



8000 Series Grain Drills



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TECHNICAL MANUAL 8000 Series Grain Drills

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8000 SERIES GRAIN DRILLS

Technical Manual

TM-1131 (Aug-80)

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All information, illustrations and specifications contained in this technical manual are based on the latest information.

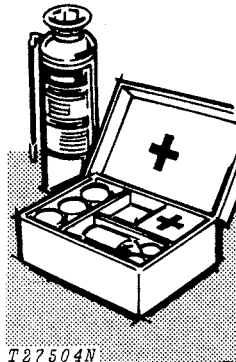
SAFETY AND YOU



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INTRODUCTION

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



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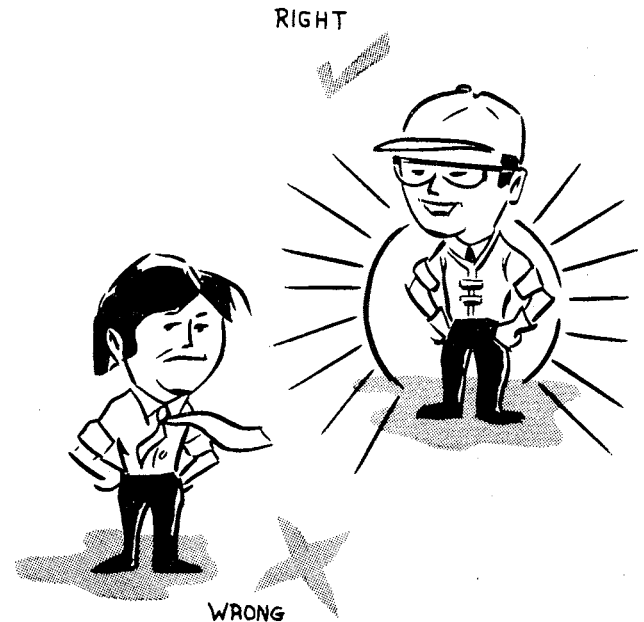
Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located—know how to use them.

PERSONAL SAFETY

If attached to tractor, shut off tractor engine and remove switch key before working on grain drill.

If it is necessary to make checks with the tractor engine running, **ALWAYS USE TWO PEOPLE**—one, the operator, at the controls, the other person checking so as to be visible to the operator on the tractor seat. **KEEP HANDS AWAY FROM MOVING PARTS.**

Don't attempt to check belt tension while the tractor engine is running.



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Always avoid loose clothing or any accessory—flopping cuffs, dangling neckties and scarves—that can catch in moving parts and put you out of work.

Always wear your safety glasses while on the job.

FLUIDS UNDER PRESSURE

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 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.

GENERAL INFORMATION

DESCRIPTION

The 8000 Series Grain Drills include the following combinations of capacities and sizes.

There are 4 drill widths—8, 10, 12, and 13 ft. (2.4, 3.0, 3.7, and 4.0 m); and 4 opener spacings—6, 7, 8, and 10 inches (152, 178, 203, and 254 mm).

There are 18 grain box capacities.

There are 5 types of openers.

There are 4 sizes of tires.

Two different feed cups are available—fluted feed or double run.

The attachments available for the 8000 Series Drills include a grain agitator, grass seeder, gang press, 2 and 3 drill hitches, double-disk outside opener scrapers, Gage-O-Matic outside opener scrapers, inside opener scrapers for single disks, depth bands, markers, feed stops, and hydraulic lift for markers.

The serial number is located on the right-hand side of the front of the drill.

LUBRICATION

System	Capacity	Type of Lubricant
Drive Shaft Clutch	John Deere Multi-purpose Lubricant or an equivalent SAE multipurpose-type grease
Fertilizer Drive Tube	John Deere Multi-purpose Lubricant or an equivalent SAE multipurpose-type grease
Fertilizer Feed Shaft Bearings	John Deere Multi-purpose Lubricant or an equivalent SAE multipurpose-type grease
Gear Case(s)	1 qt. (0.95 L)	John Deere SAE 90 Gear Lubricant or an equivalent SCL multipurpose gear oil
Gage-O-Matic Openers	John Deere Multi-purpose Lubricant or an equivalent SAE multipurpose-type grease

DIAGNOSING MALFUNCTIONS AND TESTING

ORGANIZING THE DIAGNOSIS

1. Know the Unit

Study this manual to know how the individual components work and their function in the over-all system.

Keep up with the latest service information. Read it and store it in a handy reference file.

2. Consult the Operator

Ask the operator how the unit was performing when the problem occurred. Find out if any corrective measures were already taken. Ask if the unit was serviced regularly as prescribed in the operator's manual.

3. Operate the Unit

If the unit can be safely operated, see for yourself how it malfunctions—don't completely rely on the operator's diagnosis.

4. Inspect the Unit

Visually check the unit. Look at the components for any cracked welds, loose hardware, damaged linkages, worn or broken lines, or anything that looks out of the ordinary.

