

24T Twine-Tie Baler



JOHN DEERE

OPERATORS MANUAL 24T Twine-Tie Baler

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Introduction

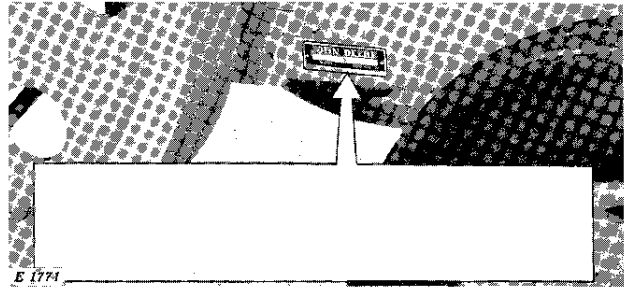
Your new John Deere 24T Baler is a dependable machine. With proper care and operation, you can expect to receive the service and long life designed and built into it. Like any precision machine your baler will require some attention at regular intervals. When any questions arise regarding lubrication 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.

When in need of parts, either to replace worn parts or to make emergency repairs, see your local John Deere dealer.

When ordering parts, give your dealer the model and serial number of your baler. This information will help him give you prompt and efficient service.

The serial number of your baler is located on the left-hand side of the bale case between the flywheel and the tire. (Record it in the space below.)



Contents

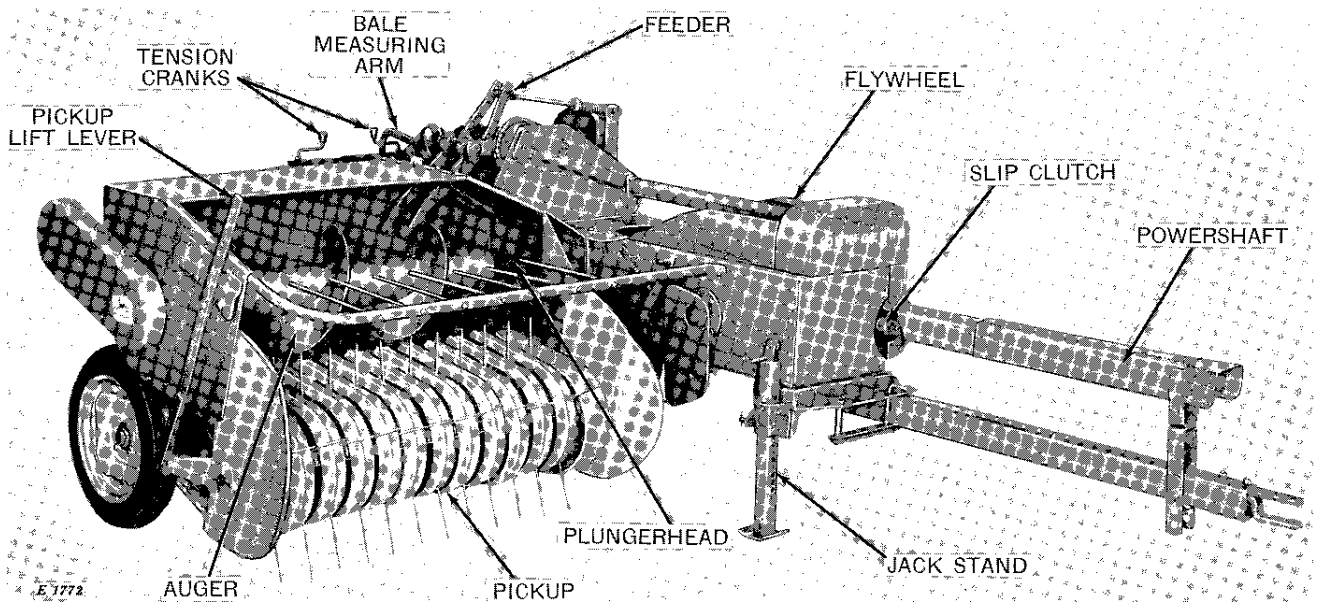
	Page		Page
Specifications	1	Auger drive belt	27
Operation	2-11	Chain adjustments	27
How the knot is tied	2-3	Timing marks	27-28
Before operation	3-5	Knotter gears	28
Safety precaution	6	Bale measuring control	28
Operating adjustments	6-9	Gear case	28
Machine protective devices	10-11	Pitman	29
Lubrication	12-13	Engine and belt alignment	29
Service	14-29	Attachments	30-34
Trouble shooting	14-19	Wisconsin engine and mounting	30
Service checking	20	Power take-off	30
Needle frame adjustment	20	No. 2 Bale Ejector	31
Timing the baler	20-21	Oversized tires	31
Billhook	21	Dual wheels (less tires)	31
Knife arm	22	Pickup gauge wheel	31
Twine disk	23	Wagon hitches and bale chute	32
Twine holder	23	Pickup slip clutch	32
Needle adjustment	24	Bale counter	33
Knotter drive brake	24	Wiper arm modeling tool	33
Tucker fingers	25	Compressors	33
Plungerhead safety stop	25	Tool box	33
Plungerhead and knife adjustment	26	Side-drop bale chute	30
Safety slip clutch	27	Assembly	35-40

