will give the desired quantity for EACH KIND of seed. Add the shifter settings together and set the shifter in the notch that represents the total of all the settings. See example.

Set the shifter higher or lower after "Checking Quantities Drilled", page 37.

**NOTE:** When your particular seed is not shown on the charts, select a seed of comparable weight and size in determining shifter setting.

EXAMPLE: 7-Inch (0.18 m) Row Spacing		
Seed	Quantity Per Acre (Hectare)	Notch
Alfalfa	6 (6.7)	3
Alsike Clover	4 (4.5)	2
Timothy	3 (3.4)	2
Birdsfoot Trefoil	7 (7.8)	3

Approximate Notch Set \_\_\_\_\_ 10

## SEEDING CHARTS FOR GRASS SEED ATTACHMENT

**IMPORTANT:** The rates shown on the charts are only to be used as a guide. See "Checking Quantities Drilled" for accuracy.

1. The charts are based on drills with slow speed drive. DOUBLE the rates for fast speed drive.
2. The charts are based on drills with either 7.60 x 15-inch rib-implement tires OR 7.50 x 20-inch double-rib tires.
3. If drill is equipped with 7.60 x 15-inch double-rib tires, multiply the chart rate by 0.94.
4. If drill is equipped with 7.50 x 20-inch rib-implement tires, multiply by 1.03.
5. Drill row spacing can be changed by using feed stops (attachments), see page 57.

Notches on Grass Seed Index	POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 6-INCH (0.15 m) SPACED GRASS SEED ATTACHMENT									
	1	2	3	4	6	8	10	12	14	16
Alfalfa; Red Alsike and Ladino Clovers	2 (2.2)	4.5 (5.0)	7.5 (8.4)	11 (12.3)	17 (19.1)	24 (27)	29 (33)	34 (38)	40 (45)	47 (53)
Serecia and Lespedeza Hulled, Crimson Clover; Birdsfoot Trefoil	2 (2.2)	5 (5.6)	8 (9)	12 (13.5)	20 (22.4)	28 (31)	38 (43)	48 (54)	59 (66)	70 (78)
Lespedeza Unhulled	.5 (.6)	1 (1.1)	2 (2.2)	4 (4.5)	7 (7.8)	10 (11.2)	13 (14.6)	17 (19.1)	21 (24)	26 (29)
Timothy; Red Top; Sand and Love Grass	2 (2.2)	4 (4.5)	6 (6.7)	8 (9)	13 (14.6)	18 (20.2)	23 (26)	28 (31)	34 (38)	40 (45)
Kentucky Blue Grass; Reed Canary Grass	1 (1.1)	1.5 (1.7)	3 (3.4)	4.5 (5.0)	6 (6.7)	8.5 (9.5)	11 (12.3)	15 (16.8)	19 (21.3)	24 (27)
Millet	1.5 (1.7)	4 (4.5)	7 (7.8)	11 (12.3)	19 (21.3)	27 (30)	38 (43)	50 (56)	62 (69)	75 (84)
Broom Corn; Hog Millet	1 (1.1)	4 (4.5)	7 (7.8)	11 (12.3)	19 (21.3)	27 (30)	38 (43)	50 (56)	63 (71)	76 (85)
Bermuda; Canary Grass	1 (1.1)	2.5 (2.8)	4 (4.5)	6 (6.7)	9.5 (10.6)	13 (14.6)	18 (20.2)	23 (26)	28 (31)	34 (38)
Sudan Grass			3 (3.4)	7 (7.8)	13 (14.6)	19 (21.3)	26 (29)	38 (43)	50 (56)	63 (71)
Crested Wheat; Orchard Grass				2.5 (2.8)	4 (4.5)	6 (6.7)	8.5 (9.5)	11.5 (12.9)	15 (16.8)	19 (21.3)
Rye Grass; Alta Fescue			.5 (.6)	1 (1.1)	3.5 (3.9)	6 (6.7)	7.5 (8.4)	9 (10.6)	11 (12.3)	14 (15.7)

Notches on Grass Seed Index	POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 7-INCH (0.18 m) SPACED GRASS SEED ATTACHMENT									
	1	2	3	4	6	8	10	12	14	16
Alfalfa; Red Alsike and Ladino Clovers	2 (2.2)	4 (4.5)	6 (6.7)	9 (10.1)	14 (15.7)	20 (22.4)	24 (27)	29 (33)	35 (39)	41 (46)
Serecia and Lespedeza Hulled, Crimson Clover; Birdsfoot Trefoil	1.5 (1.7)	4 (4.5)	7 (7.8)	10 (11.2)	17 (19.1)	24 (27)	31 (35)	39 (44)	47 (53)	56 (63)
Lespedeza Unhulled	.5 (.6)	1 (1.1)	2 (2.2)	3 (3.4)	6 (6.7)	8.5 (9.5)	11 (12.3)	14 (15.7)	17 (19.1)	20 (22.4)
Timothy; Red Top; Sand and Love Grass	1.5 (1.7)	3 (3.4)	5 (5.6)	7 (7.8)	11 (12.3)	15 (16.8)	19 (21.3)	23 (26)	28 (31)	33 (37)
Kentucky Blue Grass; Reed Canary Grass	.5 (.6)	1.5 (1.7)	2.5 (2.8)	4 (4.5)	6 (6.7)	8 (9.0)	9 (10.1)	12 (13.5)	15 (16.8)	18 (20.2)
Millet	1.5 (1.7)	4 (4.5)	6 (6.7)	8.5 (9.5)	14 (15.7)	20 (22.4)	26 (29)	33 (37)	40 (45)	48 (54)
Broom Corn; Hog Millet	1 (1.1)	3 (3.4)	6 (6.7)	9 (10.1)	16 (17.9)	22 (25)	31 (35)	41 (46)	52 (58)	63 (71)
Bermuda; Canary Grass	1 (1.1)	3 (3.4)	4 (4.5)	5 (5.6)	8 (9.0)	11 (12.3)	14 (15.7)	17 (19.1)	21 (24)	25 (28)
Sudan Grass				2.5 (2.8)	5.5 (6.2)	11 (12.3)	17 (19.1)	23 (26)	31 (35)	39 (44)
Crested Wheat; Orchard Grass					2 (2.2)	4 (4.5)	6 (6.7)	7.5 (8.4)	8.5 (9.5)	10 (11.2)
Rye Grass; Alta Fescue					.5 (.6)	1 (1.1)	3 (3.4)	5 (5.6)	6 (6.7)	7.5 (8.4)
									9 (10.1)	11 (12.3)

Notches on Grass Seed Index	POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 8-INCH (0.2 m) SPACED GRASS SEED ATTACHMENT									
	1	2	3	4	6	8	10	12	14	16
Alfalfa; Red Alsike and Ladino Clovers	1.5 (1.7)	3 (3.4)	5.5 (6.2)	8 (9.0)	12 (13.5)	17 (9.1)	22 (25)	27 (30)	33 (37)	39 (44)
Serecia and Lespedeza Hulled, Crimson Clover; Birdsfoot Trefoil	1.5 (1.7)	3.5 (3.9)	6 (6.7)	8.5 (9.5)	14 (15.7)	20 (22.4)	27 (30)	34 (38)	42 (47)	50 (56)
Lespedeza Unhulled	.5 (.6)	1 (1.1)	1.5 (1.7)	2.5 (2.8)	4.5 (5.0)	7 (7.8)	9.5 (10.6)	12 (13.5)	15 (16.8)	19 (21.3)
Timothy; Red Top; Sand and Love Grass	1.5 (1.7)	3 (3.4)	4.5 (5.0)	6 (6.7)	9.5 (10.6)	13 (14.6)	17 (19.1)	22 (25)	27 (30)	33 (37)
Kentucky Blue Grass; Reed Canary Grass	.5 (.6)	1 (1.1)	2 (2.2)	3.5 (3.9)	5 (5.6)	6.5 (7.3)	8 (9.0)	11 (12.3)	14 (15.7)	18 (20.2)
Millet	1 (1.1)	3 (3.4)	5 (5.6)	7.5 (8.4)	12 (13.5)	17 (19.1)	22 (25)	28 (31)	34 (38)	41 (46)
Broom Corn; Hog Millet	1 (1.1)	3 (3.4)	5 (5.6)	8 (9.0)	14 (15.7)	20 (22.4)	28 (31)	36 (40)	45 (50)	54 (61)
Bermuda; Canary Grass	1 (1.1)	2 (2.2)	3 (3.4)	4.5 (5.0)	6.5 (7.3)	9 (10.1)	12 (13.5)	15 (16.8)	19 (21.3)	23 (26)
Sudan Grass			2 (2.2)	5 (5.6)	9.5 (10.6)	14 (15.7)	19 (21.3)	27 (30)	36 (40)	46 (52)
Crested Wheat; Orchard Grass			2 (2.2)	3 (3.4)	5 (5.6)	6.5 (7.3)	7.5 (8.4)	9 (10.1)	11 (12.3)	
Rye Grass; Alta Fescue			.5 (.6)	1 (1.1)	3 (3.4)	4 (4.5)	5.5 (6.2)	7 (7.8)	9 (10.1)	11 (12.3)

Notches on Grass Seed Index	POUNDS PER ACRE (KILOGRAMS PER HECTARE) FOR DRILLS WITH 10-INCH (0.25 m) SPACED GRASS SEED ATTACHMENT									
	1	2	3	4	6	8	10	12	14	16
Alfalfa; Red Alsike and Ladino Clovers	1.5 (1.7)	2.5 (2.8)	4 (4.5)	6.5 (7.3)	10 (11.2)	13 (14.6)	17 (19.1)	21 (24)	25 (28)	30 (34)
Serecia and Lespedeza Hulled, Crimson Clover; Birdsfoot Trefoil	1 (1.1)	2.5 (2.8)	4.5 (5.0)	7 (7.8)	11 (12.3)	16 (17.9)	22 (25)	28 (31)	35 (39)	42 (47)
Lespedeza Unhulled	.5 (.6)	1 (1.1)	1.5 (1.7)	2.25 (2.5)	4 (4.5)	6 (6.7)	8 (9.0)	10 (11.2)	12 (13.5)	14 (15.7)
Timothy; Red Top; Sand and Love Grass	1 (1.1)	2 (2.2)	3.5 (3.9)	5 (5.6)	7.5 (8.4)	10 (11.2)	13 (14.6)	16 (17.9)	20 (22.4)	24 (27)
Kentucky Blue Grass; Reed Canary Grass	.5 (.6)	1 (1.1)	2 (2.2)	3 (3.4)	4 (4.5)	5 (5.6)	6.5 (7.3)	8.5 (9.5)	11 (12.3)	14 (15.7)
Millet	1 (1.1)	2.5 (2.8)	4 (4.5)	6 (6.7)	10 (11.2)	14 (15.7)	18 (20.2)	23 (26)	28 (31)	32 (36)
Broom Corn; Hog Millet	1 (1.1)	2 (2.2)	4 (4.5)	6.5 (7.3)	11 (12.3)	16 (17.9)	22 (25)	29 (33)	36 (40)	44 (49)
Bermuda; Canary Grass	1 (1.1)	1.5 (1.7)	2.5 (2.8)	3.5 (3.9)	5.13 (5.7)	8 (9.0)	11 (12.3)	14 (15.7)	18 (20.2)	22 (25)
Sudan Grass			1.5 (1.7)	4 (4.5)	7.5 (8.4)	11 (12.3)	15 (16.8)	22 (25)	29 (33)	37 (41)
Crested Wheat; Orchard Grass				1.5 (1.7)	2.5 (2.8)	4 (4.5)	5.5 (6.2)	7 (7.8)	9 (10.1)	11 (12.3)
Rye Grass; Alta Fescue			.5 (.6)	1 (1.1)	2 (2.2)	3 (3.4)	4 (4.5)	5.5 (6.2)	7 (7.8)	9 (10.1)

## CHECKING QUANTITIES DRILLED

### Method 1

1. Make all adjustments as shown on the particular rate chart for the seed to be checked.
2. Fill the box level-full in the field, then pull the drill a short distance to settle the seed. Refill the box so that it is exactly level-full.
3. Mark one of the drill tires and drive (and drill) the specified number of wheel revolutions as shown on page 63 to obtain one acre (hectare).
4. Carefully weigh the seed (or fertilizer) required to refill the box level-full.
5. Compare the weight of the seed (or fertilizer) required to fill the box with the predetermined rate.
6. Adjust the seed shifter index setting (or the fertilizer gear case) to compensate for any variation between the weight desired and the amount actually drilled.

