JOHN DEERE
223 BEET HARVESTER
(SERIAL NO. 223-1085)

JOHN DEERE

OPERATORS MANUAL

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ENGLISH

TO THE PURCHASER

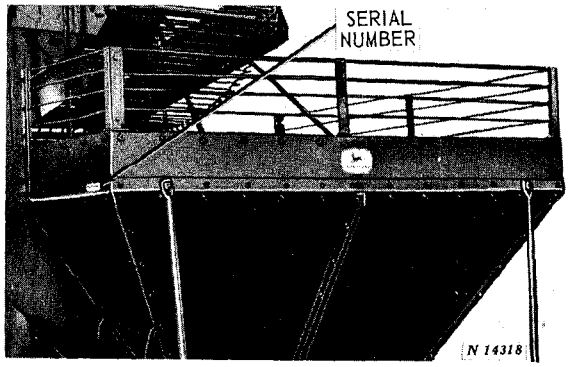
Your new beet harvester was built to rigid manufacturing standards. Material and workmanship are the best. However, the machine will serve you in only direct proportion to the care you give it. How long it will last and continue its good work is a matter entirely in your hands.

The way you operate your beet harvester and the care you give it have much to do with the service and satisfaction you will get from it. This manual has been carefully prepared and illustrated to show you what to do and when to do it. It explains the adjustments that are built into the machine and gives instructions on when and how to make these adjustments. The information given in this manual will afford an understanding of the fundamentals of beet harvesting. The best use of these fundamentals to suit the conditions in which the machine is operating is a responsibility that is completely up to the operator.

If you find you need information not covered in this manual or if your beet harvester requires special servicing, take advantage of the facilities offered by your John Deere dealer. He has trained mechanics, who are kept informed on the best methods of servicing and can give you prompt "know-how" service in the field or in his shop.

Location references as "right," "left," "front" or "rear" are determined when facing in the same direction the harvester travels in the field.

SERIAL NUMBER

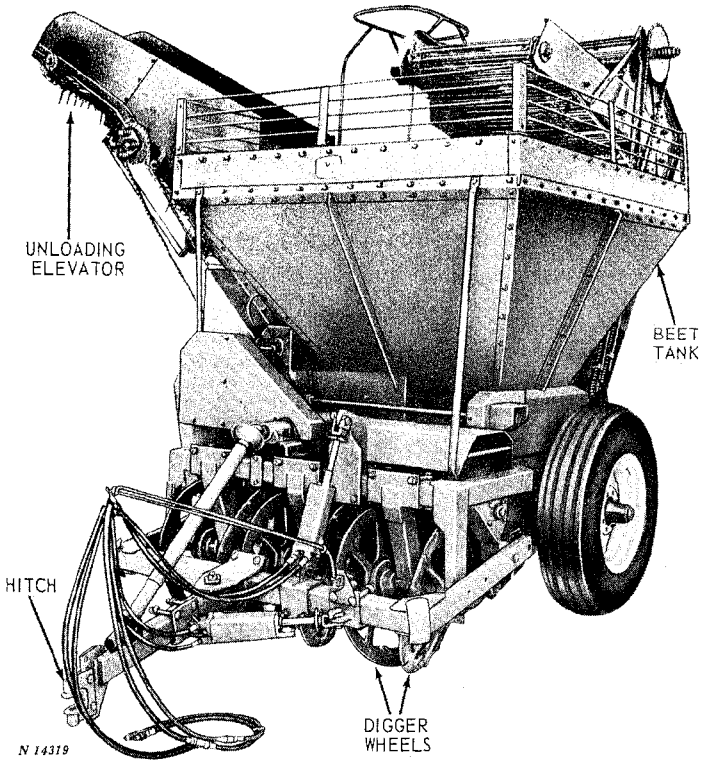


You will find the serial number on a plate located on the upper right-hand corner of the beet tank. Write this serial number in the space provided below for handy reference.