Specifications

Auger: Diameter	16 In.
Length	49 In.
Bale: Cross-Section	14 In. x 18 In.
Length	Adjustable 12 In. to 50 In.
Compression Chamber Length	44 In.
Engine, Wisconsin Model THD	17 Horsepower
Feeder Opening Dimensions	13 In. x 21 In.
Flywheel Diameter	27 In.
Height (Maximum)	64 In.
Length: With Engine Tongue and Bale Chute	17 Ft. 10-1/2 In.
With PTO Tongue and Bale Chute	17 Ft. 1/2 In.
Less Tongue and Bale Chute	10 Ft. 6 In.
Pickup Cylinder Diameter	12 In.
Pickup Width: Inside	53 In.
On Flare	59 In.
Plungerhead: Stroke	28 in.
Speed	Normal (under load) 65 strokes per minute Maximum (no load) 72 strokes per minute
Size of tractor recommended	2-Plow Tractor or Larger
Power Take-Off Shaft Speed	ASAE-SAE Standard—540 or 1000 rpm
Tires: R.H., Standard (Inflation pressure, 30 psi)	15 x 4.00—4-ply
R.H., Oversize (Inflation pressure, 27 psi)	15 x 5.00—4-ply
L.H., Standard (Inflation pressure, 40 psi)	15 x 6.40—6-ply
L.H., Oversize (Inflation pressure, 35 psi)	15 x 6.70—6-ply
Transmission: Gears	Steel Cut, Enclosed
Capacity	2-3/4 Qts. SAE 140
Weight (Approximate): With PTO	2400 Lbs.
With Engine	2650 Lbs.
Width	8 Ft.

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.

(Specifications and design subject to change without notice)