### Method 2

1. Place seed or fertilizer in box and a container under each feed.
2. Make seed shifter index setting (or fertilizer gear case setting) for desired quantity per acre (hectare) as shown on the rate chart.
3. Turn drill wheels the required number of revolutions for one acre (hectare) or fraction, as shown on page 63.
4. Carefully weigh the seed in all containers and compare that to the weight shown on the rate charts.
5. Adjust the seed shifter index setting (or the fertilizer gear case) to compensate for any variation, then repeat the test until the desired quantity is obtained.

**IMPORTANT: Feed cups meter VOLUME, not weight.**

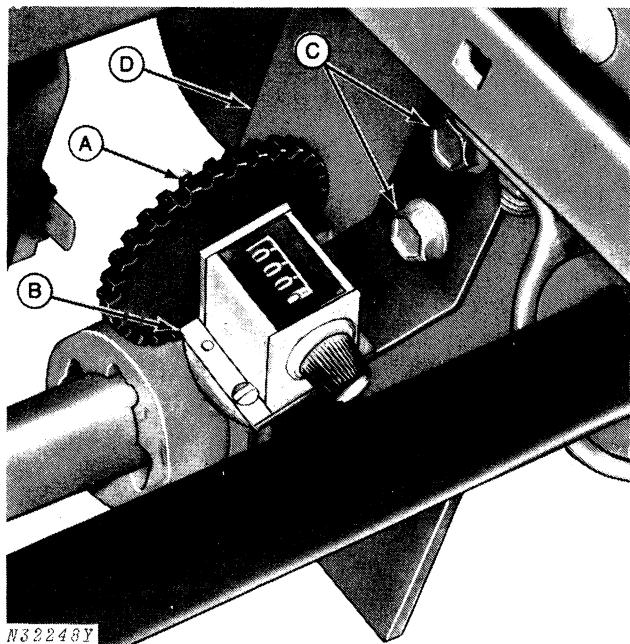
## Importance of Checking Quantities Drilled

The following five variables affect the rates as shown on the rate charts:

1. Quality of Seed—Two bags of seed that weigh the same may have different quantities of seed because of moisture content, trash, unfilled kernels, or simple seed size.
2. Wheel Slippage—It can vary depending on tire size, seed bed condition, soil type, and load in drill. Speed also affects wheel slippage.
3. Tires—Size, type, and air pressure affect seeding rates. Use the recommended tire sizes and proper air pressure.
4. Operator Judgement—Land contains more or less area than assumed. Overlapping rows or leaving too wide a space between rows. Turning at row ends without lifting furrow openers.
5. Acremeter—Worn out counter or chipped teeth. Worm gear loose on shaft.

**IMPORTANT:** Gear teeth (A) should mesh with drive worm gear (B), but should not "bottom" on drive worm. The attaching holes in the support bracket (D) are slotted. Loosen attaching bolts (C) and move acremeter, bracket, and attaching bolts on support bracket to make adjustment.

Recommended Tire Size and Type	PSI	(Bar)	(Kg/cm)
7.60 x 15-inch 4 PR Rib Implement	28	1.9	2
7.60 x 15-inch 6 PR Double Rib	32	2	2
7.50 x 20-inch 4 PR Rib Implement	28	1.9	2
7.50 x 20-inch 4 PR Double Rib	28	1.9	2



A—Drive Gear  
B—Worm Gear  
C—Attaching Bolts  
D—Support Bracket

## DRILLING ROW CROPS

Soybeans, common beans, corn, sugar beets and many other row crops can be planted with your drill.

Furrow openers not used do not have to be removed but can be left on the drill to work the soil or tied up to prevent unnecessary wear.

Remove fertilizer feed wheels not used, as fertilizer being trapped around the wheels will cause extreme wear.

Cover all of the grain and fertilizer feed openings not being used with stops. Be sure fertilizer feed wheels are correctly assembled on the shaft after changing for row-crop planting (see page 46). Keep grain and fertilizer tubes as straight as possible and align pressure spring rods as vertical as possible. Markers, page 59, are recommended for row-crop work.

To obtain proper drill settings for row-crop planting, multiply the amount per acre (hectare) to be planted by one of the conversion factors for the row spacing indicated. Apply this amount to the rate charts to obtain feed index, sprocket and gear combinations for drives, and fertilizer gear case settings.

FEED CUP SPACING In. (m)	ROW CROP SPACING Inches (Meters)					
	6 (0.15)	12 (0.31)	18 (0.46)	24 (0.61)	30 (0.76)	36 (0.91)
6 (0.15)	12 (0.31)	18 (0.46)	24 (0.61)	30 (0.76)	36 (0.91)	42 (1.07)
7 (0.18)	14 (0.36)	21 (0.53)	28 (0.71)	35 (0.89)		
8 (0.20)	16 (0.41)	24 (0.61)	32 (0.81)	40 (1.02)		
10 (0.25)	20 (0.51)	30 (0.76)	40 (1.02)			
CON- VERSION FACTOR	2	3	4	5	6	

**EXAMPLE:** To plant 50 pounds (56 kilograms) of soybeans in 30-inch (0.76 m) rows with a fluted feed drill with 6-inch (0.15 m) feed cup spacing, multiply 50 (56) x conversion factor of 5 = 250 lbs (280 kg) per acre (hectare).

Refer to the particular rate chart to find the closest setting for 250 lb/acre (280 kg/hectare). In this example, the correct chart is one page 32 and the correct index setting would be 32.

For a row spacing not shown in the conversion chart, use the formula as shown.

$$\text{ROW CROP SPACING} = \text{CONVERSION FACTOR} \times \text{FEED CUP SPACING}$$

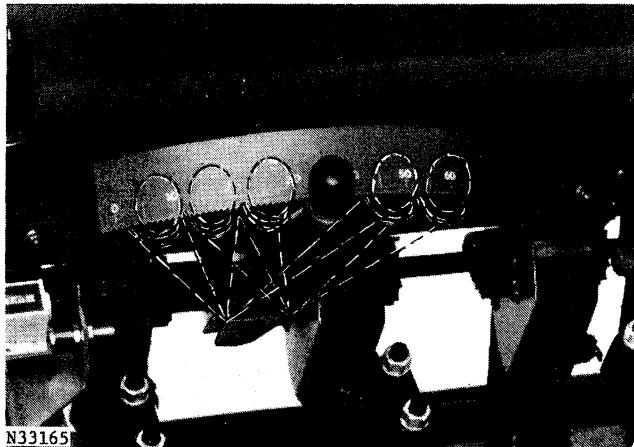
**EXAMPLE:** To plant 42-inch (1.07 m) rows with a drill that has 6-inch (0.15) spaced feed cups, divide the row crop spacing by feed cup spacing to obtain the conversion factor of 7.

## PREPARING DRILL FOR STORAGE



**CAUTION:** Be careful when using diesel fuel so that it does not ignite. Use only in well-ventilated areas away from any sparks and flames.

1. Open the feed cups to their largest or wide open setting. If fertilizer drill, remove the bottom cover, baffles, and feed shafts. Store in box after cleaning.
2. If double run, pull the drill around, with the feed shafts engaged, to remove more material.
3. Wash the drill with a high-pressure washer; move the shifters back and forth while washing.
4. Paint all bare metal and rust spots.
5. Spray ALL moving parts with diesel fuel or lubricating oil. Move shifter back and forth while spraying. Spray EACH FEED CUP, inside and outside. Work the individual cup levers back and forth while spraying. Pull the drill around, with feed shafts engaged, then spray more fuel or oil on moving parts.
6. Lubricate the drill.
7. Remove chains, clean with diesel fuel, then apply oil before storing in box.
8. Raise the furrow openers. Coat disks or shovels with oil or grease, then lower onto a board for storage.



## **REMOVING DRILL FROM STORAGE**

**⚠ CAUTION:** Be careful when using diesel fuel so that it does not ignite. Use only in well-ventilated areas away from any sparks or flames.

1. Remove parts stored inside the box. If fertilizer drill, install feed shaft, baffles, and bottom covers.
2. Turn feed shafts with a wrench to check that they turn freely. Work shifter back and forth.
3. Install any chains removed. If a drive is not going to be used, leave that chain off.
4. Check tires, inflate if necessary.
5. Lubricate drill.
6. Review the "Field Operation and Adjustments" section of this manual and make the settings necessary for the seed you want to drill.



# Lubrication

Lubricate with the following John Deere Lubricant:

