

John Deere Traction Feed Fertilizer Attachment for Press Grain Drills



JOHN DEERE

OPERATORS MANUAL

John Deere Traction Feed Fertilizer
Attachment for Press Grain Drills

OMN159327 B3 English

OMN159327 B3

LITHO IN U.S.A.
ENGLISH



TO THE PURCHASER

This new Fertilizer Attachment was carefully designed and manufactured to give years of dependable service. To keep it running efficiently, read the instructions in this operator's manual. Each section is clearly identified so you can easily find the information you need—whether it is operation, service, or lubrication. Read the Table of Contents to learn where each section is located.

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

Record your fertilizer attachment serial number in the space provided on the inside back cover. Your dealer needs this information to give

you prompt, efficient service when you order parts. If your fertilizer attachment requires replacement parts, go to your John Deere dealer where you can obtain genuine John Deere parts—accept no substitutes.

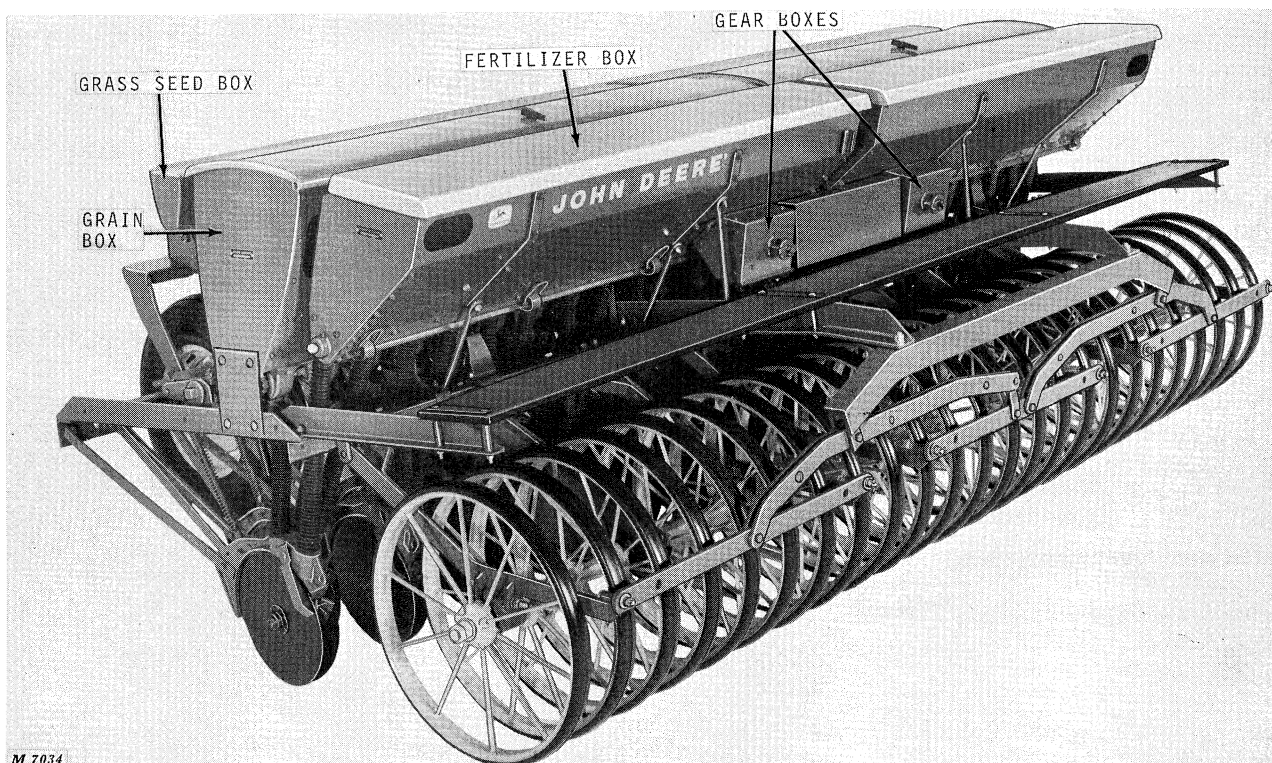
The warranty on this fertilizer attachment appears on copy of the purchase order which you should have received from your dealer when you purchased the fertilizer attachment.

