

NO. 116W AUTOMATIC PICK-UP BALER



JOHN DEERE

OPERATORS MANUAL NO. 116W AUTOMATIC PICK-UP BALER

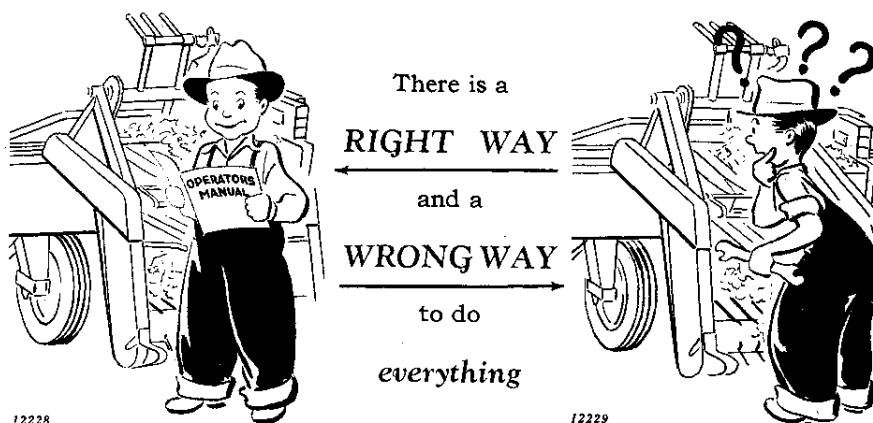
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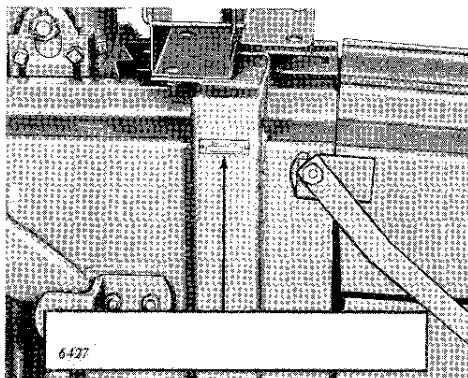
INTRODUCTION



Your new John Deere No. 116W Automatic Baler is a dependable machine, but only by proper care and operation can you expect to receive the service and long life designed and built into it. Like any precision machine, your baler will require a certain amount of attention at regular intervals. When any questions arise regarding lubrication and adjustments etc., use your manual as a guide to service your machine the **RIGHT WAY**.

If you find yourself in need of additional information or special servicing not covered in this manual, see your John Deere dealer. He is in a position to answer your questions for you, or to secure the correct information.

When in need of parts either to replace worn parts or to make emergency repairs, see your local John Deere dealer; he and the John Deere branch house behind him are equipped to render prompt service during the long life of your baler.



When ordering parts, give your dealer the serial number of your baler as well as the part number and description provided in the parts list of this manual. This information will help him give you prompt and efficient service.

The serial number of your baler is located on the front of the bale case below the wire boxes. (Record it in the space at the left.)

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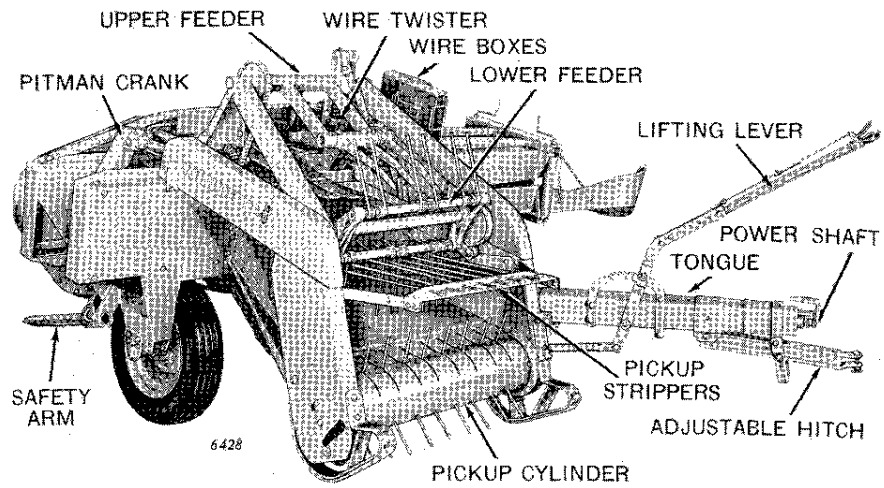