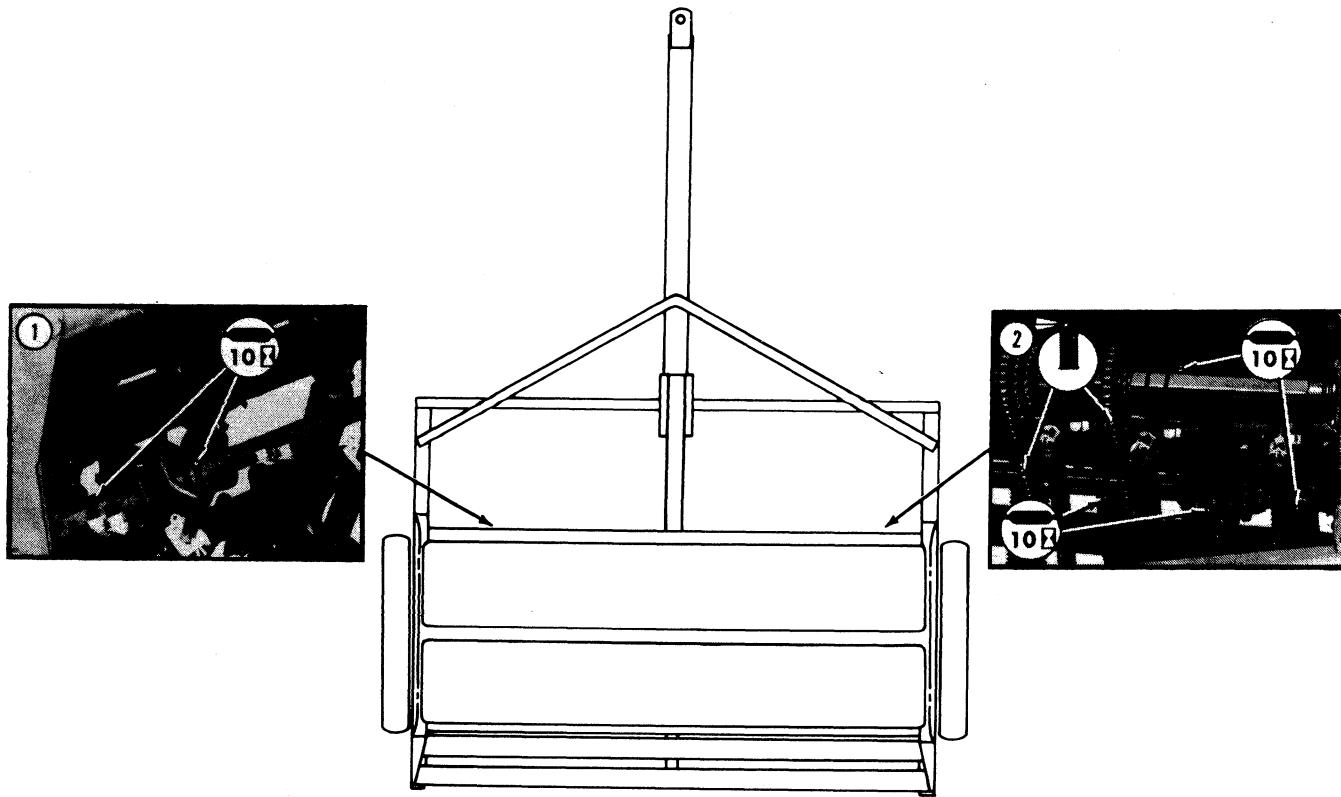
PT 507 14 oz. (0.4 kg) Tube

PT 540 5 lb. (2.27 kg) Can

PT 575 33 lb. (15.8 kg) Pail

Or use an equivalent multi-purpose-type grease at the hourly intervals indicated on the symbols.

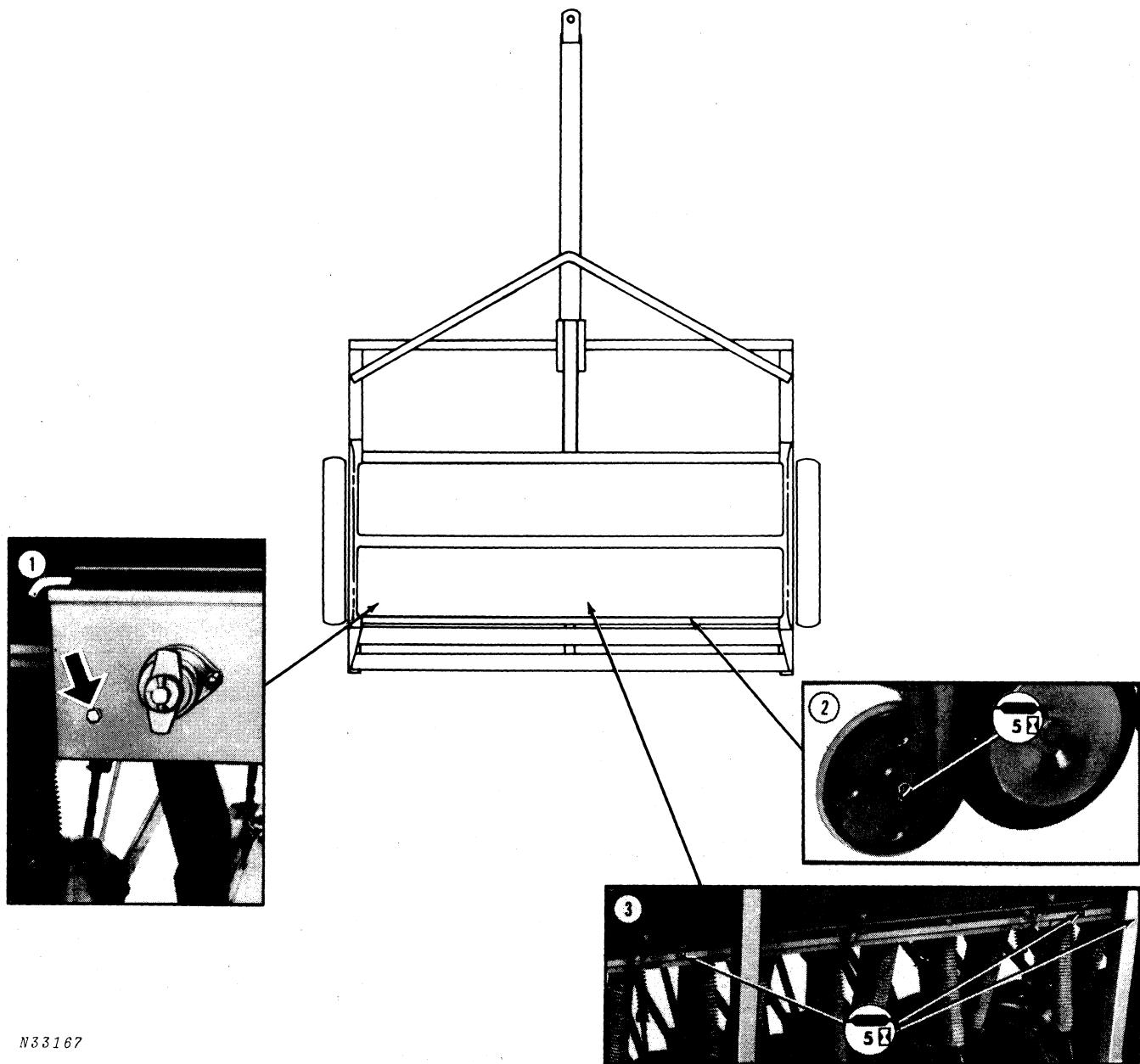
PT 508 14 oz. (0.4 kg) Aerosol Can



N33166

1—Throw-Out Clutch

2—Drive Tubes and Chains



N33167

1—Remove gear case level screw (bold arrow) annually to check oil level. If no oil runs out, add SAE 90 oil (John Deere AM 50990) through the hole or by removing the top cover. Change oil only if dirty by removing pipe plug in bottom of gear case.

2—Gage-O-Matic Openers  
3—Fertilizer Feed Shaft Bearings



# Service

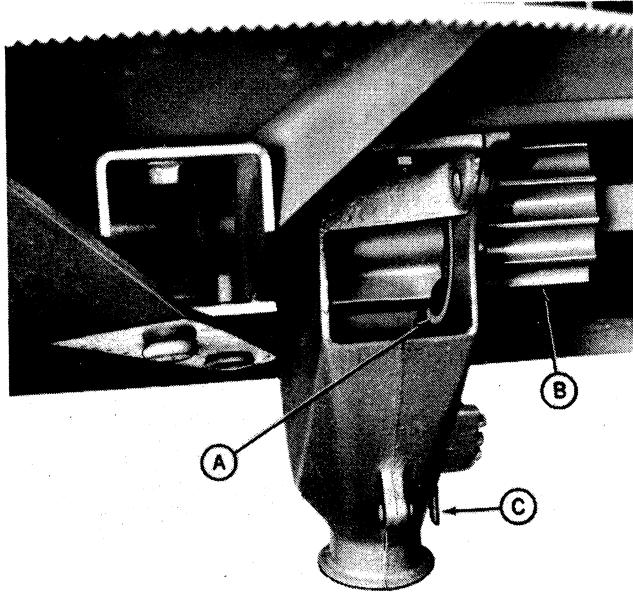
## RESETTING FLUTED-FEED CUPS

Reset cups whenever:

- A. Cup has been removed from drill.
- B. Cup has been knocked out of position.
- C. Quantity of seed sown varies from cup to cup.
- D. Quantity of seed sown does not agree with chart.

Reset as follows:

1. Set feed shaft shifter on grain box to notch "O" on index plate by first moving shifter lever past the first notch and returning it to notch "0" to equalize spring pressure.
2. Open seed gates to clean-out position (C).
3. Start at master feed cup (first feed cup on each side of shifter lever) and loosen bolts holding feed cup to box bottom.
4. Move feed cup until end of feed roll (B) is flush with inside surface of seed retainer ring (A) on lower radius of seed reservoir. Reset all feed cups in same manner, beginning with master feeds and working in both directions. Tighten bolts on each feed cup as soon as resetting is complete.
5. Recheck adjustment by moving feed shaft shifter through full index setting range; then move lever past notch "O" and return. Recheck to make sure all feed rolls are flush at lower radius of feed cup.
6. Close seed gates to desired setting, making sure all gates are in identical position.



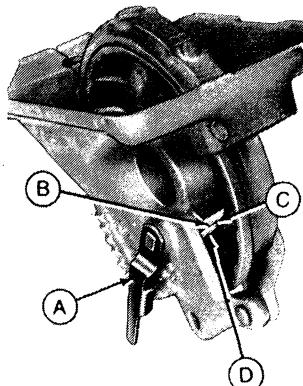
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**A—Inside Face of Ring**  
**B—Feed Roll**  
**C—Feed Gate Lever**

## CHECKING DOUBLE-RUN FEED CUPS

Check accuracy of the feed gate opening with the notches on the feed cup by first moving latch to the wide open setting (A). There should be a gap between the gauging ledge (B) and the feed gate (C) of "from touching to 1/32-inch (0.8 mm)" (D).

Adjust the gap by holding the feed gate tight against the gauging ledge (with a screwdriver or other tool) and then bending the gate latch to the wide open setting.



N33168Y

## TIGHTENING DRIVE CHAINS

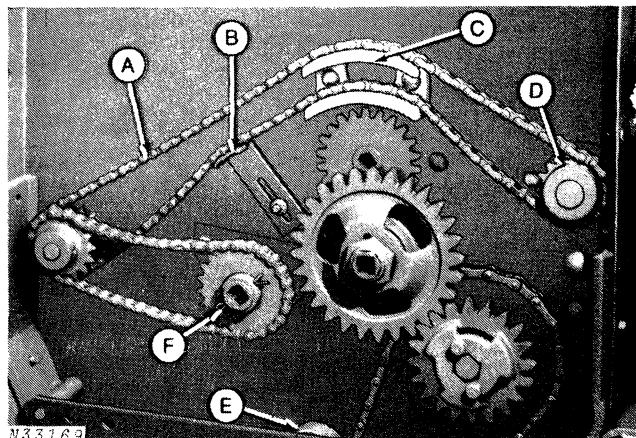
### All Drills

Rotate tightener (E) on bolt into chain.

### 8250 and 8350 Drills

Loosen bolts inside the box and move the primary tightener (C) up.

If the box is full, tighten the chain with the secondary tightener (B) by moving it into the chain. As soon as the primary tightener bolts are accessible, loosen the secondary tightener, tighten the primary to the end of its slot, then use the secondary tightener.