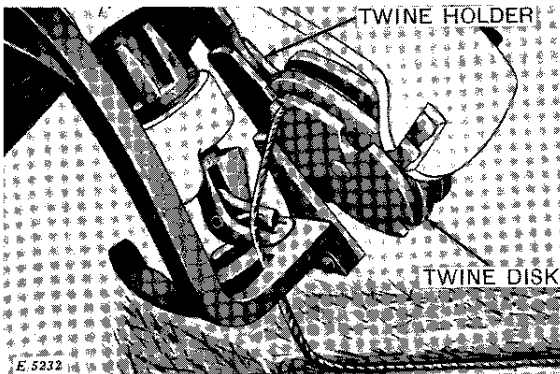


Front View of John Deere 24T Power Take-Off Baler

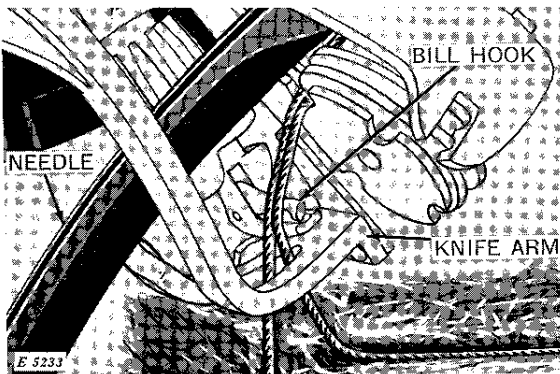
Operation

How the knot is tied

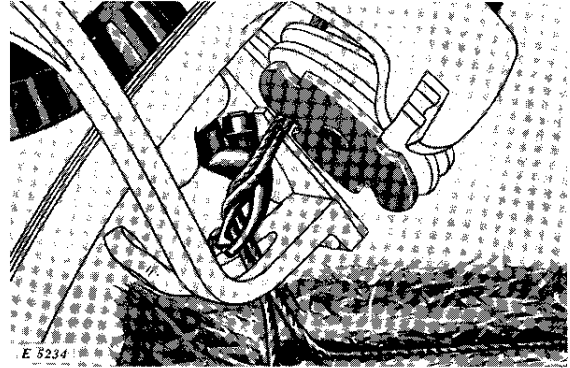
To get a better understanding of the operation of your baler and the importance of the various adjustments dealt with in this manual, an understanding of the tying cycle of the baler is important. This illustrates and describes the knoter action at various stages of one complete knot formation.



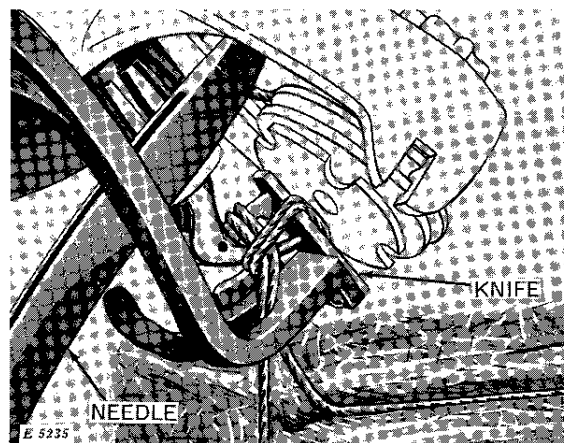
1. After the needle has been threaded, the end of the twine is held in the twine disk by the twine holder. As the bale is formed, it pulls twine from the twine box.



2. When the bale reaches its proper length, the measuring wheel trips the tying mechanism and the needle (with the help of the tucker finger) brings the second strand of twine through the guide on the knife arm—across the billhook and into the twine disk.



3. The billhook starts its revolution when the gear teeth on the intermittent knotter gear have operated the disk driving pinion and turned the disk sufficiently to permit the twine holder to secure both strands of twine in the disk.



4. As the billhook turns, it forms a loop of twine around the hook, the jaw opens to receive the twine. The knife advances ready to cut the twine between the billhook and the disk.

NOTE: At this stage, the needle begins to recede—leaving twine in the disk which will be held there for the next knot.

Before operation

Breaking in the new baler

After the baler has been completely assembled and connected to the tractor, inspect it to be sure all bolts are tight. A loose bolt may cause wear and make premature replacement of parts necessary.

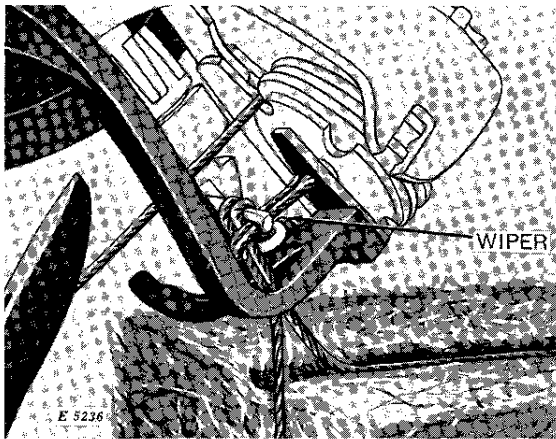
Inspect all chains for proper tension. Tighten chains only enough to prevent links from climbing sprocket teeth.

On engine-driven balers, check the drive belt (see page 29) to be sure tension is adjusted just tight enough to eliminate slippage. See the engine operator's manual for engine operation and break-in instructions.

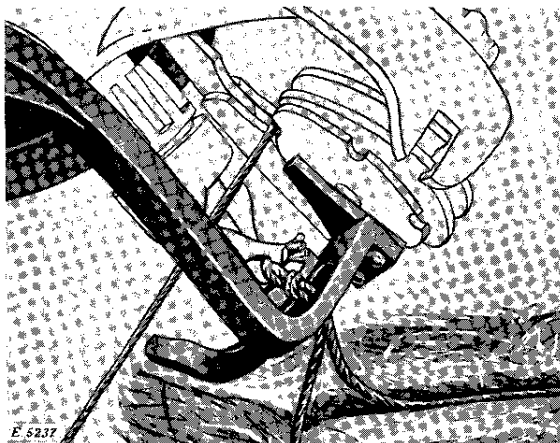
NOTE: Grease has been applied, at the factory, to the knotter area to prevent paint and rust from collecting on these parts. Remove the grease and the paint before operating baler. Some misses in tying may occur in the first few bales due to this grease. Do not attempt to make adjustments until all knotter parts have had time to become thoroughly polished by the twine through operation.

