22 and 32 Hay Conditioners

JOHN DEERE

OPERATORS MANUAL

22 and 32 Hay
Conditioners

OME36259 H5 English

OME36259 H5

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ENGLISH

INTRODUCTION

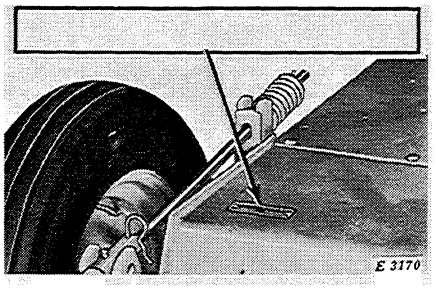
Your new John Deere Hay Conditioner is a dependable machine. With proper care and operation you can expect to receive the service and long life designed and built into it. Like any precision machine your conditioner will require some attention at regular intervals. When any questions arise regarding 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 conditioner. This information will help him give you prompt and efficient service.

The serial number of your conditioner is located on the right-hand front edge of the main frame. (Record it in the space below.)



CONTENTS

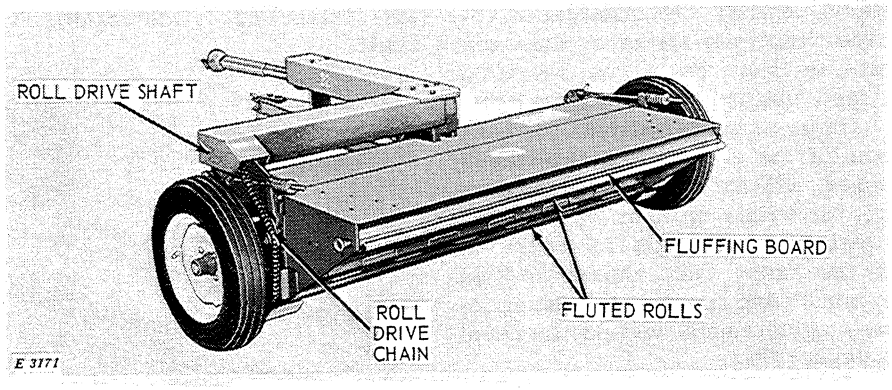
NOTE: Right- and left-hand sides referred to in this manual are determined from a position at the rear of the machine facing in the direction of travel.

SPECIFICATIONS

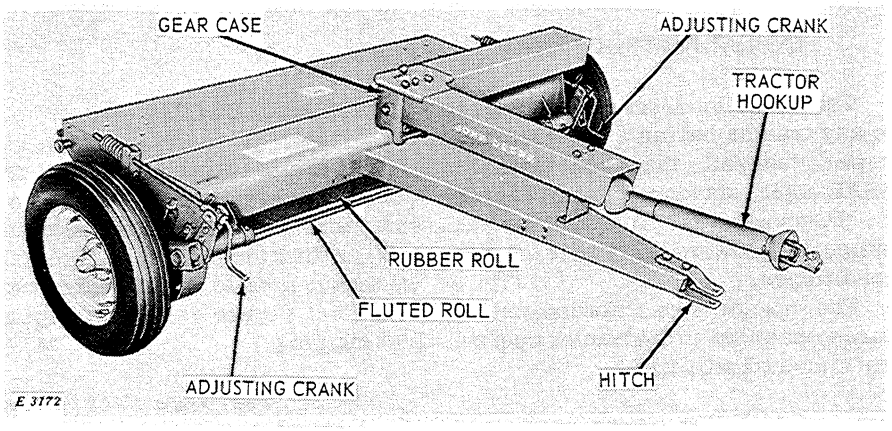
Length of rolls . . . . . 6 ft. 6 in.
Diameter of rolls: 22 . . . 7-3/4 in.
32 . . . . . 7 in.
Roll speed . . . . . 825 rpm
Over-all width . . . . . 8 ft. 9 in.
Over-all length . . . . . 7 ft. 2 in.
Over-all height . . . . . 3 ft. 1 in.
Wheels . . . . Standard drop center type 14 or 15 in. rims

Tire size (When shipped with hay conditioners) . . . 5:90 x 15—4 ply
Tire pressure . . . . . 10 lbs.
Weight (approx.): 22 . . . . 1355 lbs.
32 . . . . 1000 lbs.
Bearings:
gear case . . . . 4 tapered roller
wheels . . . . . 4 tapered roller
rolls . . . . . 4 self-aligning ball
driveshaft . 1 self-aligning bronze
drivenshaft . 1 self-aligning ball

(Specifications and design subject to change without notice.)



