

AT20, AT40 and AT630 Row-Crop Cultivators



JOHN DEERE

OPERATORS MANUAL AT20, AT40 and AT630 Row-Crop Cultivators

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TO THE PURCHASER

This operator's manual contains information regarding operation and adjustments so that you may obtain maximum service and satisfaction from your new cultivator.



Study this manual carefully and keep it handy in a safe place for future reference.

Right-hand and left-hand reference is determined by standing at the rear of the cultivator and facing the direction of travel in the field.

If you should find that you require information not covered in this manual, consult your John Deere dealer. He will be glad to answer any question that may arise regarding the operation of your cultivator. Your John Deere dealer has trained mechanics who are kept informed of the best service methods. They will render you prompt service when needed.

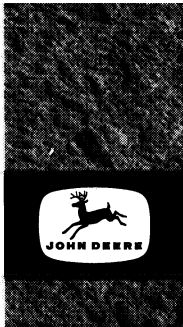
Occasionally, your cultivator may need new parts to replace worn parts. If you will furnish your dealer the description and the information which should be recorded below when the cultivator is delivered, he can give you prompt and efficient parts service.

JOHN DEERE AT20, AT40, OR AT630 CULTIVATOR

Model

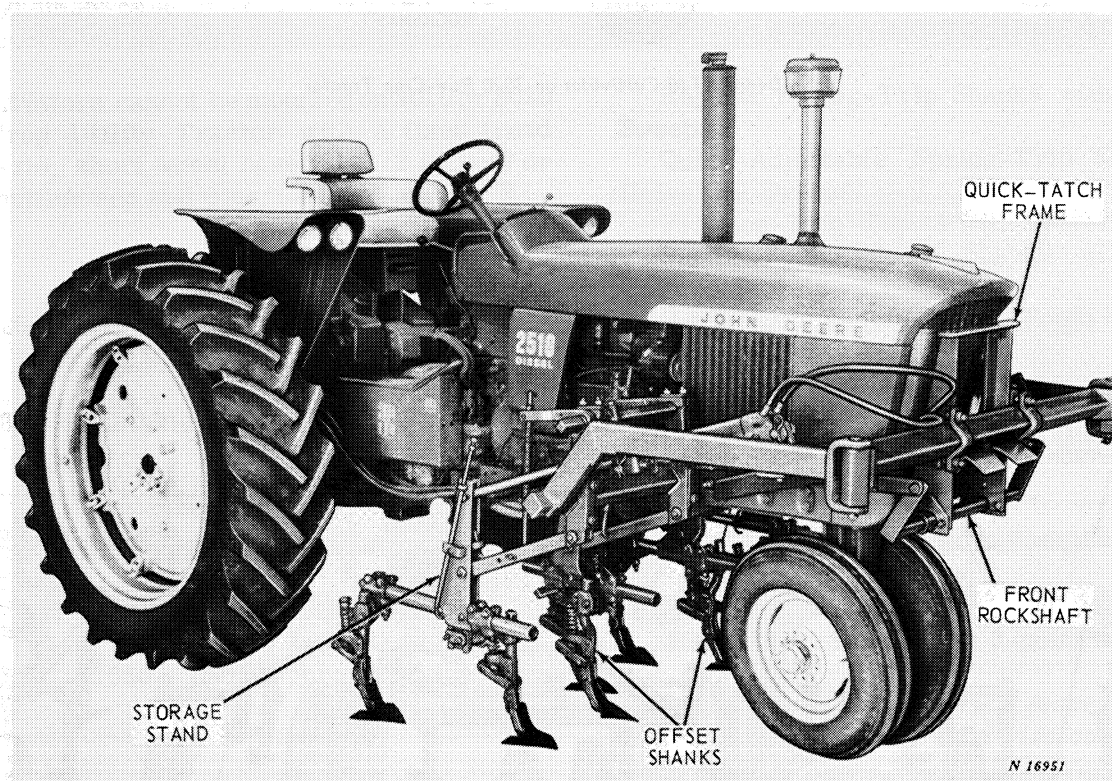
Date Purchased 19

(To be filled in by purchaser)



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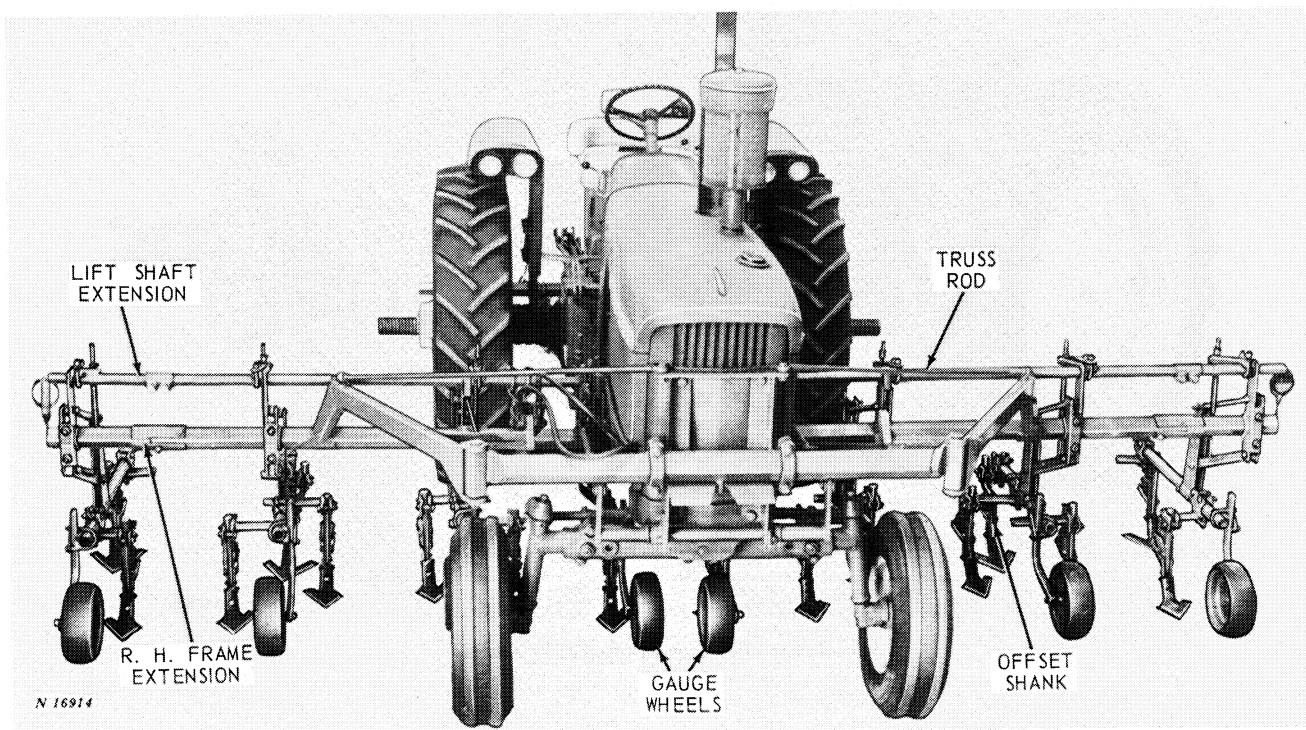
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John Deere AT20 Cultivator on 2510 Tractor



John Deere AT40 Cultivator on 3020 Row-Crop Tractor



John Deere AT630 Cultivator on 4020 Row-Crop Tractor



SPECIFICATIONS

CULTIVATOR MODELS

AT20R, AT40R, and AT630R - Operated by lift pipes from tractor rear rockshaft.

AT20F, AT40F, and AT630F - Operated by one or two remote hydraulic cylinders mounted on the cultivator frame.

TRACTORS

Both F and R Model Cultivators can be used on John Deere 2510, 3010, 3020, 4010 and 4020 Row-Crop Tractors with single or double front wheels or adjustable-tread front axle.

Only F Model Cultivators can be used on John Deere 3010 and 3020 Row-Crop Utility Tractors with adjustable-tread front axle (50 to 79 inches) and long wheel base (92-3/4 inches) and upright muffler.

Cultivators cannot be mounted on 3010 or 3020 Row-Crop Utility Tractor with a fixed-tread front axle, short wheel base (81-1/2 inches) or rear muffler and tail pipe.

ROW SPACING

AT20 and AT40 Adjustable for 36- to 42-inch rows.

AT630 Adjustable for 28- or 30-inch rows.

CULTIVATOR WEIGHT

AT20 - 980 pounds (approximately)

AT40 - 1700 pounds (approximately)

AT630 - 1550 pounds (approximately)

CULTIVATOR WIDTH

AT20 - 6 feet, 8 inches

AT40 - 14 feet, 2 inches

AT630 - 18 feet, 6 inches

GAUGE WHEELS

Anti-friction rigid type. Two can be used on AT20 Cultivator for tractors with adjustable tread front axle or four can be used for tractors with single or dual front wheels. Four gauge wheels are regular on AT40 and AT630 Cultivators. Two additional gauge wheels can be used for tractors with dual or single front wheels and four additional gauge wheels can be used for tractors with adjustable tread front axle.

FRONT RIG EQUIPMENT

Regular Spring-Trip Shanks with Universal Sweeps

Quick-Adjustable Spring-Trip Shanks with Universal Sweeps.

Friction-Trip Shanks with Universal Sweeps
Single Spring-Tooth Shanks with Double-Pointed Shovels

Heavy-Duty Single Spring-Tooth Shanks with Single-Pointed Shovels

Double Spring-Tooth Shanks with Single-Pointed Shovels

Heavy-Duty Double Spring-Tooth Shanks with Single-Pointed Shovels

REAR RIG EQUIPMENT

250A Series for tractor 3-point hitch

250B Series for tractor 3-point hitch

NOTE: Only 250A Series (except 257A and 285A) and 250B Series rear rigs can be used on 3010 or 3020 Row-Crop Utility Tractor.

AXLE-MOUNTED TYPE WITH 3-POINT HITCH MOUNTED CENTER RIG

110A and 110B Series Parallel Lift Type
130A and 130B Series Straight Lift Type
150A Series Offset Beam Type

AXLE MOUNTED TYPE WITH DRAWBAR MOUNTED CENTER RIG

120A and 120B Series Parallel Lift Type
140A and 140B Series Straight Lift Type
160A Series Offset Beam Type

AXLE MOUNTED TYPE WITHOUT CENTERING

170A and 170B Series Parallel Lift Type
180A and 180B Series Straight Lift Type
190A Series Offset Beam Type

*NOTE: Only "B" Series (except 250B Series)
and 250A Series rear rigs are recommended for
use on tractors equipped with cane and rice tires.*

REAR RIG SHANK EQUIPMENT

Regular Spring-Trip Shanks
Long Regular Spring-Trip Shanks
Quick-Adjustable Spring-Trip Shanks
Long Quick-Adjustable Spring-Trip Shanks
Friction-Trip Shanks
Single Spring-Tooth Shanks
Double Spring-Tooth Shanks

SWEEPS AND SHOVELS

A wide variety of types and sizes available.
See pages 34 and 35.

SPECIAL EQUIPMENT

Rig-Mounted Shields
Hooded Shields
Shield Arm Extensions (used with No. 60 Narrow
Row Attachment)
Weeding Knife Shanks
Spread Bar
Disk Hillers - 12, 14 and 16-Inch Sizes
Gauge Wheels
No. 1 Center Attachment (For AT20 and AT40
Cultivator)
No. 3C Rotary Hoe Attachment
No. 4 Minimum Tillage Attachment (For AT40
Cultivator)
No. 10 Listed Crop Attachment (For AT20 and
AT40 Cultivator)
*No. 13 Front Rig Attachment
No. 16 Disk Hiller Attachment (For AT20 and
AT40 Cultivator)
No. 21 Spring-Tooth Attachment (For AT20 and
AT40 Cultivator)
No. 60 Narrow Row Attachment (For AT40 Cul-
tivator)
AB690E Two-Row Bean Harvester Attachment
(For AT20 Cultivator)
AB690F Four-Row Bean Harvester Attachment
(For AT20 and AT40 Cultivator)
AB690G Six-Row Bean Harvester Attachment
(For AT40 and AT630 Cultivator)
AB690H Eight-Row Bean Harvester Attachment
(For AT630 Cultivator)
96E Two-Row Peanut Digger Attachment (For
AT20 Cultivator)

Rear Rig Extra Shank Attachment (250A Series
Rear Rigs Only - except 257A and 258A)

No. 12 Rear Rig Gauge Wheel Attachment
(250A Series Rear Rigs Only)

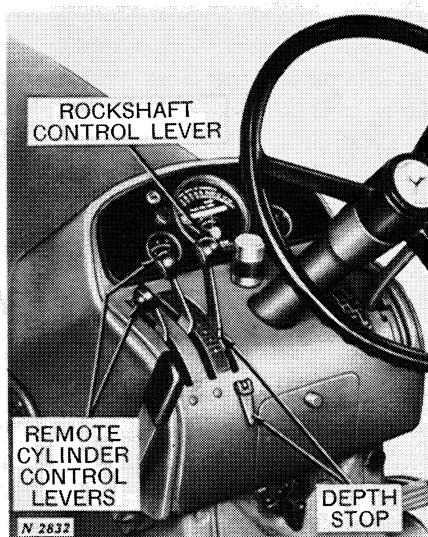
*Cannot be used if cultivator is mounted on
3010 or 3020 Row-Crop Utility Tractor.

(Specifications and design subject to change without notice.)



OPERATION

CONTROLS



AT20F, AT40F AND AT630F CULTIVATOR

Front rigs are controlled by the remote cylinder operating levers. If cultivator is equipped with one remote cylinder, one lever operates rigs on both sides of tractor. If cultivator has two cylinders, the left-hand remote cylinder lever controls rigs on left side of tractor, the right-hand remote cylinder lever controls rigs on right side of tractor.

Push lever forward to raise rigs; pull lever back to lower rigs. Reverse hoses at outlets on tractor if rigs do not respond correctly.

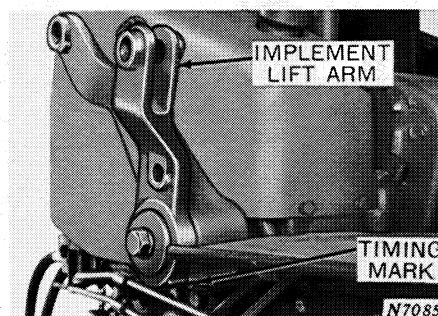
Rear rigs are controlled by the rockshaft control lever.

AT20R, AT40R AND AT630R CULTIVATOR

Both front and rear rigs are controlled by the rockshaft control lever. Push the lever forward to raise the cultivator; pull the lever back to lower the cultivator.

IMPORTANT: Do not attempt to raise cultivator unless storage stands are fastened to rig coupling plates. See page 6.

TIMING IMPLEMENT LIFT ARM (AT20R, AT40R and AT630R Cultivator Only)



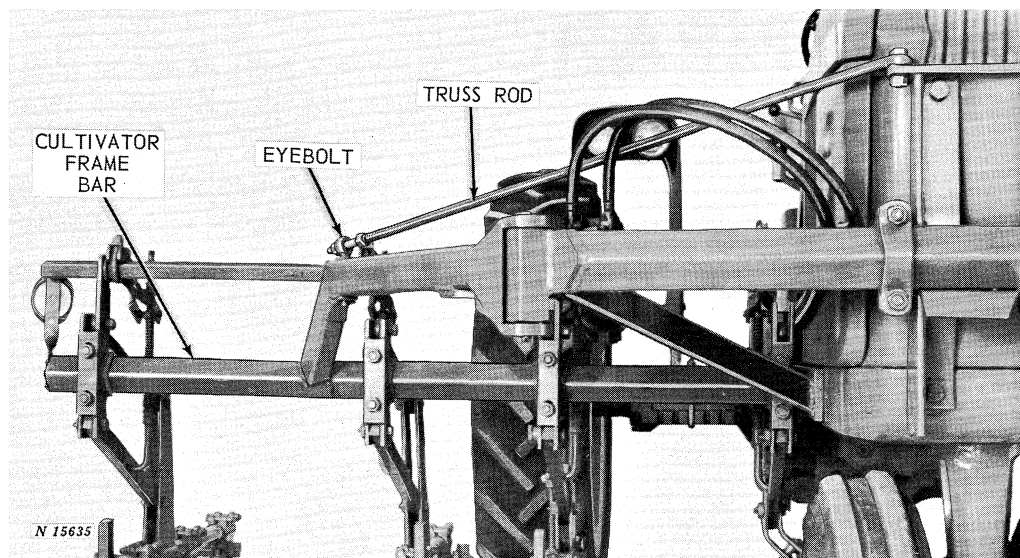
The implement lift arms, attached to tractor rear rockshaft to operate the cultivator, must be properly timed. If arms are not timed, front and rear rigs may not enter the ground at the same time or penetrate to the same depth.

To time arms, align the timing mark on the arms with the timing marks on the rear rockshaft.

TRACTOR TIRE INFLATION AND BALLAST

Refer to your tractor operator's manual for proper tire inflation pressures and rear wheel ballast with front-mounted implement.

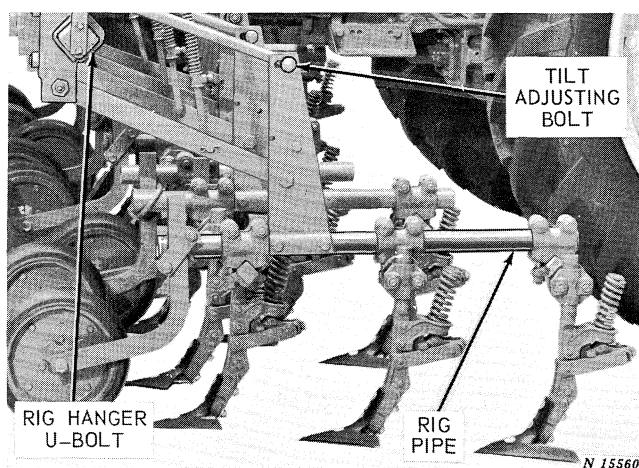
LEVELING CULTIVATOR FRAME BARS (AT40 AND AT630 CULTIVATORS)



For level cultivation, the cultivator frame bars should be one-inch higher at the outer ends than at the tractor. Check frame bar angle by sighting under frame bar and tractor rear axle or by measuring distance between frame bar and ground with tractor and cultivator on a level surface.

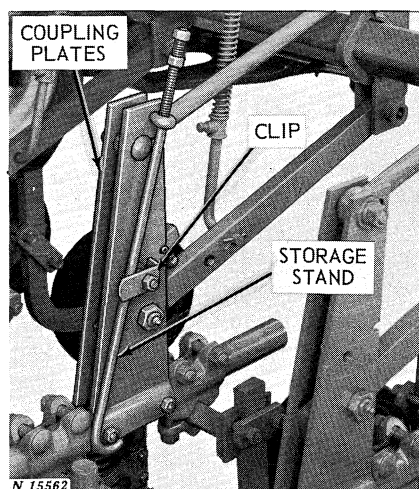
Adjust frame bar angle by tightening nuts against eyebolt on threaded end of truss rod.

RIG TILT

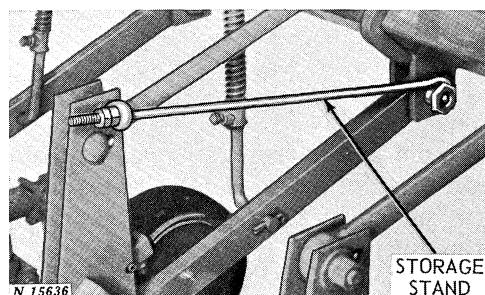


Rig pipes should be set 1/4-inch higher at the front than at the rear so they will run level when cultivating. Loosen the top bolt in the rig coupling plates to tilt rig pipes. Sight across rig pipes from side of cultivator to check level and tilt, then tighten the top bolts. If some rig pipes are high or low, check the rig hanger U-bolts. They should fit square on the frame bar.

STORAGE STANDS

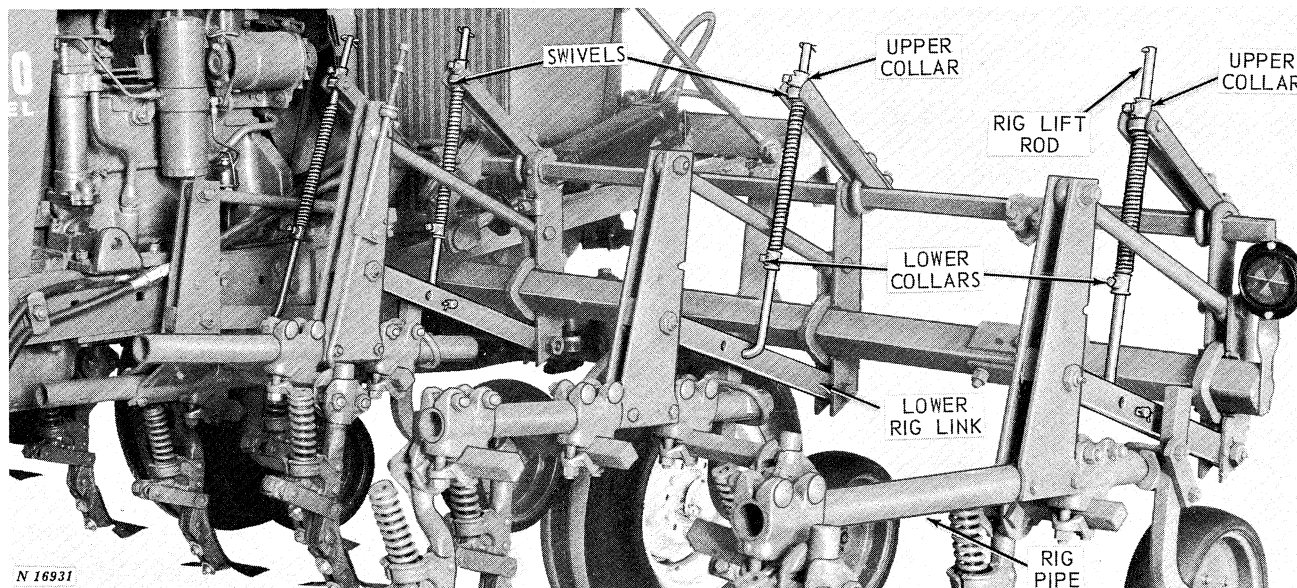


Before raising or operating cultivator, make sure the storage stands are fastened behind the clips against the rig coupling plates as shown above. Be sure the nut on the clip is tight.