The new machine should be given an empty running "breaking-in" period of at least one hour to allow the parts to work in gradually. After a short run at slow idling speed, stop machine and inspect completely. Make a check for loose bolts, heated bearings, binding parts, chain tension, etc. Run the baler at slow idling speed for the first thirty minutes and increase to full speed for the rest of the period. Inspect baler frequently during "breaking-in" period.

Adjust plungerhead after baling the first 1,000 bales (see page 26) and thereafter as necessary depending upon operating conditions.



5. The billhook jaw has closed and now holds the ends of the twine tightly. The twine has been cut and the wiper on the knife arm advances to wipe the looped twine from the outside of the billhook—as the jaws hold the two cut ends of twine preparatory to completing the knot.

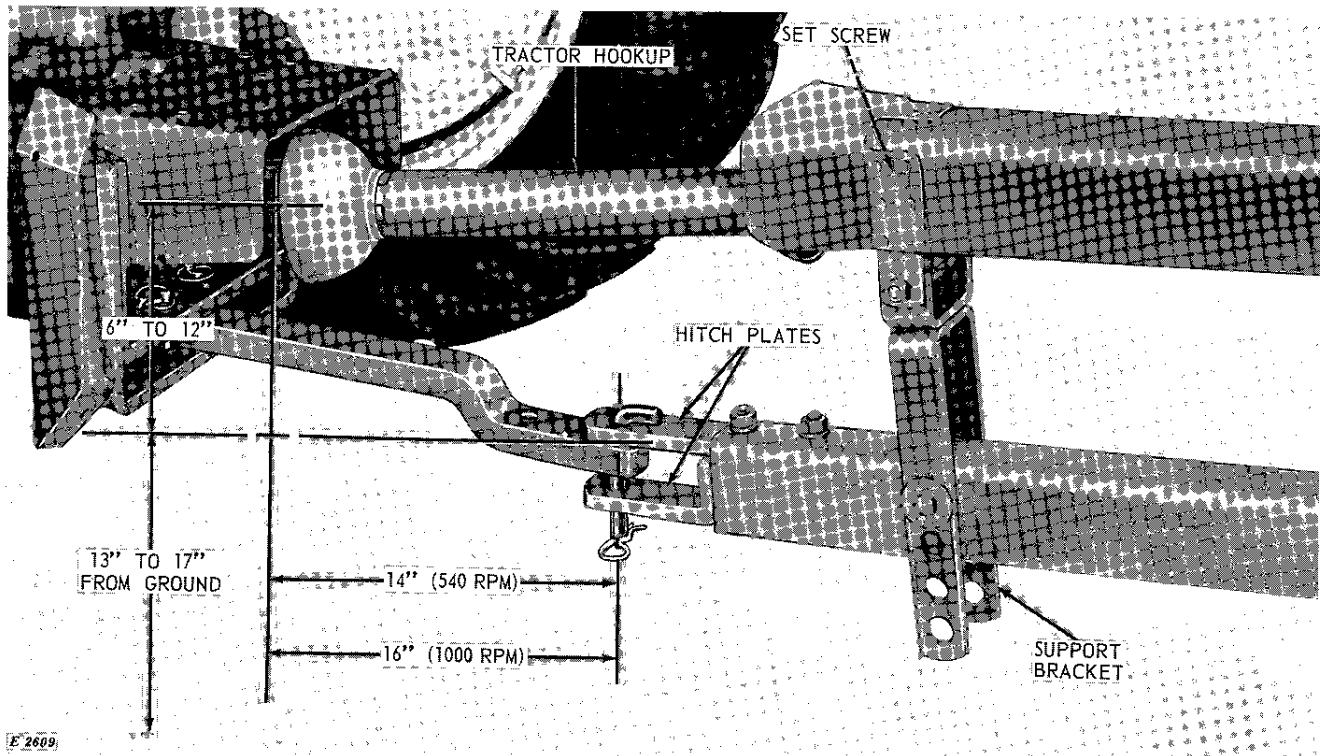


6. The knot is tied and drops from the billhook, which completes the tie around the bale.

The needles then return to the "home" position leaving the strand of twine in the disk and extending through the bale chamber ready to receive material for the next bale, at the end of which another tying cycle will be performed.