Left-Hand View of John Deere 22 Crimper Hay Conditioner



Right-Hand View of John Deere 32 Crusher Hay Conditioner

OPERATION

DESCRIPTION

The 22 Crimper Hay Conditioner and 32 Crusher Hay Conditioner pick up cut hay from the ground and pass it between the surfaces of two rolls. The rolls are designed to effectively condition the heavier stems and stalks, at the same time providing ample space for tender leaves and small stems to pass through the rolls without damage.

The crimping or crushing of the stems permits the moisture to escape from the stems at the same rate as from the leaves, providing a fast, uniform curing of the crop.

Under some conditions the reaction of the crop to the hay conditioner will not show up immediately, but within an hour or two, the moisture will begin to work out of the crop. This should be kept in mind when operating so unnecessary adjustments will not be made prematurely.

Hay should be conditioned before it starts to wilt—usually within 20 minutes after it has been mowed.

HOOKUP INSTRUCTION

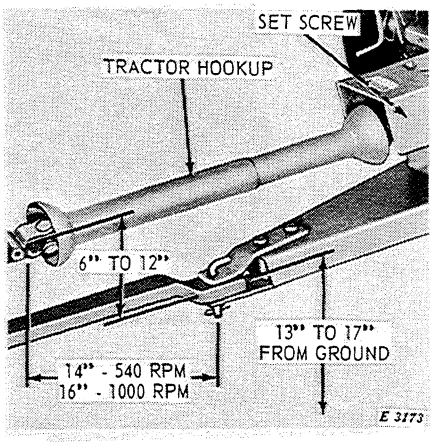
The conditioner can be attached to any tractor having a drawbar and power take-off that conforms to ASAE-SAE standards and having a PTO speed (540 or 1000 rpm) to match the powershaft speed of the conditioner.

The tractor tire inflation pressures specified in the tractor operator's manual will apply.

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

TRACTOR DRAWBAR

Adjust tractor drawbar so it measures 14 inches (for 540 rpm PTO) or 16 inches (for 1000 rpm PTO) from end of PTO shaft to hitch pin hole in drawbar, and 6 to 12 inches from center of the PTO shaft to the top of 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 PTO shaft.



UNIVERSAL JOINTS

Attach the rear end of the conditioner universal joint to the powershaft and secure it with the clamp bolt. Attach the front end of the universal joint to the tractor powershaft and secure it with the spring locking pin.

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

BEFORE OPERATION

Do not start tractor until hay conditioner has been carefully checked for correct assembly. See that all nuts are tight and cotter pins spread.

Check tires for proper operating pressure of 10 pounds.

Be sure all moving parts work freely and are properly lubricated. Check to see that the powershaft telescopes freely.

Start tractor engine and while idling, slowly engage PTO. Let hay conditioner run slowly for a while and observe all moving parts to see that they operate freely and normally.

CAUTION: Never adjust machine while it is operating.

Check tractor levers and controls to see that they operate the hay conditioner properly.

FIELD OPERATION

Operate tractor engine to obtain the SAE rated PTO speed. Running the engine at slow speed reduces the roll speed and may cause the hay conditioner to clog where crop is heavy. Where difficult conditions make it necessary to slow down the travel speed of tractor, shift to a lower gear rather than reduce the engine speed. By shifting to a lower gear, the engine will maintain its rated speed, which will keep the rolls running at the proper speed for best results.

Do not engage PTO with engine running at high speed. To do so may cause undue wear or possible breakage.

Direction of travel should be the same as the mower.

IMPORTANT: Do not use the guards under the right-hand and left-hand ends of the hay conditioner as runner shoes.

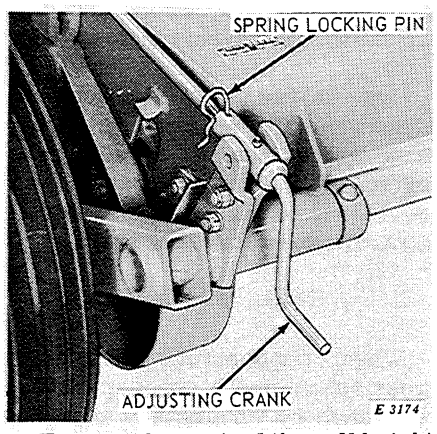
ROLL HEIGHT

Rolls should be set as high as possible (4 to 7 inches) but low enough so they will still pick up all the crop.