Figure 1—Front View of Baler

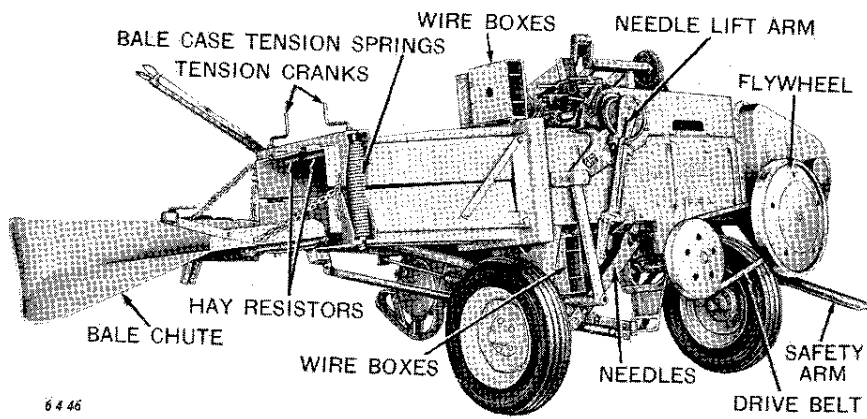


Figure 2—Rear View of Baler

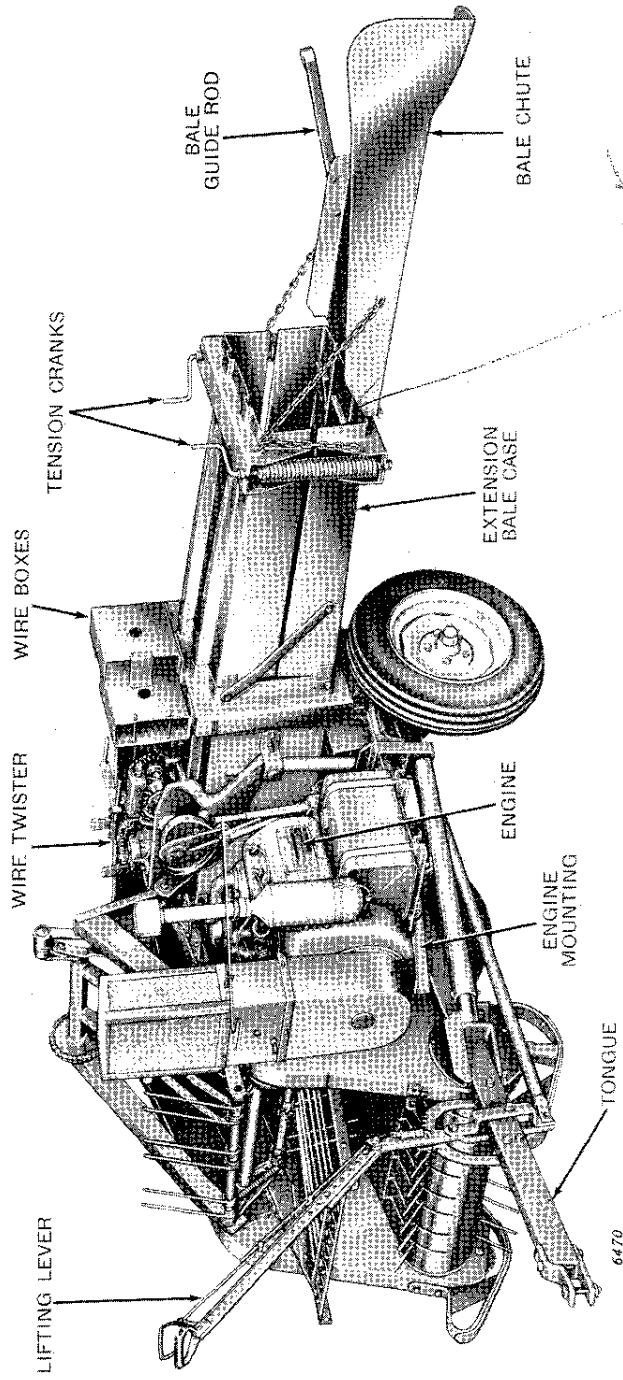


Figure 3—Front View of Engine Baler

SPECIFICATIONS AND DATA

Power required.....	John Deere Model B Above Serial No. 96000 or its Equivalent
Cross-section of bale.....	16" x 18"
Length of bales.....	34, 38, 41, or 44"
Wire.....	No. 15W & M Ga. (0.072") Bright annealed oiled
Wire coils.....	40-45 lbs. each, 9-7/8" O.D., 3-3/4" wide
Speed of power take-off shaft.....	536 R.P.M. A.S.A.E. Standard
Speed of plungerhead.....	50-54 strokes per minute
Approximate capacity.....	3 to 4 tons per hour (average hay conditions)
Tires.....	R. H. 16 x 6.50—6-ply L. H. 16 x 6.00—4-ply
Width of pick-up.....	50"
Transmission gears.....	Steel cut, enclosed and fully lubricated.
Bearings.....	Wheels, crank arm and pulley shaft—Timken tapered-roller bearings. Cam rollers—New Departure ball bearings. Most others—Replaceable bronze bearings. Flywheel—Straight needle bearings.
Main drive.....	Heavy V-belt
Transport width.....	8 feet (See Page 10)
Weight.....	Power take-off baler..... 3116 lbs. (approx.) Engine-mounted baler..... 3768 lbs. (approx.)

NOTE: Right- and left-hand sides referred to in this manual are determined from a position at the rear of the machine facing in the direction of travel.