4 operation

Hookup instructions



Drawbar

Adjust the tractor drawbar so it measures 14 inches (for 540 rpm PTO) or 16 inches (for 1000 rpm PTO) from the end of the power take-off shaft to the hitch pin hole in the drawbar, and 6 to 12 inches from the center of the PTO shaft to the top of the drawbar. The top of the rear end of the drawbar should be 13 to 17 inches from the ground. The drawbar hitch pin hole must be aligned vertically with the center line of the tractor power take-off shaft.

Tongue

Adjust the hitch plates so the baler is approximately level. (The front end of the baler tongue should be 13 to 17 inches from the ground.)

Universal joints

Attach the rear end of the baler universal joint to the powershaft and secure with set screw and lock nut. Attach the front end of the universal joint to the tractor powershaft and secure with the spring locking pin.

NOTE: Never use a steel hammer when attaching or removing universal joints. Keep the universal joint splines clean.

Support bracket

Adjust the support bracket so the power take-off shaft and universal joint are as straight as possible.

For 1000 rpm operation, mount the support bracket so powershaft is offset to the right-hand side of the tongue.

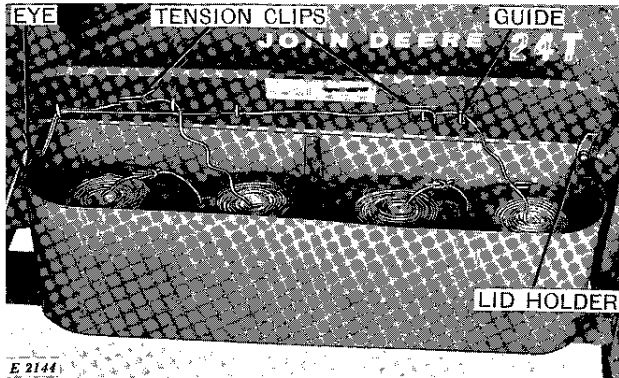
Jack stand

After the baler has been properly hooked up, secure the jack stand in the raised position with the latch.

CAUTION: Never hook up a 540 rpm baler to a 1000 rpm tractor.

Loading twine box

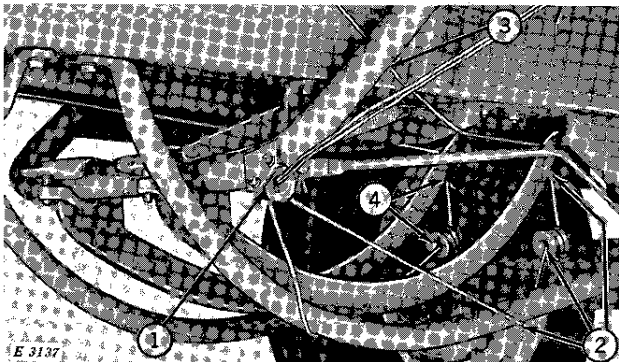
Use the holder (located inside the twine box) to hold the lid out of the way to facilitate loading or unloading.



Place two balls of good quality twine in each compartment of the twine box.

NOTE: Be sure twine is pulled from the end of the ball marked "top." The two balls in each section should be joined by tying the inside end of one ball to the outside end of the other ball. In joining the twine, use a secure square knot. The loose ends of the twine should be trimmed as close to the knot as possible. Thread twine through their respective guides in the box lid; then thread both ends of twine through the eye on the side of the twine box.

Threading needles



1. Thread both ends of twine through eye on needle frame.

2. With the needles in "home" position, run end of one strand of twine below needle guard, through eye beneath right-hand needle and through right-hand needle.

NOTE: Thread twine OVER guide on end of needle.