Operate rolls higher in heavy crops than in light scattered crops. Low roll height is one of the primary causes of material wrapping on rolls.

Raise the rolls when transporting.

ADJUSTING HEIGHT

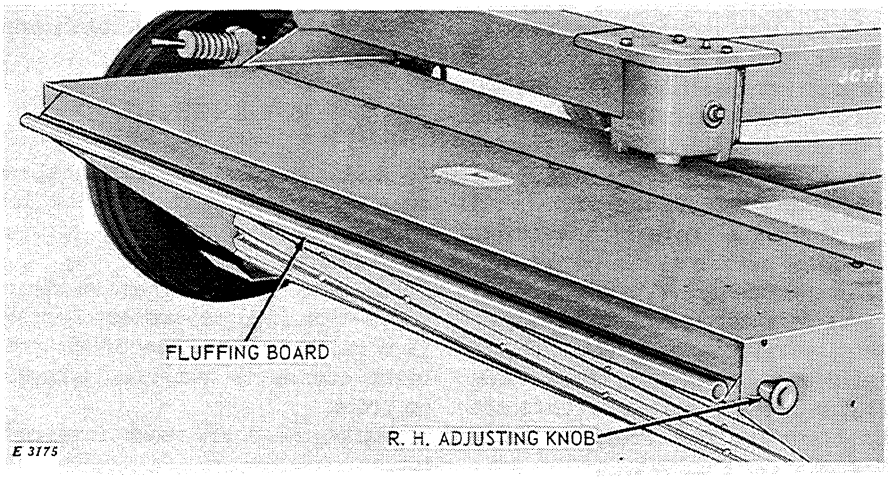


Two cranks control the roll height. Remove the spring locking pins on each end of the crank to be adjusted so they do not interfere with rotating crank.

Turn crank counterclockwise to raise rolls, or clockwise to lower rolls. Replace the spring locking pins.

The hand cranks serve as lower limit stops on hydraulic lift. During operation the cylinder should always be contracted so the weight of the machine will be carried by the hand cranks.

FLUFFING BOARD



The hinged fluffing board can be adjusted to deflect the hay downward in fluffier, faster-curing swaths.

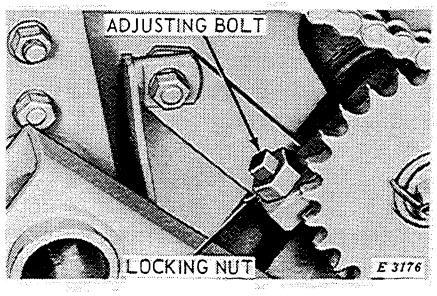
Use the two adjusting knobs and adjust the fluffing board downward until desired fluffing results without bunching. In heavy, rank crops, the fluffing board should be adjusted upward to prevent back feeding.

ROLL SPACING

When crimper rolls are too aggressive on tender crops, decrease roll mesh by turning the adjusting bolt on each side an equal number of turns. Tough crops may require increasing mesh.

NOTE: On 32 Hay Conditioners only, the roll spacing should normally be 1/64- to 1/32-inch clearance between the rolls. This clearance will permit the stems to be crushed without damaging the leaves.

ADJUSTING SPACING



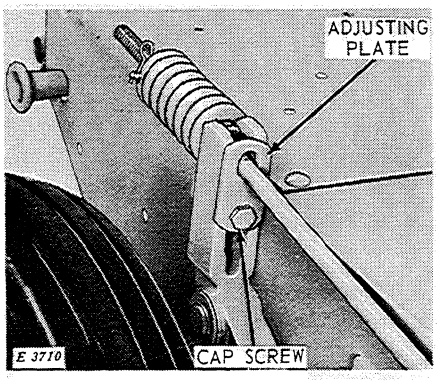
Loosen locking nuts and turn adjusting bolts on both sides an equal number of turns to maintain uniform spacing. Tighten locking nut.

ROLL PRESSURE

Heavy, tough crops require more roll pressure than light crops.

Average setting is 1 inch from top of pivot casting to top of adjusting plate.

ADJUSTING PRESSURE



Loosen cap screw and move adjusting plate up for increased pressure or down for decreased pressure. Maintain same distance on both ends. Tighten cap screws to 80 ft-lbs torque.

SAFETY SUGGESTIONS

The safety of the operator was one of the prime considerations in the minds of John Deere engineers when the hay conditioner was designed. Shielding, and other safety features were built into the hay conditioner wherever possible.