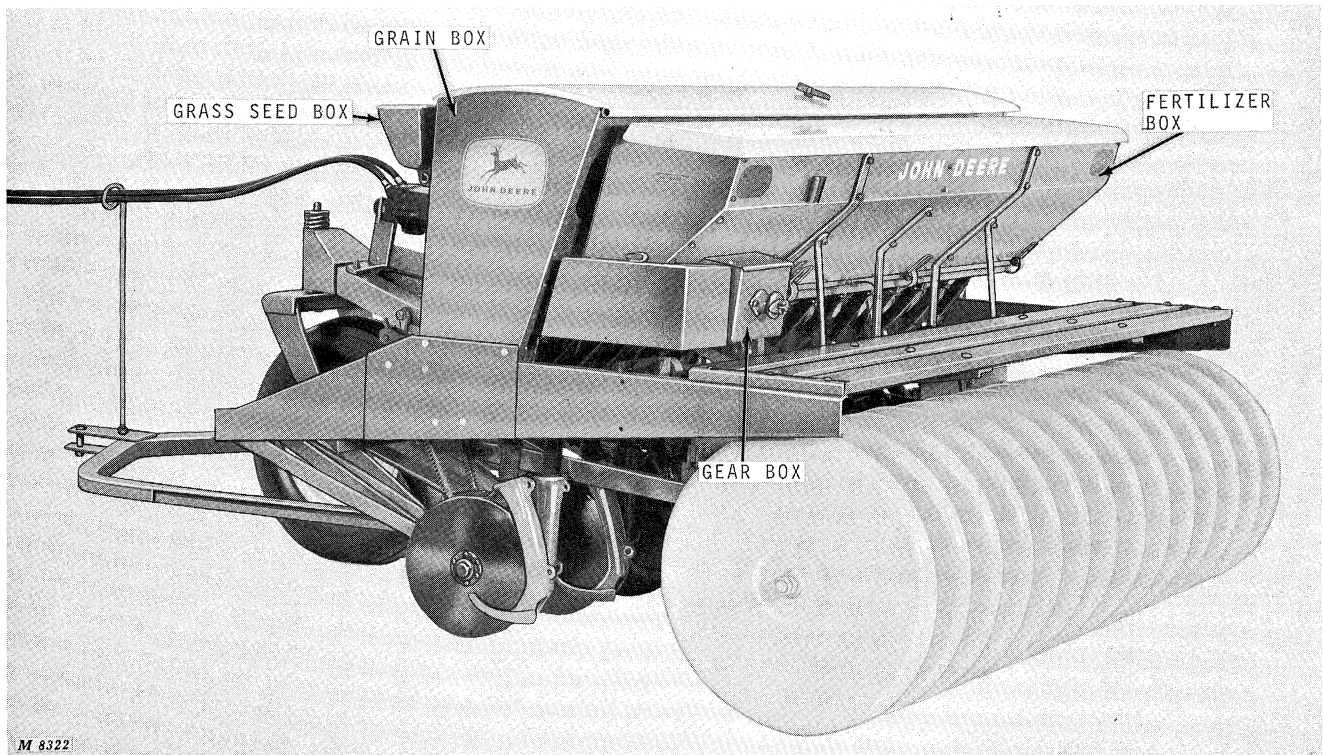


This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

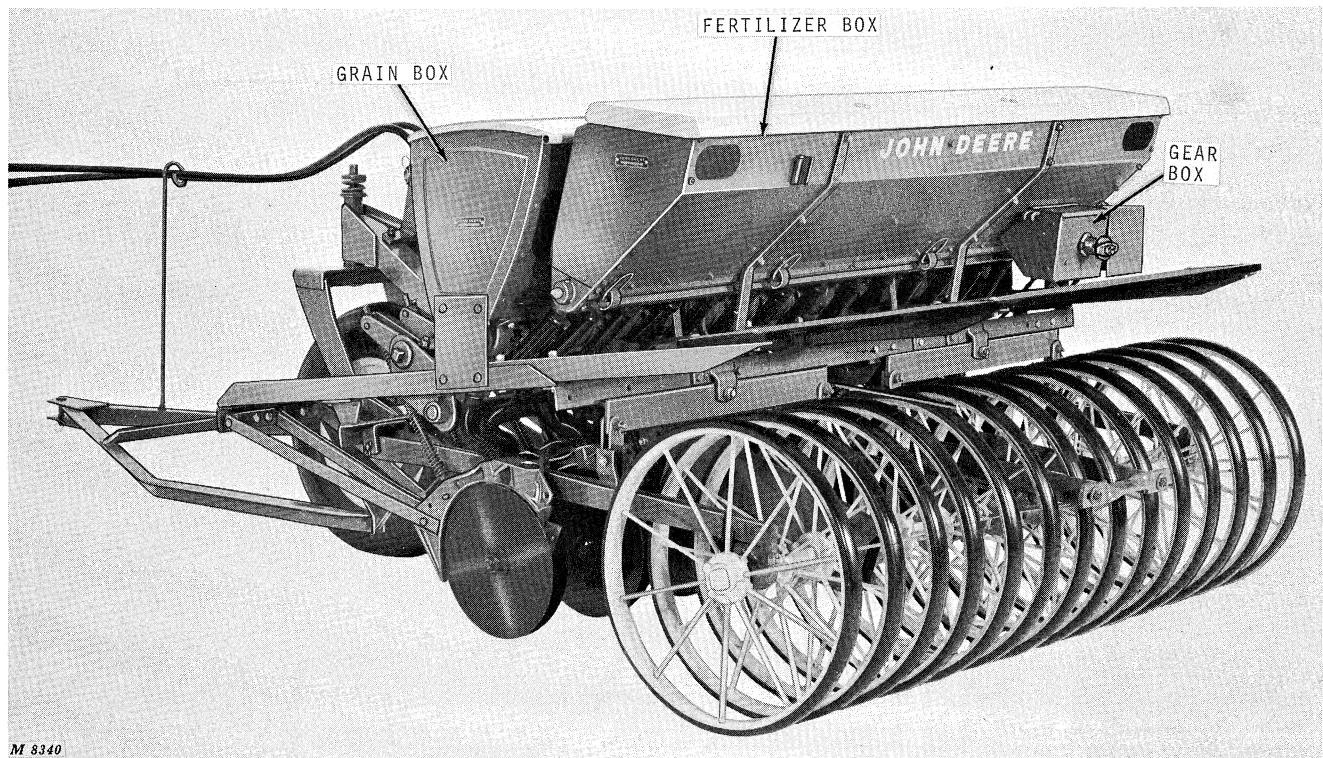
CONTENTS

	Page		Page
CONTENTS	1	Installing Feed Stops	7
OPERATION	3-8	Cleaning Fertilizer Box	8
Preparing Fertilizer Attachment for Use	3	Transporting Drill	8
Handling Fertilizer	3	Safety Suggestions	8
Setting Rate of Distribution	4	LUBRICATION	9
Adjusting Gear Box Setting	4	SERVICE	10-12
Adjusting Feed Shaft Speed	4	Servicing Gear Boxes	10-11
Chart for Drilling Fertilizer	5	Servicing Countershaft	11
Operating Fertilizer Drive	6	Preparing Attachment for Storage	11
Checking Feed Shaft Movement	6	Multi-Luber System	12
Adjusting Throw-Out Clutch	6	SPECIFICATIONS (Inside Back Cover)	
Locking Throw-Out Clutch Out of Gear	6		
Positioning Fertilizer Tubes	7		
Applying Fertilizer with Grain	7		
Applying Fertilizer Separate from Grain	7		





John Deere Traction Feed Fertilizer Attachment on LL147 Press Grain Drill



John Deere Traction Feed Fertilizer Attachment on PD146A Press Grain Drill

OPERATION

PREPARING FERTILIZER ATTACHMENT FOR USE

1. Disengage gear box as explained on page 4 under "Adjusting Gear Box Setting." Use a wrench to turn the extended portion of the feed shafts several revolutions. See page 6.

NOTE: If feed shaft does not turn freely, check for foreign objects in the fertilizer box. If feed shaft still does not turn freely, remove feed shaft and clean thoroughly. See page 8. This precaution is important to prevent breakage of drive parts when starting the drill.