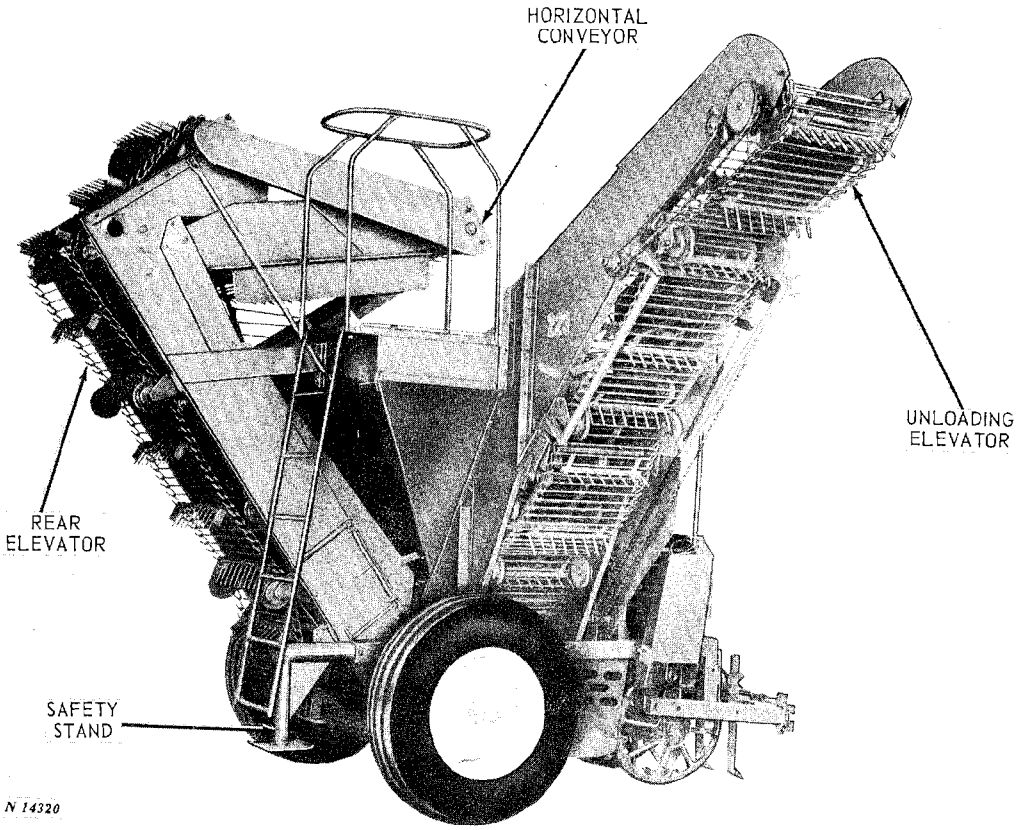
BEET HARVESTER SERIAL NO. . . . . .

DATE PURCHASED . . . . . , 19 . . . .

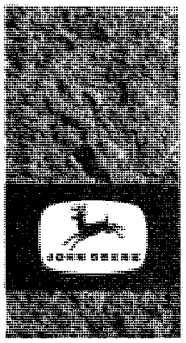
CONTENTS



Front View, John Deere 223 Beet Harvester



John Deere 223 Beet Harvester with Horizontal Conveyor



SPECIFICATIONS

TYPE

Tractor drawn, tank-type harvester, 2 or 3 row.

ROW SPACING

Two row—20 to 36 inches with regular pedestals; 14 inches on 40- or 42-inch (center-to-center) beds or 16 inches on 42-inch (center-to-center) beds with offset pedestals.

Three row—20 to 22 inches with regular pedestals.

DIGGER WHEELS

Solid rim, 29-inch diameter, 2 per row.

PADDLES

Steel or rubber (optional), 1 set per row.

CLEANING BED

12 sq. ft.—52 inches wide at front, 36 inches wide at rear. Six revolving shafts. Single grate wheels on first and sixth shafts, steel star wheels on four middle shafts. Rubber star wheels on second and fourth shafts, de-viner rolls on fifth shaft, optional.

REAR ELEVATOR

Potato-type conveyor chain, 36 inches wide.

Horizontal Conveyor Option—36-inch wide potato-type conveyor chain.

Beet Cleaner Option—Four steel cleaning rolls with rod-type spiral flighting; dirt conveyor belt.

BEET TANK

3-1/2-ton capacity, potato-type conveyor chain bottom.