(It is John Deere policy to improve our machines at every opportunity. Consequently it may be necessary to change design without notice.)

HOW THE BALER WORKS

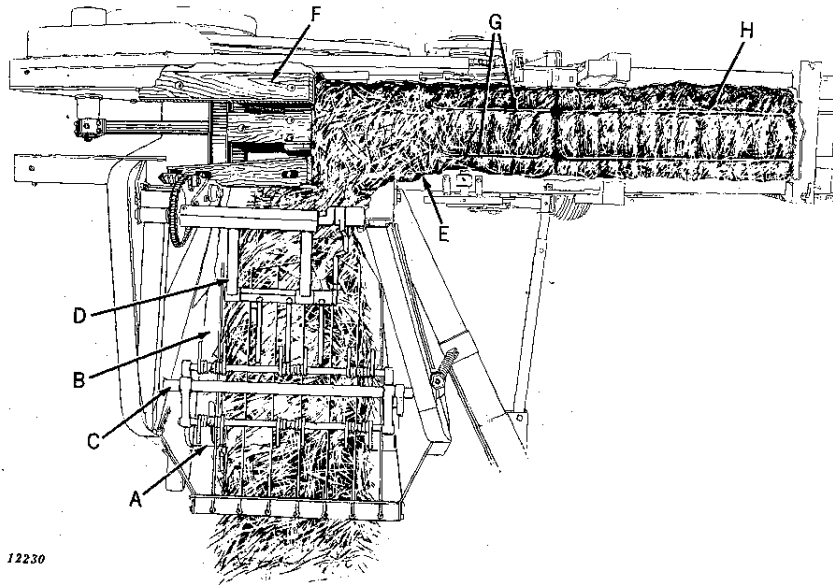


Figure 4

The John Deere No. 116W is a fully automatic wire-tying baler. Only one man, the tractor operator, is required to operate the machine. The only baler control necessary is the lifting lever, which raises and lowers the pickup. Because of the floating action of the pickup, this lever adjustment is seldom changed.

As the baler follows the windrow, the fingers on the pickup cylinder "A" lift the crop onto the pickup deck "B." The material is moved back by the lower feeder "C" to where the upper feeder "D" contacts and feeds it directly into the baling chamber "E". The upper feeder arms, timed with the plungerhead, strip out through slots in the top of the bale chamber.

As the feeder teeth clear the bale chamber, the plungerhead "F" moves forward, slices off the charge, compresses and moves it through the bale chamber. Hay dogs, or retainers, in top and bottom of the bale chamber, hold the sliced charges in position against the bale being formed while the plungerhead returns for the next charge.