3. Run twine between needle frame and bale case and fasten around bale case tension crank.

4. Repeat Steps 2 and 3 with the other strand of twine to thread left-hand needle.

When both strands of twine have been properly threaded, trip the measuring arm and turn flywheel counterclockwise by hand. Continue turning flywheel until needles are all the way up, twine is held in twine disk, and needles have returned to the "home" position.

Remove the twine which was temporarily secured to the bale case tension crank. (Check the twine tension, see page 9.) The twine is now ready for the baling operation.

Field operation

Crop preparation

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.

Direction of travel

Bale the driest hay first; therefore, start baling at the outside of the field. Travel in the direction that the rake traveled to pick up the hay in a head-first position.

Starting and driving

When starting the baler, bring the tractor or engine up to recommended speed to obtain 540 or 1000 rpm on the baler powershaft (plunger-head should be up to normal 65 strokes per minute under load). Drive in low gear until baler is functioning properly and a few bales have been discharged. If hay does not fill opening in the 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. If the auger drive belt slips, the baler is being crowded beyond its capacity, and serious damage may result.

The baler is operating efficiently, when it is taking from 12 to 18 charges per bale.

6 operation

Starting and driving—continued

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

Always operate the baler with tractor or engine at recommended speed to obtain 540 or 1000 rpm on the baler powershaft.

CAUTION: Disengage the tractor PTO shaft when making sharp turns at ends of the field to avoid excessive vibration.

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.

The twine coming out of the twine box should move with each stroke of the plunger. If it stops moving, the twine has run out or has broken. Stop and correct the trouble.

It is essential to periodically clean out accumulated chaff and trash from around the twine knotting mechanism. In most haying conditions this accumulation will not affect the operation of the baler. If material is high in moisture content or gummy, or if the accumulation gets wet, it may cause the tucker fingers to function inaccurately, resulting in broken parts, or untied bales.

Safety precautions

This machine has been carefully shielded for your protection—nevertheless, ordinary caution must be exercised in operation. Always keep all safety shields in place when operating baler. Avoid serious accidents by keeping hands and clothing away from chains and other moving parts.

Before servicing or adjusting the baler, or removing bales or other material from it, or hitching wagon to baler, always:

- (a) disengage all power,
- (b) shut off engine, and then
- (c) wait until baler flywheel has stopped rotating.

Tractor hookup rotating shields must turn freely. Use light oil on nylon bearings as necessary.

Stand clear of machine at all times when machine is operating.

Do not attempt to pull hay from pickup when machine is running.

Be sure flywheel is not moved when working on knives.

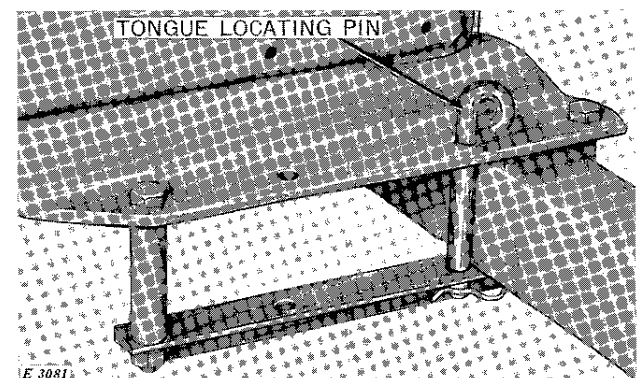
Do not try to remove or pull twine from bale case or knotter mechanism if machine is operating.

The baler may be tripped by hand by grasping the measuring arm and pulling back as necessary to allow the arm to be raised to tripped position.

When tripping measuring arm by hand with the baler running, do not touch the knotting mechanism or the needle frame.