2. Adjust for rates of distribution as explained on page 4.

3. Inspect all fertilizer tubes to be sure they are fastened firmly in place and are not plugged. Replace any broken or damaged tubes.

4. Check throw-out clutch mechanism to be sure clutch jaws are fully engaged when furrow openers are lowered and completely disengaged when openers are raised. See page 6.

5. Some of the oil or grease which was put on parts and in bearings to prevent rusting when the fertilizer attachment was stored will have run off, or will have accumulated dirt. Wipe off old grease and oil, and thoroughly grease fertilizer attachment. See page 9.

6. Fill fertilizer box in the field only. Keep fertilizer dry and break up lumps when filling box.

7. Check quantity distributed in the field as explained in the drill operator's manual.

HANDLING FERTILIZER

Care in selecting a fertilizer which will flow freely under most weather conditions will avoid trouble in the field. Keep fertilizer dry. Do not store in a damp place.

Fill fertilizer box in the field only. Transporting the drill with the box full causes fertilizer to pack and may cause damage to the drive mechanism.

Most fertilizers readily accumulate moisture and cause metal to corrode. This corrosion not only shortens metal life, but leads to unnecessary expense for parts broken because of "binding" or "freezing."

Deposits of fertilizer will build up in the box and interfere with working parts. Never leave fertilizer in the box when not in use.

Loose fertilizer can be removed by removing the feed shafts and opening the bottom cover. Brush out with a whisk-broom, or flush out with water.

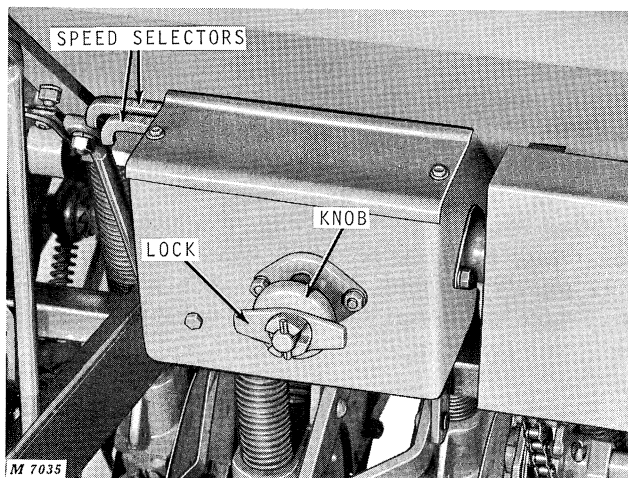
Hard and caked fertilizer can be removed by saturating parts with diesel fuel and chipping with a tool. Wipe diesel fuel from parts before refilling box.

SETTING RATE OF DISTRIBUTION

There are two methods of adjusting the quantity of fertilizer applied per acre. They are by:

1. Adjusting gear box setting.
2. Adjusting feed shaft speed.

Adjusting Gear Box Setting

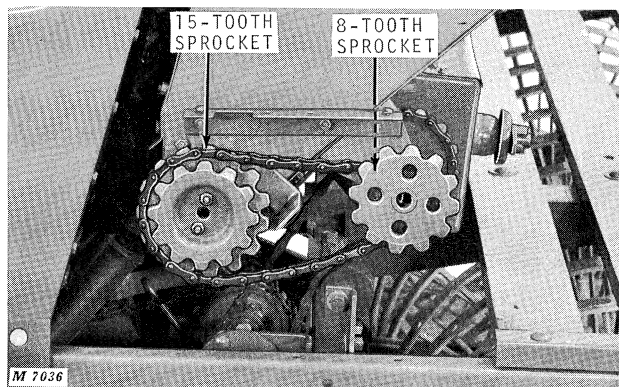


The gear box speed selectors provide a wide range of feed shaft drive speeds to meter desired amounts of fertilizer. Select the proper settings from the fertilizer chart on page 5.

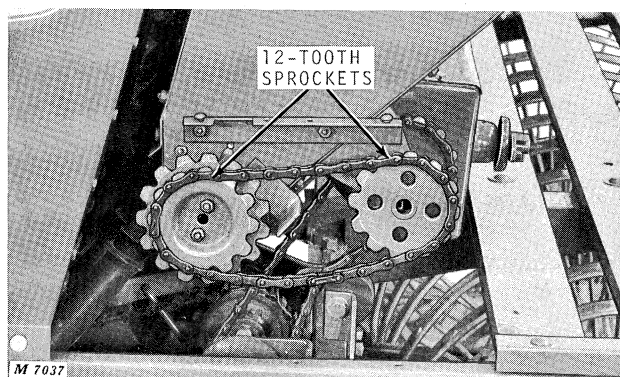
To adjust speed selectors, turn lock to a vertical position and pull out. Then pull knob out to disengage gears. Move speed selectors to the desired setting.

Push the knob in and rotate slightly as required to engage the gears. Push lock in and turn to horizontal position.

Adjusting Feed Shaft Speed



Drive 1 – Slow Speed



Drive 2 – Fast Speed

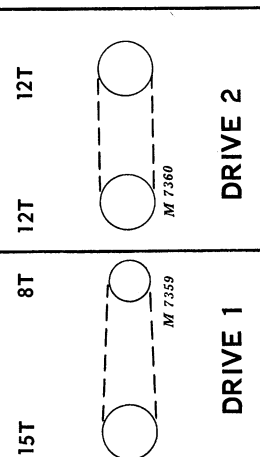
The feed shaft speed can be increased for applying larger quantities of fertilizer.

Simply move the drive chain from the 8 and 15-tooth inner sprockets (Drive 1) to the 12-tooth outer sprockets (Drive 2). The sprockets are factory assembled in Drive 1.

Use Drive 1 whenever possible to minimize wear on gear box drive. Select the proper drive from the fertilizer chart on page 5.

CHART FOR DRILLING FERTILIZER – IN POUNDS PER ACRE

IMPORTANT: Fertilizer distribution rates are affected by humidity, moisture content of material, and types of material (granular, pellet, powder, etc.); therefore, the quantities indicated on this chart should be used as a guide only. Check the quantities drilled as explained in the "Operation" section of your Operator's Manual.
NOTE: These rates are based on fertilizer having a density of 65 pounds per cubic foot.
 *C3 settings are identical to A5, B4, D2 and E1 (not shown).