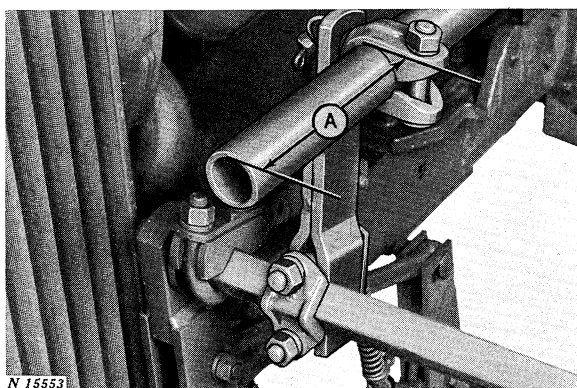


CAUTION: Do not attempt to raise cultivator with stands in storage position as shown above

RIG LIFT HEIGHT



The cultivator must be adjusted so the inner rigs do not strike the tractor and the rig pipes do not contact the lower rig links when the cultivator is raised.



On rear rockshaft operated cultivator only, the lift pipes must be correctly positioned in the lift arm clamps before rig lift height can be adjusted.

On 2510, 3010 or 3020 Tractors, set the distance "A" from the end of the pipe to the edge of the clamp at 14 inches. On 4010 Tractor, distance "A" should be 8 inches. On 4020 Tractor, distance "A" should be 7 inches.

For correct spacing of lift arms, refer to pages 16, 17 and 18.

To adjust the cultivator rigs for the maximum lift height, loosen the upper and lower collars on all the rig lift rods and raise the rigs as high as possible with the operating lever on the tractor.

Lift the inner rig on each side of the tractor by hand until the rig contacts the tractor. Lower the rig a half-inch and tighten the upper collar set screw. The upper collar should be resting on the lift arm swivel.

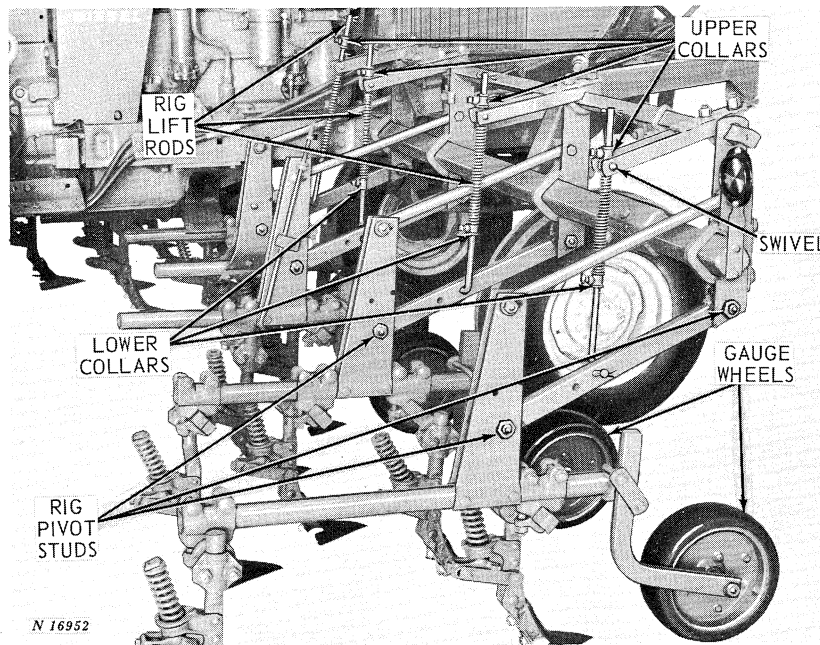
On rigs without gauge wheels, lift the rig by hand until there is about a half-inch gap between the rig pipe and the lower rig link, tighten the upper collar set screw.

On rigs equipped with gauge wheels, lift rigs by hand until there is a half-inch gap between the rig pipes and lower rig link or between the gauge wheel and rig hanger. Tighten the upper collar set screw.

CAUTION: Once the upper collars are set, do not change their position without repeating the adjustment procedure described above. Otherwise, changing the collar settings could cause the rigs to strike the tractor or parts of the cultivator when the cultivator is raised.

After setting the upper collars, position the lower collars so they are just touching the bottom of the lift rod spring as shown above. Tighten the set screw after adjusting.

RIG FLEXIBILITY



Rigs equipped with gauge wheels will "float" with the surface of the ground if they are properly adjusted.

Rig pivot studs should be loose enough so rigs work up and down freely but do not wobble excessively from side to side. To adjust pivot studs, loosen the nut on the end of each stud. Turn the stud to loosen or tighten the coupling plates on the lower rig link. After adjusting the stud, tighten the nut.

When cultivating, there should be about two inches of clearance between the upper collars and swivels on the rig lift rods to allow rigs to float.

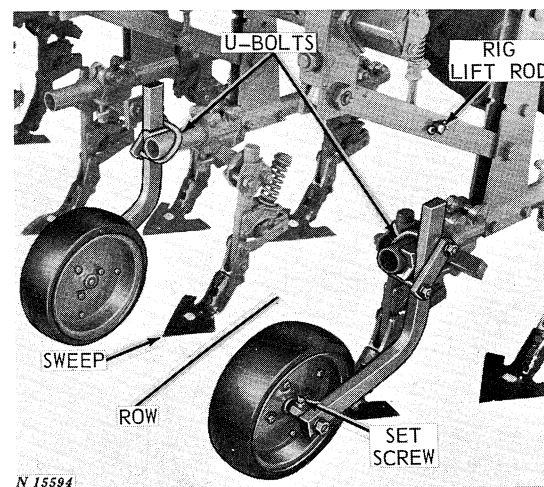
On cylinder-operated cultivator, this clearance is controlled by the position of the cylinder depth stop. To increase the clearance, move the stop back or away from the cylinder.

On rear-rockshaft-operated cultivator, this clearance is controlled by the position of the depth stop on the rear rockshaft control lever. To increase the clearance, move the stop to the rear.

NOTE: All final adjustments should be made while in the field.

CULTIVATING DEPTH

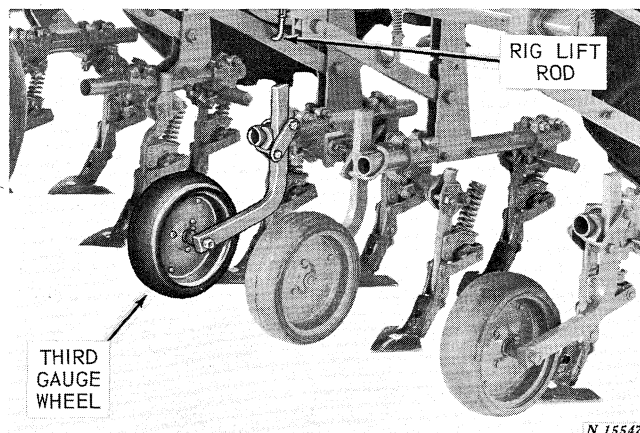
Gauge wheels and rig depth stops, not the tractor hydraulic system, determine the depth of cultivation. Make sure gauge wheels and rig depth stops are set so sweeps penetrate the soil to an equal depth.



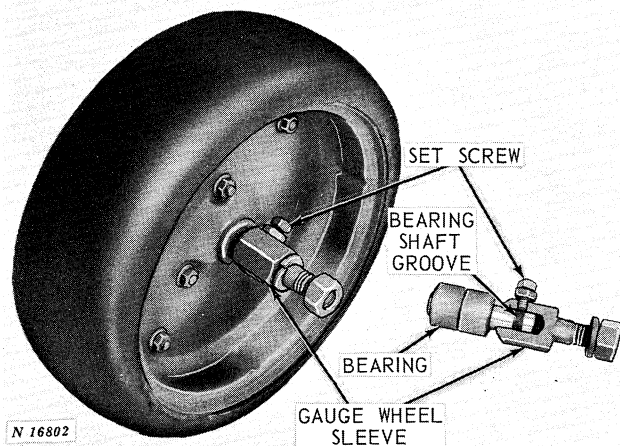
Loosen nuts on U-bolt clamps to set gauge wheels. Average position is one to two inches above the sweeps. Make sure gauge wheel shanks are vertical, then tighten the U-bolt nuts.

Periodically check gauge wheel set screws and shank nuts; make sure they are tight.

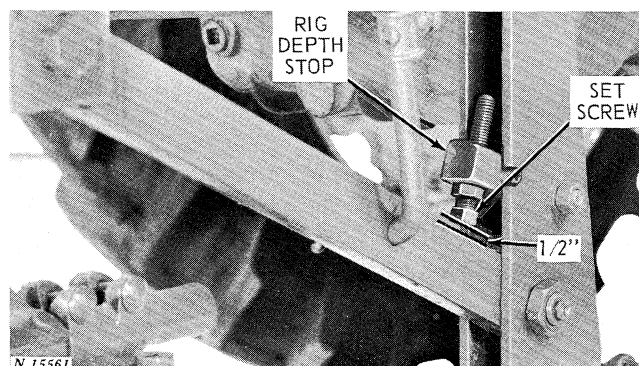
Gauge wheel shanks and the lower end of rig lift rods should be on the same side of the rig away from the row.



On cultivator with six or eight gauge wheels, the end of the rig lift rod on the second rig on the left side of the tractor must be next to the row because of the storage stand.



Gauge wheel set screw must be positioned in the groove on bearing shaft as shown above. If set screw is not positioned in groove on bearing shaft, loss of gauge wheel or undue failure to bearing may occur. Check periodically to be sure set screw is tight.



On rigs without gauge wheels, rig depth stops determine cultivating depth. With cultivator resting on the ground, one-half inch clearance between the lower rig link and depth stop set screw is an average setting. For more depth, loosen the lock nut and turn the set screw in. Tighten the lock nut.

If cultivating depth is changed, reset cylinder or rear rockshaft stops to maintain the clearance between the upper collars and swivels on the rig lift rods (see page 8).

DOWN PRESSURE ON SWEEPS

If soil conditions prevent sweeps from penetrating to the desired depth, down pressure can be applied in several ways.

COMPRESSING RIG LIFT ROD SPRINGS

Raise the cultivator. Loosen the lower collars on the lift rods. Lift the collars up tighter against the springs to obtain the desired compression and tighten the collar set screws.

NOTE: On rear-rockshaft-operated cultivator, down pressure can only be applied by compressing springs on rig lift rods.

OVERRIDING CYLINDER DEPTH STOP

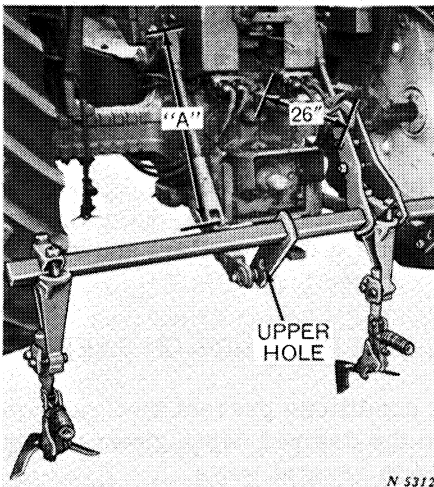
If hydraulic remote cylinder has a depth stop, hold the remote cylinder operating lever in the slow retract position. This will cause the cylinder rod to retract beyond the depth stop. This is a convenient way of applying down pressure when encountering only occasional spots of hard ground.

REAR RIGS

TOOLBAR TYPE

These instructions apply to the 250A and 250B Series Rear Rigs and to the 3-point hitch mounted center rig of 110A, 110B, 130A, 130B and 150A Series Rear Rigs.

NOTE: On 3-point hitch mounted center rig, adjust lift links and center link after setting outer rigs (page 11) to make all sweeps touch the ground at the same time.



Hitch Links and Sway Blocks

For 250A and 250B Rear Rigs, set sway blocks in the Category 2, "down" position. For 3-point hitch mounted center rigs, set sway blocks in the Category 1, "down" position.

Set the length of the center link at 26 inches. On 3010 Tractor, set lift link length (dimension "A") at 26-3/4 inches. On 2510, 3020, 4010 or 4020 Tractor, set lift link length (dimension "A") at 28-1/2 inches.

Make sure collars on lift links are locked up against the adjusting cranks.

Cultivating Depth

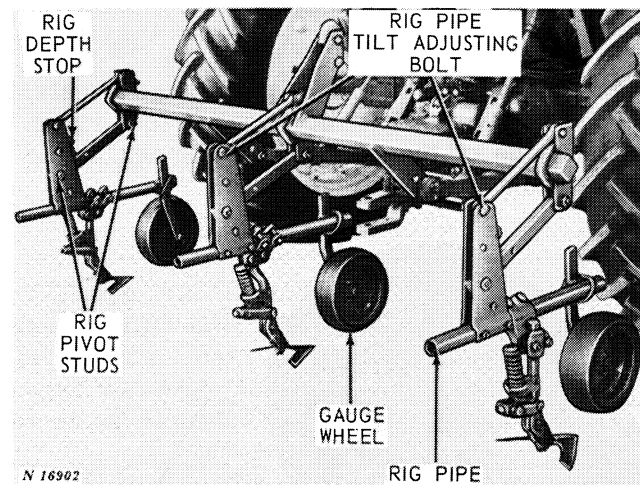
On rear-rockshaft-operated cultivator, the working depth is controlled by the length of the lift links. Set cultivating depth of front rigs first, then turn lift link adjusting cranks to match depth of rear rig with front rigs. Reset center link, if necessary, so shanks are vertical.

On cylinder-operated cultivator, the working depth is controlled by the depth stop on the tractor rockshaft control lever. Set depth stop so rear rig works at same depth as front rigs. Adjust lift link length if necessary.

For deeper cultivation, lower shanks in standards or reattach rear rig to draft links with hitch pins in upper holes of hitch pin brackets.

After setting depth of cultivation, adjust center link so shanks are vertical.

Rig Adjustment on 253B Rear Rig



Make sure rig pivot studs are loose enough so rigs float with level of the ground to maintain even cultivating depth.

Rig pipes should be level with the ground and level with each other. Loosen the top bolt in the rig coupling plates to make this adjustment.

Adjust the height of the shanks so all sweeps will cultivate at the same level.

Set gauge wheel shanks in the clamps so bottom of each gauge wheel is one to two inches above the sweep.

Set rear rig depth stops so there is about one inch clearance between the set screw and lower rig link. Set screw should be high enough so stop does not interfere with operation of gauge wheels. Rig depth stops hold rigs up when cultivator is raised for transport.

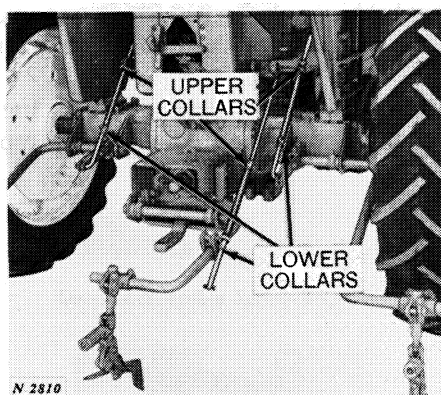
Gauge wheels, not cylinder or rockshaft depth stops or lift links, control cultivating depth of 253B Rear Rig. But tractor depth stop on rockshaft control lever or 3-point hitch lift links should be set to maintain about one-inch clearance between rig stop and lower rig link on each rig.

AXLE MOUNTED REAR RIGS

These instructions apply to 120A, 120B, 140A, 140B, and 160A Series Rear Rigs with drawbar mounted center rig and outer rigs of 110A, 110B, 130A, 130B, and 150A Series Rear Rigs with 3-point hitch mounted center rig.

Before adjusting the rear rigs, make sure the front rigs are properly adjusted.

Lift Height, Cultivating Depth and Down Pressure



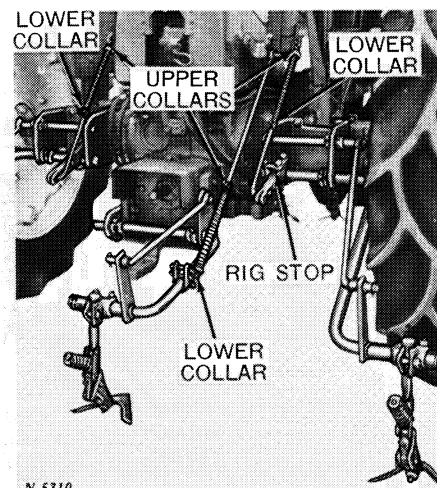
140A Series Rear Rig

The location of the upper collars on the outer rig lift rods and the lower collar on the drawbar mounted center rig lift rod control the rear rig lift height and cultivating depth.

Adjust the upper collars on the outer rigs and the lower collar on the center rig so all the sweeps touch the ground at the same time.

Down pressure can be applied to the sweeps by compressing the lift rod spring with lower collars on outer rigs and upper collar on the drawbar mounted center rig.

Rig Stops

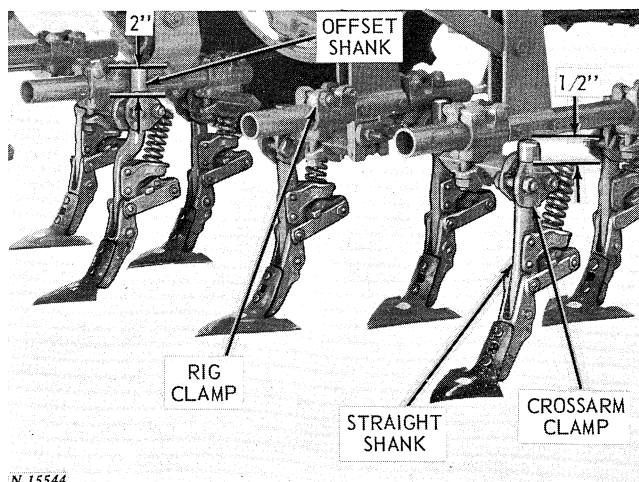


120B Series Rear Rig

When the rear rigs are equipped with rig stops, the height of the outer rigs is limited by these stops. When the rear rigs are fully raised, the stop should come in contact with the rear rig beam or close to it.

When raising the rear rig for the first time, raise it slowly. If the stop comes in contact with the rear rig beam before the rear rigs are fully raised, loosen the upper collars and continue to raise the tractor rockshaft as high as possible. Lift the outer rear rigs by hand until the stop comes in contact with the rear rig beam or close to it, and set the upper collar next to the eyebolt.

NOTE: If rear rigs cultivate too deep or not deep enough after making all the adjustments, raise or lower the shanks in the standards or readjust the lift rod collars.

CLAMPS, SHANKS, AND CROSSARMS

When cultivating, sweeps should penetrate the soil to an equal depth. Shanks should be perpendicular to the ground. Crossarms should be level and properly set for row spacing and crop conditions.

A good method to follow for positioning rigs, shanks and sweeps is as follows.

Park the tractor with cultivator on a hard surface such as a livestock cement feeding floor. This will enable you to set all rigs, shanks and sweeps the same level.

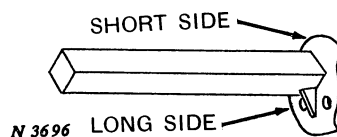
Cut two 15-inch high blocks of wood from a 2 x 4 piece of wood. Lower the cultivator to the surface. Place the two wood blocks under the front and rear of rig pipe.

Loosen shank clamps and position all shanks with sweeps level on the surface.

To place shanks perpendicular to the ground, loosen the nuts on top of the rig clamps. Move the crossarms up or down to position the shanks. Tighten the nuts on the rig clamps securely.

To position the crossarms, loosen the nuts on the bottom of the rig clamps. Move the crossarms away from or closer to the row as crop size or cultivating requirements dictate. Tighten the clamp nuts securely. See row spacing diagram, pages 16 through 21, for crossarm positions for each row spacing.

The clamp end of the crossarm is 3/4-inch longer on one side than it is on the other side.



When used with straight shanks, position the crossarms with the short side of the clamp up.

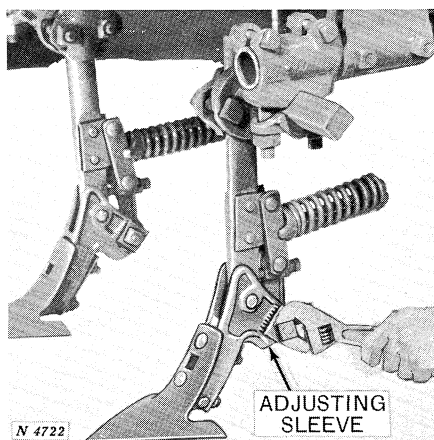
When used with offset shanks, position the crossarms with the long side of the clamp up.

To place sweeps at the same level, loosen the nuts on the crossarm clamps. Adjust shanks up or down and tighten the clamp nuts securely.

