John Deere 500 Round Baler

TECHNICAL MANUAL

John Deere 500
Round Baler

TM1140 (01FEB76) English

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LITHO IN U.S.A.
ENGLISH

500 ROUND BALER

TECHNICAL MANUAL

TM-1140 (Feb-76)

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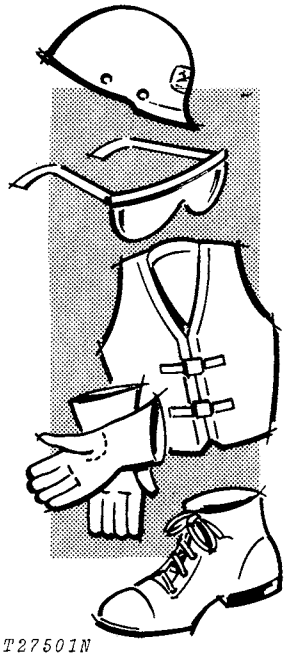
Litho in U.S.A.

MAINTENANCE WITHOUT ACCIDENTS
WORK SAFELY

T27999N

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

EVERY EMPLOYER HAS A SAFETY PROGRAM. KNOW WHAT IT IS!



T27501N

Consult your shop supervisor for specific instructions on a job, and the safety equipment required.

For instance, you may need: Hard hat, safety shoes, safety goggles, heavy gloves, reflector vests, ear protectors, respirators.

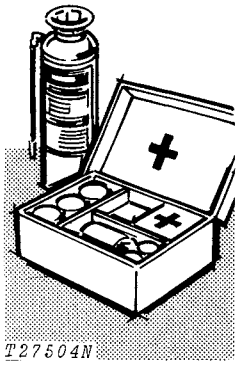
T27502N

ALWAYS AVOID

Loose clothing or any accessory—flopping cuffs, dangling neckties and scarves, or rings and wrist watches—that can catch in moving parts and put you out of work.

BE ALERT!

Plan ahead—work safely—avoid accidental damage and injury. If a careless moment does cause an accident or fire, react quickly with the tools and skills at hand—know how to use a first aid kit and a fire extinguisher—and where to get aid and assistance. In an emergency, split-second action is the key to safety.



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Section 10
GENERAL

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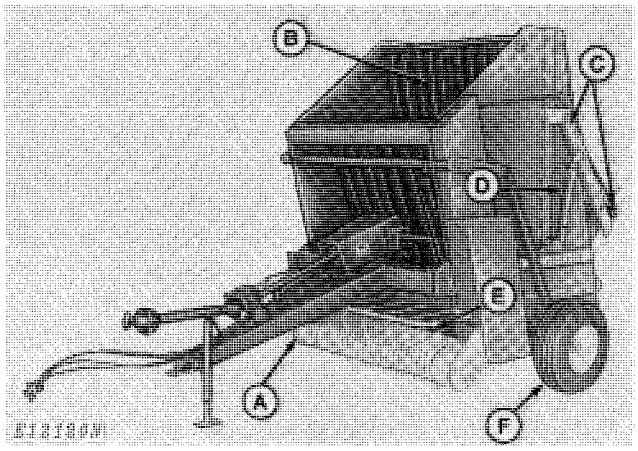
Group 5
DESCRIPTION

GENERAL



A—Pickup
B—Upper Belts
C—Rear Gate
D—Hydraulic Cylinder
E—Lower Belt
F—Wheels

Fig. 1-500 Round Baler

The 500 Round Baler is a large size baler for handling loose hay and corn stover. It will produce high-density bales 5 ft. 3 in. (1.6 m) wide by 6 ft. (1.83 m) in diameter weighing approximately 1500 lbs. (680 kg).

The basic components of the round baler include the main frame and wheels (F), pickup (A), upper (B) and lower (E) forming belts, rear gate and mechanism (C), and bale wrapping mechanism.

Operating power for the round baler is provided from a 540 rpm tractor power take-off (PTO).

Two hydraulic cylinders operating in series from the tractor hydraulic system are used to raise and lower the rear gate of the baler. A double acting hydraulic cylinder is used to operate the bale wrapping mechanism.