GEAR BOX SETTING – DRIVE 1

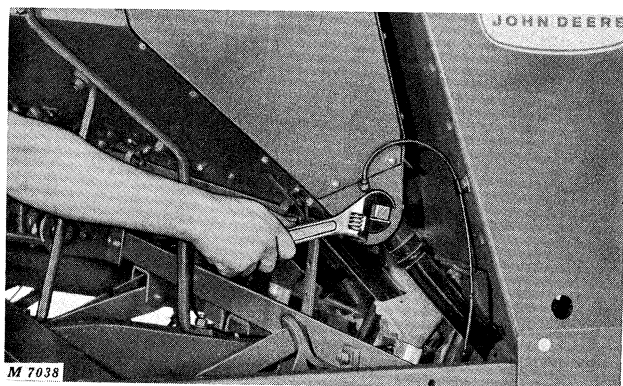
Row Spacing	A1	B1	A2	C1	B2	A3	D1	C2	B3	A4	C3*	B5	C4	D3	E2	C5	D4	E3	D5	E4	E5
6	30	35	38	40	43	45	48	50	52	53	61	69	71	73	76	81	85	91	97	106	121
7	27	30	33	35	38	40	42	44	45	46	53	61	62	64	66	71	74	79	85	93	106
10	19	22	24	25	27	28	30	32	32	33	38	43	44	45	47	50	53	57	61	66	76
12	15	17	19	20	22	23	24	25	26	26	30	35	35	36	38	40	42	45	48	53	61
14	13	15	17	18	19	20	21	22	23	23	26	30	31	32	33	35	37	40	42	46	53
16	11	13	14	15	16	17	18	19	19	20	23	26	26	27	28	30	32	34	36	40	45

GEAR BOX SETTING – DRIVE 2

Row Spacing	A1	B1	A2	C1	B2	A3	D1	C2	B3	A4	C3*	B5	C4	D3	E2	C5	D4	E3	D5	E4	E5
6	57	65	71	76	81	85	91	95	97	99	114	130	133	136	142	151	159	170	182	199	227
7	50	57	62	66	71	75	80	83	85	87	99	114	116	119	124	133	139	149	159	174	199
10	36	41	44	47	51	53	57	59	61	62	71	81	83	85	89	95	99	106	114	124	142
12	28	32	35	38	41	43	45	47	49	50	57	65	66	68	71	76	80	85	91	99	114
14	25	28	31	33	35	37	40	41	43	43	50	57	58	60	62	66	70	75	80	87	99
16	21	24	27	28	30	32	34	35	36	37	43	49	50	51	53	57	60	64	68	75	85

OPERATING FERTILIZER DRIVE

Checking Feed Shaft Movement



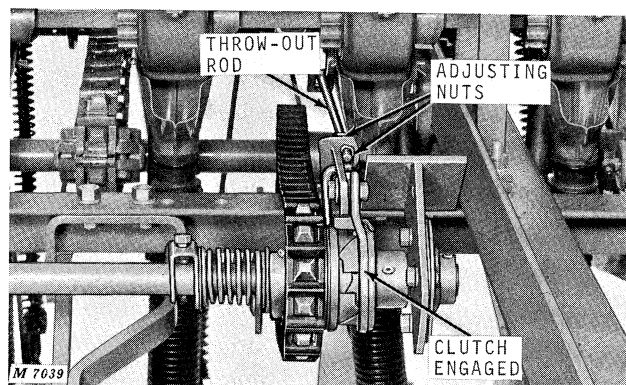
After checking the grain feeds each day of the using season as explained in the grain drill operator's manual, also check the fertilizer feeds by turning the extended portion of the feed shaft several revolutions with a wrench. Disengage the gear box, page 4, before attempting to turn the feed shaft.

If the feed shaft turns hard, check for foreign objects in the fertilizer box. Lubricate and clean feed shaft and drive if necessary.

Followed regularly, this precaution will avoid many needless and costly delays while in the field.

Adjusting Throw-Out Clutch Mechanism

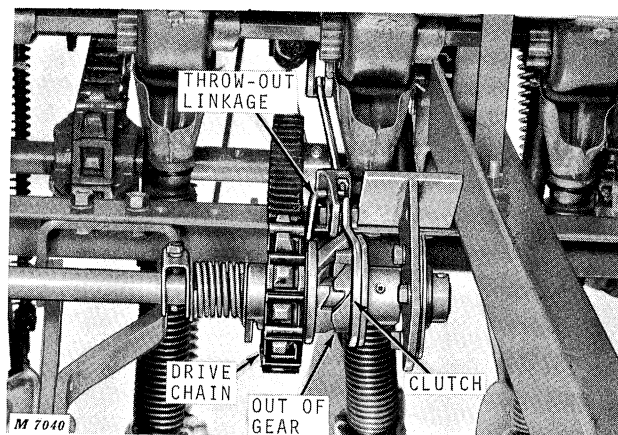
The fertilizer drive is engaged and disengaged automatically by the throw-out rod connected to the grain drill pressure shaft when the furrow openers on the grain drill are lowered and raised.



Adjust nuts on throw-out rod so clutch jaws are fully engaged when furrow openers are lowered to working depth. Be sure that clutch jaws disengage when furrow openers are raised.

IMPORTANT: It is necessary to adjust the throw-out linkage whenever the furrow opener depth of penetration is changed by readjusting the lifting equipment.

Locking Throw-Out Clutch Out of Gear



The fertilizer drive can be locked out of operating position making it possible to drill grain or grass seed without operating the fertilizer attachment.

Pull the throw-out linkage toward the front of the drill until the clutch locks in the out of gear position. See illustration above.

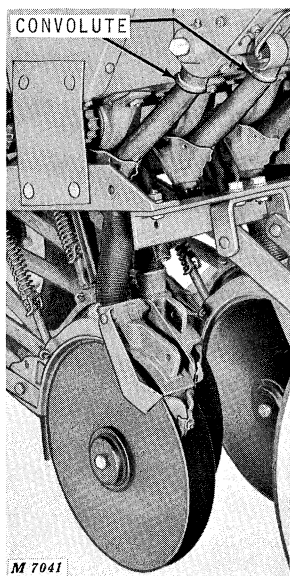
If the drill is to be used for extended periods without drilling fertilizer, remove drive chain from countershaft drive sprocket.