UNLOADING ELEVATOR

Potato-type conveyor chain, 26-1/2 inches wide, electric clutch control.

DIGGER WHEEL DEPTH AND LIFT CONTROL

Remote hydraulic cylinder.

HITCH

Adjustable for row spacing, guides beet harvester with hydraulic cylinder (a screw jack may be used in place of angling cylinder), attaches to tractor drawbar.

TIRES

Two 11.25 x 24 8-ply ribbed implement type.

TRACTOR REQUIREMENTS

Row-Crop, minimum of 50 horsepower at drawbar, two remote hydraulic cylinders.

DIMENSIONS

Width—14 ft. 7 in. (includes unloading elevator)
Length—17 ft.
Height—12 ft.

WEIGHT (Approximate)

Two-row with beet cleaner—8400 lb.
Two-row with horizontal conveyor—7600 lb.
Three-row with beet cleaner—8700 lb.
Three-row with horizontal conveyor—7900 lb.

SPECIAL EQUIPMENT AND ATTACHMENTS

See pages 32 to 40.

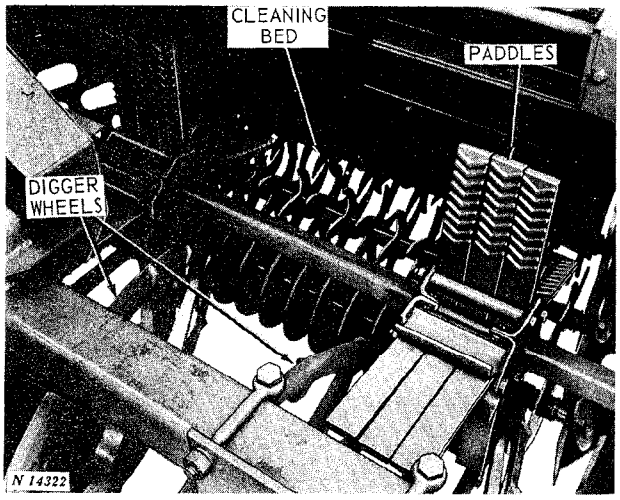
(Specifications and design subject to change without notice.)

OPERATION

HOW THE BEET HARVESTER FUNCTIONS

The 223 Beet Harvester is a high capacity machine designed to harvest two or three rows. It will dig and load beets in a continuous operation or hold beets in the large tank for unloading at row ends. Easy to handle in and out of the field, the 223 can be operated by one man.

The beet harvester consists of four basic components: Digger wheels, cleaning bed, beet tank, and conveying system.



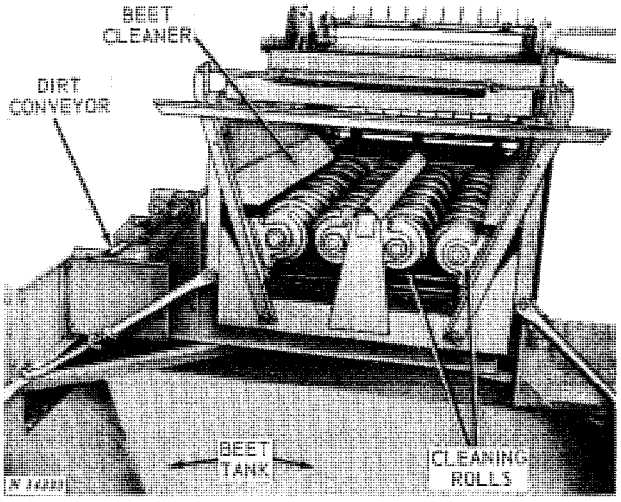
The digger wheels penetrate the soil on each side of the row and "pop" or "pinch" the beets out of the ground.

Rubber or steel paddles knock off dirt as they flip beets from the digger wheels onto the cleaning bed. Steel paddles also help scrape mud from the digger wheels; rubber paddles aid in knocking streamers off the beets.

Revolving shafts of star wheels on the cleaning bed agitate the beets, loosening clods as the beets are moved to the rear elevator. In stony fields, alternate shafts of rubber star wheels will reduce the chance of stones plugging the cleaning bed.