Tractor Requirements

The baler is set for use on tractors with two sets of hydraulic outlets; one for the two hoses which control the rear gate and one for the two hoses to wrap the bale.

A selector control valve, with the shift mechanism, allows the use of the baler hydraulics on tractors with only one hydraulic outlet. The selector control valve is available as an attachment.

The tractor must have a 540 rpm PTO with a minimum of 60 horsepower (45 Kw) to obtain the maximum capacity from the baler.

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Tractor Hookup

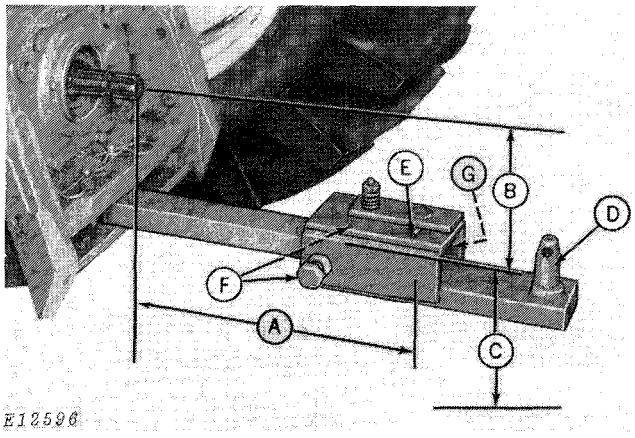
When servicing the baler, pay particular attention to the tractor-baler hookup geometry, Fig. 2.

IMPORTANT: Unequal angles occur if the tractor drawbar is not set for the proper length relative to the PTO operating speed. If the equal angles are not maintained, the following problems could occur:

1. Premature failure of the powerline components.

2. Excessive noise and vibration.

The proper equal angle hitch hookup dimensions are illustrated in Fig. 2.



A—14 in. (356 mm)
B—6 to 12 in. (152 to 305 mm)
C—13 to 17 in. (330 to 432 mm)
D—Equal Angle Hitch
E—Hitch Pin
F—Adjusting Bolts
G—Shims

Fig. 2-Hookup Dimensions

Pickup

The pickup is 72-inches (1.82 m) wide to adequately cover up to 5 foot (1.52 m) windrows. It allows for variations in windrows and minimizes hay loss when turning.

The pickup is driven at 108 rpm by a spring loaded belt off the left-hand roll drive chains. The pickup operating height is adjusted by setting a stop bolt on each side. The pickup should be adjusted to run as high off the ground as possible and still pick up all the hay. See 50-10-7 for adjustment.

Bale Forming Belts

There are upper and lower belts to form the bale as hay is moved through the compression and starter rolls. The upper set consists of nine repairable rubber-coated forming belts. These belts can be repaired or replaced individually or as a set. (See page 40-10-1).

The upper belts are tensioned by the large springs on the sides of the baler. (See page 40-10-3).

The continuous lower belt minimizes leaf loss while the bale is being formed. Lower belt tension is controlled by a spring adjustment on rear roll.

Bale Wrapping System

The bale wrapping system is controlled by the tractor hydraulic system.

A check valve is used in the system to allow full flow to the cylinder for moving the twine arm to the right. The flow is metered on return by a flow control valve. This controls the number of wraps of twine on the bale.

This system can be used with either plastic or sisal twine.

Rear Gate

After the bale is formed, the rear gate is raised and the bale is discharged from the baler.

The rear gate is controlled by two large cylinders supplied with oil by the tractor hydraulic system.

There are two rollers on the gate which must follow the channel along the lower belt. These rollers must also be held in position to start the core of the bale. See page 50-5-3 for adjustment.