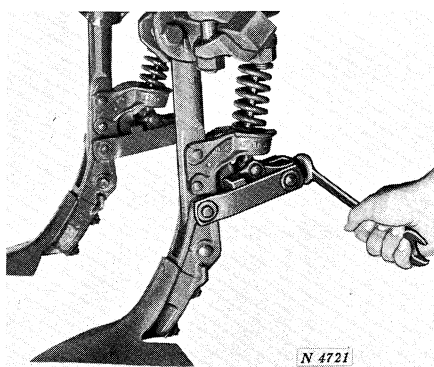
Set straight shanks with about one-half inch of shank showing above the crossarm clamp.

Set offset shanks with about two inches of shank showing above the crossarm clamp.

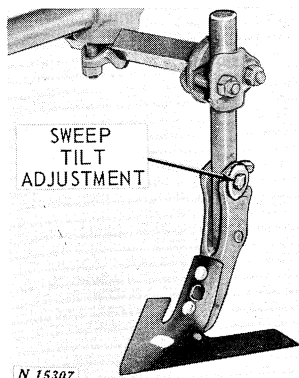
SETTING SWEEPS



Regular Spring-Trip Shank

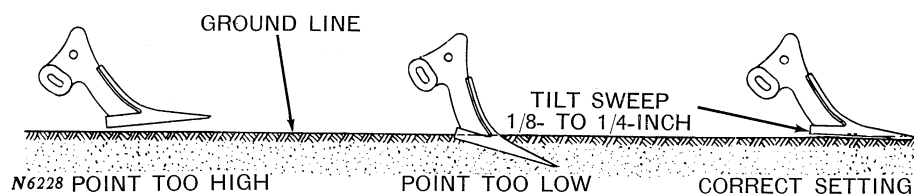


Quick-Adjustable Spring-Trip Shank

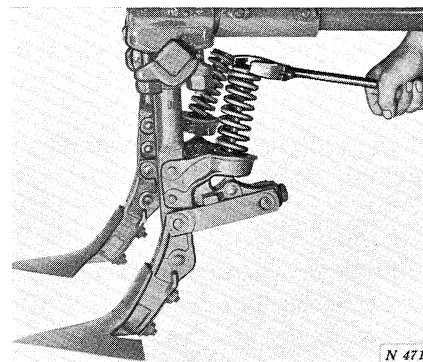


Friction-Trip Shank

Adjust spring-trip and friction-trip shanks so the sweeps are tilted as shown below. In some soils, it may be necessary to lower the sweep points for better penetration.

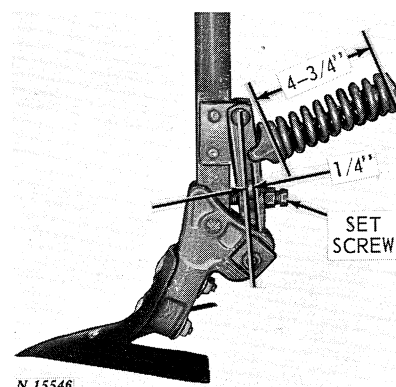


ADJUSTING SPRING-TRIP



Quick-Adjustable Spring-Trip Shank

On quick-adjustable spring-trip shanks, adjust tripping action by turning nut at the top of the spring so shanks do not trip under ordinary cultivating conditions.



Regular Spring-Trip Shank

On regular spring-trip shanks, adjust shanks for desired trip by turning the set screw. Turn set screw in to make trip release easier. An average setting is illustrated above.

IMPORTANT: Adjust tripping action of regular spring-trip shanks with the set screw only. Do not set trip by turning the nut at the rear of the spring. Spring should be adjusted, however, to a length of 4-3/4 inches.

On friction-trip shanks, tighten the tilt adjustment bolt to control trip.



SAFETY SUGGESTIONS

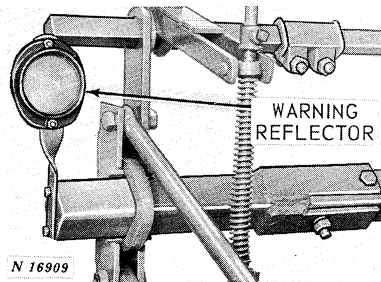
Always stop the tractor and lower the rigs before lubricating or adjusting the cultivator.

Support the cultivator rigs on stands or blocks before working under the cultivator with rigs raised.

Never ride or allow others to ride on the cultivator or tractor. The tractor operator should be the only person on the tractor.

Drive at speeds slow enough to insure your safety. Reduce speed before turning or applying brakes. Drive slowly over hills and roughground to avoid tipping over.

Always keep the tractor in gear when driving down steep grades.



CAUTION: When transporting the cultivator 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 from your John Deere dealer.

For AT40 and AT630 Cultivators, warning reflectors are provided and should be installed on left and right-hand ends of frame as illustrated above.

MAINTENANCE SUGGESTIONS

To keep your cultivator in good working condition, follow these recommendations.

NUTS AND BOLTS

Keep all nuts and bolts tight, all cotter pins spread. If allowed to work loose, bolts may bend, strip threads and cause parts to fall off.

RIGS

Keep rig hangers bolted tight to the frame.

Periodically check pivot studs on lower rig links. Tighten if necessary to keep rigs from wobbling.

SHOVELS AND SWEEPS

Clean sweeps or shovels after each cultivating day to maintain a good scouring surface.

Sharpen dull sweeps or shovels for better soil penetration.

Between seasons and during periods of intermittent use, coat the polished face of sweeps or shovels with grease or oil.

LUBRICATION

Grease cultivator as instructed on page 36.

STORAGE SUGGESTIONS

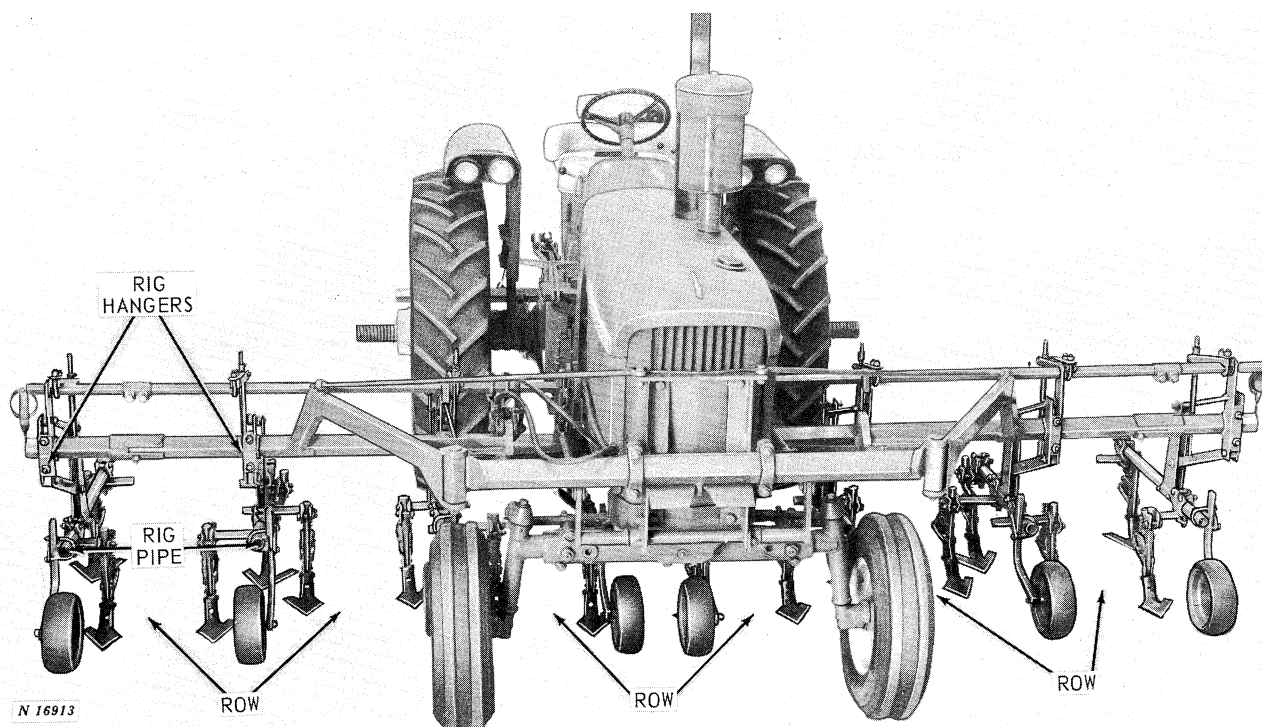
At the end of the season, completely clean and lubricate the cultivator. Store the implement where it is adequately protected from the weather.

Before the next season, inspect the cultivator for worn or damaged parts and replace them.

KEEP YOUR CULTIVATOR A JOHN DEERE CULTIVATOR

Genuine John Deere shovels and sweeps contain high quality material in points and other wearing surfaces. They fit better, stay sharp longer, and save you money. Buy your shovels and sweeps from your John Deere dealer.

ROW SPACING



The AT630F Cultivator illustrated above can be set for 28 or 30-inch rows. The AT20 and AT40 Cultivators can be set for row spacings ranging from 36 to 42-inch rows.

AT20 and AT40 Cultivators are factory-set for 40-inch rows.

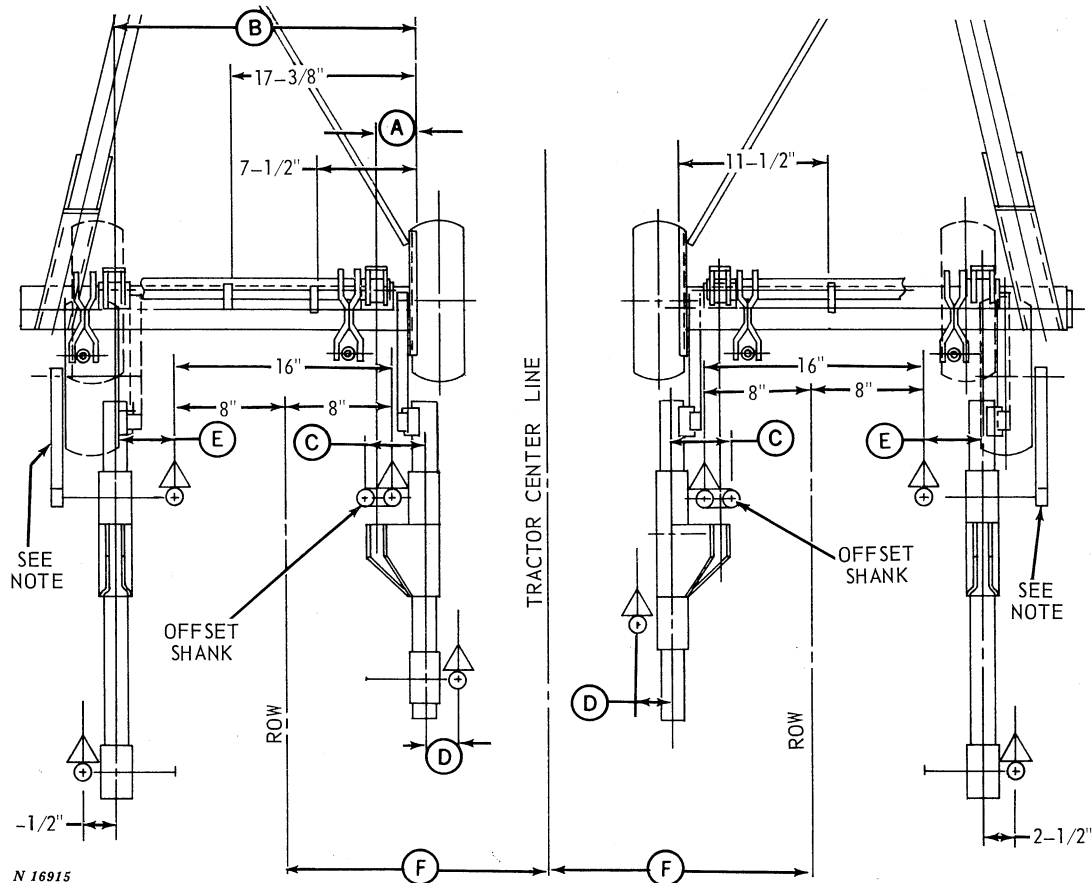
Dimensions for rig, sweep or shovel and shank positions are listed in the corresponding chart for each diagram on the following pages.

To determine rig positions, measure from the center of one rig hanger and rig pipe to the center of the next rig hanger and rig pipe.

To position sweeps, shovels or spring teeth, measure from the center of the row to the point of the sweep, shovel or shank.

To position offset shanks, measure from the center of the rig pipe to the top of the shank. Offset shanks should angle in toward the rig pipe.

ROW SPACING—Continued

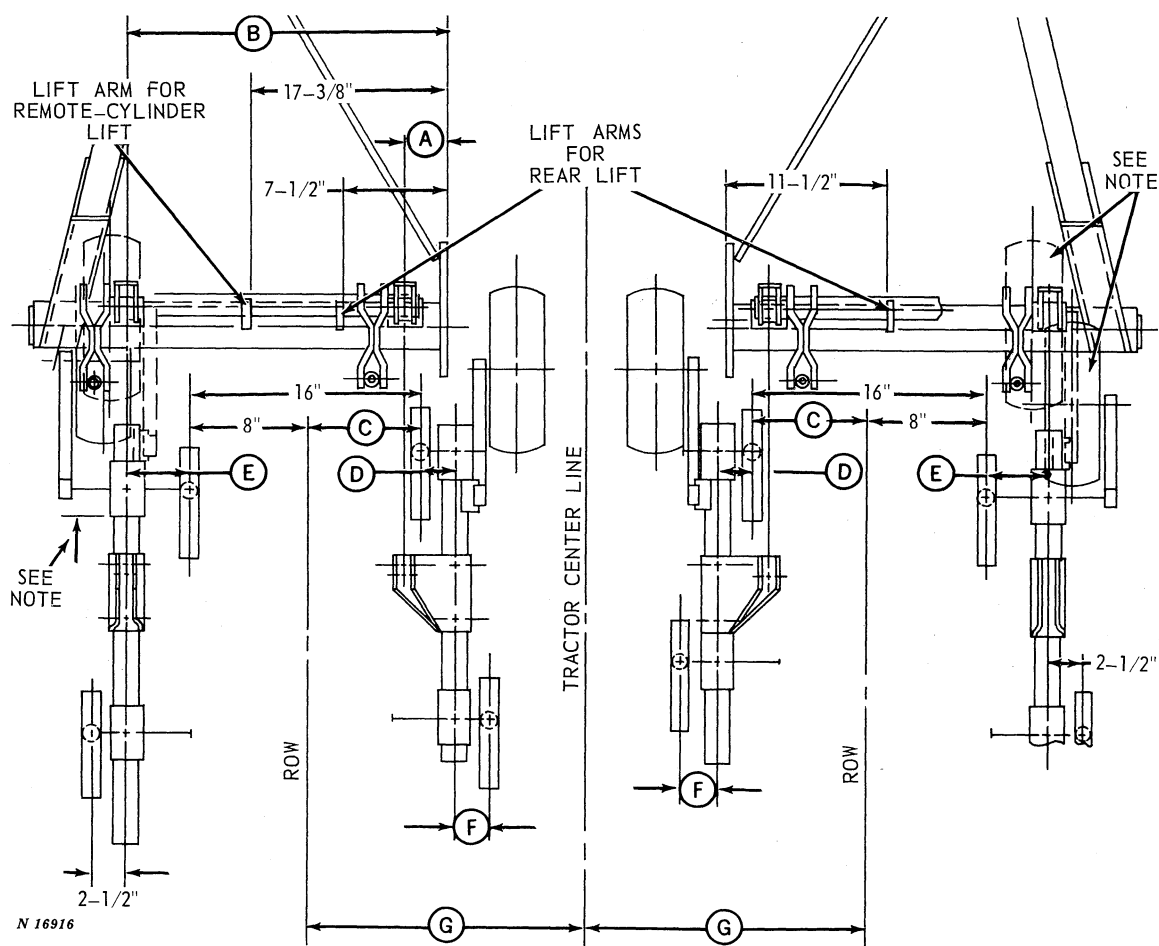


36, 38, 40, and 42-Inch Shank and Sweep Row Spacing for AT20 Cultivator

Location	Dimensions In Inches			
	36-Inch Row	38-Inch Row	40-Inch Row	42-Inch Row
A	2-3/4	2-3/4	3	3-1/4
B	20-1/2	21-1/2	22-1/2	23-1/2
C	3	4	4-3/4	5-1/2
D	2-1/2	2-1/2	2-1/2	2-1/2
E	5-1/2	4-1/2	4-1/2	4-1/2
F	18	19	20	21

Position gauge wheel on crossarm when cultivator is mounted on tractors with adjustable tread front axle.

Position gauge wheel on front of beam when cultivator is mounted on tractor with single or dual front wheel.



36, 38, 40, and 42-Inch Row Spacing for AT20 Cultivator with Spring Teeth

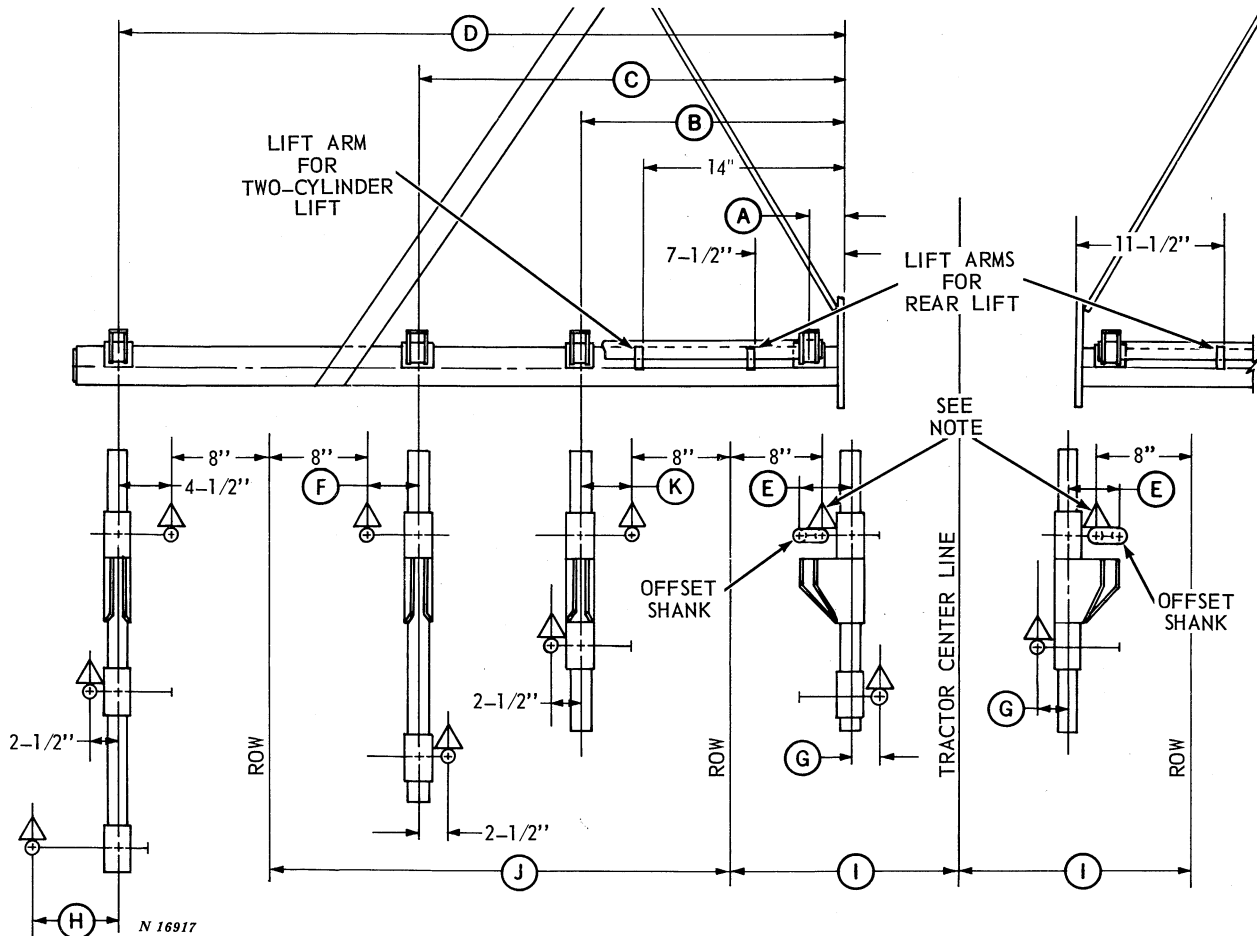
Location	Dimensions In Inches			
	36-Inch Row	38-Inch Row	40-Inch Row	42-Inch Row
A	3	3	3	3-1/4
B	21-1/2	21-1/2	22-1/2	23-1/2
C	6-1/4	7-1/4	8	8
D	2-1/2	2-1/2	2-3/4	3-1/2
E	5-1/2	4-1/2	4-1/2	4-1/2
F	2-1/2	2-1/2	2-1/2	2-3/4
G	18	19	20	21

NOTE: When cultivator is mounted on tractor with adjustable tread front axle, position gauge wheel on crossarm.

When cultivator is mounted on tractor with single or dual front wheel, position gauge wheel on front of beam.

Move clamp in front of coupler plates on outer rigs, three inches forward for tractors with dual front wheels. Move clamp forward as far as possible to clear front tire on tractors with adjustable tread front axle.