As the material moves through the bale chamber it draws wire "G" out of the wire boxes. When the bale reaches the proper length, as determined by the bale measuring wheel, the bale is tied. (Operation of the twister mechanism is described on the next page.

As more material is fed into the bale chamber, the completed bale "H" is forced out the end of the bale case and drops on the ground.

HOW THE WIRE IS JOINED

To give a better understanding of the timing procedure and the importance of the various adjustments dealt with later on, an understanding of the tying cycle of the No. 116W is necessary.

The twist produced by this baler is a twist with a double kink in it. This twist is as strong as the wire itself and will not pull apart if properly formed.

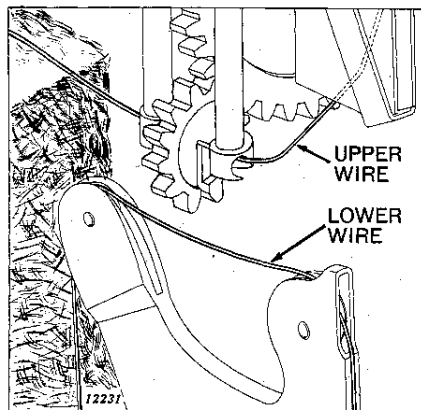


Figure 5

Four coils of wire are used simultaneously; two on top of the baler and two underneath. The upper wires are threaded through the twisting, kinking and cutting mechanism and the lower wires are threaded around the needles. The needles are used to carry the lower wires up into the twisting mechanism next to the upper wires (see Figure 5). The needles come up through the plungerhead slots so they do not contact the hay.

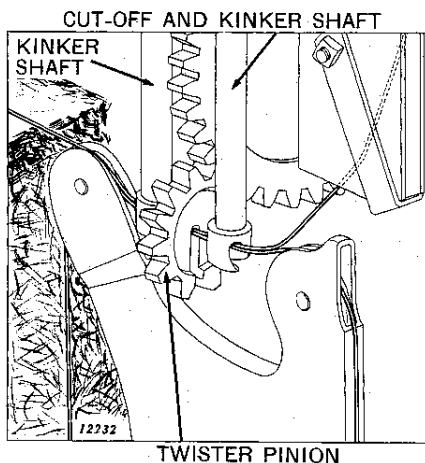


Figure 6

When the upper and lower wires are together in the twister pinion, they also pass through the slot in the cut-off and kinker shaft and the kinker shaft. See Figure 6.

The twister pinions are now made to revolve four times which twists the upper and lower wires together. This twist is about 3 inches long. See Figure 7.

As the twist is being completed, the cut-off and kinker shafts revolve 180 degrees, the cutting edge of the cut-off shaft cuts the twist in two against the face of the twister pinion and simultaneously double-kinks the right-

hand half of the twist. The kinker shaft is at the same time double kinking the left-hand half of the twist (Figure 7).

When the twist is cut and kinked, the wire that had been carried up along the end of the bale is joined with the upper wire to complete the tying of the bale. The wire on the other side of the needle is also joined with the upper wire and when the twist is cut it then forms a continuous strand with the upper wire. (Figure 9). Immediately after the wires are twisted and cut off, the needles are driven down out of the bale case.

As the plungerhead compresses the hay into the bale case, the joined wires are carried with the hay. Additional wire is pulled from the wire boxes to encircle the bale as it is formed. The length of the bale is determined by the measuring wheel (Figure 21). When the measuring wheel completes one revolution, the tying mechanism is tripped and the next tying cycle starts. After the tying mechanism is tripped, the needles are lifted into bale case through slots in plungerhead, bringing the lower wire up into the twisting, kinking, and cutting mechanism and completely encircling the bale with wire.