The pegged flights of the rear elevator carry the beets from the cleaning bed to the top of the harvester. Dirt and trash fall through the conveyor chain as the beets are elevated.

On horizontal conveyor equipped machines, the beets from the rear elevator drop onto a 36-inch wide conveyor chain which moves the beets forward into the tank.



On machines with the beet cleaner attachment, the elevator drops the beets onto four rolls. The rolls remove excess mud and weeds from the beets. Spiral flighting on rolls moves beets forward into the tank. A wide rubber belt under the rolls conveys mud and trash to the right side of the machine.

The high capacity (3-1/2 ton) tank allows continuous operation without waiting for truck changes. The unloading elevator empties the tank in two to three minutes and clears high-sided trucks. An electric clutch drive controlled from the tractor permits unloading without stopping the harvester.

PREPARING THE BEET HARVESTER

Before taking harvester to the field, be sure it is thoroughly lubricated and all nuts and bolts are tight. Check tire inflation pressure, wheel spacing and digger wheel spacing. Operate the machine for 10 to 15 minutes. Stop the harvester and adjust tension of drive chains and conveyor chains if necessary.

PREPARING THE TRACTOR

Any row-crop tractor adaptable to your beet row spacing can be used with the 223 Beet Harvester if it meets the following requirements: Standard ASAE drawbar, 540 or 1000 rpm power take-off, a minimum of 50 horsepower at the drawbar, and a hydraulic system with two remote cylinders.

CAUTION: Be sure the PTO master shield is in place when the rear PTO guard is removed from the PTO shaft.

DRAWBAR

The tractor drawbar should be placed in a fixed center position, parallel with the PTO shaft, with the offset down.

If the beet harvester will be operated by a 540 rpm PTO, adjust the length of the drawbar so the end hole is 14 inches from the end of the powershaft. With a 1000 rpm PTO, position drawbar so the end hole is 16 inches from the end of the powershaft.

See your tractor operator's manual for details on attaching PTO-driven implement.

LOAD-AND-DEPTH SELECTOR LEVER

On John Deere 3010, 3020, 4010, and 4020 Tractors, move the load-and-depth selector lever to the "D" (depth) position. Keep the lever in this position whenever tractor is attached to beet harvester.

TRACTOR TIRE INFLATION

Properly inflated tires are important to the operation of your tractor. Keep the tractor tires inflated according to recommendations given in the tractor operator's manual.

TRACTOR WHEEL SPACING

Set the tractor rear wheels according to the chart below. If tractor is equipped with adjustable front axle, set the front wheels as close as possible to the dimensions given for the rear wheels.

Make all measurements from center of tire to center of tire. Set both wheels equi-distant from the center of the tractor. For some row spacings, the tractor must be equipped with long or extra-long axles to obtain the proper wheel spacing. See the tractor operator's manual for wheel spacing procedure.

Row Spacing	Tractor Rear Wheel Spacing
20"	80"
22"	88"
*24"	96"
*26"	104"
28"	60" or 112"
30"	60"
32"	64"
34"	68"
36"	72"

**John Deere 70 Tractor with adjustable front axle must be equipped with two 8-inch front axle knee extensions (AB3841R).*

NOTE: On John Deere 3010, 3020, 4010, or 4020 Tractor with adjustable tread front axle, set front wheels as follows for 24- or 26-inch rows:

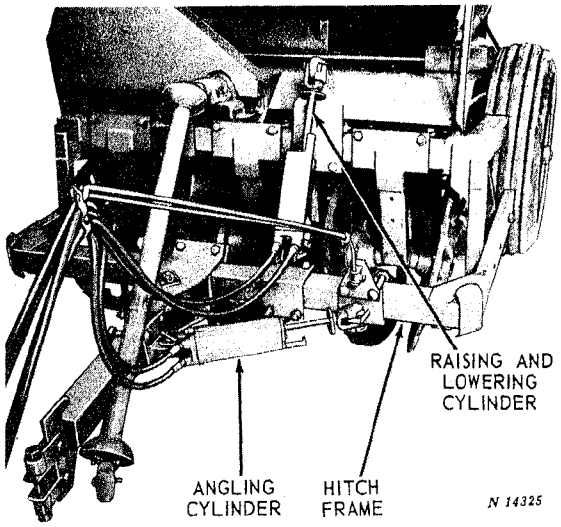
24-inch row—48-1/2 inches (6.00 x 16 tires)
50-3/4 inches (7.50 x 15 tires)
26-inch row—52-1/2 inches (6.00 x 16 tires)
52-3/4 inches (7.50 x 15 tires)