To re-engage drive, push throw-out linkage back until clutch returns to operating position.

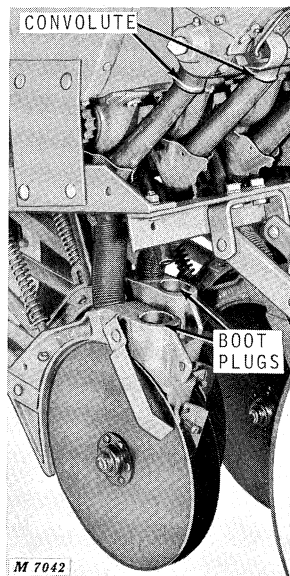
POSITIONING FERTILIZER TUBES

Fertilizer may be applied with the grain through the grain tube top or separate from grain on LL, LL-A and PD146A Drills.

Applying Fertilizer with Grain



Single-Hole Boot



Double-Hole Boot

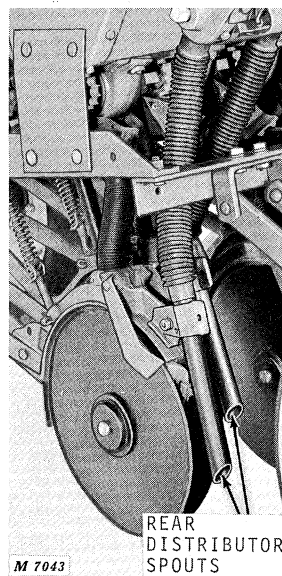
Fertilizer tubes are positioned as shown above to apply fertilizer with the grain.

If drill has double-hole boots, plug the back hole in each boot with a snap plug.

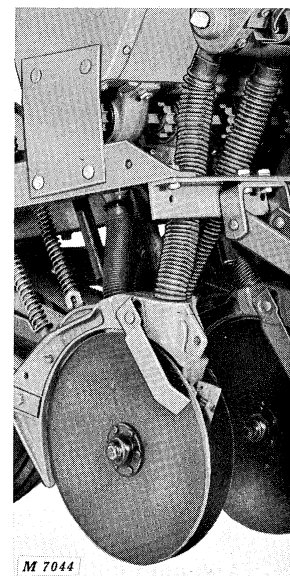
When cleaning or replacing fertilizer tubes, be sure convolute in tube is over the lip on tube top. End of tube should extend to the top edge of the round opening in tube top.

IMPORTANT: Tube should not project too far into tube top so as to restrict or block off the flow of grain and fertilizer. Check for overlength tubes with openers lowered so that grain tube top will be in same position as when drill is operating. If tube is too long, slide tube upward on tube top or cut off as necessary.

Applying Fertilizer Separate from Grain



Single-Hole Boot



Double-Hole Boot

On all drills equipped with single disk openers and regular bearing double disk openers, fertilizer is applied separately from the grain through rear distributor spouts.

On drills equipped with anti-friction double disk openers, fertilizer is applied separately through the back hole in the boot.

When cleaning or replacing the fertilizer tubes on double-hole boots, be sure the first convolute of the tube is inside the hole in the boot. On rear distributor spouts, the first convolute must be over the lip on the spout.

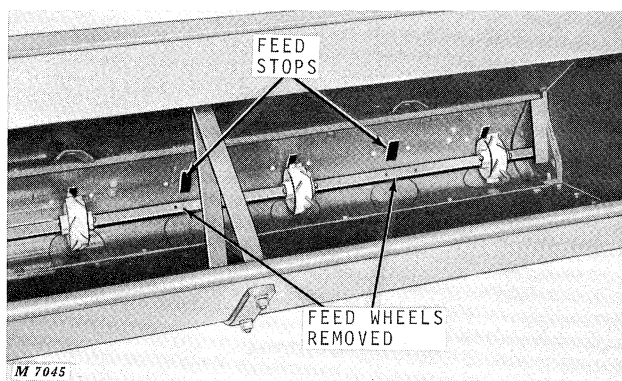
INSTALLING FEED STOPS

Feed stops are available to convert 6 and 7-inch spaced fertilizer attachments for use on drills with 12- and 14-inch spaced openers.

To install feed stops, remove feedshaft as explained on page 8, "Cleaning Fertilizer Box."

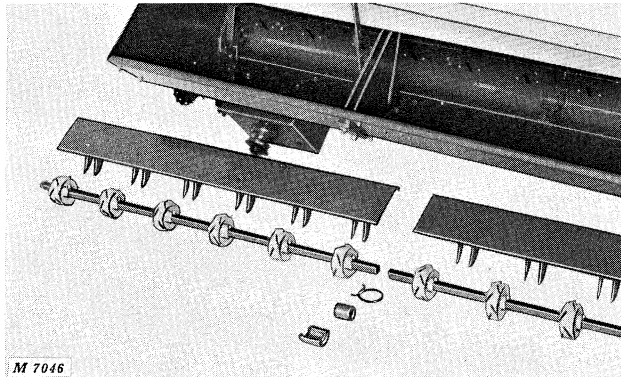
Remove alternate feed wheels to conform with the opener spacing on the drills by removing cotter pins and sliding the feed wheels off the feed shaft.

Flex the feed stop and snap it into the feed opening where each feed wheel has been removed. Install baffle after feed shaft has been replaced.

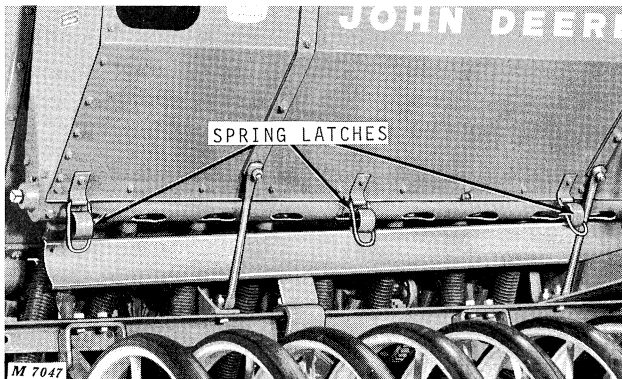


CLEANING FERTILIZER BOX

Most fertilizers readily accumulate moisture and cause metal to corrode. This corrosion not only shortens metal life but leads to unnecessary expense for parts broken because of "binding" or "freezing." Therefore, it is important to take extra care of your fertilizer attachment by cleaning it thoroughly.