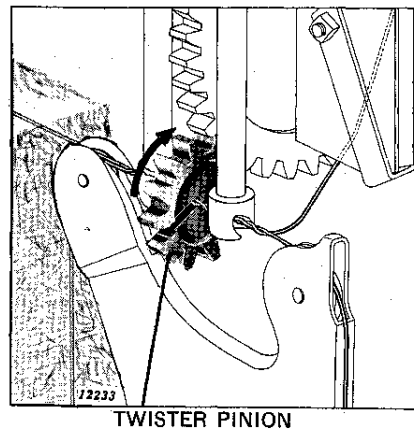


Figure 7

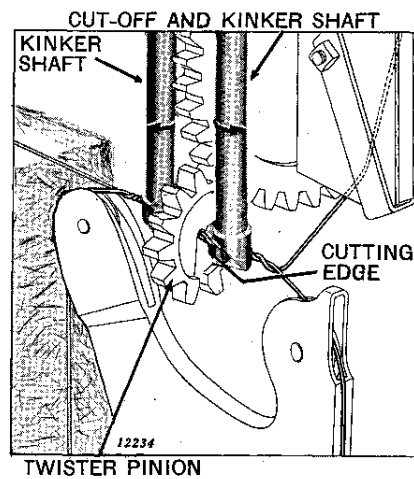


Figure 8

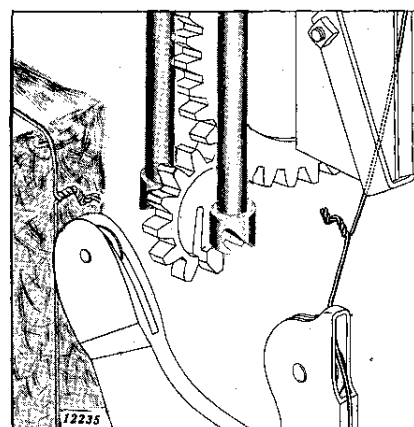


Figure 9

OPERATION

Before-Operation, Check and Adjust the following:

Adjust Safety Arm. Adjust the safety arm so baler will not tip over backward if the tongue is raised too high. See page 14.

Hitch Baler to Tractor. See page 13 for detailed instructions. Adjust baler drawbar so power shaft is as straight as possible. Be sure to **attach shield.**

CAUTION: Unless power shaft is straight, there will be excessive vibration in the power shaft and knocking in the overrunning clutch.

Engine-Mounted Balers. If your baler is equipped with an engine, see the Operator's Manual that accompanies the engine for engine operating and break-in instructions.

Tire Inflation. Inflate the 6:50 x 16—6-ply tire on the right side of the baler to 40 pounds pressure, and the 6:00 x 16 tire on the left side to 28 pounds pressure on power take-off machines. Increase the pressure of the tire on the left to 32 pounds on engine-mounted machines.

For the tractor tires, follow the recommendations in the tractor operator's manual for tire pressures.

Time the Baler. It is important to check the timing of a new baler, or one that has not been used for sometime before starting in the field. See page 14 for procedure to follow when checking the timing.

Load Wire Boxes and Thread Wire. See page 15 for instructions on loading the wire boxes and threading the wire.

Preparation of Crops.

The windrows should be of moderate size made by a side delivery rake. In material running from 1 to 1-1/2 tons per acre, do not place more than the width of the rake in the windrow. Heavier crops will require splitting the mower swaths in proportion.

Starting and Driving.

To start the baler, bring it up to its rated speed of 50 to 54 strokes per minute with the machine standing still. The overrunning clutch in the drive pulley allows the tractor gears to be shifted and the outfit started forward without stopping the baling mechanism. Start in low gear until you are sure baler is functioning properly and a few bales have been discharged. If hay does not fill opening in bale chamber, gradually increase ground speed up to about 3-1/2 miles per hour, or increase the size of the windrow, until good sized charges are fed into the compression chamber without straining the feeding and baling mechanisms. When the teeth on lower

OPERATION

feeder deflect and slip over the material, and/or the shear pin shears off in the upper feeder (Page 20), the baler is being crowded beyond its capacity, and serious damage may result. When the baler is taking about 4 or 5 pounds of material per charge, it is operating efficiently. See page 19 for size and weight of bales.

Rough ground conditions may require judgment on the part of the operator to adjust the size of the windrow and the speed of the machine to obtain the best performance.

When starting with an empty bale case, the first few bales will be light and their length will be irregular until the compression of the material has been built up sufficiently to turn the bale measuring wheel positively.