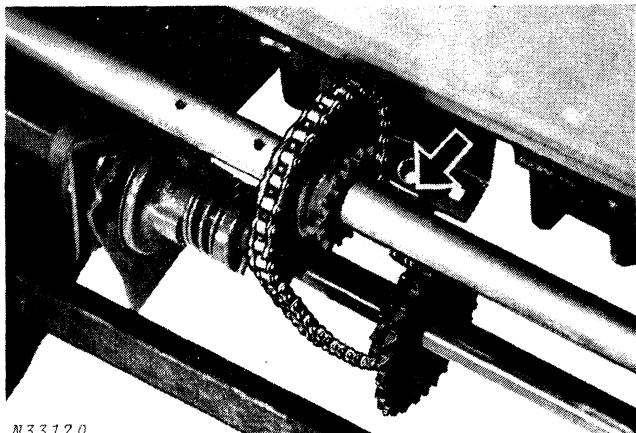
N33169

*End Panel Removed For Clarity ONLY*

- |                                    |                              |
|------------------------------------|------------------------------|
| A—Fertilizer Gear Case Drive Chain | D—Countershaft Sprocket      |
| B—Secondary Tightener              | E—Main Drive Chain Tightener |
| C—Primary Tightener                | F—Fertilizer Shaft Shear Pin |

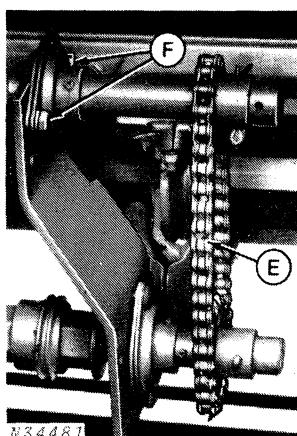
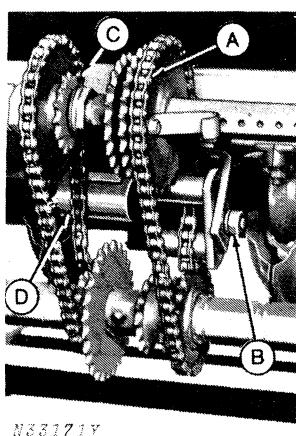
### Fluted-Feed Drills

Loosen carriage bolt and move tightener into chain.



N33170

## TIGHTENING DRIVE CHAINS—Continued



### Double-Run Feed Drills

Tighten the feed shaft drive chain (A) by loosening the tightener pivot bolt (B) and rotating the tightener to put more chain wrap on the lower sprocket.

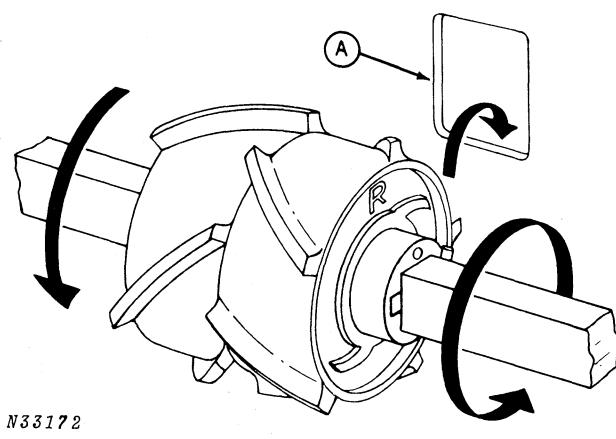
Tighten the fertilizer drive chain (C) by sliding the tightener into the chain.

Tighten countershaft driven chain (E) by loosening nuts (F) and moving bearing retainer bolts in slots. Retighten nuts.

A—Feed Shaft Drive Chain  
B—Pivot Bolt  
C—Fertilizer Drive Chain

D—Tightener  
E—Driven Chain  
F—Nuts

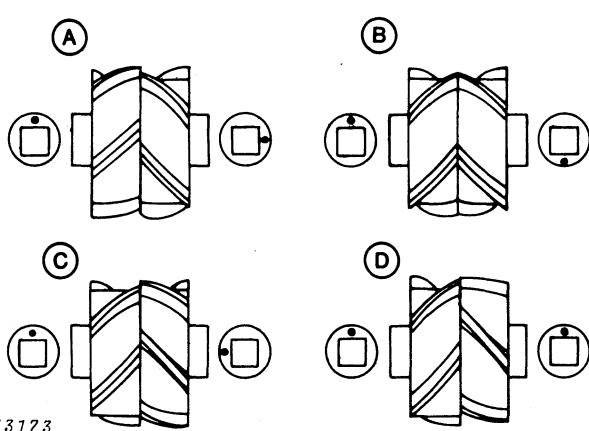
## REPLACING FERTILIZER TRACTION FEED WHEELS



N33172

The wheels are composed of two halves marked "R" for right-hand and "L" for left-hand. Remove the traction feed wheel from the feed shaft by removing the feed shaft with feed wheels from drill and sliding wheels off shaft.

When reassembling the feed wheels on the shaft, the right-hand half marked (R) must face the right-hand end of the drill. Be sure the "ribs" on one half of the wheel are centered between the "ribs" on the other half, as shown. (See illustration showing the right and wrong method of assembly.)



N33173

Having the "R" and "L" on the same square of the shaft will assure proper assembly of the wheels. Another method is to have the dots on the hubs on the same square of the shaft. The two halves are compressed slightly to hold them firmly together when the spring clips are installed.

A—Wrong  
B—Wrong  
C—Wrong  
D—Right

## FURROW OPENERS

### Replacing Single-Disk Boot

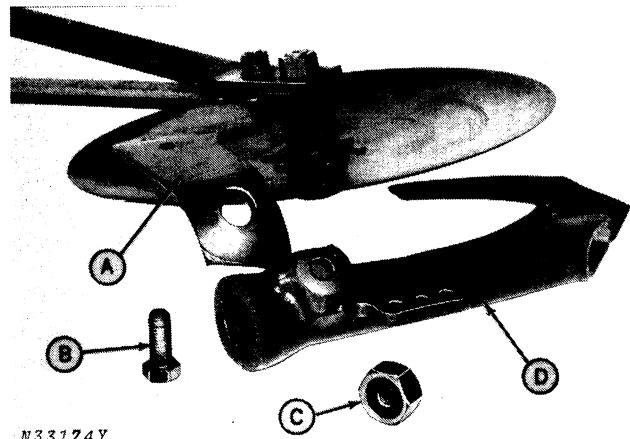
Remove the cone nut (C), either on or off the drill.

Install the boot by inserting the bolt (B) through the boot, from inside out, then through the boot support.

**IMPORTANT:** Refer to pages 11 and 12 for proper scraper adjustment.

A—R.H. Boot Support  
B—Bolt

C—Cone Nut  
D—R.H. Boot



N33174Y

### Replacing Single-Disk Disk

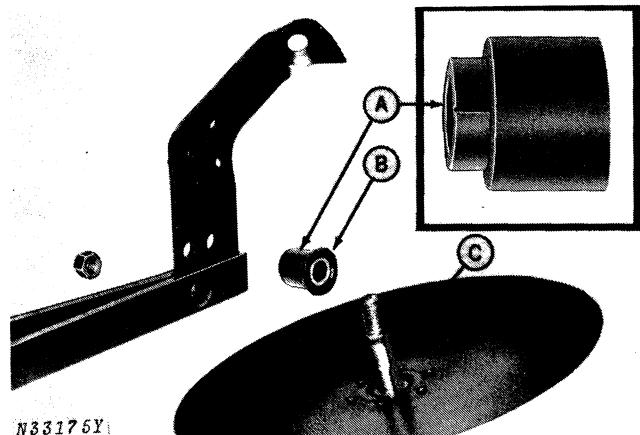
Remove the nut, then slide the disk and spacer (A) out of the drawbar.

**NOTE:** Take notice of the flat surfaces in the drawbar, spacer, and bolt; also note the bevel on the end of the spacer that makes contact with the drawbar.

Because of the flat surfaces, a disk MUST BE installed correctly. Install it with the wide part of the spacer (A) down (or the flat inner surface on top). The bolt will curve up.

When assembling, fill the seal (B) with rubber seal lubricant (AM12000M).

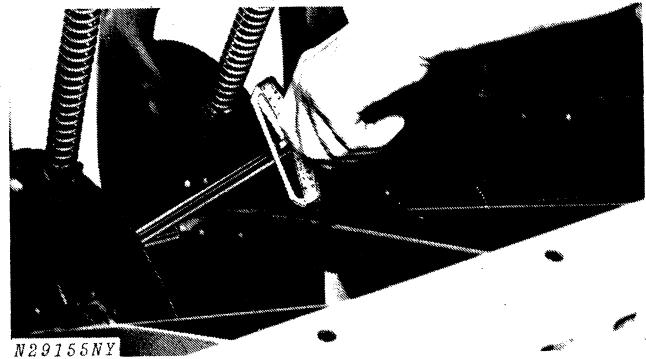
A—Spacer  
B—Seal  
C—Curved Bolt



N33175Y

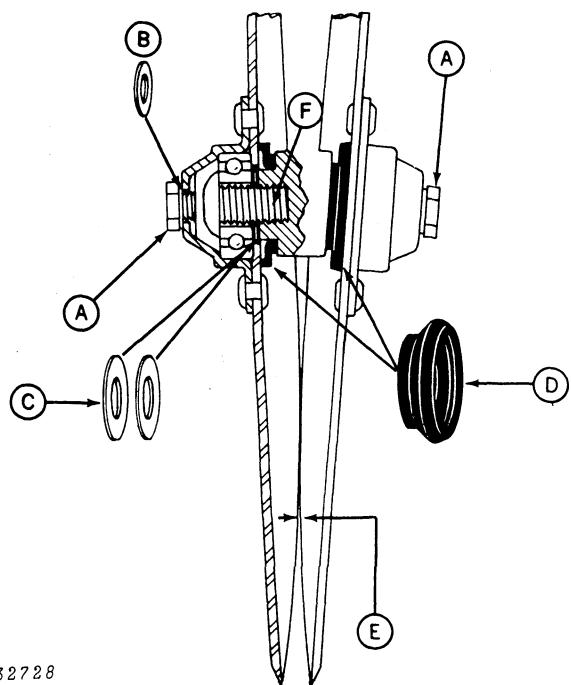
Install the new disk, spacer, and seal on the drawbar. Tighten the nut to 105 ft-lbs (143 Nm) torque WHILE PUSHING THE TOP OF THE DISK AWAY FROM THE DRAWBAR AND PUSHING THE BOTTOM TOWARD THE DRAWBAR.

**IMPORTANT:** Refer to pages 11 and 12 for proper opener adjustment.



N29155NY

## FURROW OPENERS—Continued



A—Bearing Plug  
 B—Washer  
 C—Spacer  
 D—Seal  
 E—Disk Blades  
 “Barely Touch”  
 F—Bearing Screw

### Replacing and Adjusting Double-Disk Blades

1. Remove bearing plug (A) from bearing case.
2. Insert 5/16-inch hexagon wrench through hole in bearing case and turn off disk blade. Carefully, inspect parts for wear or damage and replace with new parts when necessary.

*NOTE: The left-hand disk has left-hand threads.*

It is recommended that rubber seals (D) be replaced with new ones (M17520M) at the end of each seeding season and lubricated as described in step 4.

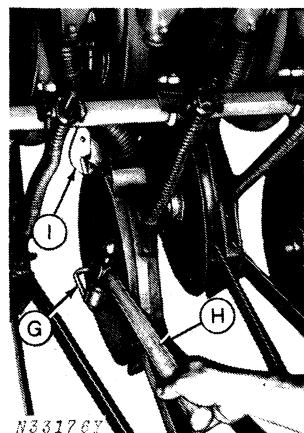
*NOTE: The sealed bearing on this opener does not require lubrication.*

3. Proper reassembly is important. Slip rubber seal (D) over boot hub so that flared open end of seal faces mating disk blade as illustrated. Be sure to press rubber seal down firmly to the shoulder on the hub.
4. Fill cupped portion of rubber seal with rubber seal lubricant AM12000M.
5. Install two M15226M spacer washers (C) on each bearing screw (F) and assemble disk blades to hub. Tighten firmly.