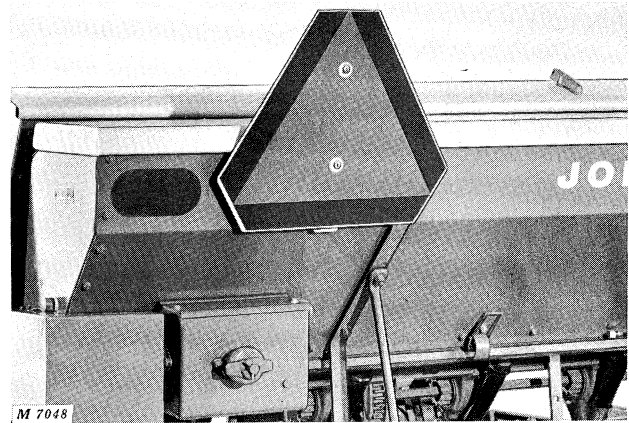
Remove baffles, bearing caps and retainers, and feed shafts.



Release the spring latches to open the bottom cover. The fertilizer may then be removed through the clean-out holes.

Brush out the box with whisk-broom or flush out with water to remove all traces of fertilizer.

Apply a coating of diesel fuel or light oil to parts exposed to fertilizer for protection against corrosion.

TRANSPORTING DRILL

When transporting the drill on a road or highway at night or during the day, use accessory lights and devices for adequate warning to operators of other vehicles. In this regard, check your local governmental regulations. Various safety lights and devices are available from your John Deere dealer. Among these is the SMV (Slow Moving Vehicle) emblem. A bracket for mounting the SMV emblem to the rear of the fertilizer box is provided with each drill. Be sure the painted surface faces the rear as shown to provide proper light reflection.

SAFETY SUGGESTIONS

Be careful when operating your grain drill. The following rules, if followed, will help prevent injury to the operator and his assistants.

Do not oil, grease, or adjust a farm machine that is in motion.

Only the operator should be permitted on the tractor platform when tractor and drill are in operation.

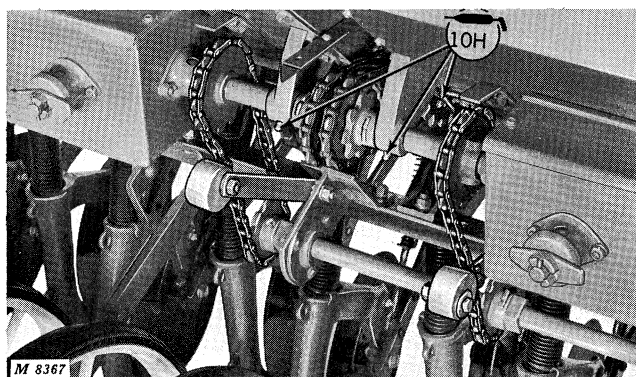
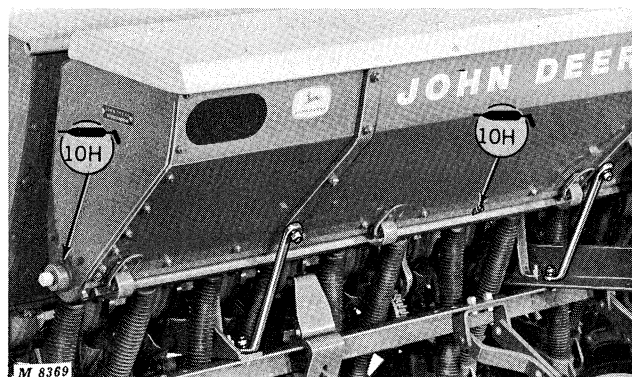
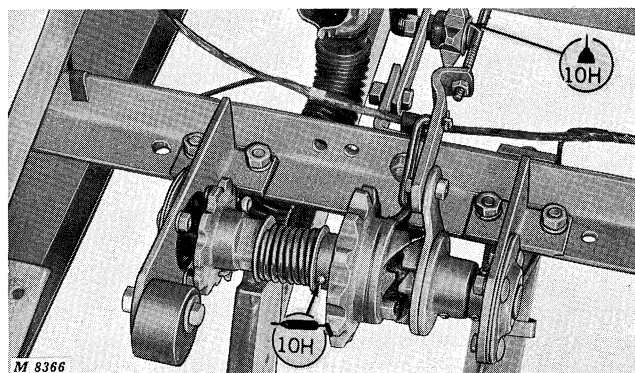
Never ride, or permit others to ride, on the drawbar of the tractor or drill, or on the front of the drill.

Keep hands out of fertilizer box when drill is in operation.

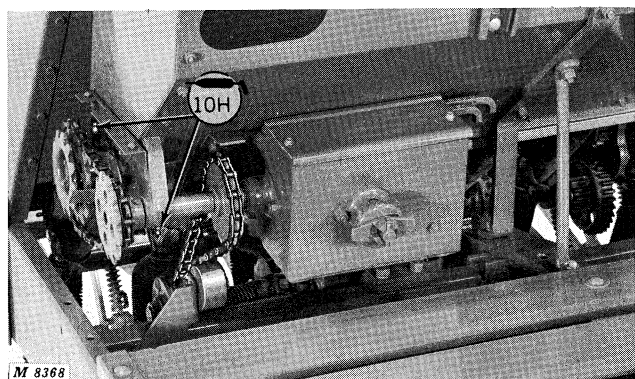
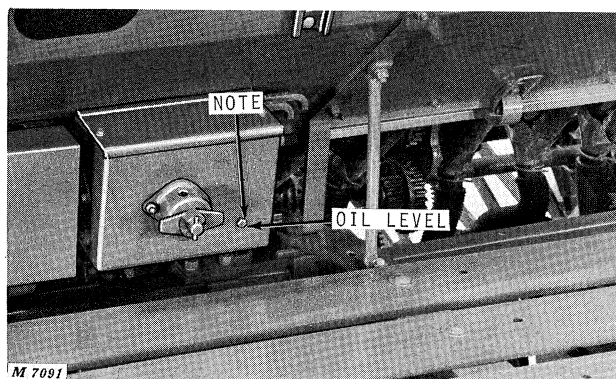
IMPORTANT: Always keep cover over fertilizer drive closed while drill is in motion.