ROW SPACING—Continued

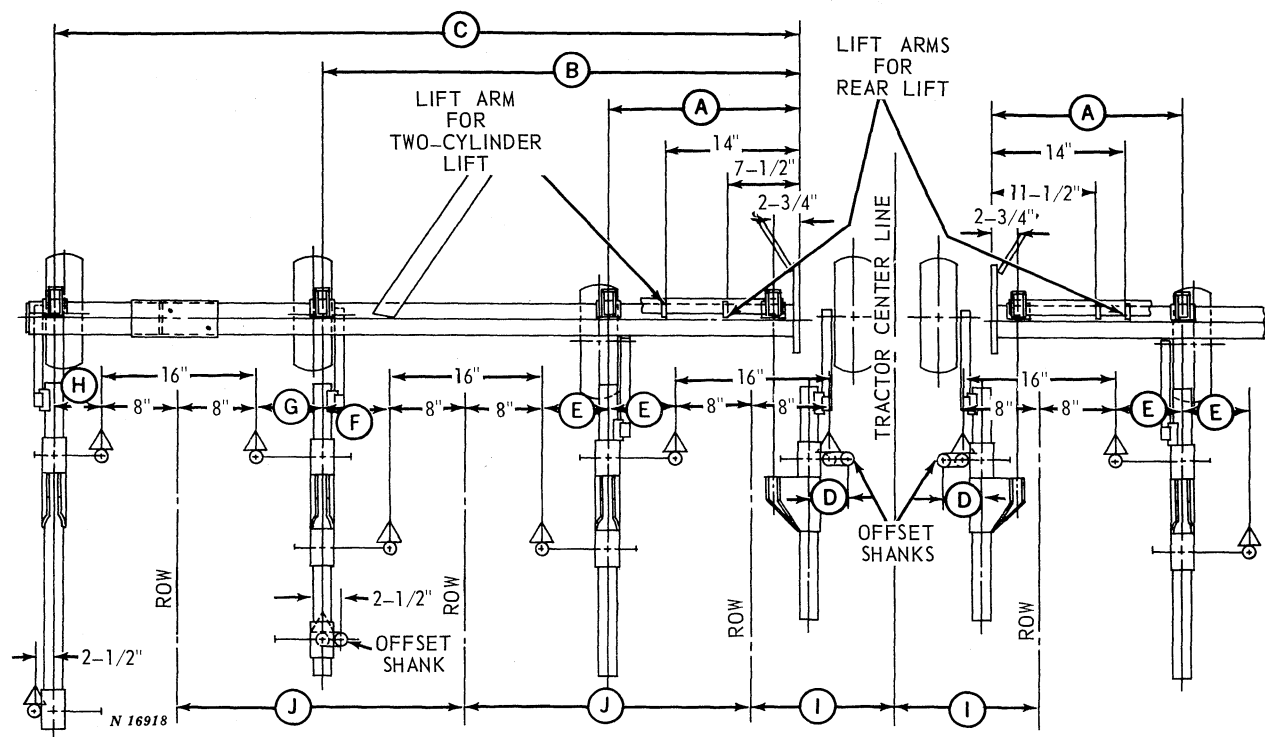


36, 38, 40, and 42-Inch Row Spacing for AT40 Cultivator

Location	Dimensions In Inches			
	36-Inch Row	38-Inch Row	40-Inch Row	42-Inch Row
A	2-3/4*	2-3/4*	3	3-1/4
B	21-1/2	21-1/2	22-1/2	23-1/2
C	31-1/2	34-1/2	37-1/2	39
D	56-1/2	59-1/2	62-1/2	65-1/2
E	3	4	4-3/4	5-1/2
F	4-1/2	4-1/2	4-1/2	6
G	2-1/2	2-1/2	2-1/2	2-1/2
H	5-1/2	6-1/2	7-1/2	8-1/2
I	18	19	20	21
J	36	38	40	42
K	5-1/2	4-1/2	4-1/2	4-1/2

**With double spring-tooth shanks this dimension should be 3 inches.*

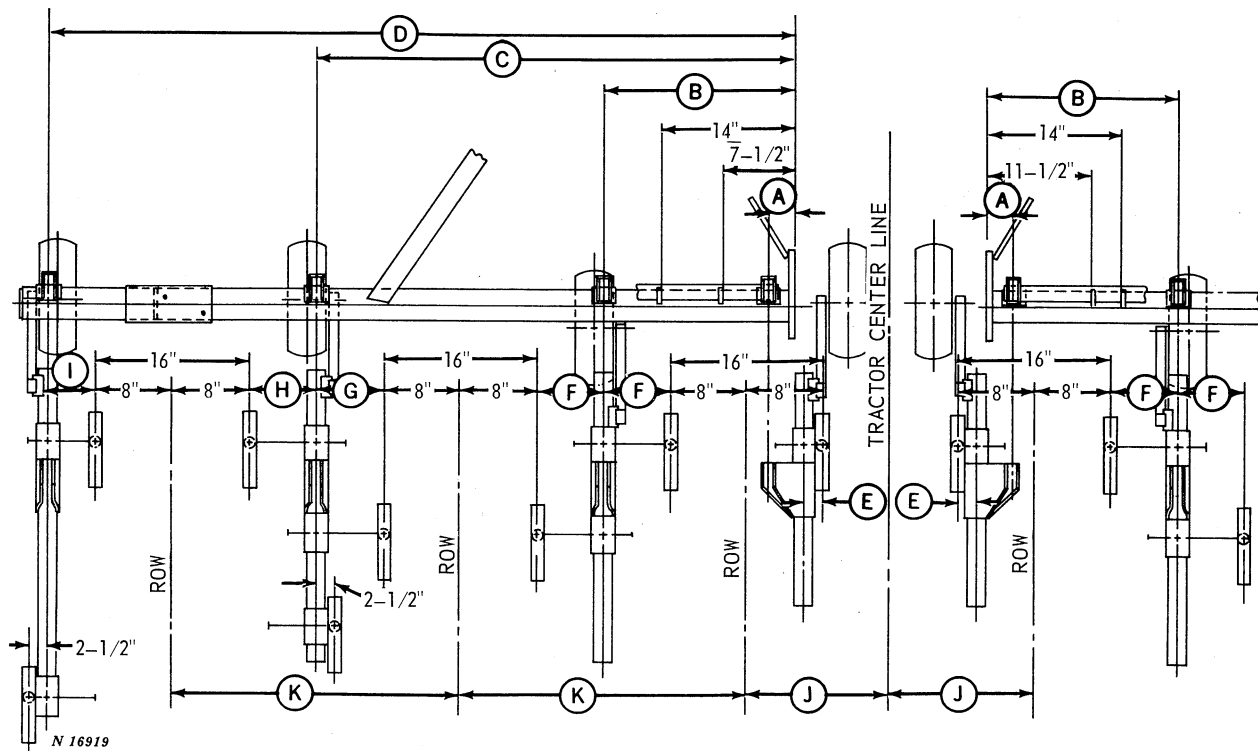
NOTE: With single or double spring-tooth shanks, place point of shovel on front of inner rig on each side of tractor 6-1/4 inches away from row on 36-inch rows, 7-1/4 inches away from row on 38-inch rows.



28 or 30-Inch Row Spacing for AT630 Cultivator

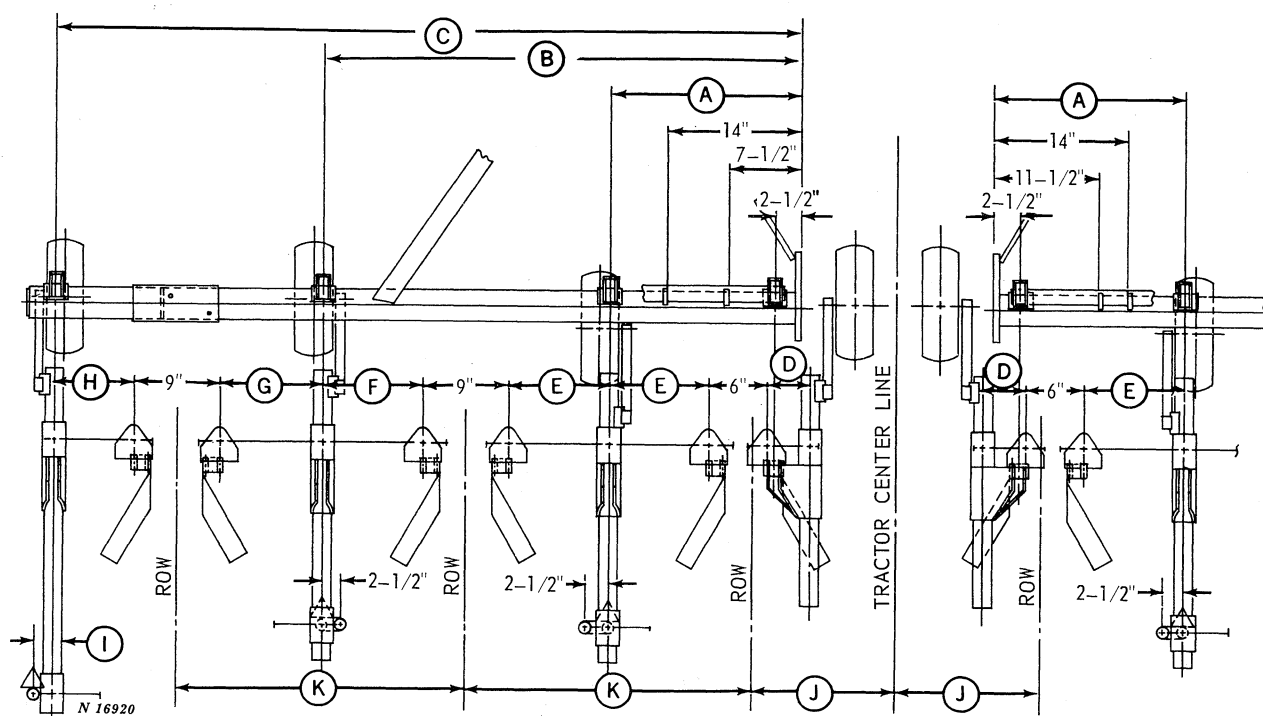
Location	Dimensions In Inches	
	28-Inch Row	30-Inch Row
A	18	20
B	46-1/2	50
C	72	77-1/2
D	5	4
E	6	7
F	6-1/2	7
G	5-1/2	7
H	4	4-1/2
I	14	15
J	28	30

ROW SPACING—Continued



28 or 30-Inch Row Spacing for AT630 Cultivator with Spring Teeth

Location	Dimensions In Inches	
	28-Inch Row	30-Inch Row
A	2-3/4	3-1/4
B	18	20
C	47-1/2	51-1/2
D	71-1/2	77-1/2
E	3	2-1/2
F	6	7
G	7-1/2	8-1/2
H	4-1/4	5-1/2
I	3-1/2	4-1/2
J	14	15
K	28	30



28 or 30-Inch Row Spacing for Beet and Bean Equipment on AT630 Cultivator

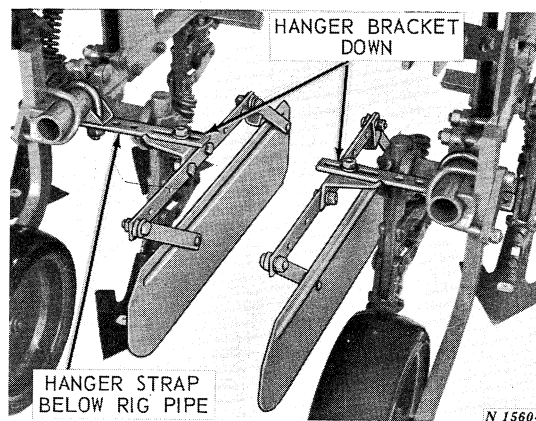
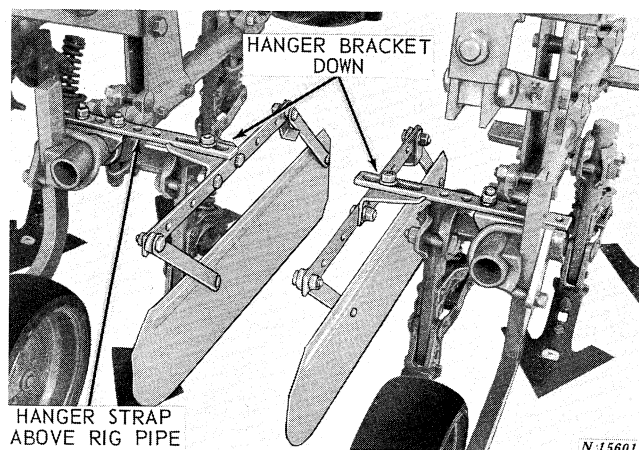
Location	Dimensions In Inches	
	28-Inch Row	30-Inch Row
A	18	20
B	46-1/2	50
C	70-3/4	74-1/2
D	3-3/4	4-3/4
E	9-1/2	10-1/2
F	10	10-1/2
G	9	10-1/2
H	6-1/4	5
I	3-1/4	5-1/2
J	14	15
K	28	30



SPECIAL EQUIPMENT

RIG MOUNTED SHIELDS

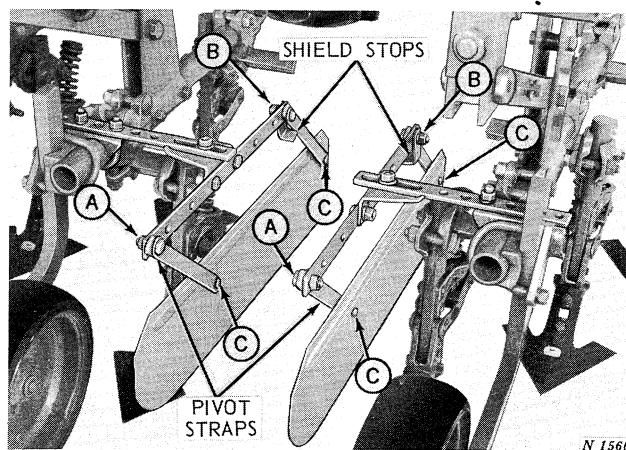
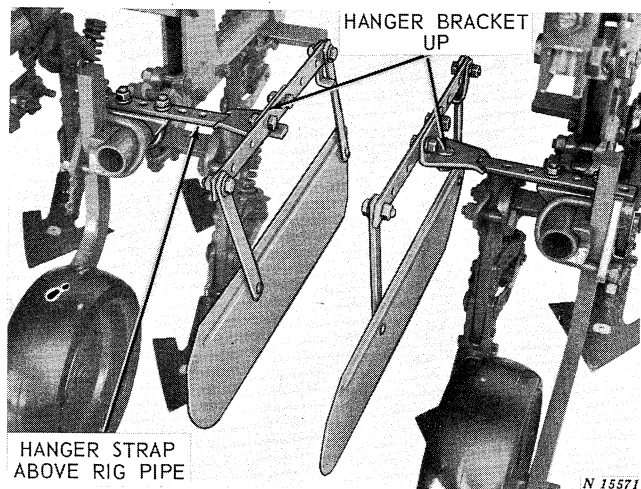
Rig-mounted shields can be positioned to suit a variety of crop conditions. Attach them to the cultivator to meet the type of planting practice followed.



For listed crops, place shields with hanger straps below the rig pipes and hanger brackets turned down.

SHIELD ADJUSTMENTS

For level land crops, position shields with hanger straps on top of the rig pipes and hanger brackets turned up.

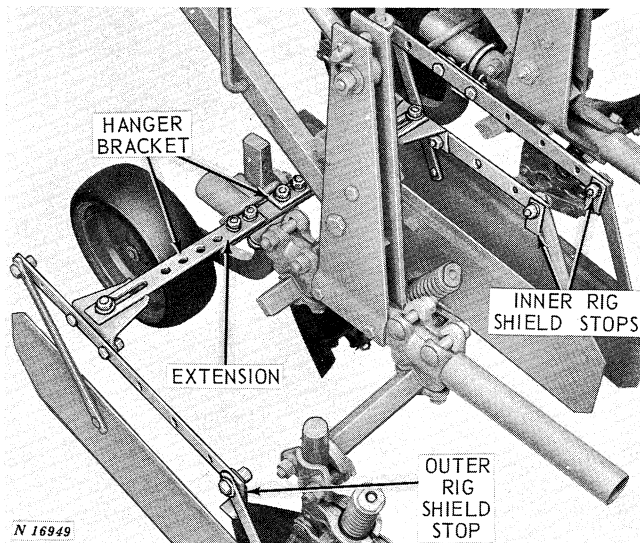


Set bolts "A" and "B" loose enough to allow shields to float up and down freely. Be sure rivets "C" and straps do not bind to limit shield movement. Pull shield stops back against pivot straps to set shield height. Tighten nuts on bolts "B" to hold stops in position.

For crops planted on beds, attach shields with hanger straps above rig pipes and hanger brackets turned up.

Slide hanger brackets in or out in hanger straps to position shields next to plants. If further adjustment is required, reposition hanger straps on U-bolts.

RIG MOUNTED SHIELD ARM EXTENSIONS (AT630 Cultivator)

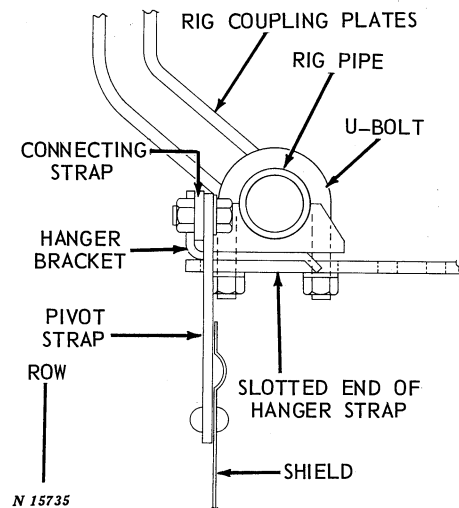


For ease of assembly, install hanger strap extension on U-bolt on all rigs, except outer and inner rig pipes, on each side of cultivator.

Place hanger straps on strap extension and install nuts on U-bolt.

Bolt hanger straps and strap extension together with two 1/2 x 1-1/4-inch cap screws as shown above.

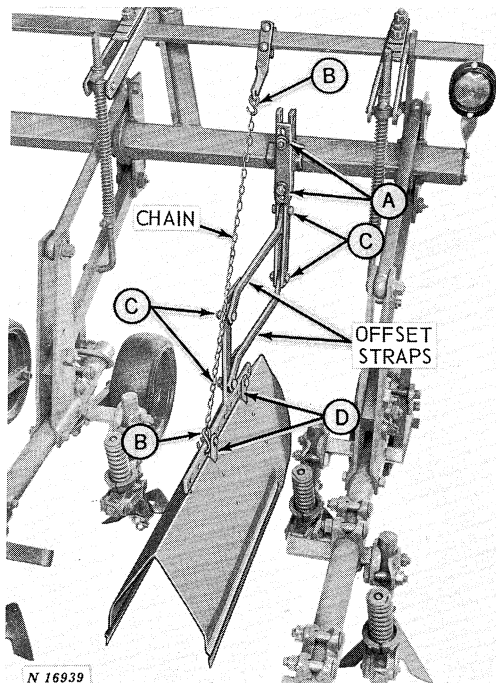
SHIELDS ON INNER RIGS



Attach the hanger strap to the U-bolt below the rig pipe and turn the hanger bracket up. The diagram above illustrates the inner rig on the right-hand side of cultivator. View is from the front.

Remove the pivot straps from the connecting strap and attach the pivot straps to the opposite side of the connecting strap. Attach the shield stop to the opposite side of the connecting strap.

HOODED SHIELDS



Attach hooded shields with hanger and U-bolt to the rear of the frame bar as shown at "A."

Fasten chain to top of hanger as shown at "B." Attach the "S" link to the chain and the shield as shown to obtain the desired crop clearance.

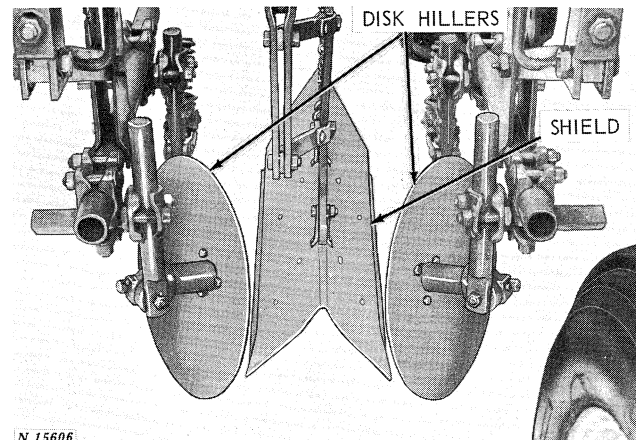
Adjust the shield for side sway at "C." Loosen the bolts to allow shield to swing; tighten the bolts to keep the shield rigid.

Place the shield between the shovels or sweeps where plants receive the most protection. Position the shield on the shield strap using the bolts at "D."

To position shield as far forward as possible, bolt hanger to the front of the frame bar.

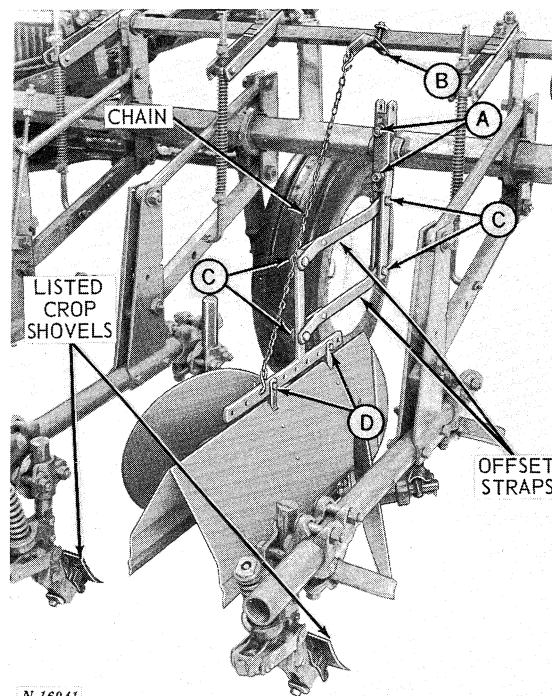
If more clearance is needed, change shield and shield hanger position by reversing the offset straps.