While the baler is in operation, watch the wires between the twister box and the wire boxes on top of the baler and around the needles underneath. These wires should move with each stroke of the plunger. If they stop moving, the wire has run out or has broken. Stop and correct trouble.

It is essential to periodically clean out accumulated chaff and trash from around the wire twisting mechanism. In most haying conditions this accumulation will not affect the operation of the machine. But if material is high in moisture content or gummy, or if the accumulation gets wet it may cause the trip device to function inaccurately, resulting in broken parts or long bales.

Safety Slip Clutch.

A safety slip clutch is built into the flywheel and is set at the factory to protect the baling parts from overloads resulting from excessive large charges; obstacles lodging between the knives, etc. Do not attempt to tighten this clutch unless it has been checked as described below and found to be too tight or too loose.

If baler has not been used for some time or has been stored for the winter season, the slip clutch must be checked for load. This can be done by applying a load of 60 pounds on a lever attached to flywheel, 10 feet from center of flywheel. If clutch does not slip, loosen clutch bolts. Be sure to tighten bolts after they are loosened until clutch slips at 600 foot-pounds of load.

Capacity.

The capacity of the baler depends upon such factors as material characteristics, ground conditions, condition of tractor, and the judgment of the operator. Average capacity is from 3 to 4 tons per hour. Do not crowd your baler. You are primarily interested in tons per day, not bales per minute. See page 19 for size and weight of bales.

TRANSPORTING BALER

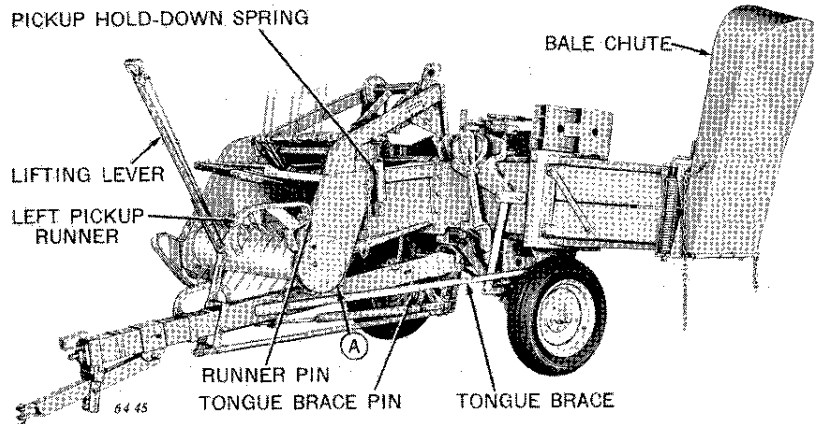


Figure 10

To transport baler, remove hold-down pin from tongue and pick-up hold-down spring. Remove tongue brace pin. Remove runner pin from left pick-up runner and pick-up at "A" and swing runner forward. Attach runner as shown in Figure 10. Lift pick-up and swing over tongue and replace tongue brace pin as shown above. Replace hold-down pin in tongue bracket and pick-up support, as shown in Figure 11. Raise bale chute as shown in Figure 10. This will give a transport width of approximately eleven and one-half feet.

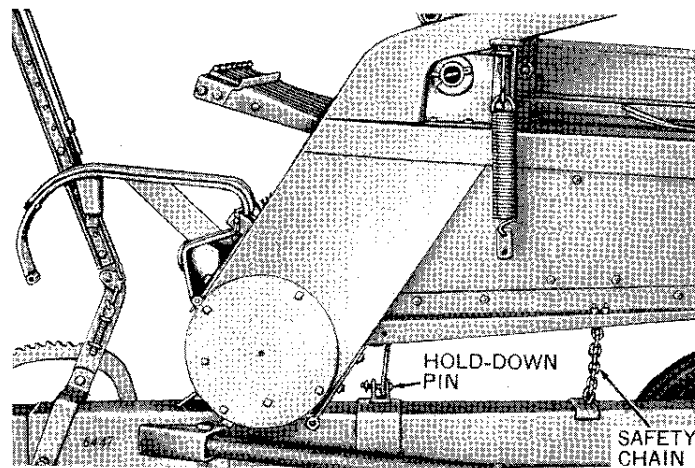


Figure 11

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