**IMPORTANT: Disk blades should “barely touch” at the closest point (E). Revolve disks to be certain disks turn freely with scrapers disengaged. If adjustment is necessary, add or deduct spacer washers (C) as required. Most new assemblies will require two washers on each bearing screw, while worn blades may require none.**

6. Disk blade and bearing assemblies must be tightened to the boot casting by impact. Tighten socket screw firmly, and then strike the end of the wrench (G) three times with a 1-1/2-pound (0.68 kilogram) hammer (H).
7. Clamp locking pliers (I), as shown, at the rear of the blade to hold the disk. Replace and tighten the bearing plug firmly. Be sure M16630M washer (B) is under head of bearing plug.

Adjust scrapers so they have just enough tension to clean the disks but do not prevent them from turning (See page 13).

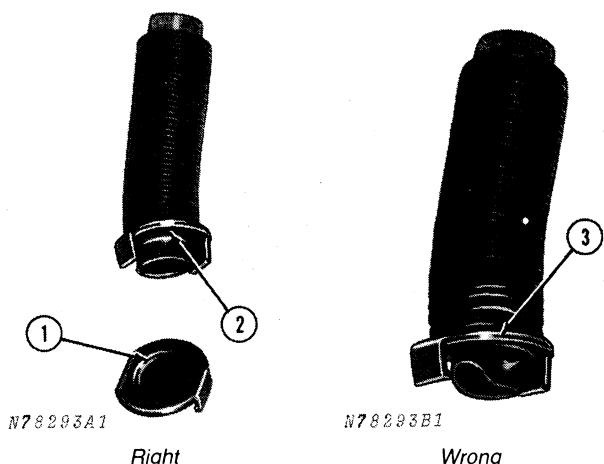


G—Wrench  
 H—Hammer  
 I—Locking Pliers

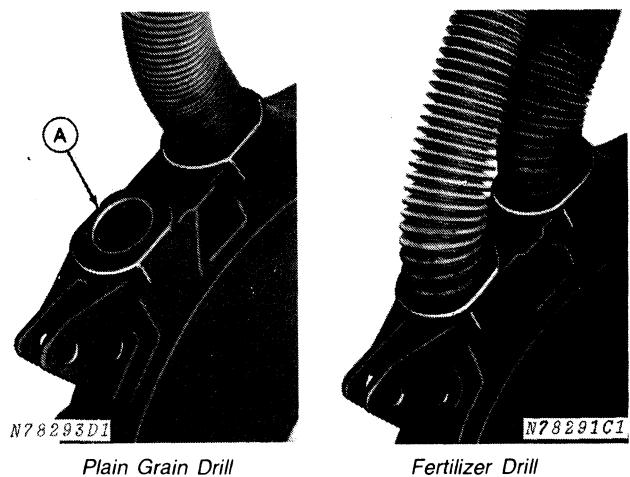
## INSTALLING SEED TUBES

### Double Disk Opener

1. If new tube holders are required, cut out the center depression in the cap, shown with dotted line.
2. Install first convolute of tube through holder.
3. Make sure convolute of tube is not collapsed. See step 2.



4. Install holders with tubes in boot. If drill is plain grain, install cap at (A).

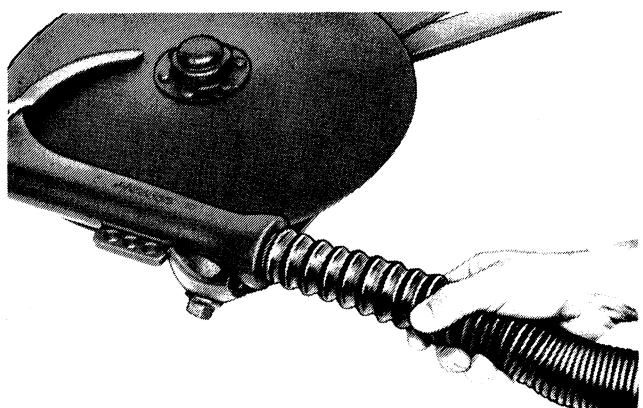


### Single Disk Opener

Install seed tube with first convolute of tube inside the lip of boot.

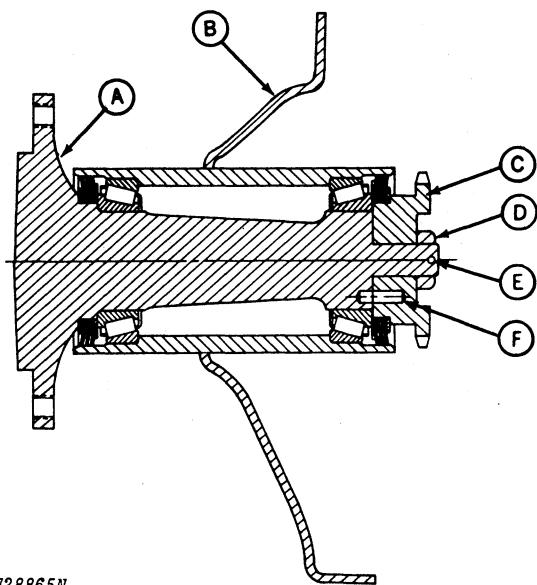
**IMPORTANT: Make sure there are no collapsed ribs in tube. Remove collapsed ribs by placing a hand tool handle inside tube and pushing collapsed rib out.**

When tubes are installed correctly, you should be able to lift the opener off the ground (with the down pressure springs disconnected) with the tube, see illustration.



Checking Tube Installation

## MAIN DRIVE SHEAR PIN



A double spring pin is located in the end of each axle assembly to act as a shear pin. To replace the shear pin, raise drill off ground and remove wheel from the hub. Loosen main drive chain tightener. Remove axle hub and end plate from end of drill.

Remove cotter pin and slotted nut holding main drive sprocket on axle. Slide sprocket off axle and replace spring pin.

- A—Axle
- B—End Plate
- C—Drive Sprocket
- D—Slotted Nut
- E—Cotter Pin
- F—Spring Pin

## MOUNTING TIRES



**CAUTION:** When seating tire beads on rims, NEVER EXCEED 35 psi (2.5 bar) (2.5 kg/cm<sup>2</sup>) or maximum inflation pressures specified by tire manufacturer. Higher inflation pressure may break the bead or even the rim with dangerous explosive force. If both beads are not seated when maximum inflation pressure is reached, deflate, reposition tire, relubricate bead, and reinflate.

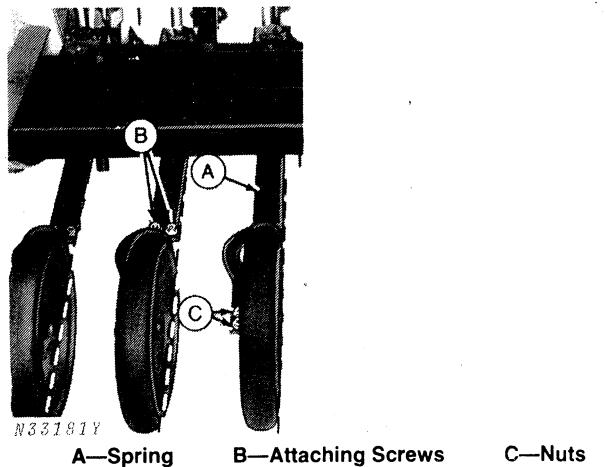
See John Deere Fundamentals of Service Manual 55 for additional information on tire mounting.

## ADJUSTING GANG PRESS ATTACHMENT

### Aligning Press Wheels

The wheels must be straight with their attaching springs (A) to work correctly. Loosen attaching screws (B), lay a straight edge (flat steel strap) along the right-hand edge of the spring, move the wheel so both the front and rear make contact with the straight edge, then tighten screws.

Make sure the U-bolt nuts (C) are tight or the wheel will wobble.

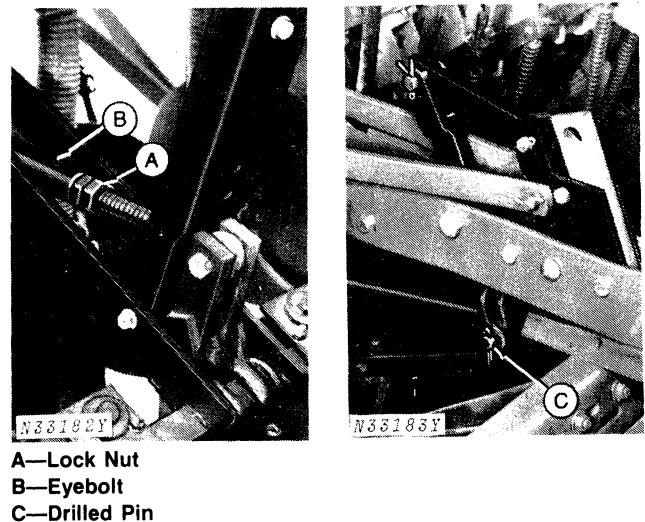


### Transport Lift Height

DECREASE lift height by loosening lock nut (A) on eyebolt (B). Remove drilled pin (C) from front of lift pipe and turn counterclockwise desired amount. Replace drilled pin and tighten lock nut.

INCREASE lift height by turning the lift pipe clockwise.

**IMPORTANT:** When the openers are fully raised (for transport), the press wheel leaf springs should contact rear edge of footboard firm enough to prevent excessive bouncing, but not so firm as to cause damage to springs or lift linkage.





# Trouble Shooting

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## FURROW OPENER AND GRAIN TUBE

### Disks Not Revolving

Possible Cause	Possible Remedy
Drill is hitched too high in front so pressure is on boot instead of disk. - Single Disk Opener	Hitch drill properly. (See page 5.)
Scrapers adjusted too tight.	Loosen scrapers so they have just sufficient pressure to clean disks. Disengage scrapers when not needed. (See page 11.)
Pressure not adjusted properly so furrow opener can float over high and low spots in field.	Adjust pressure on furrow openers so the collar on pressure rod is about 1-1/2 inches (38 mm) above pressure arm swivel. (See page 16.)
Openers spaced too close together.	Adjust opener spacing.
Insufficient spacer washers on disk hubs—Double Disk Opener	Add washers to hubs. See page 48.

### Lack of Penetration Or Excessive Wear On Bottom Of Boot—Single Disk Opener

Boot adjusted too low.	Adjust boot. See page 12.
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### **Toe Scraper Will Not Stay Adjusted—Single Disk Opener**

Ball joint at top of boot loose.

Position top edge of lug, located on rear of boot, against bottom edge of boot support; then tighten ball joint bolt.

### **Clogging Of Grain Tubes and Furrow Openers**

Drill improperly hitched.

Hitch drill properly. (See page 5.)

Using trashy seed or lumpy fertilizer.

Use clean seed and dry, free-flowing fertilizer.

Stopping drill in field and letting drill roll backward, filling the bottom of boot with dirt.

Raise furrow openers before stopping drill. Do not permit drill to roll backwards if it is necessary to stop without raising furrow openers.

Convolute tube rib collapsed inside opener boot.

Install tube correctly. See page 49.

## **DRILLING GRAIN**

### **Fluted Feed Shifter Lever Difficult To Shift**

Position of feed gate too high.