NOTE: There are several references in this manual to the use of diesel fuel or a mixture of diesel fuel and oil as a cleaning agent. Be careful when cleaning with any of these fuels so that they do not ignite. Use only in a well ventilated area and away from any sparks or flames.

LUBRICATION



LL-A and LZ-B



LL, LZ, HZ, PD-A

NOTE: Remove oil level screw in gear box to check oil level. If necessary, use an oil can to add SAE 90 gear lubricant through level hole until oil begins to run out the level hole. It is not necessary to remove the gear box cover. Remove plug in bottom of gear box to change oil when dirty. SAE 90 gear lubricant is available in one-quart cans (Part No. AM50990) from your John Deere dealer.

SYMBOLS



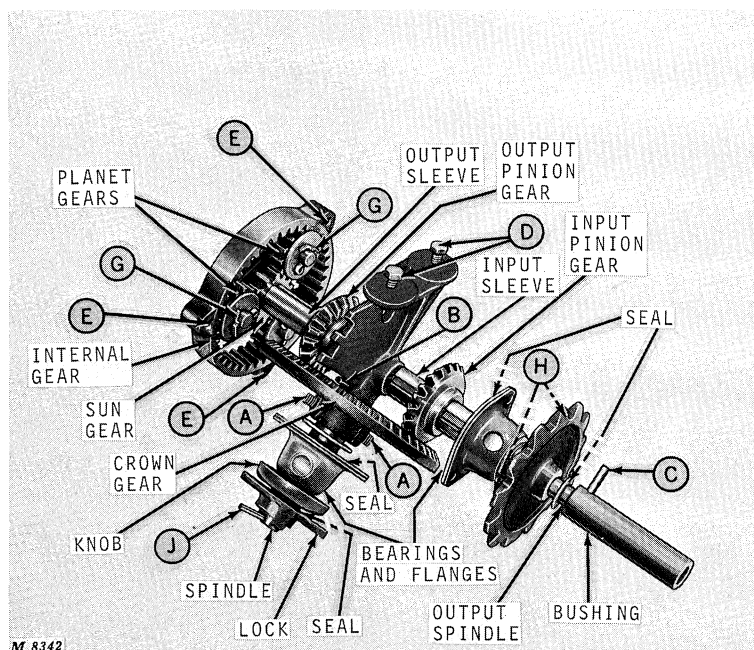
Lubricate with SAE Multipurpose-type grease every 10 hours of operation.



Oil thoroughly every 10 hours of operation.

SERVICE

SERVICING GEAR BOXES



The gear boxes must be removed from the fertilizer box for servicing. Remove the drive chain from the countershaft to the gear box sprocket. Remove chains from end sprockets. Pull cotter pin to remove double sprocket on end of gear box bushing. Remove bolts holding gear box to fertilizer box. Slide gear box bushing out of end bearing to remove gear box.

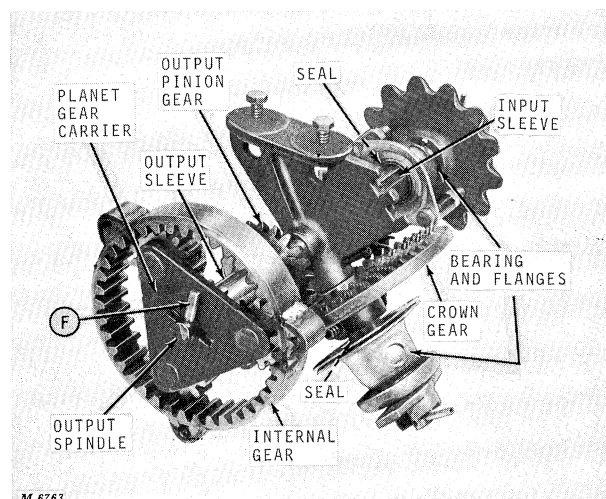
Replacing Crown Gear

1. Loosen set screws (A) in crown gear.
2. Remove spring pin (B) holding spindle in bearing.
3. Pull out spindle and knob so that sleeve on knob and end of spindle are even with inside of gear box.

IMPORTANT: Be sure sleeve is free of burrs and deformities before pulling outward to avoid damaging seal and bearing.

4. Lift out crown gear. Replace using reverse procedure. When replacing crown gear, be sure set screws seat in holes in sleeve.

NOTE: Use Loctite Sealant on set screws before tightening.



Replacing Input and Output Pinion Gears, Planet Gears, Sun Gear and Internal Gear

1. Remove spring pin (B) holding spindle in bearing. Pull spindle out of bearing.
2. Remove spring pin (C) and slide off bushing.
3. Slide input sleeve through bearing off output spindle.

IMPORTANT: Be sure input sleeve is free of burrs and deformities before pulling outward to avoid damage to seal and bearing. Also check end of output spindle for burrs and deformities.

4. Remove cap screws (D) holding hanger bearing to gear box.

5. Move parts toward outer end of gear box to disengage planet gears from internal gear.

6. Push output spindle back through carrier enough to disengage drive pin (F). Remove drive pin from spindle.

7. Remove spindle from sun gear, output sleeve and hanger bearing to remove input gear.

8. Pull output sleeve and pinion gear from gear box.

9. Pull cotter pins (G) to replace planet gears.

10. Remove bolts at (E) to replace internal gear.

Reassemble parts in reverse order.

IMPORTANT: Be sure drive pin (F) is installed in slot in carrier.