HOW THE BALE IS FORMED

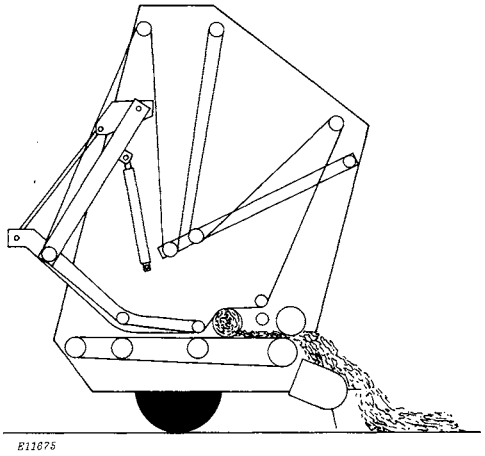


Fig. 3-Forming the Core

The starting of the bale is extremely important. The core must be carefully made to insure a satisfactory bale. To start the bale, set the tractor at 3/4 throttle and start placing hay in the middle of the pickup. As the core begins to form, weave the tractor and baler across the windrow to get an even core. Once the bale has become 2-foot (60.9 cm) in diameter, do not weave as often. Crossing over too often will fill the center of the bale and a "barrel-shaped" bale may result. Always drive to the extreme sides and cross over as quickly as possible so that the sides of the bale will be square and well shaped.

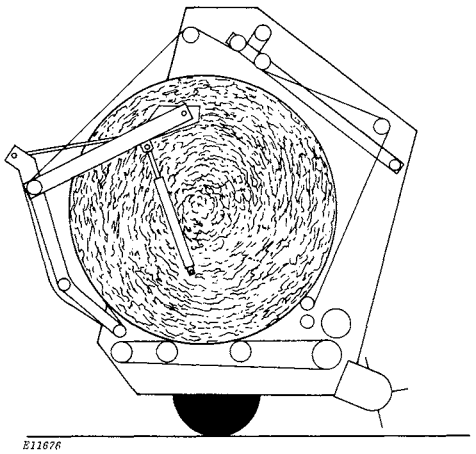


Fig. 4-Full Size Bale

When the bale is full size, the word "Stop" will appear at the indicator on the right-hand side of the baler.

IMPORTANT: The bale must be stopped at the indicator setting to insure that the idler rolls will not interfere with the top roller shaft.

At this time, the bale is ready to be wrapped with twine.

Actuate the tractor hydraulic controls to start the twine arm across the bale. The twine is then fed into the baler, wrapping the bale. When the twine has been fed into the last bunch of hay and into the compression rolls, stop forward travel. As the tying arm reaches the left-hand end of the bale, place the hydraulics in neutral to allow the twine to wrap several times on the end of the bale.

NOTE: The wrapping cycle can be altered by the flow control valve. (See page 30-15-5).

Again, actuate the hydraulics to move the arm back across the bale. As the arm moves to the right-hand side, stop movement before it reaches the automatic cutoff. Again wrap the end of the bale several times. Continue the arm to the right until the automatic cutoff cuts the twine.

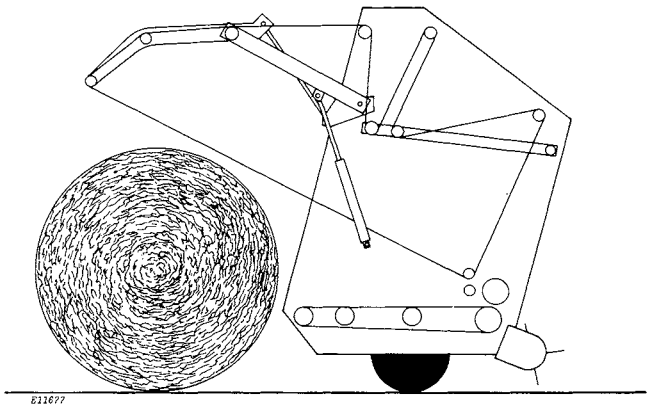


Fig. 5-Removing The Bale

After the bale is tied it can now be removed from the baler. Disengage the tractor PTO and place throttle at idle speed. Back up the tractor eight to ten feet (2.4 to 3.0 m) away from the windrow. Raise the rear gate and re-engage the PTO shaft. After the bale falls from the rear of the baler pull the tractor forward and lower the gate.

IMPORTANT: Make certain to return hydraulic lever to neutral after returning rear gate to its home position.

Place tractor at 3/4 throttle and continue into the windrow to make another bale.