Lower feed gate, position shift lever in place; then place feed gate in desired position.

### Varying Quantities Drilled By Individual Feeds

Possible Cause	Possible Remedy
Seed bridging in box due to unclean seed, inoculation, treatment, or dampness.	Use agitators.
Feed gates not all set the same.	Adjust gates according to instructions on page 19.
Feed cup out of adjustment with the fluted feed roll.	Adjust feed as shown on page 36.

### Quantities Drilled Not Agreeing With Seed Chart

Feed gates improperly adjusted.	Adjust gates according to instructions on page 19.
Heavier or lighter than average weight seed.	Check quantity drilled as explained on page 37.
Improper tire inflation, tire size, or tread.	Inflate tires as instructed on page 38.

### Bunching and Skipping

Jerky driving or jolting over poorly prepared seedbed.	Drive steadily. Prepare good seedbed.
Not driving straight, overlapping or leaving too wide a space between seeded strips across fields.	Use care in driving to have space between seeded strips the same width as the opener spacing on the drill. Use markers.
Drill improperly hitched.	Hitch drill properly. (See page 5.)
Loose or swinging drawbar on tractor.	Lock tractor drawbar to prevent swinging.
Improper adjustment of furrow openers resulting in openers not penetrating low spots or bouncing over rough ground.	Adjust furrow openers as shown on page 12 and 48.
Stopping drill in field.	Stop only at ends of field whenever possible.
Dragging seed out of ground by harrowing after drilling.	Use covering chains, press wheels, or packer.

### Seed Scattered On Top Of Ground Or Not Placed Deeply Enough Into Furrow—Single Disk Opener

Boot set too high.	Adjust boot. See page 12.
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## DISTRIBUTING GRASS SEED

### Irregular Distribution

Seed tubes clogged with foreign objects.	Remove tubes and clean, page 49.
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### Varying Quantities Between Individual Feeds

Distributing light chaffy seed.	Mix seed with heavier seed or other material such as cracked corn to give it weight.
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## **Quantities Do Not Agree With Seed Chart**

Possible Cause	Possible Remedy
Heavier or lighter than average weight seed.	Check quantities drilled as explained on page 37.

## **DRILLING FERTILIZER**

### **Irregular Drilling**

Drill improperly hitched.	Hitch drill properly, see page 5.
Loose or swinging drawbar on tractor.	Lock tractor drawbar to prevent it from swinging.

### **Clogging Of Tubes**

Boots clogged with dirt or fertilizer.	Do not stop or allow drill to back up with furrow openers down.
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## **Quantities Drilled Not Agreeing With Fertilizer Chart**

Using wrong fertilizer drive.	Check drive for proper gear and sprocket assembly. (See page 31.)
Quantity drilled has not been checked.	Check quantity drilled as instructed, page 37.
Improper tire inflation, tire size, or tread.	Inflate tires as shown on page 38.
Fertilizer density other than 65 pounds per cubic foot.	Set fertilizer rate for correct density. See page 31.

## **Flow Of Fertilizer Stops**

Broken shear pin.	Install new shear pin. (See page 50.)
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## **Fertilizer Spills Out Of Feeds**

Wrong fertilizer drive speed being used.	Change fertilizer drive to next higher speed and reduce fertilizer index setting. (See page 31.)
Driving too fast over poorly prepared seedbed.	Decrease speed and deflate tires slightly.
Baffles installed incorrectly.	Install baffles as shown on page 32.

## **ACREMETER**

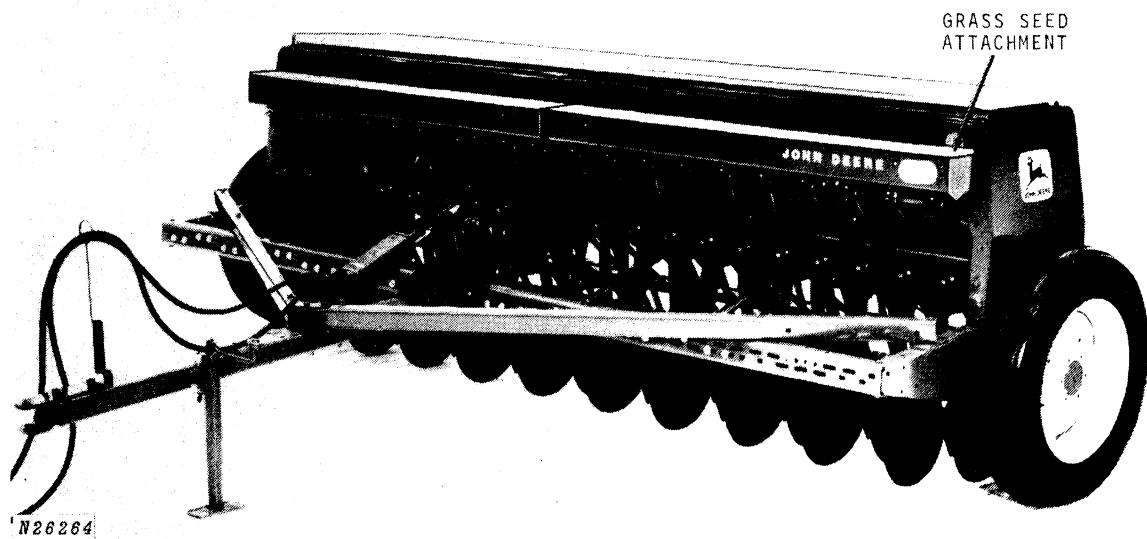
### **Acremeter Tallying Incorrectly**

Improper tire inflation, tire size, or tread.	Inflate tires as instructed on page 38.
Turning at the end of the field without raising furrow openers or drilling around the field.	Raise furrow openers before turning at end of field.
Double tracking, or leaving too wide a space between rows on each trip across field.	Drive carefully; leave same space between seeded strip as the furrow opener spacing on the drill.
Plot of land contains more or less land than assumed.	Remeasure land.



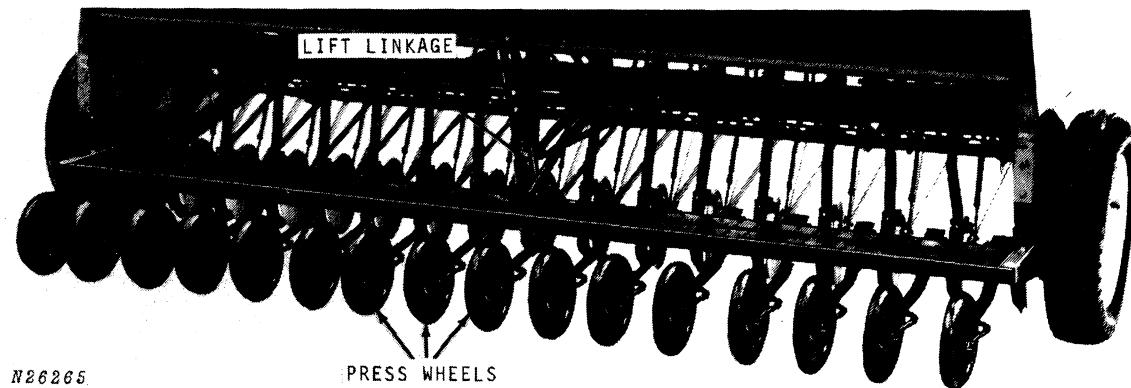
# Attachments

## GRASS SEED ATTACHMENT



Grass seed attachments with accurate and dependable fluted force-feeds are capable of handling the smallest seed with outstanding accuracy.

## GANG PRESS ATTACHMENT

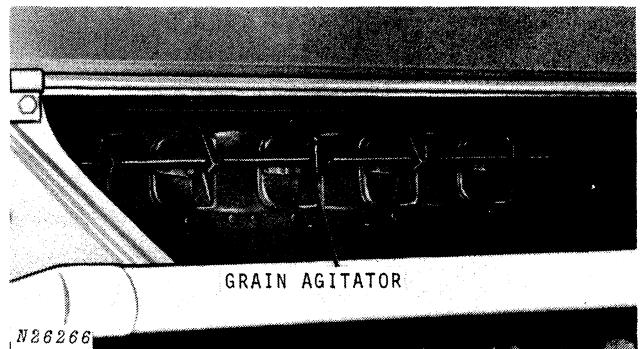


The gang press attachment is designed for use where the soil is loose and light. 2-or 4-inch press wheels are available to follow the furrow openers and pack the soil firmly over the seed.

The press wheel gang is raised when the openers are raised, and lowered when the openers are lowered. This makes it possible to back the drill when necessary and transport the drill with the press wheel gang raised off the ground.

## GRAIN AGITATOR

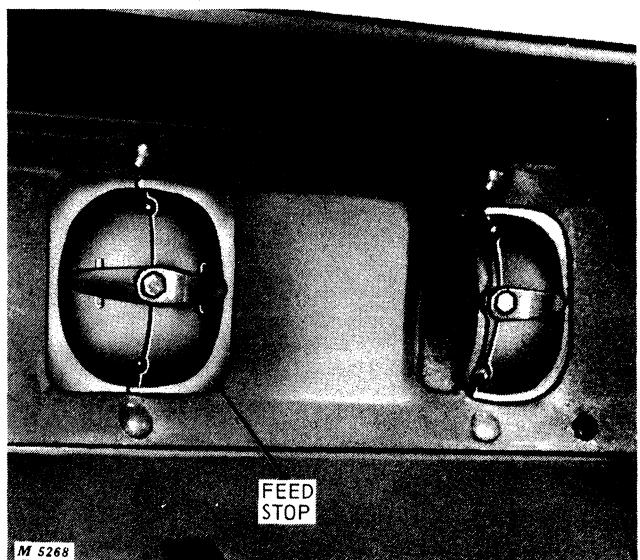
Grain agitators are recommended when drilling trashy, inoculated, or very light seeds.

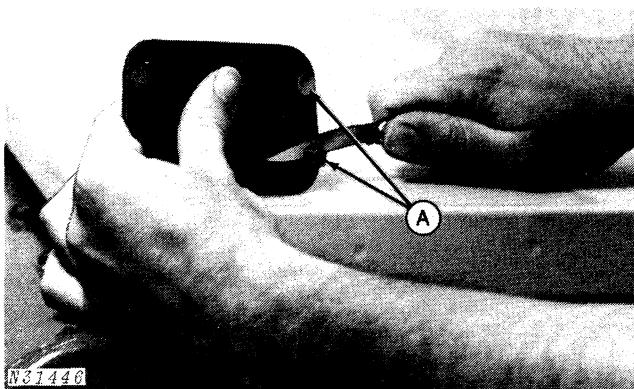


## FEED STOPS

When drilling row crops, cover grass feeds not being used with feed stops.