NO. 10 LISTED CROP ATTACHMENT



Attach the disks in the front crossarms to replace the two inside shanks and sweeps. Set disks as shown for barring off, or switch disks in crossarms for hilling.

NOTE: Gauge wheels have been removed from rig pipes for illustration purposes.

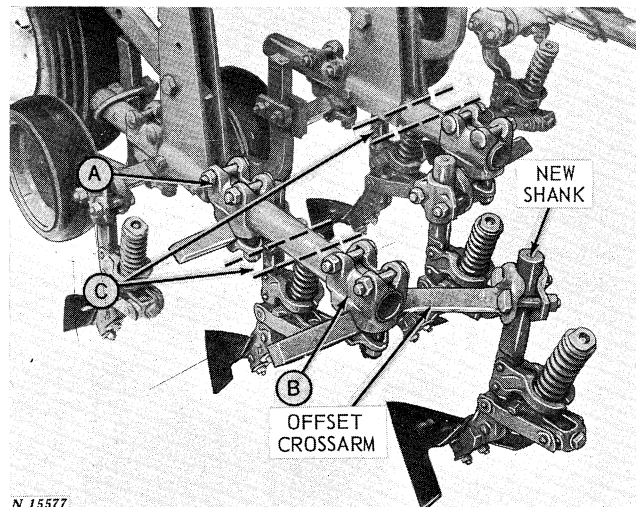


Attach the hooded shields to frame bar at "A." See instructions at left for adjusting hooded shields.

Remove sweeps or shovels from rear shank and bolt listed crop shovels to shanks. Reposition crossarms and shanks next to row as shown.

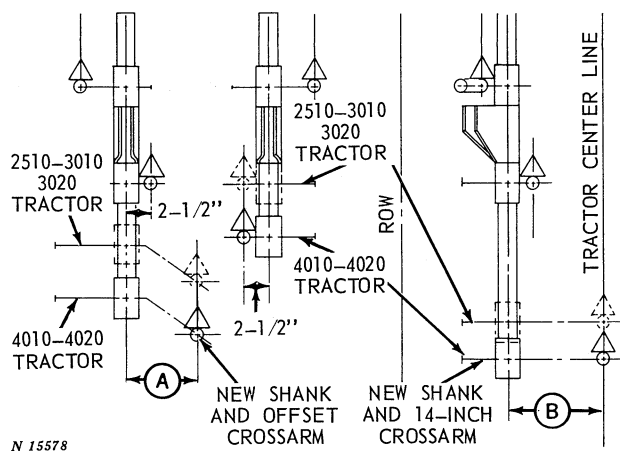
NO. 13 FRONT RIG ATTACHMENT (AT20 and AT40 Cultivator)

This attachment adds three shanks to the cultivator. It cannot be used if cultivator is mounted on 3010 or 3020 Row-Crop Utility Tractor.



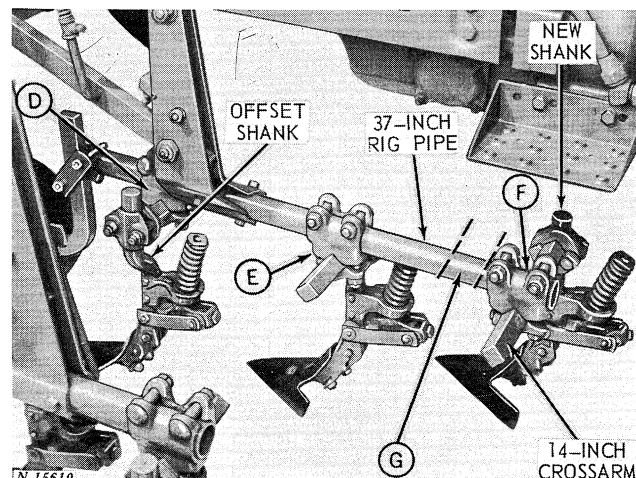
On second rig out for AT20 Cultivator or on third rig out for AT40 Cultivator from the tractor on both sides of cultivator, move the rear shank, crossarm, and rig clamp up against the coupling plates at "A."

Install rig clamp with offset crossarm on rear of second pipe for AT20 or third pipe for AT40 on both sides of cultivator at "B." Bolt sweep or shovel to shank and install shank in clamp on offset crossarm. Position crossarms as shown in row spacing diagram below.



Row Spacing

NOTE: On 2510, 3010 or 3020 Row-Crop Tractor, move rig clamps on rear of second and third rig pipes on both sides of cultivator closer to rig coupling plates to position "C."



On left-hand side of tractor, remove the short rig pipe from the inner rig and install the 37-inch rig pipe.

Remove rig clamp, crossarm and offset shank from short rig pipe and install them on rig pipe at "D" in front of coupling plates.

Remove rig clamp, crossarm and straight shank from short rig pipe and install them on rig pipe at "E."

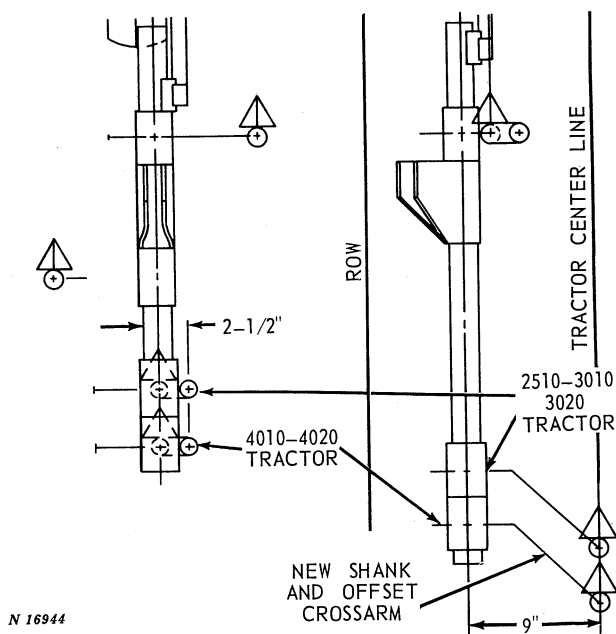
Install rig clamp with 14-inch crossarm on the rear of the pipe at "F." Install shank and sweep in crossarm clamp. Position crossarm as shown in diagram.

NOTE: On 2510, 3010 or 3020 Row-Crop Tractor, set rig clamp forward on rig pipe several inches to position "G."

Location	New Shank Positions in Inches			
	36-Inch Rows	38-Inch Rows	40-Inch Rows	42-Inch Rows
A	5-1/2	6-1/2	7-1/2	8-1/2
B	9	9	9-1/4	9-1/2

Other dimensions are the same as those shown on pages 16 and 18.

NO. 13 FRONT RIG ATTACHMENT (AT630 Cultivator)



On the left-hand side of the tractor, remove the short rig pipe on the inner rig and install the 37-inch rig pipe.

Remove the rig clamp, crossarm and offset shank from short rig pipe and install them on the new rig pipe in front of the coupling plates.

Install rig clamp with offset crossarm on rear of inside rig pipe on left-hand side of cultivator. Offset crossarm should angle in and to the rear.

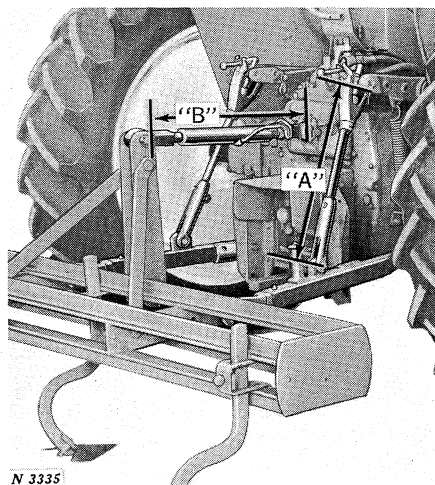
NOTE: On 2510, 3010 or 3020 Tractor, move rig clamps on rear of inside rig pipe of cultivator up closer to rig coupling plates. See diagram.

On second rig out on both sides of the cultivator, bolt sweep or shovel to shank and install shank in straight crossarm clamp. Position the crossarm so sweep or shovel is centered between the two sweeps or shovels in front of it.

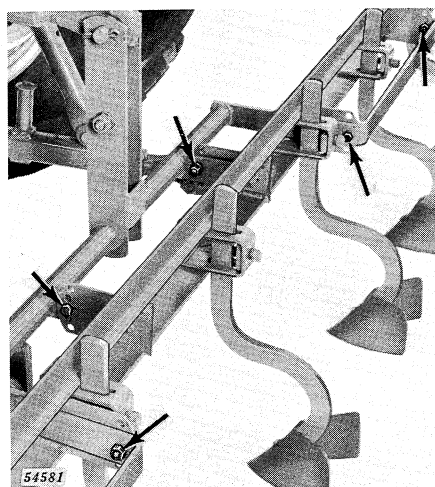
Other dimensions not shown on diagram above are same as on page 19.

BEEET AND BEAN REAR TOOL FRAME (AT630 Cultivator)

Rear tool frames are available as extra equipment. Rear tool frame is operated by tractor rockshaft and controlled by rockshaft control lever.

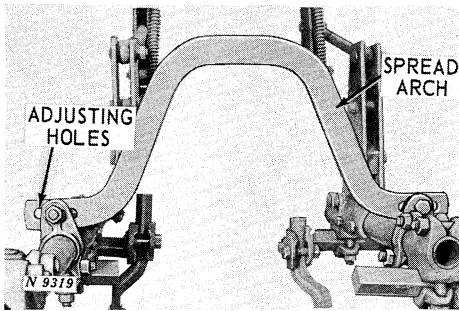


The rear tool frame is attached to the tractor 3-point hitch. On the 2510, 3010, 3020, 4010, and 4020 Tractors the recommended length "A" for the right- and left-hand links is 28 inches. The length of the center link at "B" is 24-1/2 inches.

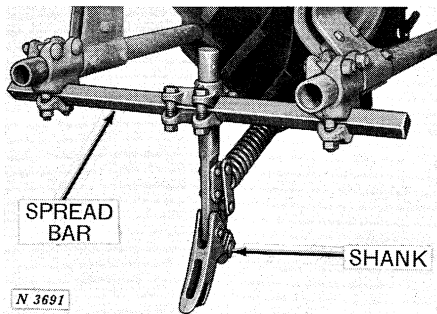


Additional adjustments are provided for the wider 124- and 136-inch tool frames.

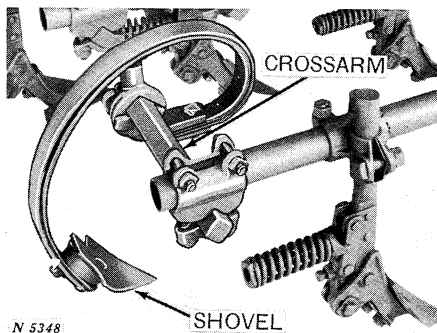
Pitch and suction of tools can be adjusted by changing angle of tool frame. This is done by relocating six bolts used to connect tool frame to inner and outer frame bars as shown by two rows. A choice of five bolt holes is provided for each bolt. Set standards so all tools operate same depth.

SPREAD ARCH

If using disk hillers or planting attachments, a spread arch holds rig pipes in line. Holes are provided to adjust spread arch for the desired row spacing.

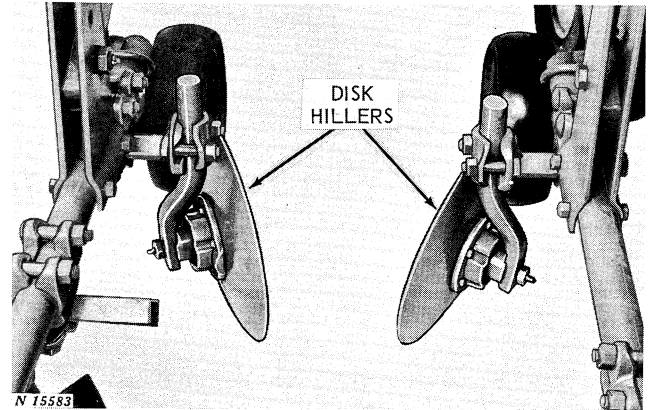
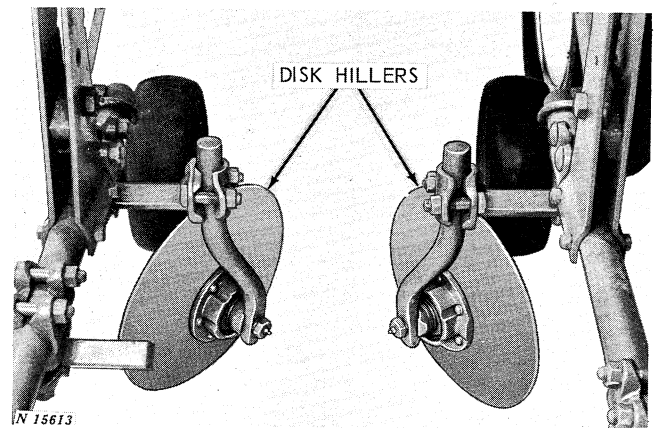
SPREAD BAR

The spread bar is used in connection with planting attachments. A sweep or some type of tool equipment can be attached to the shank to open up a furrow for the seed to be planted.

CENTER ATTACHMENT

The No. 1 Center Attachment is available for converting the row-type cultivator to a field-type for use in open fields. This attachment is clamped to the pipe of the outside rigs back of the second

shovel. The crossarm is adjustable and should be positioned so the shovel of the center attachment cuts out the center left between the two front shovels.

DISK HILLERS*Hilling Position**Barring Off Position*

Use disk hillers in place of sweeps or shovels in the front position to hill or bar off the rows.

To hill, set disks so shanks angle forward and toward the rig pipes. To bar, set disks so shanks angle forward and away from the rig pipes.

Disk hillers are available in 12, 14, and 16-inch sizes, with anti-friction or sleeve-type bearings.

ROTARY HOE ATTACHMENT

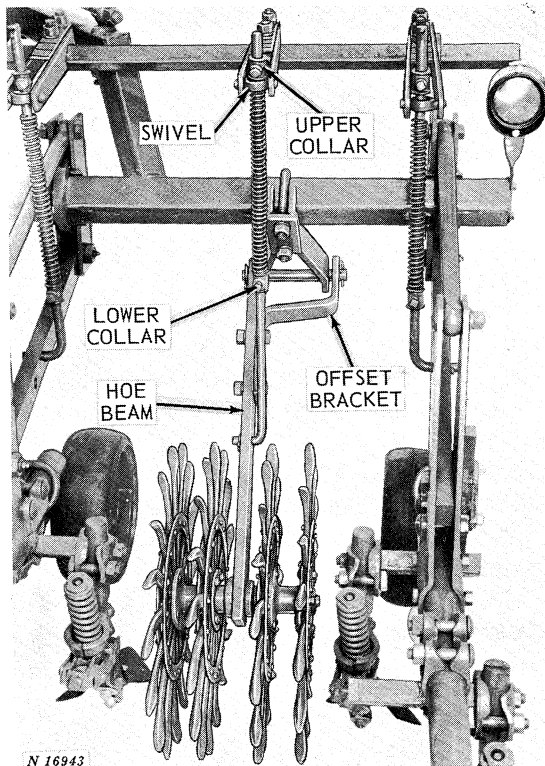
The No. 3C Rotary Hoe Attachment improves early cultivation by getting the weeds and breaking the crust in the rows. The hoe attachment fits between the cultivator rigs, directly over the row.

The offset bracket can be bolted to either side of the hoe beam to position the wheels over the row or to provide clearance for the hoe hanger.

When cultivating, set the upper collar on the hoe lift rod so there is at least a one-inch space between the collar and the swivel. Adjust the lower collar to keep the spring under tension. Raise the lower collar to increase spring tension.

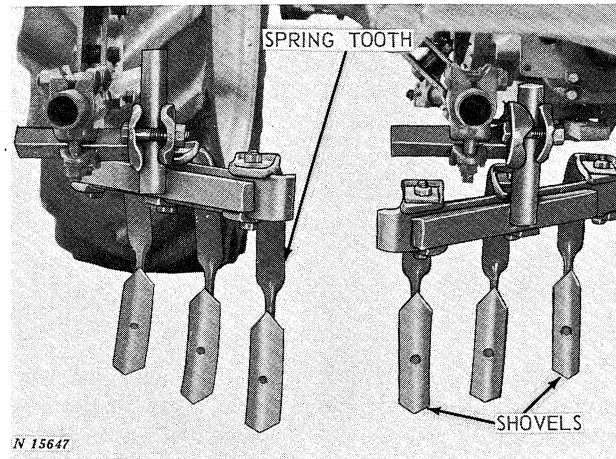
When crop is higher, remove the two inner hoe wheels and use only the outer hoe wheels as plant shields.

To remove the inner hoe wheels, remove the long hub bolt and hubs with wheels from the hoe beam. Remove the inner wheels from the hubs. Replace hubs and long hub bolt on the hoe beam.



The hoe wheels are shown in the packing position, with hoe tines pointed back. If a mulching effect is desired, reverse the hoe wheels so the tines point forward.

SPRING-TOOTH ATTACHMENT

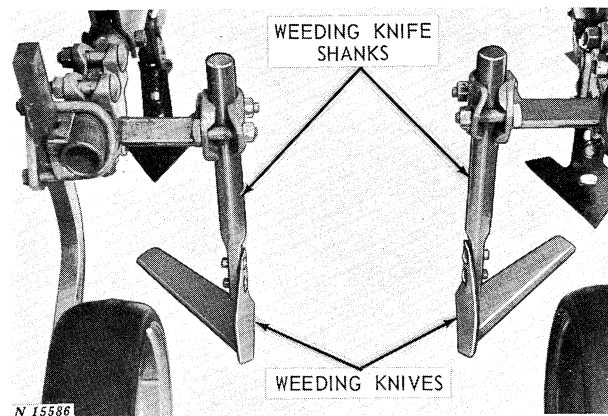


The No. 21 Spring-Tooth Attachment consists of short spring teeth and narrow shovels mounted on a stub bar.

Remove regular shank equipment from cultivator and position crossarms so they face the row with the long side of the clamp up. Install the spring-tooth stub bars in the clamps.

On both sides of the tractor, set inner rig 6-1/2 inches out from tractor and position inner rig lift arm and lift rod on the inner side of the rig.

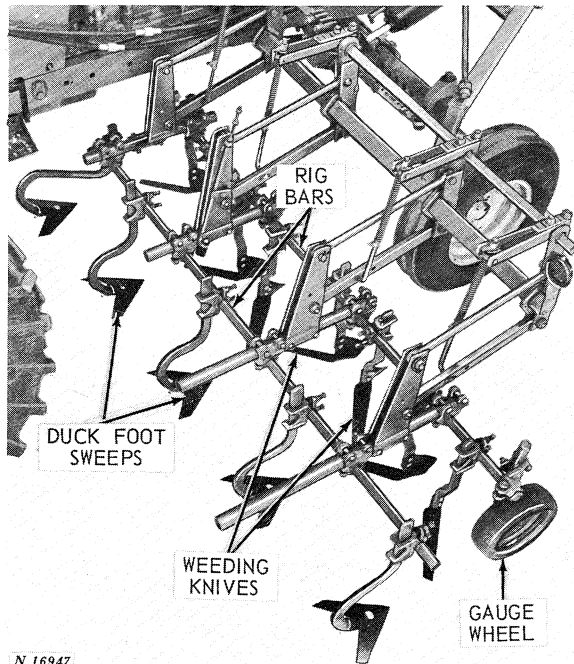
WEEDING KNIFE SHANKS



Weeding knife shanks are used for beet and bean weeding knives in combination with or place of regular row-crop shank equipment.

IMPORTANT: Weeding knife shanks are solid non-trip shanks. They should not be used in stone or stump-filled areas.

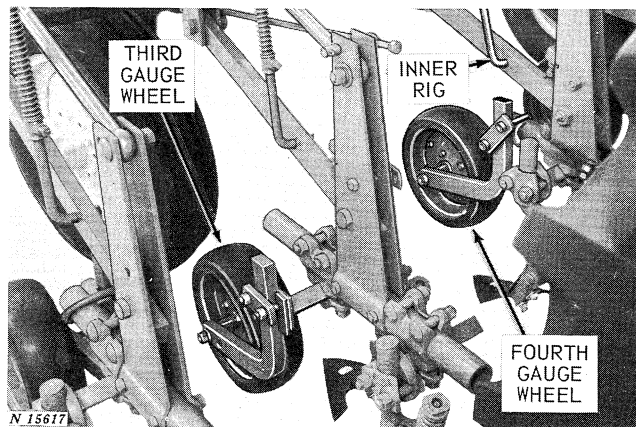
RIG BARS FOR VEGETABLE CULTIVATION



N 16947

To convert cultivator for vegetable cultivation, remove regular shanks and crossarms from the rig pipes. Bolt the rig bars, two on each side of tractor, to rig clamps. Attach clamps, shanks and tool equipment for vegetable cultivation to the rig bars. Reposition rig lift rods in rear holes in lower rig links as shown.