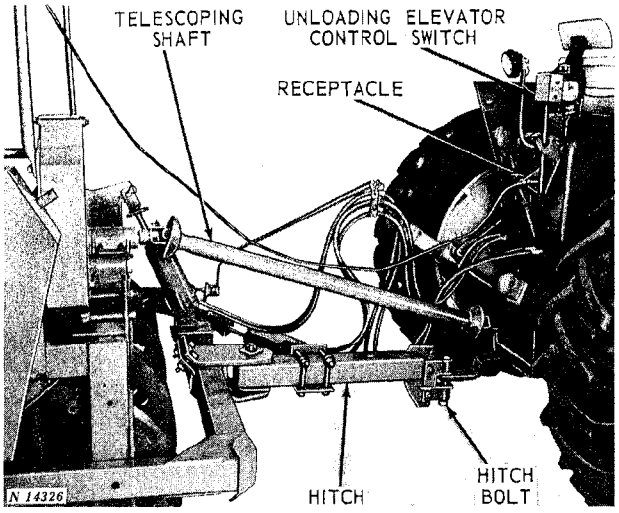
TRACTOR REAR WHEEL WEIGHTS

Wheel ballast, either a liquid solution or cast iron, may be used if necessary. Do not add ballast to eliminate all wheel slippage. Add only enough ballast so soil between tire lugs breaks or shifts when tractor pulls loaded beet harvester. Tread marks are clear and distinct when too much weight is used. With too little ballast, tread marks are entirely obliterated.

Refer to tractor operator's manual for rear wheel ballast instructions.

ATTACHING BEET HARVESTER TO TRACTOR





Back the tractor to the beet harvester. Install the angling cylinder between the hitch and hitch frame. Attach the hose end of the raising and lowering cylinder to the hitch frame. Insert hydraulic hoses in tractor breakaway couplers and attach hoses to the hose support.

NOTE: Make sure hydraulic cylinders are filled with oil; bleed air from cylinders if necessary.

Start the tractor engine and extend or retract the raising and lowering cylinder until it can be attached to the cylinder anchor on the beet harvester main frame. Pin cylinder yoke to the anchor.

Use both hydraulic cylinders to align the hitch with the tractor drawbar and attach the hitch to the drawbar as shown.

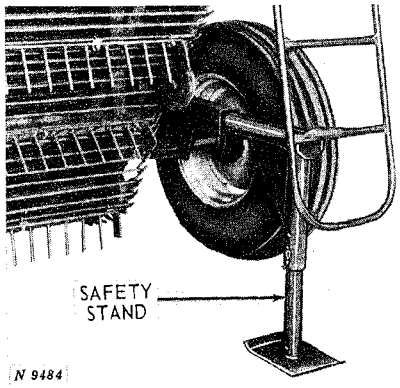
Stop the tractor engine and connect the telescoping powershaft to the tractor PTO shaft.

Bolt unloading elevator control switch to rear of tractor within easy reach of the seat. Connect electric clutch cable to receptacle on tractor. Connect switch box wire to tractor battery terminal opposite the ground terminal. If tractor has 6-volt electrical system, see page 7.

Raise safety stand at rear of beet harvester.

DETACHING FROM TRACTOR

Lower the safety stand to the ground and fasten in place with pin and spring locking pin.



CAUTION: Always lower the safety stand before detaching beet harvester from tractor.

Stop tractor engine and disconnect the telescoping powershaft from the tractor PTO shaft. Wire the powershaft to the main frame.

Start the tractor and retract the raising and lowering cylinder until the digger wheels rest on the ground.

Remove hitch bolts and use both cylinders to move hitch off the drawbar.

Pull hydraulic hoses from tractor breakaway couplers. Remove cylinders from harvester if desired.

Remove electric clutch wire from receptacle on tractor and remove control switch box and wires from the tractor.

Thank you so much for reading.

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