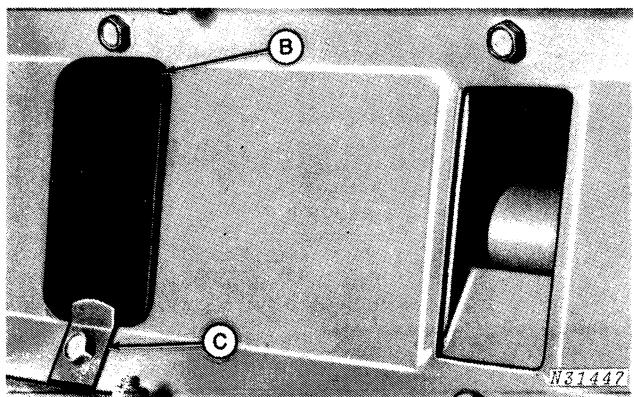
### Grain Feed Stop - Double-Run Feeds



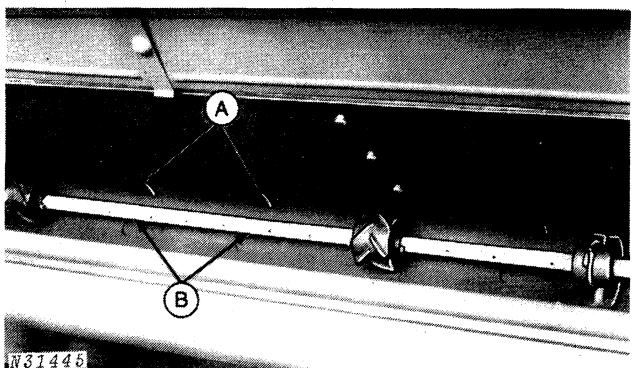


### Grain Feed Stop - Fluted Feeds

To install feed stop (B), remove the tabs (A) from one end of the feed stop. Place the feed stop over the opening with the tab end toward the rear of the box. Position the feed stop in place with tabs under floor of box with feed stop flat against the floor. Install hold-down clip (C) in place over feed stop.



A—Tabs  
B—Feed Stop  
C—Hold Down Clip



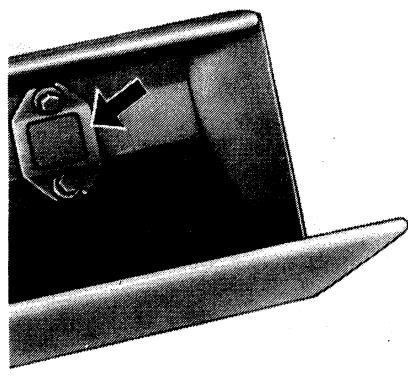
### Fertilizer Feed Stop

**IMPORTANT:** Be sure feed wheels are correctly reassembled on feed shaft. See page 46.

A—Feed Stops  
B—Feed Wheels Removed

### Grass Seed Feed Stop

When installing grass seed feed stops, be careful to keep feed cup from shifting from original position.

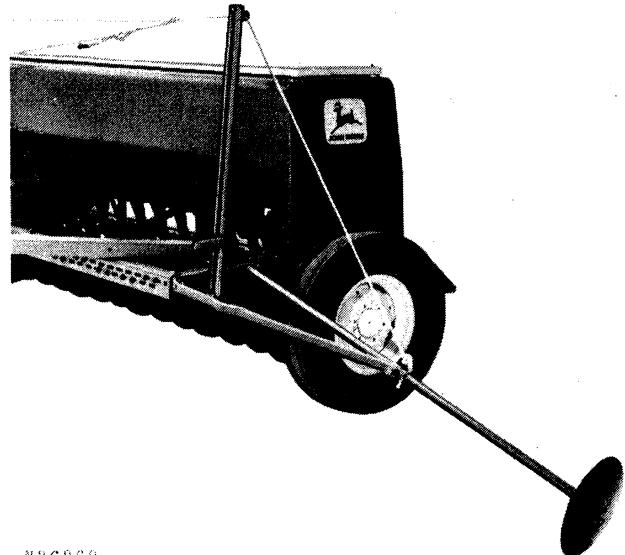


N31444

## MARKERS

Markers are used to minimize or eliminate irregular gaps between adjacent planted strips. They are especially useful when drilling row crops. The drill can be equipped with both right-hand and left-hand markers, or left-hand marker only.

Markers can be raised with either a hand-rope-lift or by a hydraulic cylinder. If hydraulic cylinder is used, install N131911 adapter in one of the hydraulic cylinder ports.

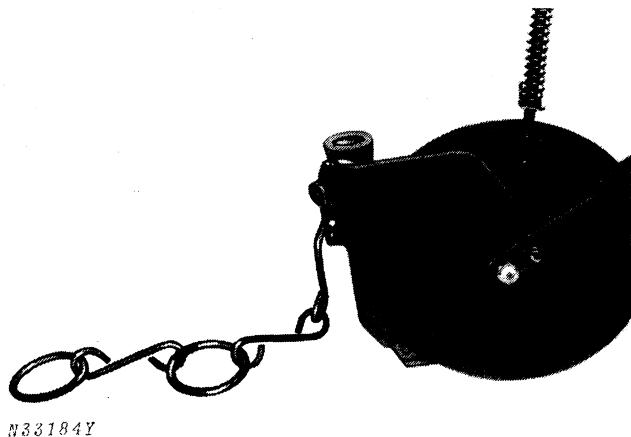


N26268

Hand Lift Shown

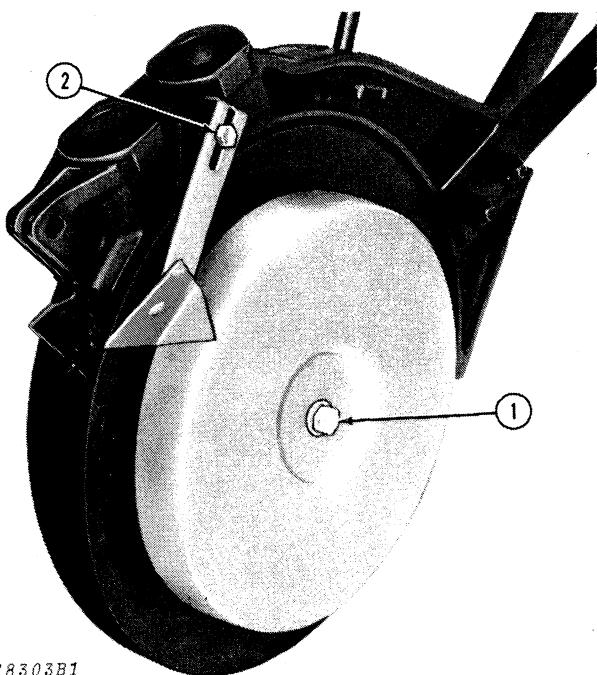
## COVER CHAINS

Used to ensure adequate seed coverage. Can be used with single- or double-disk openers with or without fertilizer tubes.



N33184Y

## DEPTH BANDS



N78303B1

Used with double disk openers to give better control of planting depth. One or two bands may be used on each opener.

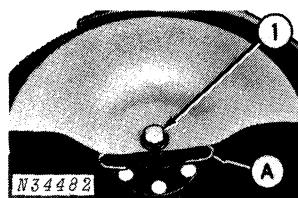
### Installation

Remove plug and plain washer from bearing on each opener blade.

1. Position depth band with retaining clip (A) between rivots on bearing case. Attach depth band with 7/16 x 1 1/2-inch bolt, internal tooth lock washer and 15/32 x 59/64-inch plain washer under bolt head. If only one depth band is used, install it on the right-hand disk.

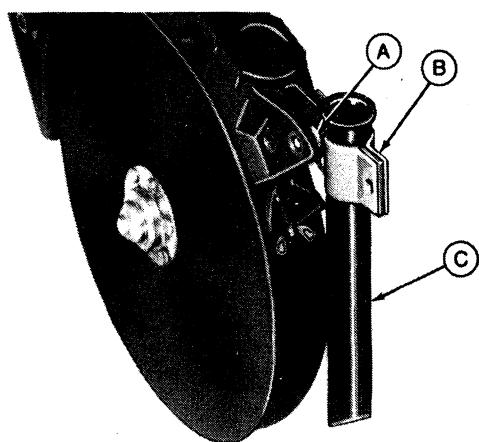
**IMPORTANT: Do not place washer between depth band and bearing case.**

2. Attach scraper to double disk boot with 1/4 x 3-1/2-inch round head bolt.



A—Retaining Clip

## FERTILIZER SPOUTS



N78296B1

Fertilizer spouts are available for double disk openers to direct fertilizer away from the seed in the furrow. Obtain spouts and attaching brackets from your John Deere dealers parts department and install on boot as shown.

### Adjusting Spout

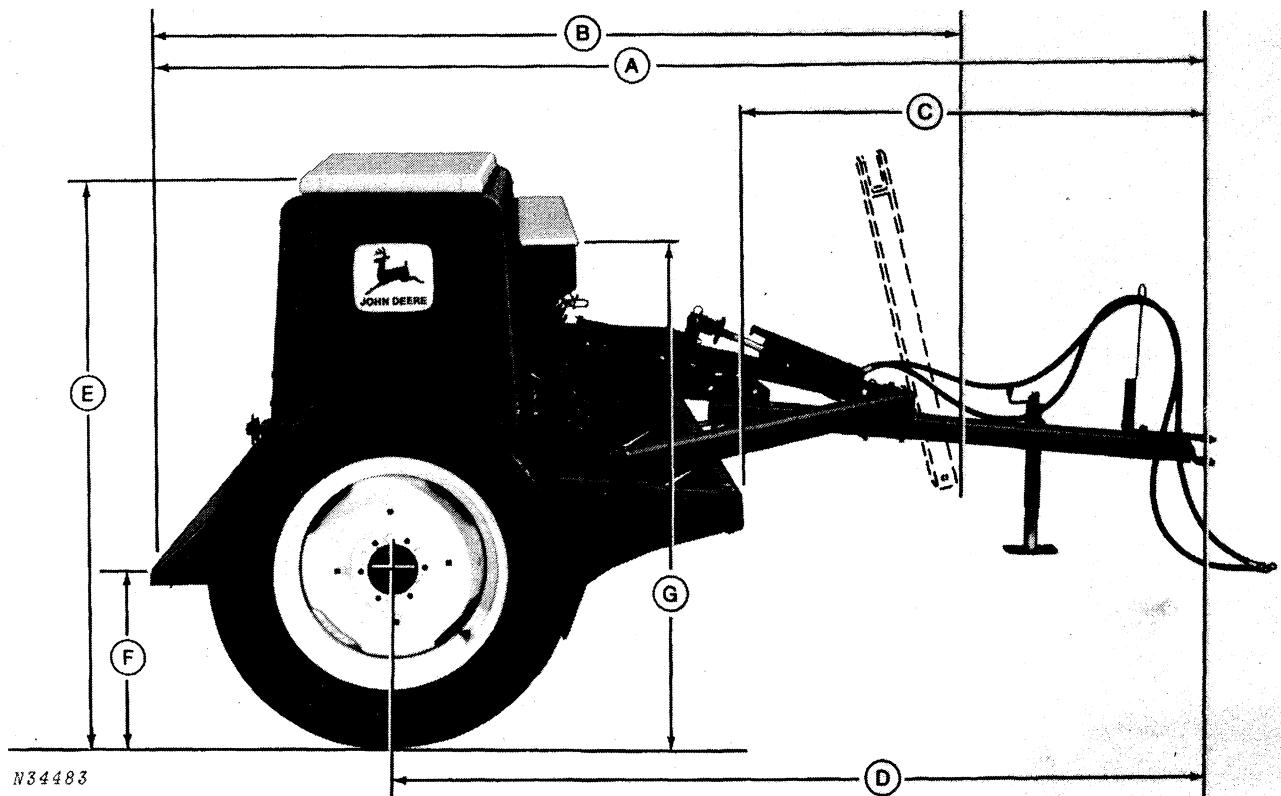
Move spout (C) in clamp (B) to increase or decrease ground clearance.