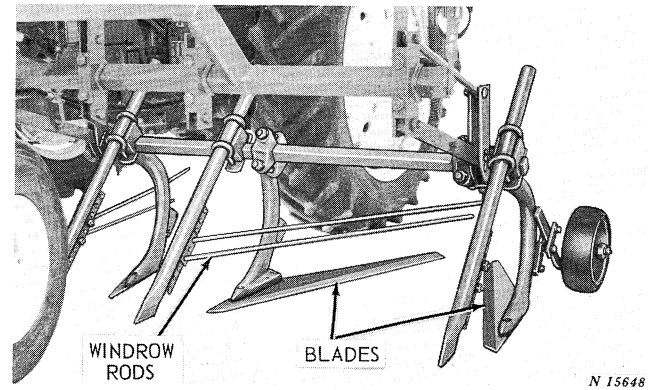
GAUGE WHEELS (AT20 and AT40 Cultivator) (Tractor with Adjustable-Tread Front Axle Only)



N 15617

On tractor with adjustable-tread front axle, two or four additional gauge wheels can be added to the cultivator. Install gauge wheel shank with two holes in special crossarm clamp on second rig on both sides of tractor. Attach the gauge wheel in the front hole in the shank. Install gauge wheel and shank on inner rig on both sides of the tractor.

BEAN HARVESTER ATTACHMENTS



N 15648

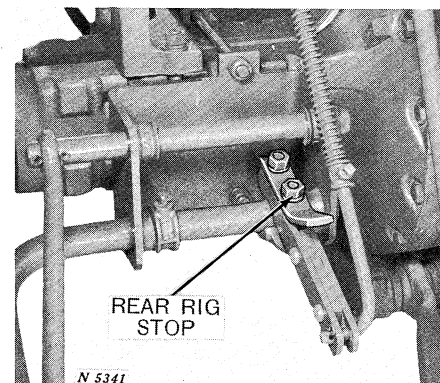
The AB690E and AB690F Bean Harvester Attachment can be used with the AT20 Cultivator. The AB690F and AB690G Bean Harvester Attachment can be used with the AT40 Cultivator. The AB690H Bean Harvester Attachment can be used with the AT630 Cultivator.

The AB690E is a two-row Bean Harvester. The AB690F is a four-row Bean Harvester. The AB690G is a six-row Bean Harvester and the AB690H is an eight-row Bean Harvester.

The 96E Peanut Digger Attachment (not illustrated) can be used on AT20 Cultivators only and is a two-row machine.

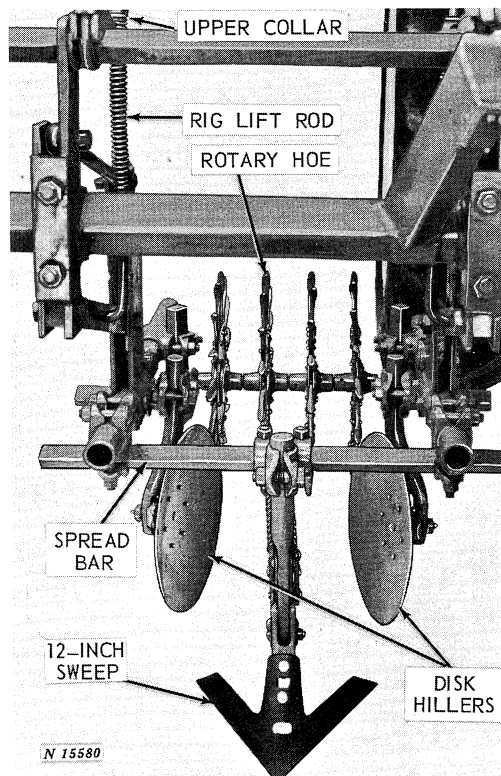
Bean Harvesters have large blades that cut the bean plants and trailing rods then windrow plants from two rows into one windrow.

REAR RIG STOP



N 5341

A rear rig stop is available for the "A" Series Rear Rigs. This stop prevents possible interference of the rear rig sweeps with large rear tractor tires, especially cane and rice tires.

MINIMUM TILLAGE ATTACHMENT

The No. 4 Minimum Tillage Attachment consists of a 12-inch sweep, a pair of disk hillers, and four rotary hoe wheels for each row. This combination makes row-width seedbeds for planter-fertilizer units attached to the tractor drawbar or 3-point hitch.

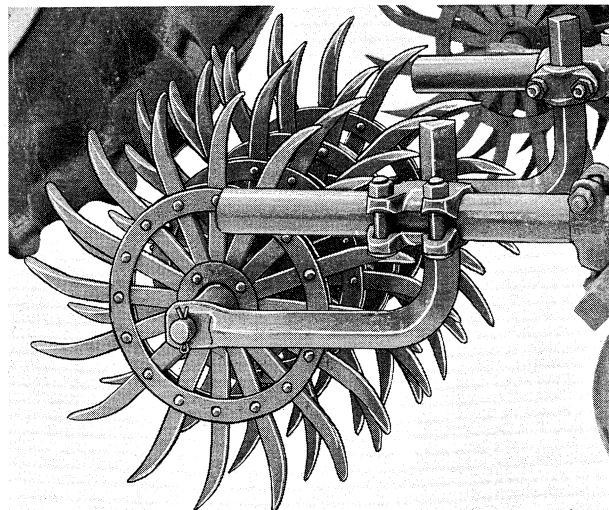
ASSEMBLY

Remove all gauge wheels, sweeps, shanks and crossarms from the cultivator, except the crossarms in the rig clamps directly behind the rig coupling plates.

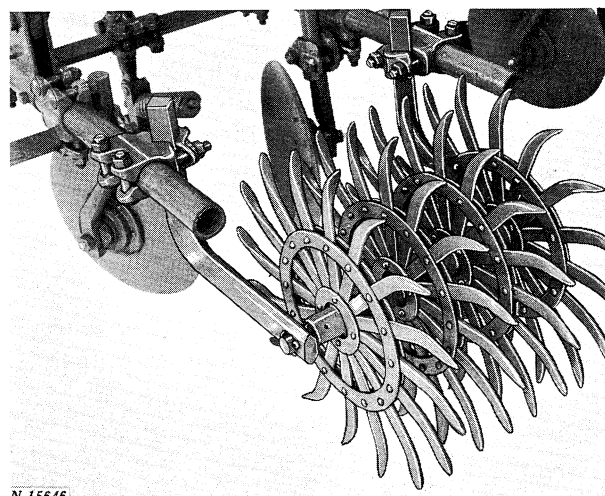
Position rigs for desired row spacing. See row spacing diagram on next page.

Install the spread bar on the rig pipes and center it above the row. On inner rigs, make sure spread bar doesn't come in contact with tractor. Install shank with 12-inch sweep on spread bar and center directly over the row.

Place rig clamps and crossarms behind the coupling plates with the long side of the cross-arm clamps up and install disk hillers in the clamps.



Rotary Hoe in Mulching Position



Rotary Hoe in Packing Position

Bolt clamps to rig pipes as shown. Assemble rotary hoe shanks to hoe axle so hoe wheels are positioned to pack or mulch as desired. Install rotary hoe unit in clamps. Adjust hoe shank clamps so bottom of hoe tines sit about one inch above the level of the sweep.

HEIGHT OF LIFT ADJUSTMENT

Set the upper collars on the rig lift rods 1-1/2 inches from the top of the rod. Raise the cultivator slowly to check for possible interference with the tractor. If there is interference, lower the cultivator and reset the upper collars in a higher position on the rig lift rods. If there is no interference, and more transport clearance is desired, lower the cultivator and reset the upper collars in a lower position on the lift rods.

NOTE: Set both collars on each row unit at the same height.

CAUTION: When checking for interference, make sure the rotary hoe does not come in contact with the tractor step.

DEPTH OF OPERATION ADJUSTMENT

All rig depth stop set screws should be turned in so they will not interfere with depth adjustments.

Depth of operation is controlled by the stops on the hydraulic cylinder and the control lever quadrant on the tractor.

DOWN PRESSURE ADJUSTMENT

To increase down pressure on the front rigs, raise the lower collars on the rig lift rods to increase spring tension. If no down pressure is desired, loosen the collars, let them slide to the bottom of the rod and tighten in place.

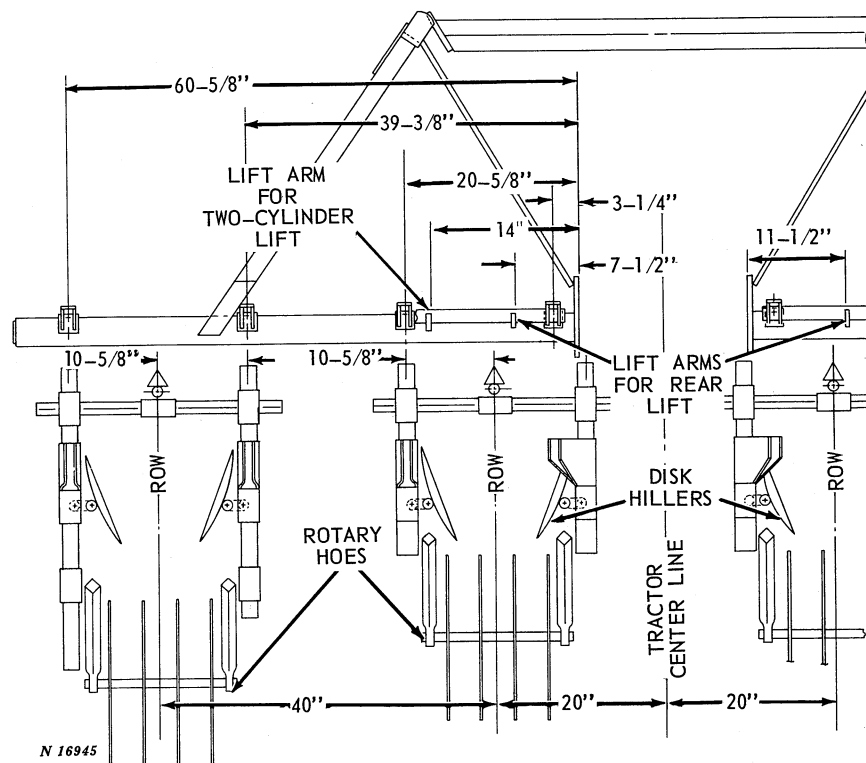
NOTE: Set both collars on each row unit the same distance from the top of the rod.

SHANKS AND SWEEPS

Refer to page 13 for adjusting sweeps and shanks.

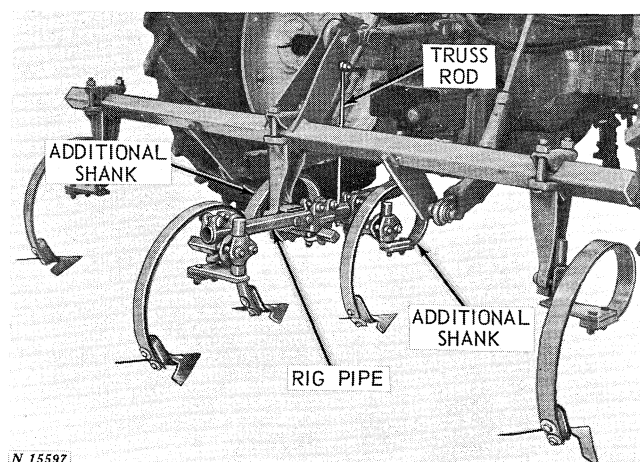
ROW SPACING

Set the rigs to the desired row spacing as shown below. Spacing on both right- and left-hand rigs should be the same.

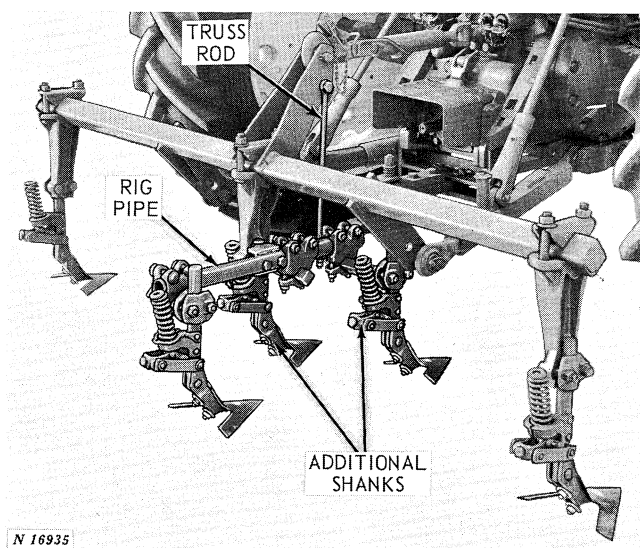


Row Spacing for 40-Inch Rows

REAR RIG EXTRA SHANK ATTACHMENT (For 250A Series Rear Rigs Only)



N 15597



N 16935

This attachment can be used if cultivator is on 3010 or 3020 Row-Crop Utility Tractor, or if two additional shanks are desired on the rear rig.

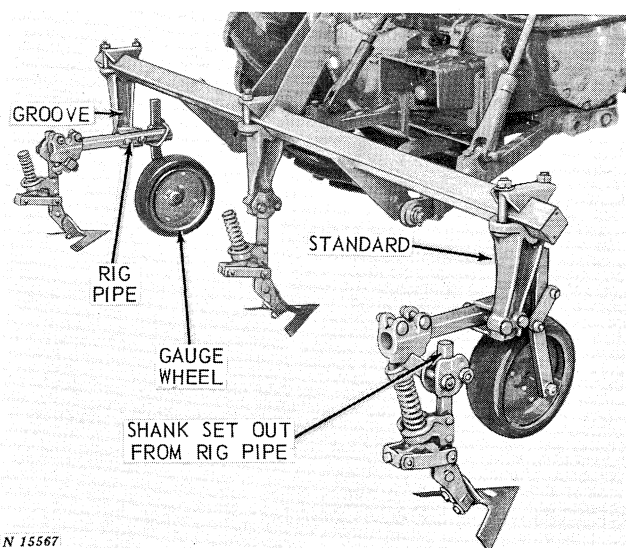
Replace shank in center standard with rig pipe.

Install the truss rod on the lower bolt in the hitch mast and insert threaded end of truss rod through holes in rig pipe. Tighten nuts up against rig pipe on threaded end of truss rod.

Install two shanks, crossarms and rig clamps as shown on front of rig pipe. If on 3010 or 3020 Row-Crop Utility Tractor, remove the shank on the rear of the inner rig pipe on both sides of tractor and install on rear rig.

Install the shank removed from the rear rig center standard in the crossarm clamp at the rear of the rig pipe.

NO. 12 REAR RIG GAUGE WHEEL ATTACHMENT (250A Series Rear Rigs Only)



N 15567

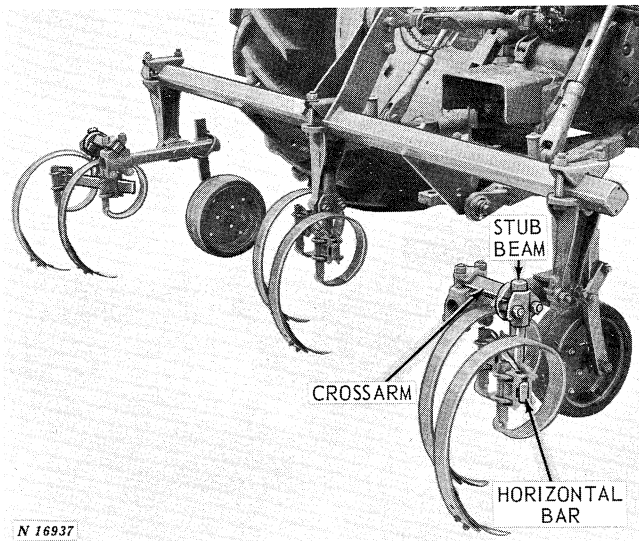
This attachment provides gauge wheels to maintain uniform cultivating depth on rear rigs.

Remove the shank from the outer standards and turn the outer standards around on the rear rig bar so the shank groove faces in rather than out.

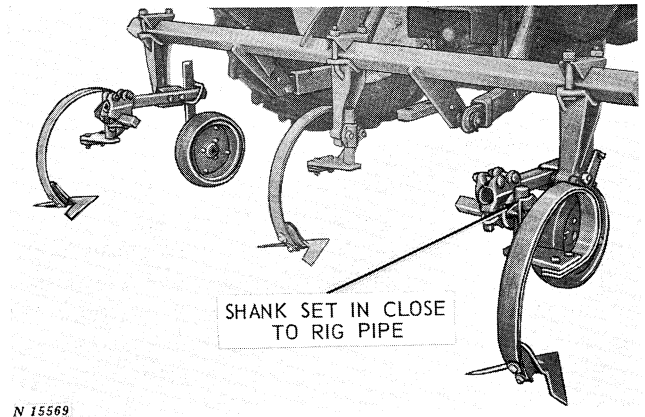
Bolt rig pipe with crossarm to each outer standard.

Assemble gauge wheel shank and clamp on front of each rig pipe as shown above. Attach gauge wheel sleeves to shanks and install gauge wheels in sleeves. Tighten sleeve set screw and jam nut.

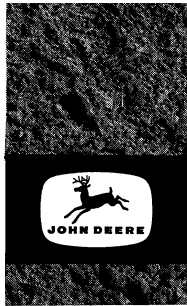
When using spring-trip or friction-trip shanks, set crossarm clamps out from rig pipe and install shanks removed from standards.



When using single spring-tooth shanks, place crossarms on top of rig pipes as shown. Shanks on stub beam must be reversed so horizontal bar is behind stub beam when spring teeth are attached to outer standards.



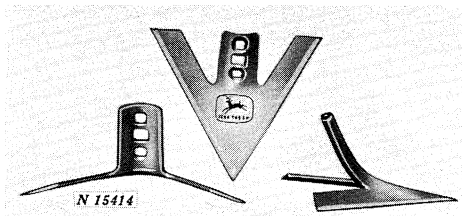
When using double spring-tooth shanks, set crossarm clamps next to rig pipes as shown. Install double spring teeth so spring sits out from crossarm clamp as shown.



SWEEPS AND SHOVELS

John Deere sweeps and shovels are made from high carbon steel and heat treated for hardness and toughness to assure longer wear and greater shock resistance. A wide variety of sizes are available from your John Deere dealer to meet your needs.

UNIVERSAL SWEEPS

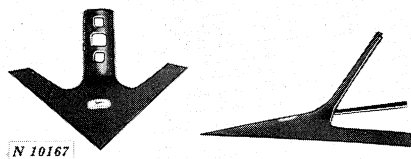


Universal sweeps have a low wing angle and crown, and a long narrow shank for high-speed cultivation. These highly-polished sweeps scour well in all types of soils.

These sweeps lift and stir soil, leaving a loose mulch on top. They throw enough dirt to bury weeds with a minimum of ridging.

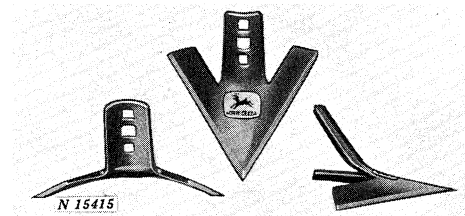
Universal sweeps are available in 6, 8, 10, and 12-inch full widths, 6-1/2-inch three-quarter widths, and 5-inch half widths.

PEANUT SWEEPS



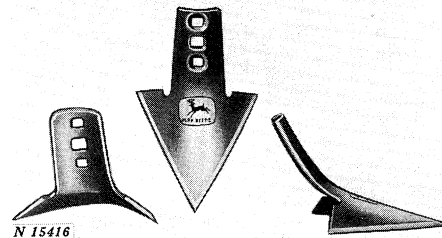
Peanut sweeps move a minimum amount of soil at high cultivating speeds. Narrow shanks, narrow wings and low profile fit most peanut cultivating requirements. Available in 6, 8, 10, 12, 14, 16, 18 and 20-inch full widths and 6-1/2-inch three-quarter widths.

MIXED-LAND SWEEPS



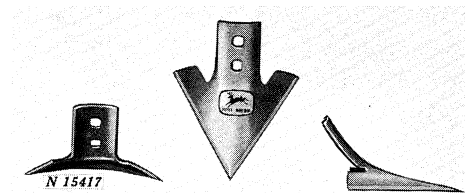
Excellent for cotton tillage, mixed-land sweeps have a high wing angle and crown with wide shank. They move a large amount of soil even at low speeds. Available in 4, 6, 8, 10, 12, 14 and 16-inch full sizes and 6-1/2-inch three-quarter width.

BLACKLAND SWEEPS

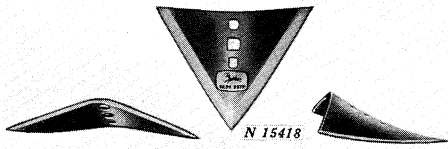


Narrow and long blackland sweeps are high crowned with a high wing angle to improve scouring in sticky soils. Available in 4, 6, 8, 10, 12, 14, 16, 18 and 20-inch full size.

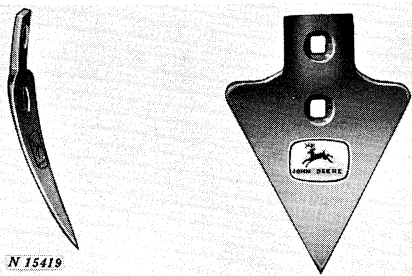
GENERAL PURPOSE SWEEPS



Used with single spring-tooth shanks, general purpose sweeps have low-pitched wings to facilitate soil flow. Available in 6-inch full size and 4-1/2-inch half width.