5. List the Probable Causes

Write down the information you have learned by steps 1 through 4. What are the signs you found while inspecting the unit and what are the most probable causes as outlined under "Diagnosing"?

6. Reach Some Conclusions

Look over the possible causes and decide which ones are most likely. Reach your decision on the most probable cause and plan to check it first.

7. Test Your Conclusions

Before disassembling any components, test your conclusions to see which are correct. Tests narrow the possibilities and soon the actual cause will be pinpointed.

DIAGNOSING

Opener Disks Not Revolving

Drill hitched too high so pressure is on boot instead of disk.

Hitch drill properly, see Operator's Manual.

Scrapers adjusted too tightly.

Loosen, pages 47, 48.

Pressure rod not adjusted properly.

Make sure pressure rod collar is 1-1/2 inches (3.75 cm) above pressure arm swivel.

Disk bearing frozen.

Replace disk or bearing, pages 46, 47.

Double disk assembled wrong.

Add washer between bearing and boot, pages 47, 48.

Fluted-Feed Shifter Lever Difficult to Shift

Feed gate(s) positioned too high.

Lower feed gate(s), position shifter lever in place; then position feed gate(s), page 16.

Fluted-Feed Shifter Does Not Stay in Position

Bent or damaged shifter lever.

Replace entire assembly, page 16.

Varying Quantities Drilled by Individual Feeds

Feed gates not all set the same.

Set all gates identically, page 43.

Feed cup out of adjustment with the fluted-feed roll.

Set the shifter on zero and move any cups that are not completely closed, pages 16 and 43.

Quantities Drilled Not Agreeing With Feed Chart

Feed gates adjusted improperly.

Adjust gates, see Operator's Manual.

Heavier or lighter-than-average weight seed.

Check quantity drilled, see Operator's Manual.
Improper tire inflation.

Inflate tires correctly, page 7.

Improper tire size.

Do not mix tires; use recommended size for drill, see operator's manual.

Improper sprocket or gear combinations.

Check both sides of drill (if large drill) for identical settings and desired settings.

Quantities Drilled Not Agreeing With Feed Chart—Continued

- Excessive overlapping or double planting.
Be aware of driving patterns (for various field conditions) that would make the feed chart appear incorrect.
- Feed cup out of adjustment with the fluted-feed roll.
Set the shifter on zero and move any cups that are not completely closed, pages 16 and 43.

Seed Distribution Stops

- Broken shear pin in axle assembly.
Replace pin and check feed shaft torque, pages 9 and 43.
- Broken chain.
Replace, and check drive shaft for ease of rotation, page 11, 18, 31, or 38.
- Feed shaft or hub rounded or worn.
Replace, page 15, 20, 36, or 41.
- Clutch spring broken.
Replace, page 14, 18, 34, or 40.
- Clutch jaws or halves have been assembled backwards.
Assemble correctly, page 14, 18, 34, or 40.

Bunching and Skipping of Drilled Seed

- Drill improperly hitched.
Hitch drill properly, see operator's manual.
- Improper adjustment of furrow openers.
Adjust openers properly, pages 45 to 49.
- Openers not turning.
Loosen scrapers or if double disks, add spacers, page 47.

Fertilizer Distribution Erratic or Incorrect

- Using wrong fertilizer drive.
Check for proper gear and sprocket combination, see operator's manual.
- Check quantity drilled.
See operator's manual.
- Fertilizer density other than 65 lbs. per cubic foot (1040 kg/m³).
Adjust rate for correct density, see operator's manual.
Calibrate density meter.
- Baffle housing bent.
Straighten to match feed wheels or replace, page 28.
- Baffle too far from end of box.
Shift baffle and wheels closer to end of box; baffle should be no more than 1/8-inch (3 mm) from the end of box.

Fertilizer Distribution Stops

- Broken shear pin (cotter pin) on drive sprocket.
Free shaft and replace pin, page 21.
- Broken shear pin (spring pin) in axle assembly.
Replace pin after checking torque, page 9.
- Broken drive chains.
Inspect and replace chain; check all torques, page 50.
- Crown gear in gear case not engaging pinion gears.
Add shim to adjusting shaft, page 27.
- Sleeve on feed shaft worn or rounded; shaft also rounded.
Replace, page 21.

Seed Tube Pulling Out of Openers

- Tube assembled improperly.
Make sure first convolution is entirely inside boot and expanded out. Turn tube to eliminate any folds in first convolution.
Check for correct installation by pulling up on tube; then connect to feed cup.

Acremeter Tallying Incorrectly

- Improper tire inflation or size.
Inflate tires correctly, page 7. Do not mix tire sizes, see operator's manual.
- Acremeter out of adjustment.
Adjust correctly, see operator's manual.
- Land area is not accurately known.
Remeasure land.
- Feed cups out of adjustment with the fluted-feed roll.
Set the shifter on zero and move any cups that are not completely closed, pages 16 and 43.
- Excessive overlapping or double planting.
Avoid driving patterns (for various field conditions) which make the acremeter read higher.