Bend bracket (A) to position spout for desired placement of fertilizer.



# Specifications

## DIMENSIONS



Box	A*	B*	C	D	E	F	G
8100	10'4" (3 150 mm)	7'4" (2 235 mm)	6' (1 829 mm)	8'7" (2 616 mm)	50-1/2" (1 283 mm)	16-1/2" (419 mm)	4' (1 219 mm)
8200	10'10" (3 302 mm)	7'10" (2 388 mm)	6' (1 829 mm)	8'7" (2 616 mm)	54" (1 372 mm)	16-1/2" (419 mm)	4' (1 219 mm)
8250	10'10" (3 302 mm)	7'10" (2 388 mm)	6' (1 829 mm)	8'10" (2 692 mm)	54" (1 372 mm)	16-1/2" (419 mm)	4' (1 219 mm)
8300	11'3" (3 429 mm)	8'3" (2 503 mm)	6' (1 829 mm)	8'10" (2 692 mm)	54" (1 372 mm)	16-1/2" (419 mm)	4'3" (1 295 mm)
8350	11'3" (3 429 mm)	8'3" (2 503 mm)	6' (1 829 mm)	8'10" (2 692 mm)	54" (1 372 mm)	16-1/2" (419 mm)	4'3" (1 295 mm)

\* A and B dimensions for drills with gang press attachment are as follows:

8100	12' (3 658 mm)	9' (2 743 mm)
8200	12'3" (3 734 mm)	9'3" (2 819 mm)
8250	12'3" (3 734 mm)	9'3" (2 819 mm)
8300	12'6" (3 810 mm)	9'3" (2 819 mm)
8350	12'6" (3 810 mm)	9'3" (2 819 mm)

Refer to your tractor operator's manual for details on tractor wheel ballasting, tire inflation, and use of the hydraulic system.

## GENERAL

Number of feeds	24	26	14	18	21	23	16	20	16
Spacing of feeds -	in. (mm)	6 (152)	6 (152)	7 (178)	7 (178)	7 (178)	8 (203)	8 (203)	10 (254)
Machine frame length -	ft. (m)	12 (3.657)	13 (3.962)	8 (2.438)	10 (3.048)	12 (3.657)	13 (3.962)	10 (3.048)	13 (3.962)
Drilling width -	ft. (m)	12'2" (3.71)	13' (3.96)	8'1" (2.46)	10'7" (3.23)	12"3" (3.73)	13'1" (3.99)	10'8" (3.25)	13'2" (4.01)
Overall width:									
15 in. wheels -	ft. (m)	14' (4.27)	14'10" (4.52)	9'10" (3.00)	12'4" (3.76)	14' (4.27)	14'10" (4.52)	12'4" (3.76)	14'10" (4.52)
20 in. wheels -	ft. (m)	14'2" (4.30)	15' (4.56)		12'6" (3.80)	14'2" (4.30)	15' (4.56)	12'6" (3.80)	15' (4.56)
Type of feed:									
Fluted feed	x	x	x	x	x	x	x	x	x
Double run	x	x	---	---	x	x	x	x	x

### 8100 Box

*Machine weight (empty) -	lb. (kg)	1160 (526.2)
<b>Grain box capacity:</b>		
Volume	bu. (L)	9.9 (349)
†Weight	lb. (kg)	594 (269.4)

### 8200 Box

*Machine weight (empty) -	lb. (kg)	1885 (855.0)	1330 (603.3)	1600 (725.8)	1805 (818.7)	1550 (703.1)	1790 (811.9)	1685 (764.3)
<b>Grain box capacity:</b>								
Volume	bu. (L)	24.2 (853)	15.8 (557)	20.8 (733)	24.2 (853)	20.8 (733)	25.8 (909)	25.8 (909)
†Weight	lb. (kg)	1450 (657.7)	948 (430.0)	1250 (567.0)	1450 (657.7)	1250 (567.0)	1550 (703.1)	1550 (703.1)

### 8250 Box

*Machine weight (empty) -	lb. (kg)	1475 (642.5)	1800 (784.1)
<b>Grain Box capacity:</b>			
Minimum grain position			
Volume	bu. (L)	7.9 (278)	10.4 (366)
†Weight	lb. (kg)	475 (215.5)	625 (283.5)
<b>Maximum grain position:</b>			
Volume	bu. (L)	11.1 (391)	14.6 (514)
†Weight	lb. (kg)	665 (302.1)	875 (396.9)
<b>Fertilizer box capacity:</b>			
Minimum fertilizer position			
Volume	cu.ft. (L)	9.9 (278)	13.0 (368)
#Weight	lb. (kg)	640 (290.3)	844 (382.8)
<b>Maximum fertilizer position</b>			
Volume	cu.ft. (L)	13.7 (388)	18.1 (512)
#Weight	lb. (kg)	894 (405.5)	1177 (533.9)

Number of feeds		24	26	14	18	21	23	16	20	16
Spacing of feeds -	In. (mm)	6 (152)	6 (152)	7 (178)	7 (178)	7 (178)	7 (178)	8 (203)	8 (203)	10 (254)
<b>8300 Box</b>										
*Machine weight (empty) -	lb. (kg)	2115 (921.3)	2225 (969.2)		1725 (751.4)	2035 (886.5)	2150 (936.5)	1675 (729.6)	2070 (901.7)	1965 (855.9)
Grain box capacity:										
Volume	bu. (L)	33.8 (1191)	36.2 (1275)		29.1 (1025)	33.8 (1191)	36.2 (1275)	29.1 (1025)	36.2 (1275)	36.2 (1275)
†Weight	lb. (kg)	2030 (920.8)	2170 (984.3)		1749 (793.3)	2030 (920.8)	2170 (984.3)	1749 (793.3)	2170 (984.3)	2170 (984.3)
<b>8350 Box</b>										
*Machine weight (empty) -	lb. (kg)	2315 (1008.4)	2435 (1060.7)		1905 (829.8)	2235 (973.6)	2360 (1028.0)	1855 (808.0)	2280 (993.2)	2175 (947.4)
Grain box capacity:										
Minimum grain position										
Volume	bu. (L)	15.8 (558)	16.9 (596)		13.6 (481)	15.8 (558)	16.9 (596)	13.6 (481)	16.9 (596)	16.9 (596)
†Weight	lb. (kg)	950 (431)	1015 (460)		819 (371)	950 (431)	1015 (460)	819 (371)	1050 (460)	1015 (460)
Maximum grain position										
Volume	bu. (L)	23.8 (839)	25.5 (897)		20.5 (723)	23.8 (839)	25.5 (897)	20.5 (723)	25.5 (897)	25.5 (897)
†Weight	lb. (kg)	1428 (648)	1527 (693)		1231 (558)	1428 (648)	1527 (693)	1231 (558)	1527 (693)	1527 (693)
Fertilizer box capacity										
Minimum fertilizer position										
Volume	cu.ft. (L)	20.3 (575)	21.7 (615)		17.5 (496)	20.3 (575)	21.7 (615)	17.5 (496)	21.7 (615)	21.7 (615)
#Weight	lb. (kg)	1317 (597)	1408 (639)		1135 (515)	1317 (597)	1408 (639)	1135 (515)	1408 (639)	1408 (639)
Maximum fertilizer position										
Volume	cu.ft. (L)	30.1 (852)	32.2 (912)		26.0 (736)	30.1 (852)	32.2 (912)	26.0 (736)	32.2 (912)	32.2 (912)
#Weight	lb. (kg)	1958 (888)	2093 (949)		1688 (766)	1958 (888)	2093 (949)	1688 (766)	2093 (949)	2093 (949)

**Grass Seed Box**

Grain box capacity:										
Volume	qt. (L)	63 (69.4)	67 (74.0)	42 (46.5)	54 (59.5)	63 (69.4)	67 (74.0)	54 (59.5)	67 (74.0)	67 (74.0)
†Weight	lb. (kg)	118 (53.5)	126 (57.2)	78 (35.4)	102 (46.3)	118 (53.5)	126 (57.2)	102 (46.3)	126 (57.2)	126 (57.2)

**+ Wheel Revolutions Per Acre (Hectare)**

7.60 x 15 4 ply rib impl.	578 (1428)		749 (1851)		578 (1428)		578 (1428)	
7.60 x 15 6 ply double rib	542 (1339)		702 (1735)		542 (1339)		542 (1339)	
7.50 x 20 4 ply rib impl.	435 (1075)	379 (936)	348 (860)		435 (1075)	379 (936)	348 (860)	348 (860)
7.50 x 20 4 ply double rib	422 (1043)	368 (909)	338 (835)		422 (1043)	368 (909)	338 (835)	338 (835)

\*Approximate weights for machine equipped with hydraulic lift and single-disk openers.

†Based upon 60 lb./bu. (0,772 kg/L)

#Based upon 65 lb./cu.ft. (1,041 kg/L)

+The wheel revolutions per acre (hectare) shown above are for pneumatic tires inflated as recommended on pg. 34.

## SERIAL NUMBER



The serial number is located on the front left-hand end of the grain box as shown. Write this number below for later reference.

**Model** \_\_\_\_\_

**Serial Number** \_\_\_\_\_

**Date Purchased** \_\_\_\_\_





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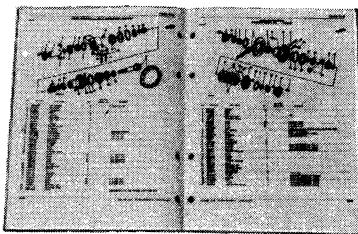
FMO Manual - Tractors	FMO-10102B		
FMO Manual - Tillage	FMO-111B		
FMO Manual - Planting	FMO-12102B		
FMO Manual - Crop Chemicals	FMO-13102B		
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FMO Set of 9 Manuals above	FMO-394 Set		
FOS Manual - Hydraulics	FOS-1003B		
FOS Manual - Electrical Systems	FOS-2004B		
FOS Manual - Engines	FOS-3005B		
FOS Manual - Power Trains	FOS-4004B		
FOUR FOS MANUALS (above)	FOS-90 Set		
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FOS Manual - Belts and Chains	FOS-5303B		
FOS Manual - Bearings and Seals	FOS-5403B		
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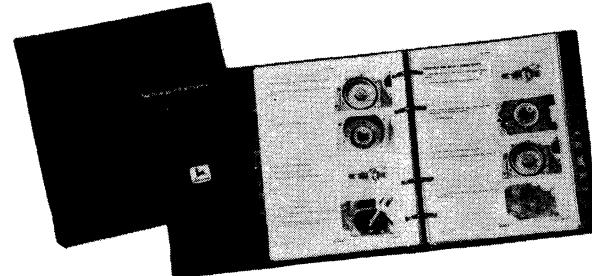
A parts catalog containing exploded view illustrations and lists of all parts is useful when purchasing service parts. Helps identify the correct parts. Useful in assembling and disassembling.

## OPERATOR'S MANUAL



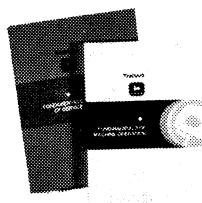
An extra copy of the operator's manual may be important if the copy furnished with your machine is misplaced.

## TECHNICAL MANUAL



The technical manual is a service guide for your machine. Included in the manual are specifications, diagnosis and adjustments, illustrations of special assembly and disassembly procedures, hydraulic oil flows, and wiring diagrams.

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