However, investigation of thousands of farm machinery accidents shows that careless use of farm machinery causes nearly 1/3 of all farm accidents. You can make your farm a safer place to live and work if you observe the safety suggestions given on this page. Study these suggestions carefully and insist that they be followed by those working with you and for you.

All machinery should be operated only by responsible persons who have been delegated to do so.

Don't stand in back of the hay conditioner while it is running. Don't allow others to do so.

Never clean, oil, or adjust the hay conditioner with the tractor engine running.

Clothing worn by operator should be fairly tight and belted. Loose jackets, skirts, shirts, or sleeves should never be worn because of the danger of getting into moving parts.

Be sure shielded powershaft is in place and in good condition before starting in the field.

Make sure everyone is clear of the hay conditioner and tractor before starting so no one can be struck by moving parts.

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

LUBRICATION

GREASE FITTINGS

Wipe dirt from grease fitting and nozzle of grease gun before greasing.

Replace missing or damaged grease fittings immediately.

Lubricate all grease fittings thoroughly with an SAE multipurpose grease, until grease oozes out of bearing. This assures that bearing is full and also flushes out dirt that may have accumulated in the bearing. However, avoid excessive lubrication.

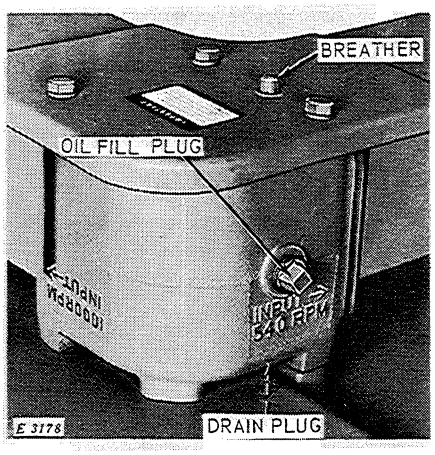
ROLLER DRIVE CHAIN

Lubricate roller drive chain at frequent intervals with SAE 10W oil. A clean paint brush is a good instrument for applying oil to chain.

CAUTION: Do not oil chain when operating in sandy conditions. Sand will stick to the oiled chain and act as an abrasive.

Symbols	
10H	Grease every 10 hours of operation with SAE multipurpose grease.
10H	Oil every 10 hours of operation with SAE 10W oil.
50H	Grease every 50 hours of operation with SAE multipurpose grease.
	Hand pack bearing once a year with SAE multipurpose grease.

GEAR CASE



Check gear case oil level at least every 60 hours of operation.

Keep SAE 80 or 90 multipurpose gear lubricant up to the level of the oil fill plug in the gear case (about one and one-third pints are required).

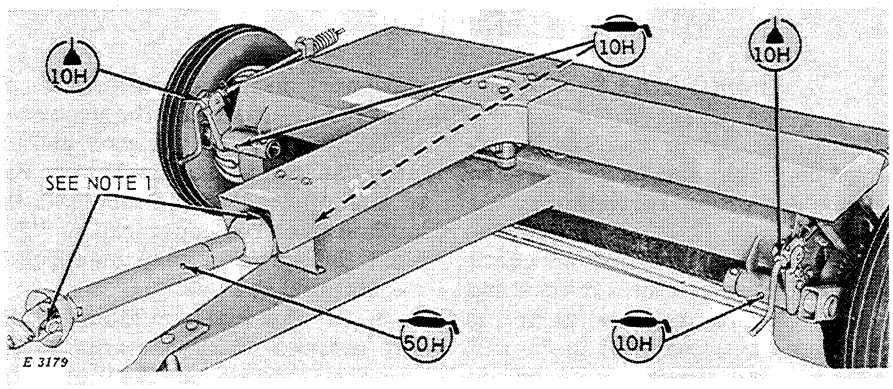
Drain and replace oil at the beginning of each year's operation. Use new oil; do not use oil drained from automobile or tractor.

To drain oil, remove the drain plug at bottom of gear case.

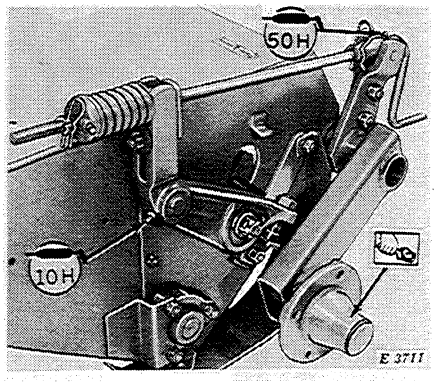
Keep breather in gear case cover free of dirt at all times.