Clutch Slips or Will not Engage

- Worn spring.
Replace, pages 14 and 34.
- Teeth worn on clutch.
Replace, pages 14 and 34.
- Throw-out rod or stationary bracket in wrong hole.
Correct, pages 14 and 34.
- Broken or bent throw-out rod.
Replace rod and check correct installation, pages 14 and 34.

Clutch Slips or Will Not Engage—Continued

Make sure the arm on the pressure shaft (that the rod is connected to) is installed so the flange is pointing toward the end of the drill.

Clutch Will Not Disengage

Broken throw-out rod.

Replace, pages 14 and 34.

Broken stationary bracket.

Replace, pages 14 and 34.

Throw-out rod or stationary bracket in wrong hole.

Correct, Fig. 69.

END WHEELS

GENERAL INFORMATION

The end wheels provide the power that is necessary to operate the grain drill. The input shaft—tube and sprocket assembly—is connected directly to the axle sprocket with a roller chain.

The following tires are available for drills as noted:

8-foot (2.4 m) drills (Models 8100, 8200, and 8250),
7.60-15, 4 or 6 PR tires only

10-foot (3.0 m) drills (Models 8200 and 8250),
7.60-15, 4 or 6 PR; 7.50-20, 4 PR tires.

10-foot (3.0 m) drills (Models 8300 and 8350),
7.50-20, 4 PR tires only

12 and 13-foot (3.7 and 4.0 m) drills (Models 8200,
8300, and 8350), 7.50-20, 4 PR tires only

The 4-ply tires require 28 psi (1.9 bar [2.0 kg/cm²])
and the 6-ply tires require 32 psi 2.0 bar or kg/cm²)

**IMPORTANT: Correct tire pressure is critical for
the correct interpretation of seed charts.**

AXLE AND AXLE PLATE DISASSEMBLY

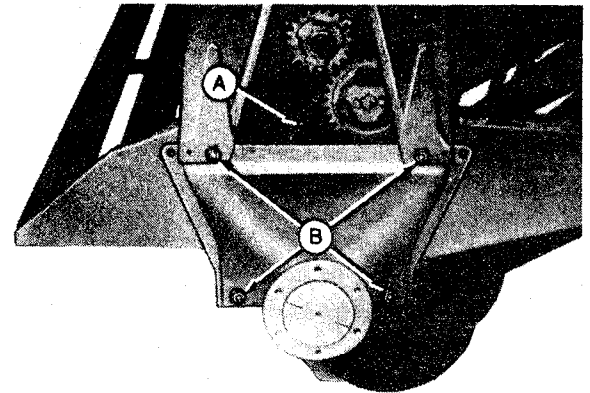
1. Raise the end of the drill with a jack under the
axle plate, or the tractor hitch.

**IMPORTANT: Do not support drill by jacking or
blocking under the foot board supports.**

2. Take out the six wheel bolts and remove the
wheel and tire; also remove the inspection plate.

3. Loosen the drive chain tightener (C, Fig. 2) and
push it toward the rear of the drill.

4. Break the drive chain (A, Fig. 1) and let it drop
down.



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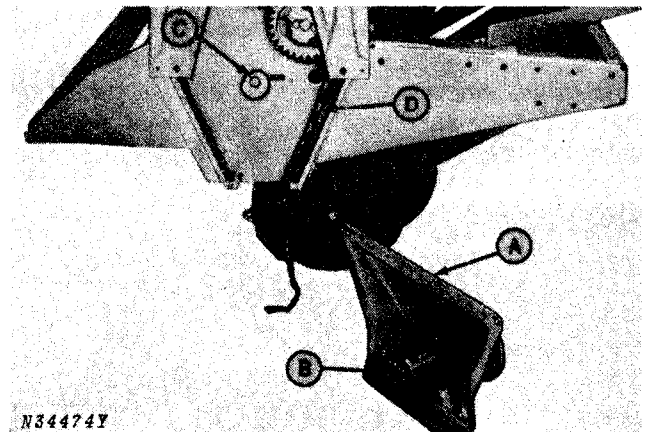
A—Chain Partially Apart

B—Axle Plate Nuts

Fig. 1—Removing Axle

5. Remove the four or five nuts (B) from the axle
plate. Larger drills will have six or seven bolts in the
plate.

6. Drive the bolts back through the end cover and
plate.



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A—Axle Plate

C—Idler

B—Drive Sprocket

D—Chain

Fig. 2—Axle Plate Removed

7. Slide the axle plate (A, Fig. 2) down; then remove
it from the drill.

8. Clamp the axle (A, Fig. 3)—not the plate—in a
vise and remove the cotter pin and slotted nut. This will
free the sprocket and seal, and the bearing.

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