SOLID SWEEPS

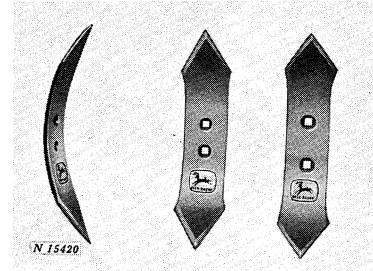
Solid triangle-type sweeps throw soil in large amounts, ideal for hilling up cotton beds or carving irrigation furrows. Available in 8, 10, 12, 14, 16, 18, and 20-inch full sizes.

SINGLE-POINTED SHOVELS

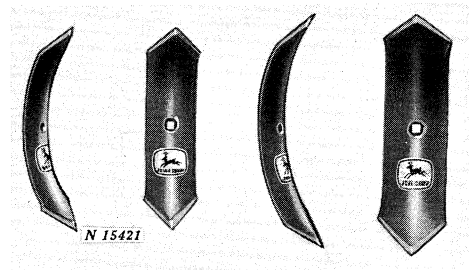
Use single-pointed shovels or spear points where extreme care must be taken to avoid injuring plants. Available in sizes ranging from 2 by 7 to 5-1/2 x 7-3/4 inches.

**DOUBLE-POINTED SHOVELS**

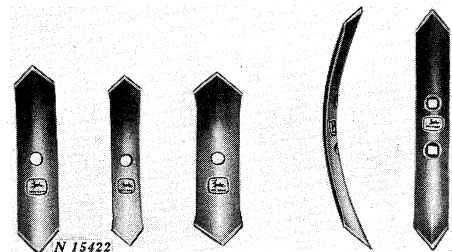
Double-pointed shovels are made strong and sturdy to withstand the most severe cultivating conditions. They are ideal for use where it's necessary to cultivate deep to stir up more ground. Use them to loosen soil compacted by tractor wheels. Reversible points provide double duty and long life.



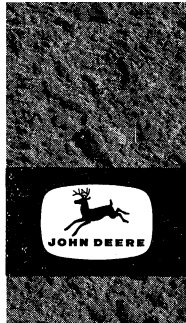
These shovels are used on single and double spring-tooth shanks. Eleven inches long, they are available in 2, 2-1/2, and 3-inch widths.



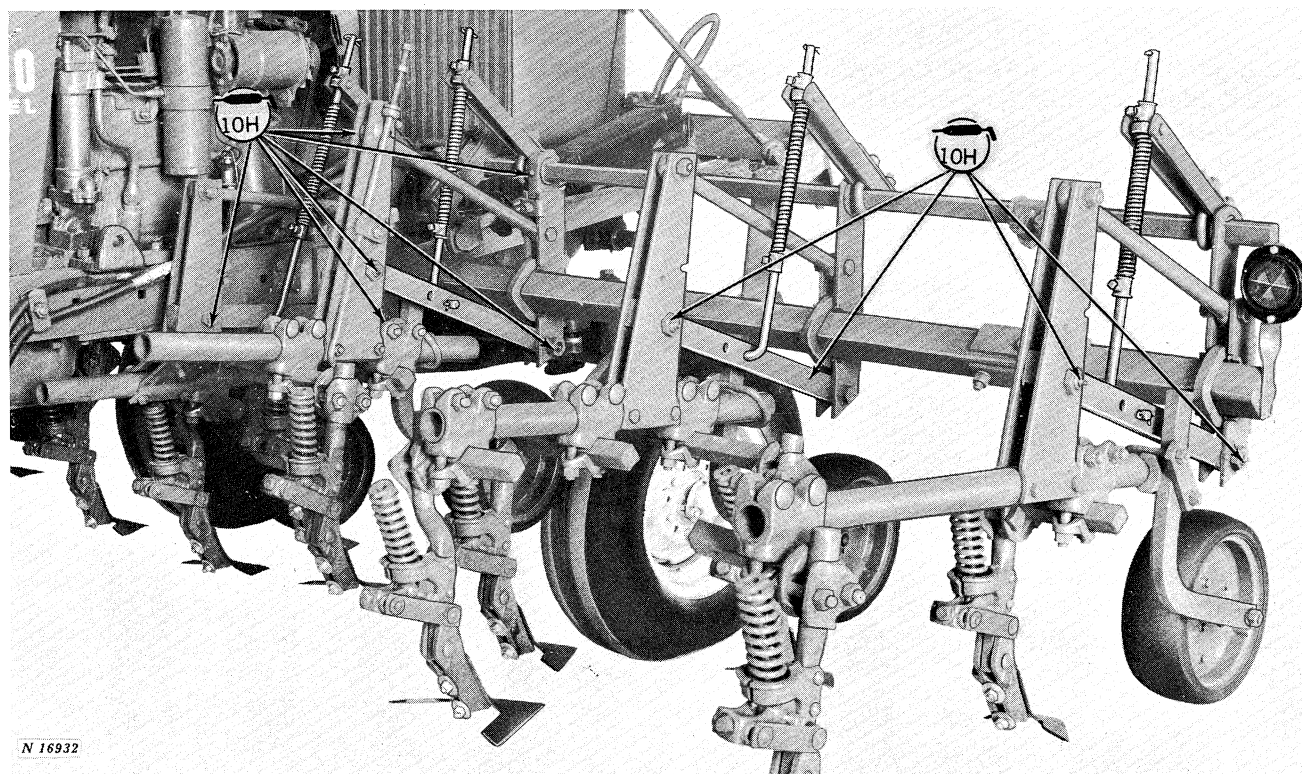
Use these shovels on regular or quick-adjustable spring-trip shanks or friction-trip shanks. Available in sizes ranging from 1-3/4 by 10-3/4 inches to 3-1/4 by 10-3/4 inches.



Additional double-pointed shovels available for heavy duty in troublesome soils are shown above.

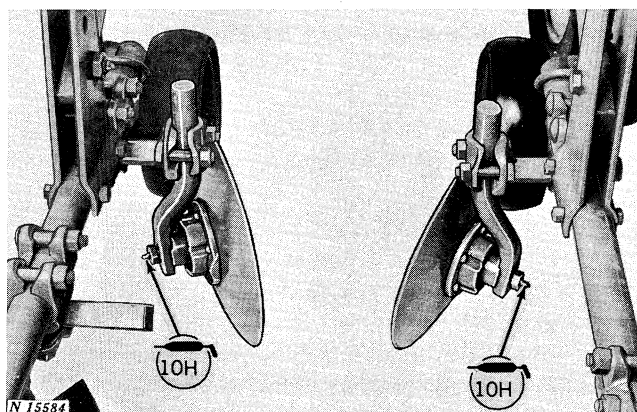


LUBRICATION



N 16932

Rig Pivot Studs and Lift Shaft Supports



N 15584

Disk Hiller Hub Bearings



Always stop the tractor and lower the rigs before lubricating the cultivator.

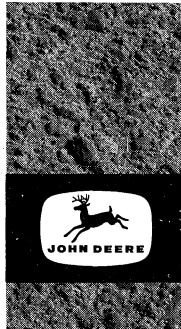
Lubricate all moving parts and pivot points. All parts should work smoothly. Make sure grease fittings are firmly installed before lubricating.

SYMBOL



Grease every 10 hours of operation with SAE multipurpose-type grease.

If cultivator is equipped with front rockshaft for one cylinder operation, lubricate fittings on rockshaft every 50 hours of operation.

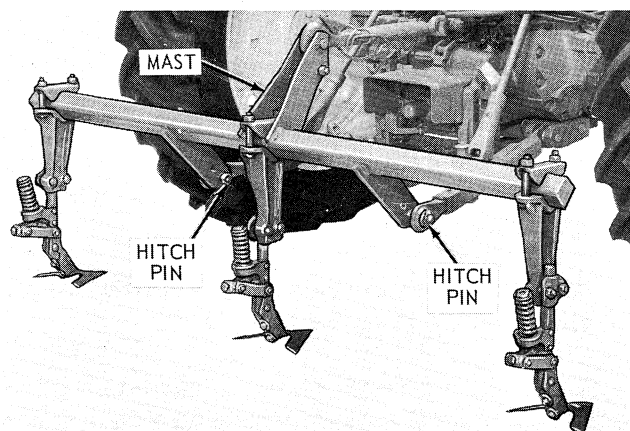


ATTACHING AND DETACHING

DETACHING CULTIVATOR FROM TRACTOR

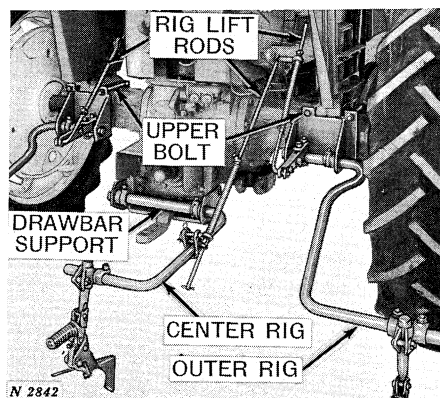
REAR RIGS

TOOLBAR TYPE AND 3-POINT HITCH MOUNTED CENTER RIG



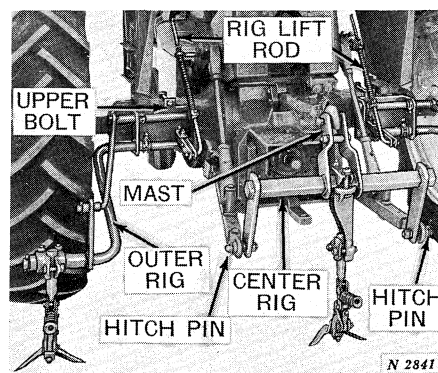
Lower the rear rig to the ground. Disconnect the draft links from the hitch pins. Remove the center link from the mast.

DRAWBAR MOUNTED CENTER RIG



Lower rear rig to the ground. Remove the bolts attaching center rig to drawbar support. Remove the center rig lift rod from the pin on the rear rockshaft.

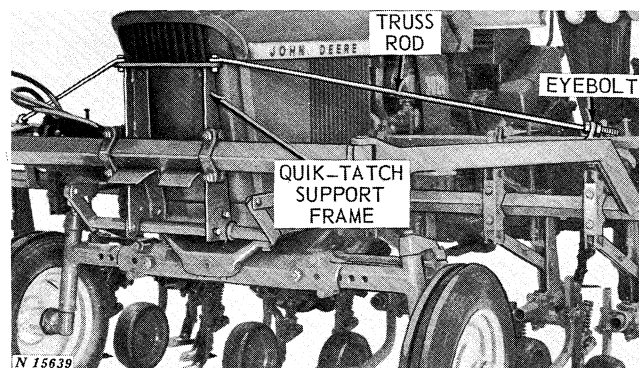
AXLE MOUNTED OUTER RIGS



Remove the spring locking pins and disconnect the rig lift rods from the tractor rockshaft lift arms. On the tractor axle housings, remove the upper bolt and loosen the lower bolts. Remove the outer rigs from the axles.

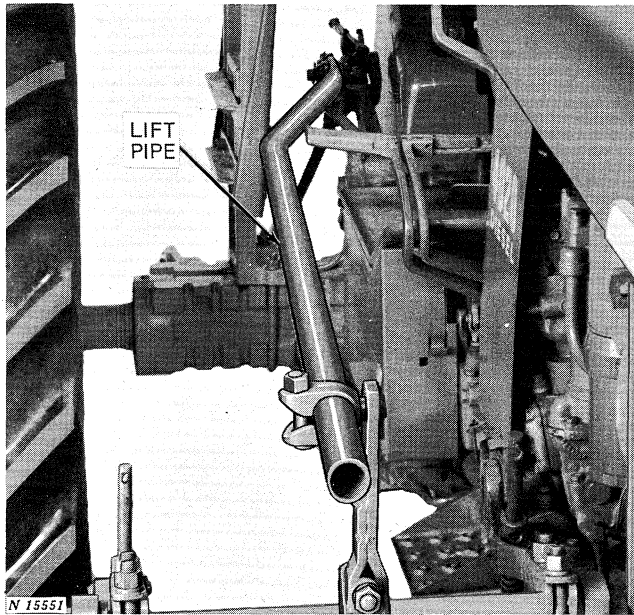
FRONT RIGS

Lower the front rigs on a floor or other fairly level surface.

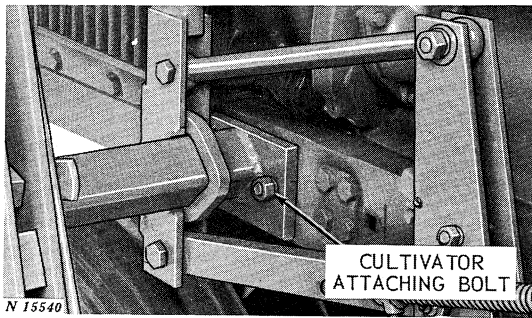


Loosen the nuts at the eyebolt on both truss rods. Remove the truss rods from the quik-tatch support frame.

REAR ROCKSHAFT OPERATED CULTIVATOR



Remove the lift pipe from each side of the tractor.

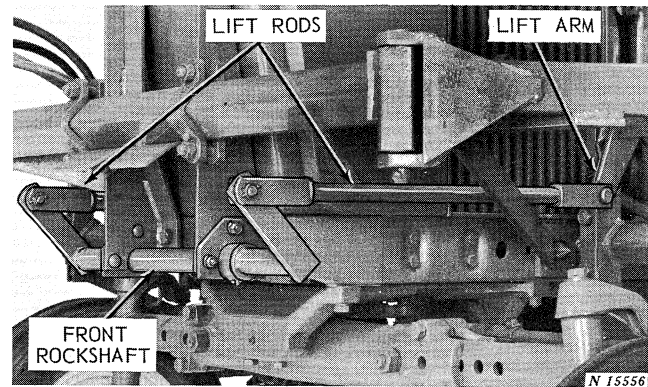


Set the storage stands on each side as shown on the next page.

Remove the cultivator attaching bolt from each side of the tractor.

Back the tractor until both sides of the cultivator fold into the position shown in the lower illustration on the next page.

ONE CYLINDER OPERATED CULTIVATOR



Remove the lift rods from the lift arms and the front rockshaft.

Remove the cultivator attaching bolt from the left-hand side of the tractor only. (See illustration at left.)

Using the hydraulic cylinder, raise the rigs on the right-hand side of the tractor.

Turn tractor front wheels "hard-left" and back tractor until rigs on left-hand side fold into position shown in upper illustration on next page.

Lower the rigs on the right-hand side and remove the cultivator attaching bolt.

Using the hydraulic cylinder, raise the rigs. Swing the rigs out by hand to the position shown in the lower illustration on the next page.

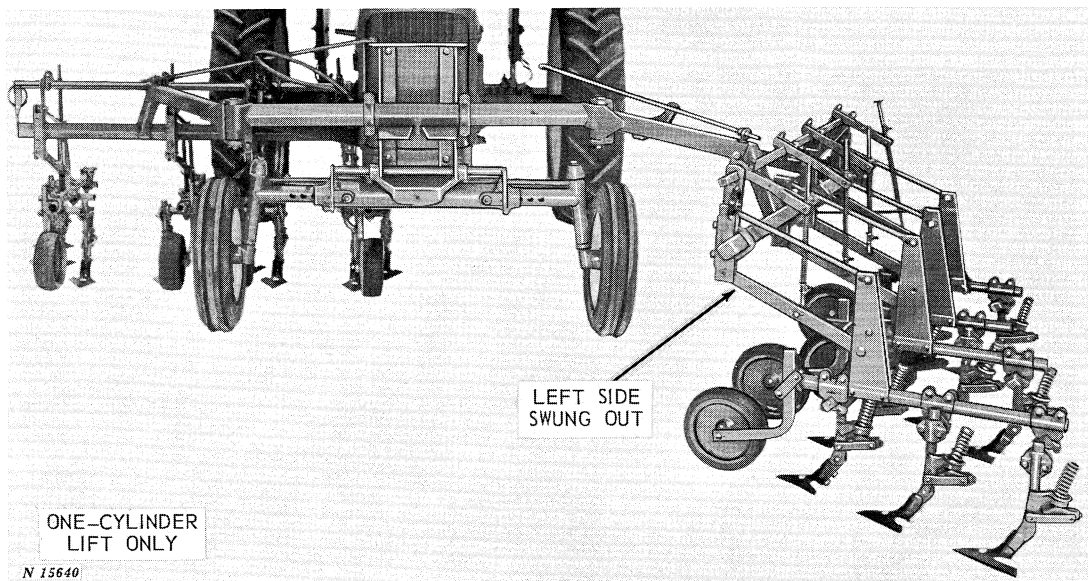
Lower the rigs to the ground and set the storage stands on each side as shown on the next page.

TWO CYLINDER OPERATED CULTIVATOR

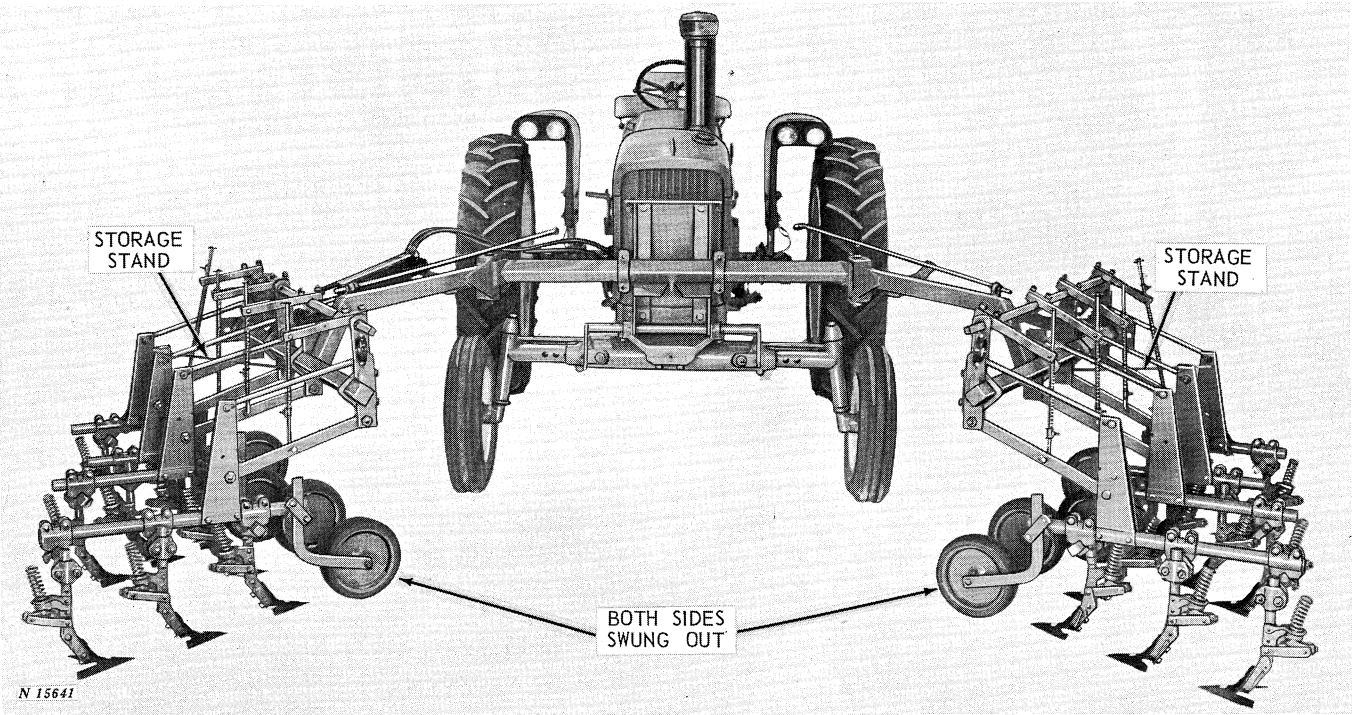
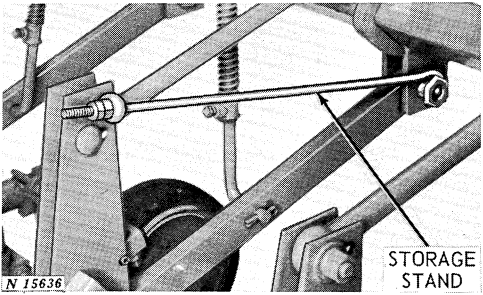
Remove the cultivator attaching bolt from both sides of the tractor. (See illustration at left.)

Using the hydraulic cylinders, raise the rigs. Swing both sides of cultivator out by hand to the position shown in the lower illustration on the next page.

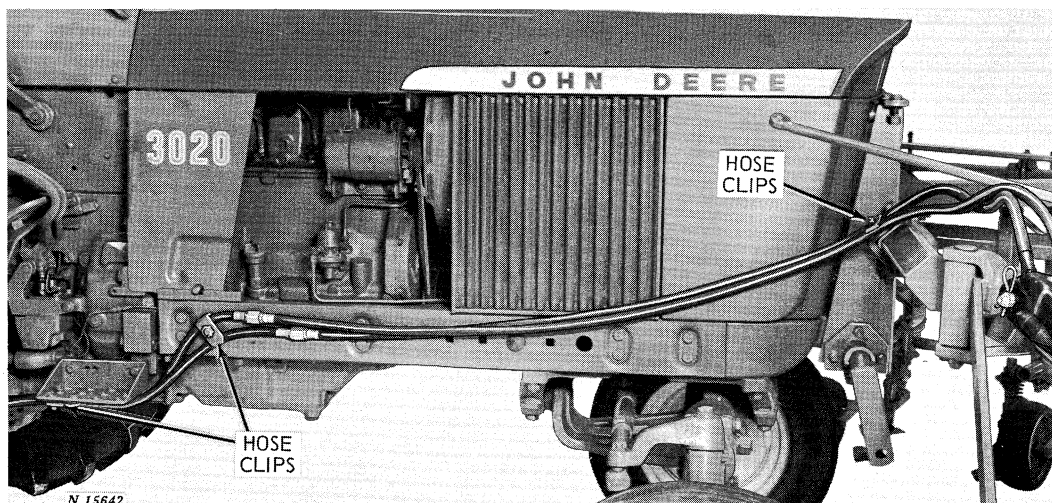
Lower the rigs to the ground and set the storage stands on each side as shown on the next page.