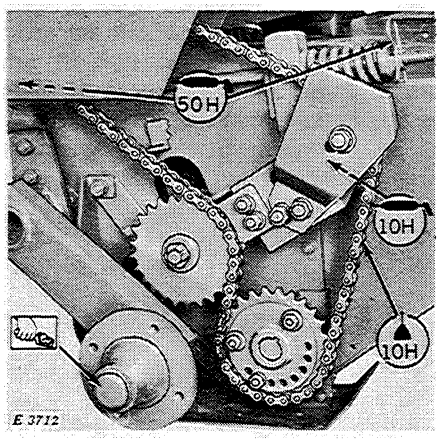
CAUTION: When lubricating the hay conditioner, check all bolts and nuts to be sure they are tight. Also check the rolls and other parts for damage or undue wear.

CAUTION: Do not oil or grease a machine while it is in motion.



NOTE NO. 1. Grease every 10 hours of operation with SAE multi-purpose grease. Extend or retract powershaft and rotate individual parts until the hole in the front shield lines up with the hole in the rear shield and the hole in drive tube; grease telescoping square shaft.





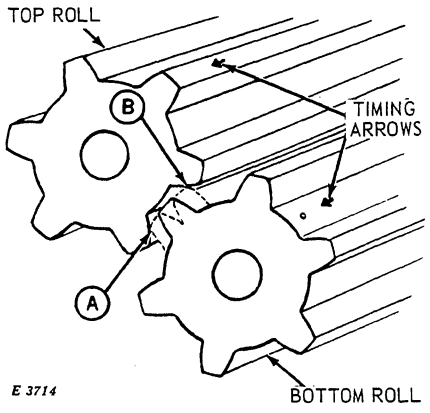
SERVICE

TIMING ROLLS

Whenever the drive chain is removed or if the teeth on the rolls are not meshing properly, time the rolls as follows:

1. With the chain removed, check the timing arrow on the left-hand end of each roll to make sure the timing arrow on the upper roll tooth will mesh with the timing arrow on the root of the lower roll. If the timing arrows do not mesh, adjust the rolls out until they will rotate free of each other. Time the rolls and reset them to the desired spacing.

2. Assemble the timing sprocket with a bolt through either of the two center holes in the hub.

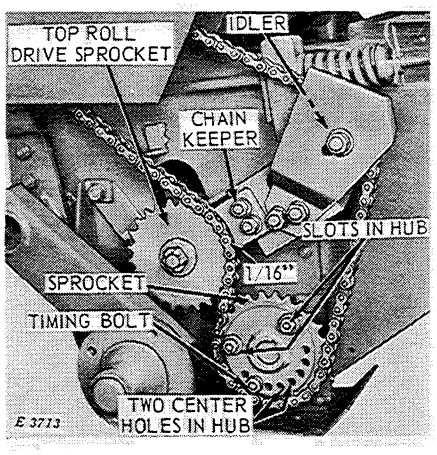


3. Time the rolls as close as possible by hand so that the teeth on one roll are midway between the teeth on the other roll.

4. Replace the drive chain—taking care to keep the rolls from turning as little as possible. Tighten the chain idler.

5. Remove the timing bolt from the sprocket; then hold the top roll stationary and rotate the bottom roll until the tooth strikes the upper roll at "A." Mark the sprocket and the hub position. Rotate the bottom roll in the opposite direction until the tooth strikes the upper roll at "B." Mark the sprocket position opposite the mark on the hub.

6. Set the mark on the hub halfway between the two marks on the sprocket; then replace the timing bolt in the hole which is most nearly aligned. Replace the two bolts through the slots in the hub. Tighten all three bolts to 50 ft-lbs torque.



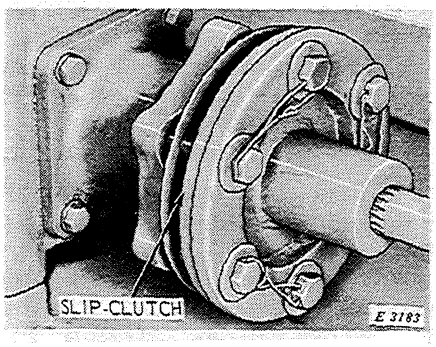
DRIVE CHAIN KEEPER AND IDLER TENSION

Chain tension should be adjusted so the chains are just tight enough to run without climbing or jumping sprockets.