Operating adjustments

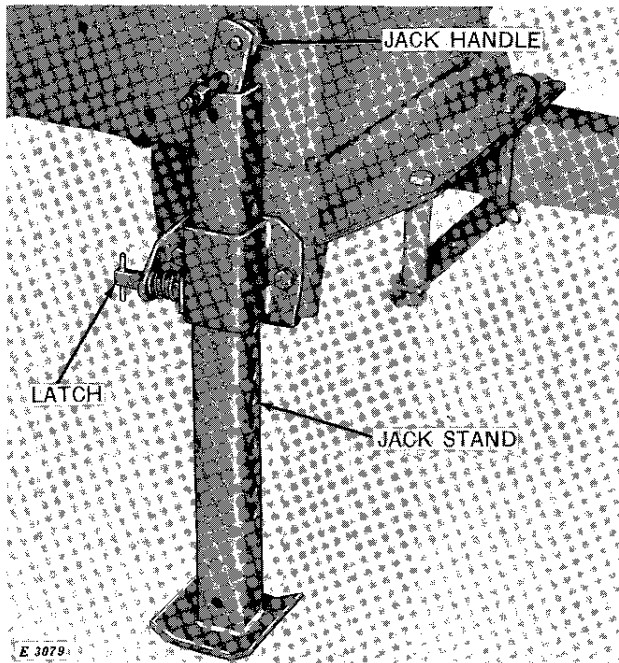
Transporting



The baler can be easily changed from operating to transporting position by removing the locating pin, blocking behind the right-hand wheel, and forcing the tongue to the left with the tractor. Secure the tongue with the locating pin.

When transporting baler, raise the pickup to the highest position to prevent damage to the pickup.

When transporting the baler on a road or highway at night or during the day, use accessory lights and devices for adequate warning to the operators of other vehicles. In this regard check local governmental regulations. Various safety lights and devices are available at your John Deere dealer.

Jack stand

Location on PTO baler

During operating or transporting, the jack stand is held firmly out of the way by a spring-loaded latch.

NOTE: Seat the latch in one of the five bottom holes to lock the stand in raised position. Operate the jack stand as follows:

Raising tongue

1. Place the pin on the jack handle completely through the first open round hole in the jack stand which is immediately under the jack stand mounting bracket.

2. Push down on the jack handle to raise the tongue.

3. Repeat Steps 1 and 2 to raise the tongue higher.

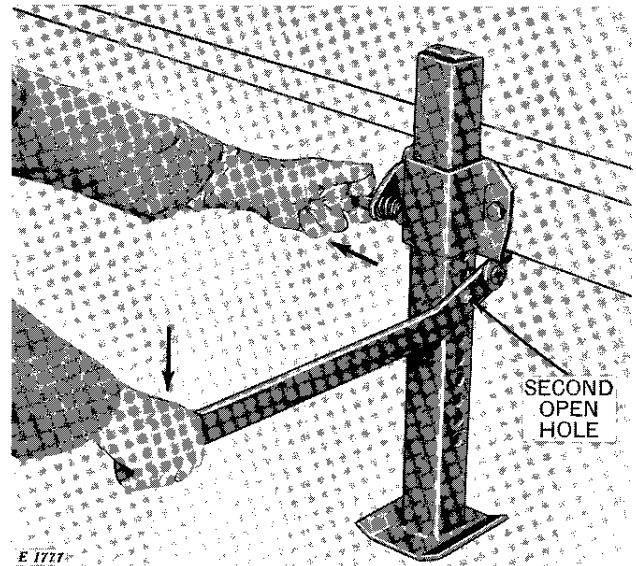
Lowering tongue

1. Place the pin on the jack handle completely through the second open round hole below the jack mounting bracket.

2. Push down on the jack handle and pull out the latch; relax pressure on jack handle and release latch.

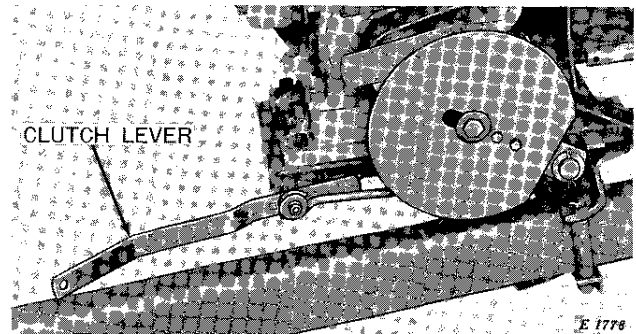
3. Repeat Steps 1 and 2 to drop tongue lower.

Replace the jack handle in the top of the jack stand.



Location on engine baler

NOTE: It is not necessary to use the jack handle after weight of baler is removed from the jack. The jack may be raised by pulling the latch and lifting the jack by hand. The jack will lower itself to the ground by pulling the latch.

Engine clutch lever

The lever located on the left-hand side of the engine, controls the transmission of power from the engine to the flywheel by means of a belt idler. Release tension on belt when starting the engine.

Engine controls

The controls and operation of the engine are described in the engine operator's manual.

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