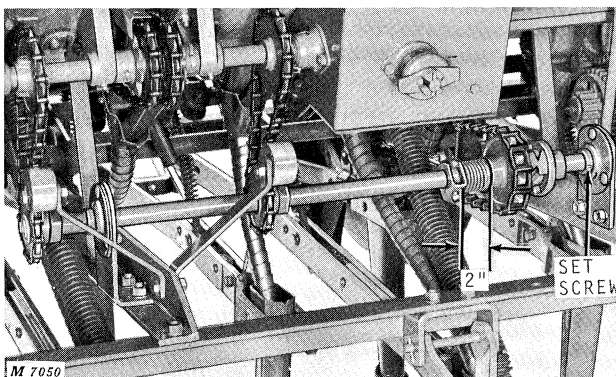
Replacing Seals

Replace seal in knob by first loosening set screws (A) so sleeve with knob can be pulled out of crown gear. Remove spring pin (J), lock and knob from spindle. Be careful not to damage new seal when replacing knob on spindle.

Replace input spindle bearing seal by disconnecting drive chains. Pull cotter pin to remove outer sprocket. Loosen set screws (H) to remove drive sprocket. Remove bolts holding bearing flanges to gear box. Pull bearing off input sleeve. Replace seal and assemble in reverse order.

Replace seal on sleeve of knob by loosening set screws (A) and removing spring pin (J). Remove bolts holding bearing and flanges to gear box. Remove spindle, knob and bearing from gear box. Replace seal and assemble in reverse order.

SERVICING COUNTERSHAFT



To remove and replace damaged parts on the countershaft, remove chains from sprockets. Disconnect the throw-out rod. To release shaft from end bearings, loosen the set screw in the locking collar and turn collar opposite the direction of rotation. Remove cotter pins and spring pins as required to replace parts.

After reassembly, check clutch spring compression. Spring must be compressed to 2 inches in length when furrow openers are lowered. Adjust if necessary. See page 6.

PREPARING FERTILIZER ATTACHMENT FOR STORAGE

Because of the corrosive action of fertilizer, completely clean the fertilizer box and its related parts prior to storage. Follow instructions on page 8.

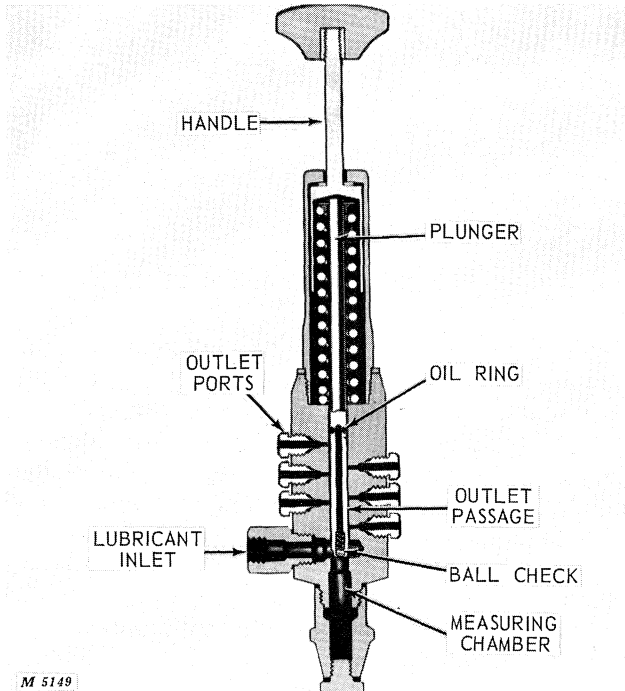
Check for worn or broken parts. Order required replacement parts prior to storage to assure availability before the next drilling season. Your fertilizer attachment will then be ready for use. Proper care will add years to the life of your attachment.

Remove and clean fertilizer tubes and install them on the attachment. Reassemble all parts in the fertilizer attachment.

Repaint all worn and exposed surfaces. Coat the inside of the fertilizer box with diesel fuel or light oil to prevent rusting and corrosion.

MULTI-LUBER SYSTEM (LZ147, LZ1010 and LZ714 Unit Drills Only)

Plugged Feed Lines and Bearings

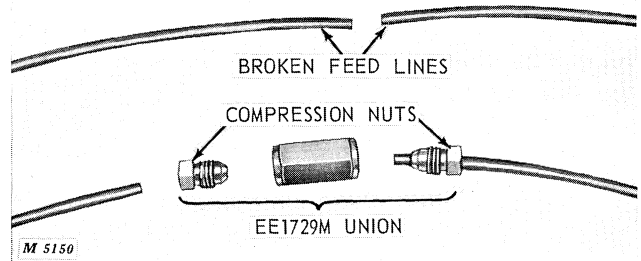


When operating properly, the plunger will move through its full stroke without difficulty. If a feed line or bearing becomes clogged, the normal stroke of the plunger will be interrupted when it reaches the outlet port of the clogged line. Clear the obstruction in the following way:

1. Determine which line is clogged by estimating how far the plunger has moved. Check to make sure by disconnecting the suspected feed line and moving the plunger.
2. After disconnecting the clogged line, move the plunger to determine if the clogging is in the bearing or in the feed line.
3. Clean bearing if clogged and refill with grease before attaching Multi-Luber feed line. If feed line is clogged, operate the pump until lubricant is forced through the line.

CAUTION: Do not force lubricant through feed line with a pressure grease gun. Burst pressure of the oil line is 3000 psi.

Broken Feed Lines



Whenever a feed line has been damaged and broken, the action of the plunger will speed up as it passes the outlet port having a broken or punctured feed line.

Determine the location of the break in the feed line. Cut broken ends of feed lines square and insert them into compression nuts and union as shown above. Tighten nuts firmly.

NOTE: Compression nuts can be used only once.

SPECIFICATIONS

Model and Size	Cubic Foot Capacity	Capacity in Pounds (65 lbs. per cu. ft.)	Weight (Empty)
LL246A	11.52	749	405
LL207A	11.09	721	387
LL247A	13.50	877	435
LZ207B	11.09	721	396
LZ247B	13.50	877	445
LZ1410B	11.09	721	381
LL166	7.54	490	243
LL147	7.54	490	241
LZ147	7.54	490	241
LZ1010	7.54	490	239
LZ812	7.54	490	239
LZ714	7.54	490	238
HZ714	7.54	490	238
PD146A	6.60	429	228

(Specifications and design subject to change without notice.)

SERIAL NUMBER

Traction Feed Fertilizer Attachment
Drill Size and Model
Serial No.
Date Purchased, 19. . . .