To adjust chain tension, loosen idler mounting bolt and adjust the idler to thumb pressure. Tighten the mounting bolt to 170 ft-lbs torque. If idler shield has been removed, tighten the shield and bracket mounting bolts to 85 ft-lbs torque.

Using the spacers provided, center the chain keeper on the chain and adjust to provide 1/16-inch clearance over the chain. Tighten the chain keeper mounting bolts to 85 ft-lbs torque.

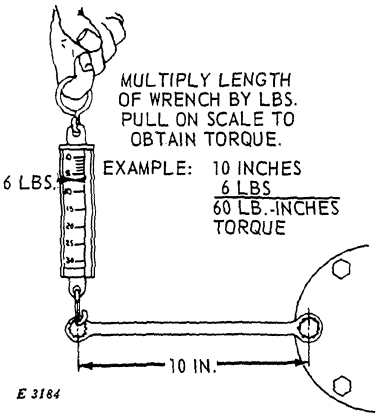
SLIP CLUTCH



The slip clutch has been adjusted at the factory and should require no adjustment except for normal wear.

Check slip clutch before each season. Block rolls and use a 4-foot bar, inserted in rear universal joint of telescoping powerline. If clutch will not slip, loosen cap screws until clutch is free. Tighten cap screws to torque setting given on this page.

ADJUSTING CLUTCH



To adjust for normal wear, remove the wire from the cap screw heads and turn each screw 1/6 revolution, then replace wire.

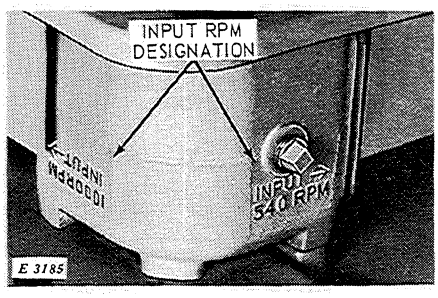
If clutch has been dissassembled for repairs, tighten cap screws to 50 to 60 inch-pounds.

To tighten cap screws use torque wrench, or use hand scale and wrench as illustrated.

A Careful Operator
IS THE BEST INSURANCE AGAINST AN ACCIDENT
—National Safety Council

CONVERSION TO 540 RPM OR 1000 RPM

The hay conditioner will accommodate both 540 or 1000 rpm PTO input speeds by reversing the gear case and changing the tractor hookup.

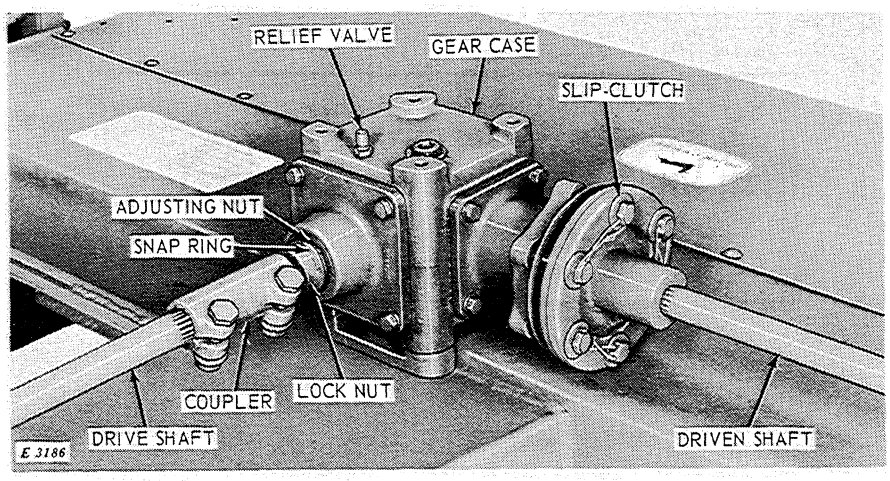


Convert to 540 or 1000 rpm as follows:

1. Remove all powerline shields.
2. Disconnect drive shaft coupler and loosen the cap screws holding the front bearing support to the tongue.
3. Loosen locking collar on left-hand end of driven shaft and slide shaft outward until it falls free of slip clutch.
4. Remove four cap screws from bottom of gear case and reverse the gear case on the mounting pads so the arrow indicating the desired rpm points to the front. Also interchange the relief valve and drain plug so relief valve is on top.
5. Interchange the locking nut with the slip clutch so the clutch is on the output side of the gear case.

CAUTION: Move the adjusting nut only enough to align the splines as this controls bearing adjustment.