CAUTION: Do not attempt to remove cultivator frame from front of tractor until storage stands have been set in place and tightened as illustrated at the right.



HYDRAULIC CYLINDER OPERATED CULTIVATORS



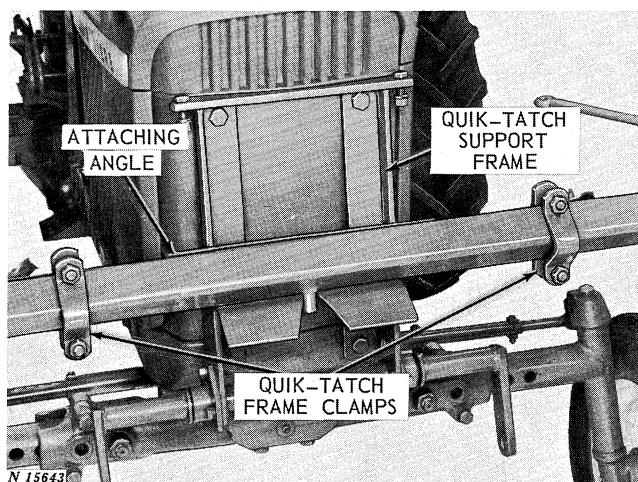
On the right-hand side of tractor, remove the hoses from the hose clips on the quik-tatch frame clamps, on the side of tractor and under the operator's step.

Remove hoses from remote cylinder outlets and coil hoses on cultivator frame or remove cylinder from cultivator as desired.

On cultivator with two cylinders, remove the hoses from hose clips on quik-tatch frame clamps, tractor side, and under the step on left hand side of the tractor.

Remove hoses from outlets and coil hoses on cultivator frame or remove cylinders from cultivator as desired.

ALL CULTIVATORS



Loosen the nuts on the quik-tatch frame clamps.

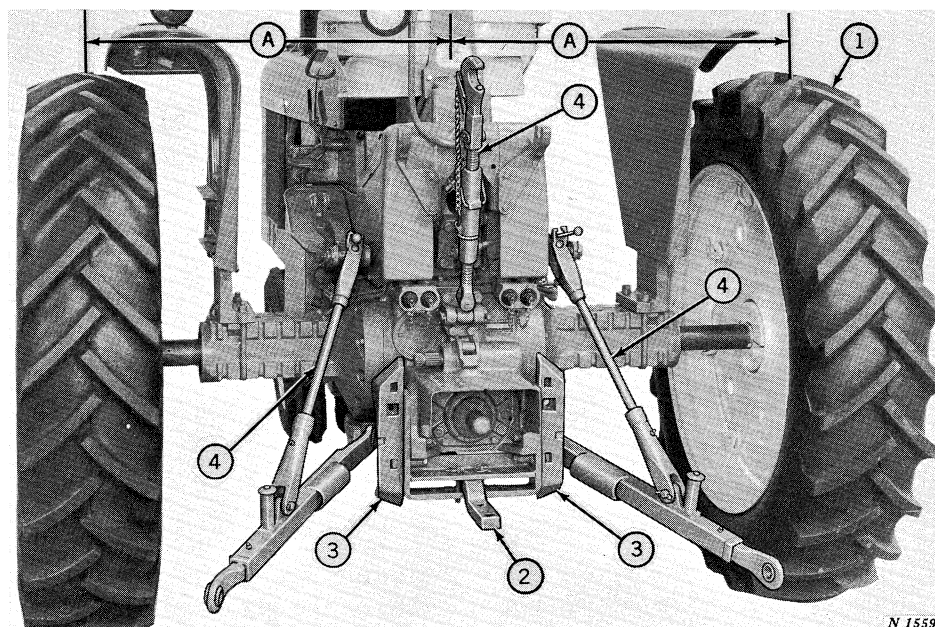
Slide the frame clamps off the attaching angle of the quik-tatch support frame.

Slowly back the tractor away from the cultivator.

Remove the quik-tatch support frame from the tractor if desired.

ATTACHING CULTIVATOR TO TRACTOR

TRACTOR PREPARATION



1. Set tractor rear wheels for desired row spacing. Dimension "A" — from center of tire tread to center of tractor — should be the same as the row spacing.

On tractor with adjustable-tread front axle, set the front wheel tread 8 inches narrower than twice the row width to be cultivated (72-inch tread for 40-inch row spacing.)

See tractor operator's manual for wheel tread adjustment and proper tire inflation.

2. Place drawbar as far forward as possible with offset portion down. Pin drawbar in a fixed, centered position.

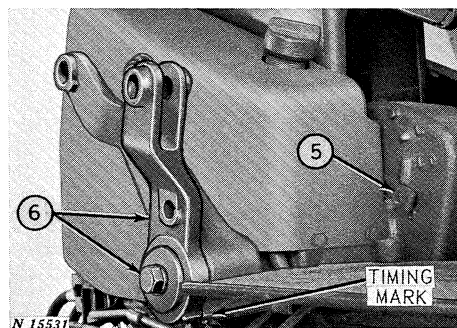
3. Install sway blocks in Category 2 down position for 250A Series and 253B Rear Rigs as shown above.

For 110A, 110B, 130A, 130B and 150A Series Rear Rigs, install sway blocks in Category 1 down position.

For 120A, 120B, 140A, 140B, 160A, 170A, 180A and 190A Series Rear Rigs, remove the sway blocks and 3-point hitch.

4. On 3010 Tractor, set length of lift links at 26-3/4 inches. Set center link length at 26 inches.

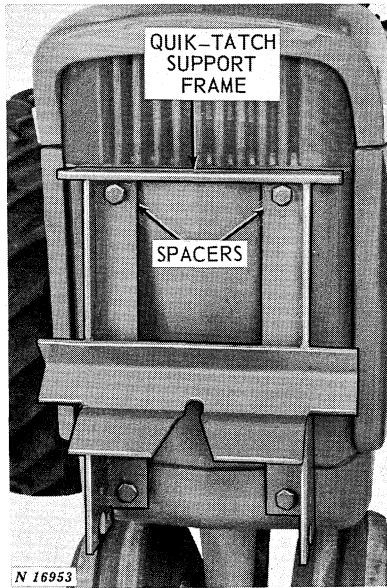
On 2510, 3020, 4010 or 4020 Tractor, set length of lift links at 28-1/2 inches. Adjust center link to a length of 26 inches.



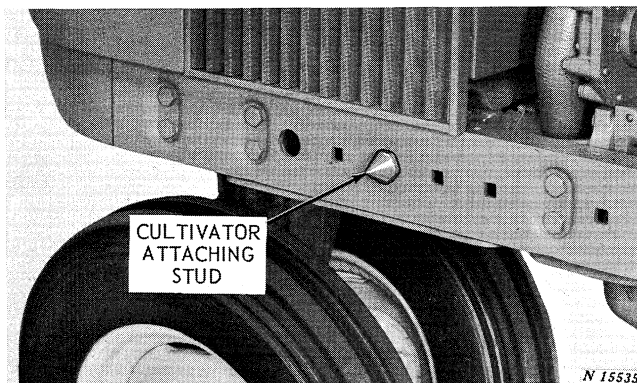
5. Place the load selector lever in the "D" position for level land cultivation or the "L" position for rolling land cultivation.

6. If cultivator will operate from rear rockshaft, install implement lift arms on rear rockshaft. Align the timing marks of the implement lift arms with the marks on the rockshaft arms.

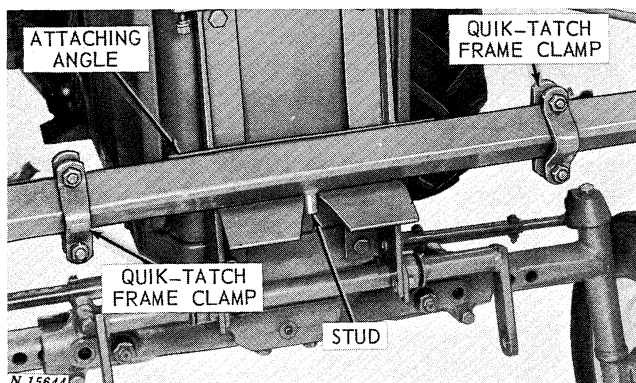
FRONT RIGS



*Bolt quik-tatch support frame to front of tractor, if frame was removed. Use lock washer under each bolt head.

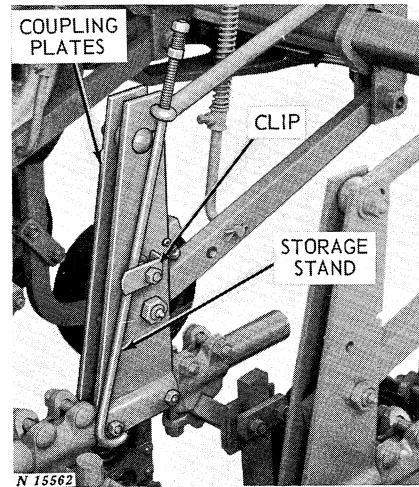


Bolt cone-shaped stud in second square hole on each side of tractor, if studs were removed.



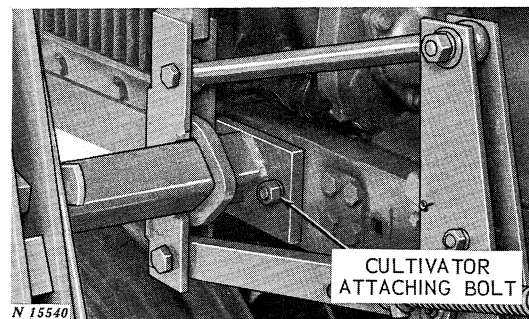
Drive tractor into cultivator until stud on quik-tatch frame bar is firmly seated in notch

on quik-tatch support frame. Slide frame clamp over attaching angle as close to quik-tatch support frame as possible and tighten clamp nut



Loosen the nuts on the threaded end of storage stands and place the stands behind clip on the rig coupling plates as shown. Tighten the nut on the clips.

IMPORTANT: Do not attempt to raise cultivator rigs unless storage stands are fastened to rig coupling plates.

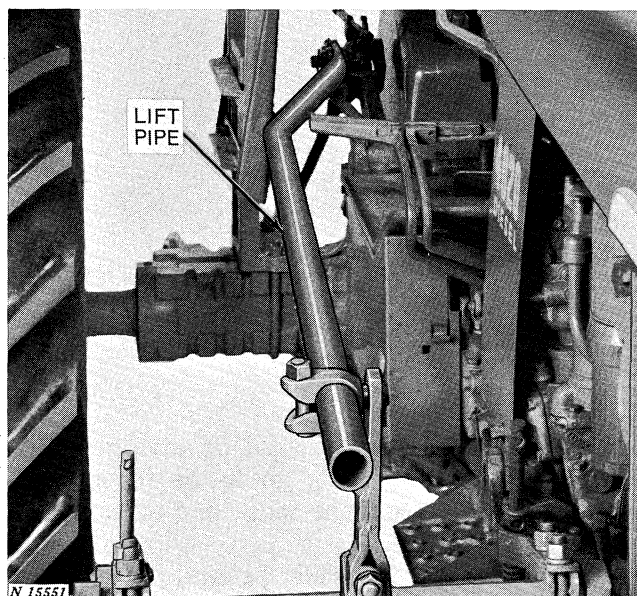


Drive tractor forward until both sides of cultivator fold into tractor.

Attach the cultivator to the tractor with attaching bolt in each side.

**NOTE: Install the two spacers provided on top two bolts behind quik-tatch support frame necessary to raise cultivator frames for ease in attaching cultivator attaching bolts.*

REAR ROCKSHAFT OPERATED CULTIVATOR



On each side of tractor connect lift pipe to tractor rockshaft and cultivator lift arm.

TWO CYLINDER OPERATED CULTIVATOR

Install cylinders on both sides of cultivator and attach hoses in hose clips as shown below (right-hand side illustrated). Connect hoses to tractor couplers so rigs rise when cylinder operating lever is pushed forward.

Using cylinders, raise the rigs and fold both sides of cultivator into tractor by hand.

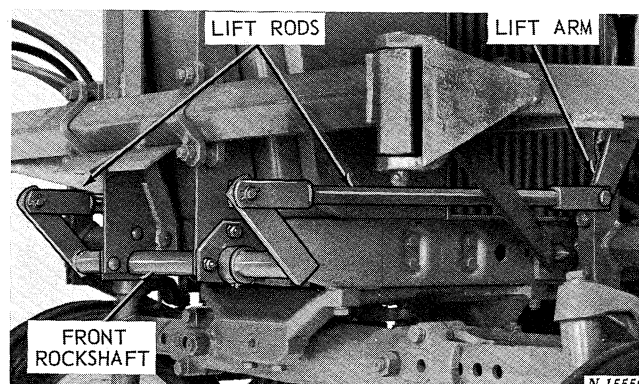
Lower the rigs and attach cultivator to each side of tractor with attaching bolt as shown on page 42.

ONE CYLINDER OPERATED CULTIVATOR

Install cylinder on right-hand side of cultivator and attach hoses to hose clips as shown below. Connect hoses to tractor couplers so rigs rise when cylinder operating lever is pushed forward.

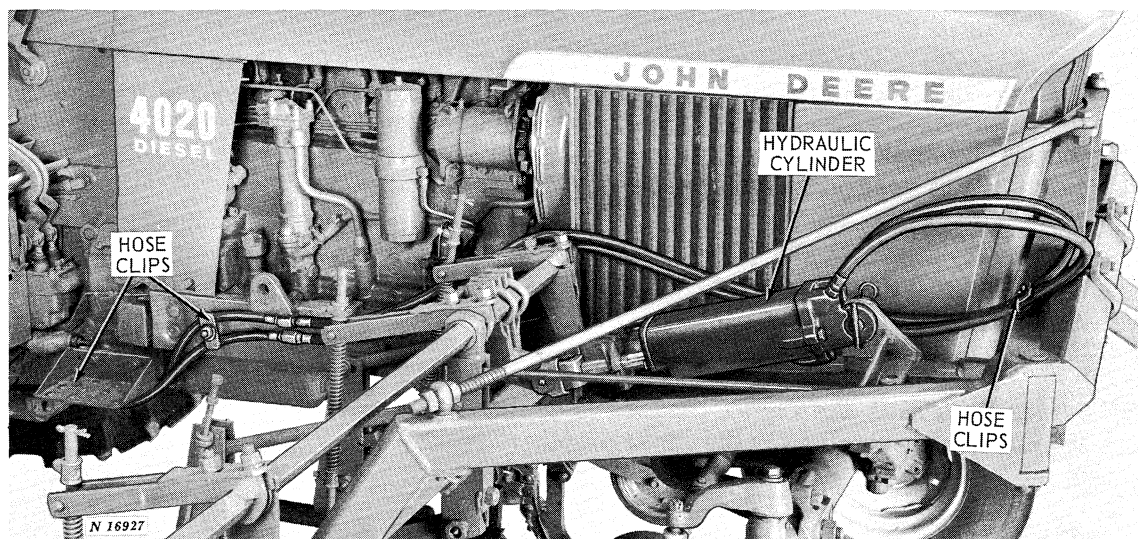
Using cylinder, raise right-hand rigs. Swing right-hand rigs into tractor by hand. Lower rigs and bolt to tractor with attaching bolt as shown on page 42.

Turn tractor front wheels "hard-right" and drive tractor forward until left-hand rigs fold into tractor. Bolt rigs to tractor with attaching bolt.

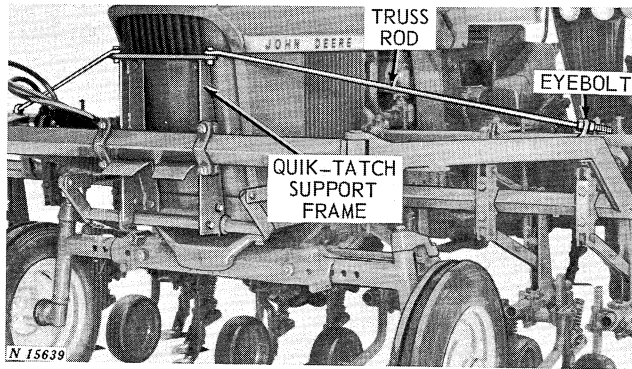


Attach lift rods to front rockshaft and cultivator lift arms. Make sure spring locking pins are on side away from tractor.

NOTE: On cylinder-operated cultivator, raising or lowering rigs may help to align cultivator frame with side of tractor to insert attaching bolt.



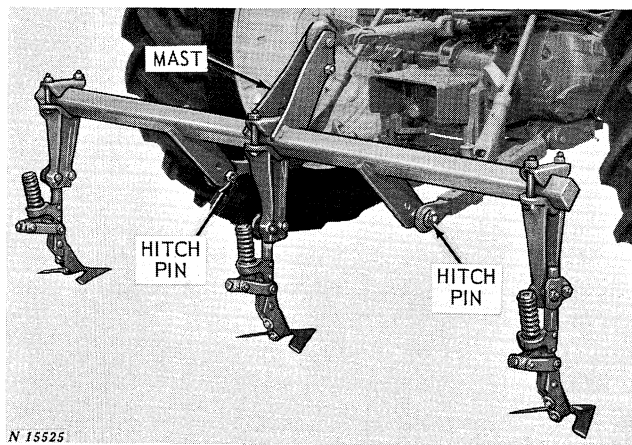
ALL CULTIVATORS



Bolt truss rods to quik-tatch support frame. Tighten nuts against eyebolt on threaded end of truss rods.

REAR RIGS

TOOLBAR TYPE AND 3-POINT HITCH MOUNTED CENTER RIG



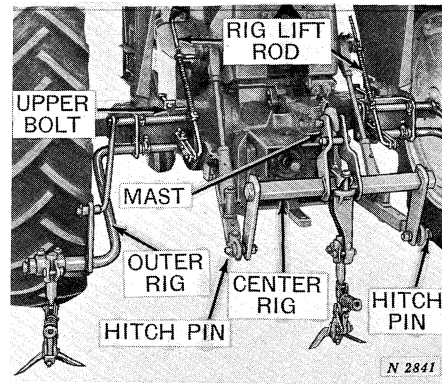
Connect draft links to hitch pins. Attach the center link to the mast.

AXLE MOUNTED OUTER RIGS

Attach the outer rigs to the tractor axle housing with long bolts. Strap goes on the front of the housing.

For "A" Series Rear Rigs, the tractor fender U-bolt must be in the fourth notch from the inner end of the axle.

For "B" Series Rear Rigs, the tractor fender U-bolt must be in the third notch from the inner end of the axle.

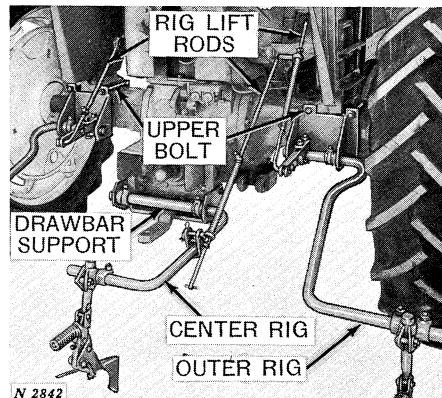


On rear rigs with parallel or straight lift the bracket locating rods go in the second and fifth notches out from the inner end of the axle

On rear rigs with offset beams, the bracket locating rods go in the third and sixth notches on the tractor axle housing.

Pin the lift rods to the tractor rockshaft arms.

DRAWBAR MOUNTED CENTER RIG



Bolt the center rear rig to the tractor drawbar support. Attach the center rig lift rod to the pin holding the right-hand rig lift rod to the tractor rockshaft arm.

INFORMATION ABOUT UNITED STATES AND CANADIAN WARRANTY

The warranty on this machine or equipment comes from your John Deere dealer and is contained in the purchase agreement you sign. If you are purchasing the machine or equipment new, the dealer's warranty ordinarily contains the following provisions.

He agrees to replace parts which prove defective with normal and proper use within:

TWELVE MONTHS from date of delivery to you unless the machine or equipment is sold for industrial, construction or logging use.

SIX MONTHS from the first day of the month following the date on which you first use the machine or equipment if the machine is sold for industrial, construction or logging use.

He agrees to give a special warranty for sweeps, shovels, and extra-heavy-duty high-speed shares, based on wear instead of time of use.

He has no obligation to replace parts whose failure is related to modification or alteration of this machine or equipment in ways not recommended by the manufacturer. It is your obligation to bring the machine or equipment to his service shop or, if this is not possible, to reimburse him for his travel expense in fulfilling the warranty.

The dealer's warranty in the purchase agreement ordinarily does not cover batteries, rubber tires, radios, engines not of John Deere manufacture or used machines or equipment, and there is no warranty or other obligation on such items unless your dealer has delivered to you a certificate or other written statement which is separate from the purchase agreement and is designated "Warranty."

Certain other limitations on the obligation of the dealer and of others may be contained in the warranty in your purchase agreement.

Be sure to read the "Warranty and Agreement" in your purchase agreement, or your separate "Warranty," as there is no other warranty obligation, express or implied, including the implied warranties of merchantability and fitness, on this machine or equipment.

Note: The above summary of the provisions ordinarily found in the dealer's warranty was correct on the date of printing of this manual. The warranty you actually receive governs in case of any inconsistency with the summary.