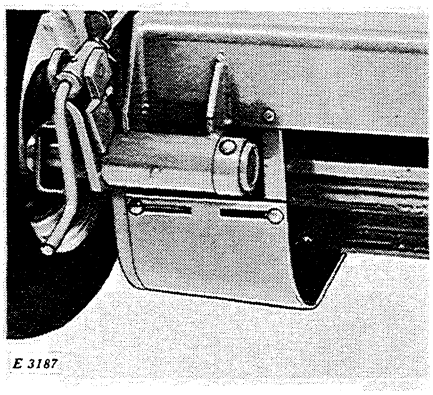
6. Replace four cap screws in bottom of gear case but do not tighten.
7. Insert driven shaft in slip clutch and tighten locking collar. Tighten the four cap screws in bottom of gear case.
8. Replace coupler and torque bolts to 100 ft-lbs.
9. Tighten bearing support cap screws and replace powerline shields.
10. Change the front tractor hookup yoke or install new tractor hookup to match the tractor PTO speed.



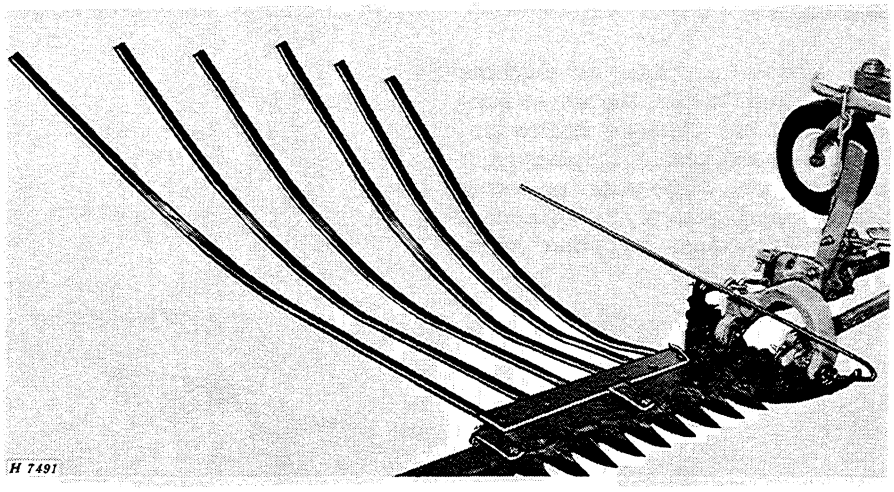
ATTACHMENTS

ROLL GUARD EXTENSIONS

The roll guard extensions will help reduce wrapping or plugging on the ends of the rolls caused by drawing material from an adjacent swath. The effective swath drawn through the rolls can be varied by adjusting the extensions.



SWATH REDUCER

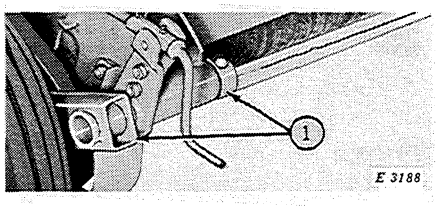


The swath reducer must be used in conjunction with a longer inner shoe fender rod on a 9-foot cutter bar when using a hay conditioner with the mower.

REMOTE HYDRAULIC CYLINDER AND ADAPTING PARTS

The remote hydraulic cylinder allows the operator to control the working height of the rolls from the tractor seat. The hydraulic action of the cylinder lowers or raises the rolls instantly when the operator moves the control lever on the tractor.

INSTALLING HYDRAULIC CYLINDER



1. Lower one side of machine onto a block to free the wheel support assembly. Remove drilled pin, cotter pin, and retaining collar from wheel support. Slide wheel assembly outward approximately 2-1/2 inches. Repeat procedure for other wheel support assembly.

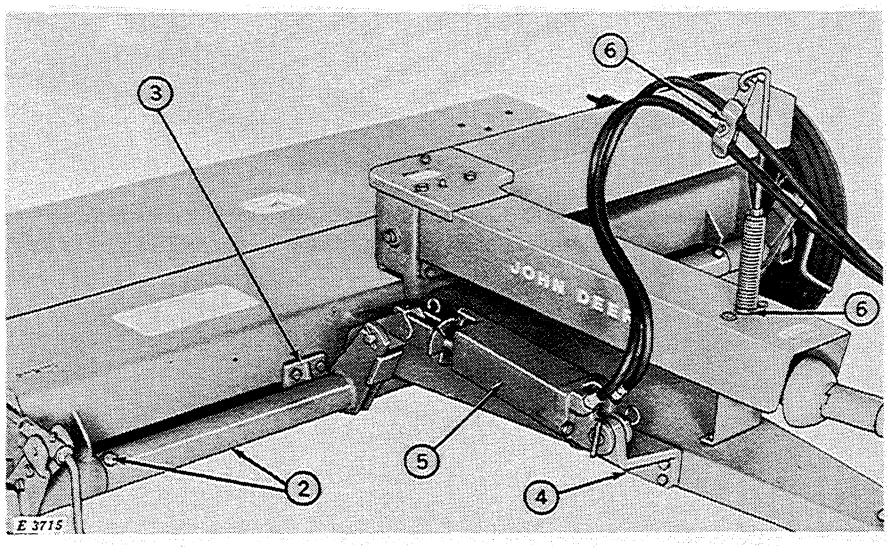
2. Position hydraulic lift tube on each wheel assembly pivot. Secure with drilled pins and cotter pins.

3. Install lift pad on main frame with two 1/2 x 1-1/2-inch cap screws.

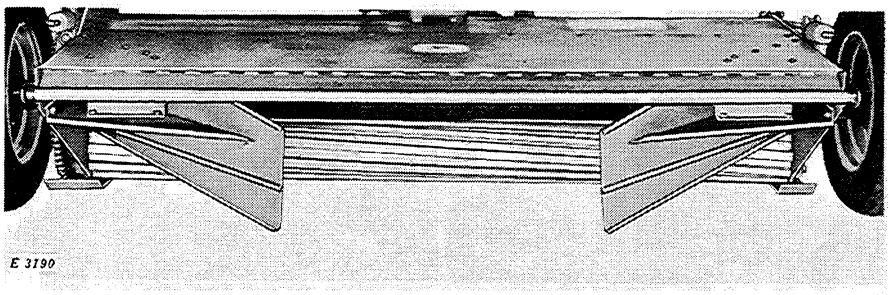
4. Install cylinder support and backup plate (inside of hitch beam) with four 1/2 x 2-inch cap screws.

5. Install hydraulic cylinder as shown.

6. Mount hydraulic hose support to powerline shields. Place hoses between clamps and tighten wing nut.



WINDROWER ATTACHMENT

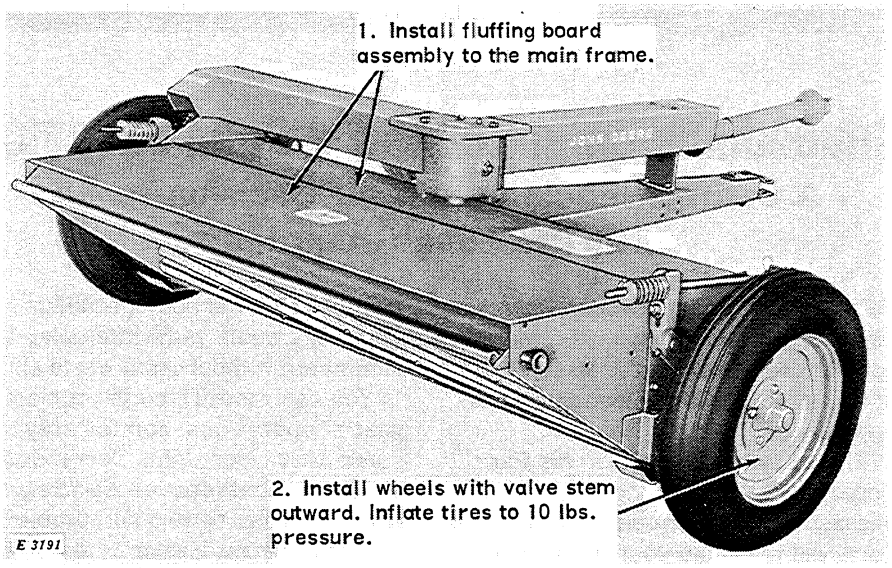


The windrower attachment makes it possible to condition and windrow hay in one operation.

When this method is used in conjunction with the special hookup for the John Deere Mower and Hay Conditioner, you can cut, condition, and windrow hay in one operation.

The windrow attachment is quickly and easily attached or detached—ready for immediate use in laying light, fluffy windrows. Adjust each deflector up or down to windrow the crop as desired.

ASSEMBLY



NOTE: After installing fluffing board, torque lower roll mounting bolts to 35 ft-lbs.