

AT12BB BEET BEAN-VEGETABLE CULTIVATOR



JOHN DEERE

OPERATORS MANUAL AT12BB BEET BEAN-VEGETABLE CULTIVATOR

OMN97680 (01SEP65) English

OMN97680 (01SEP65)

LITHO IN THE U.S.A.
ENGLISH



TO THE PURCHASER



accurately controlled heat-treating assure maximum strength and long life for every part.

Keep this manual in a convenient place for quick and easy reference. Study this manual carefully. You have purchased a dependable and sturdy implement, but only by proper care and operation can you expect to receive the service and long life designed and built into it.

Give your cultivator proper attention during slack periods, and by doing this it will always be ready, without delay, when you need it.

This manual contains valuable information about your new John Deere Cultivator. It has been carefully prepared and illustrated. In it, you will find instructions and helpful suggestions for operating, adjusting, attaching, transporting, lubricating, and servicing your new cultivator. You will also find instructions for adapting your cultivator to work properly in all types of field cultivation.

Sometime in the future, your cultivator may need new parts to replace those that are worn or broken. If so, go to your John Deere dealer. Provide him with the model number of your cultivator and the date purchased. Record this information in the space provided below, so it will be readily accessible when it is needed.

Location references

Your new cultivator was built to rigid manufacturing standards. Material and workmanship are the best. Precision production methods, and

Right-hand and left-hand references are determined by standing at the rear of the cultivator and facing in the direction of travel.

JOHN DEERE AT12BB CULTIVATOR

Cultivator Model

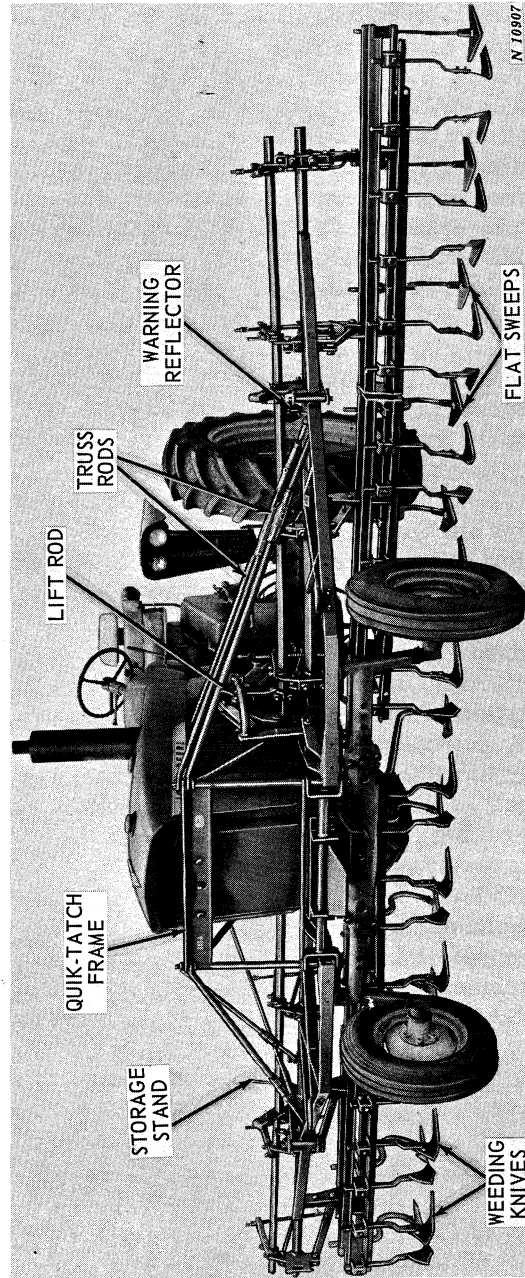
Date Purchased 19

(To be filled in by Purchaser)

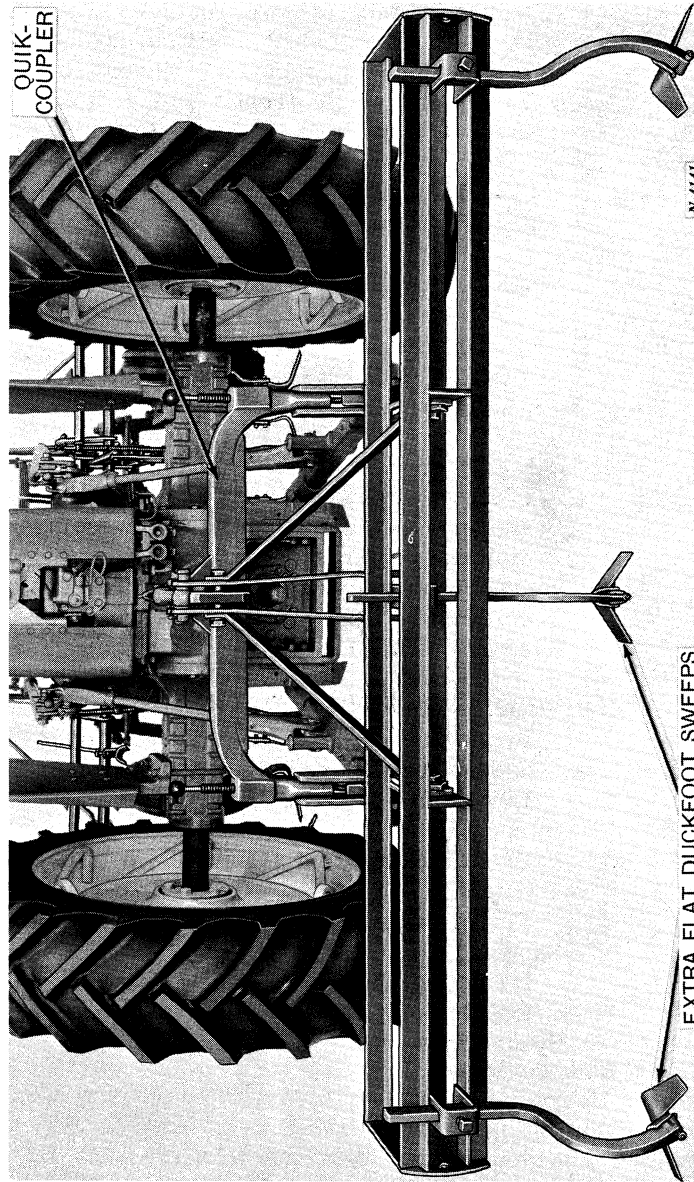
Price

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John Deere AT12BB Cultivator with weeding knives and extra-flat duck foot sweeps



John Deere AT12BB Cultivator with 91-inch rear tool frame

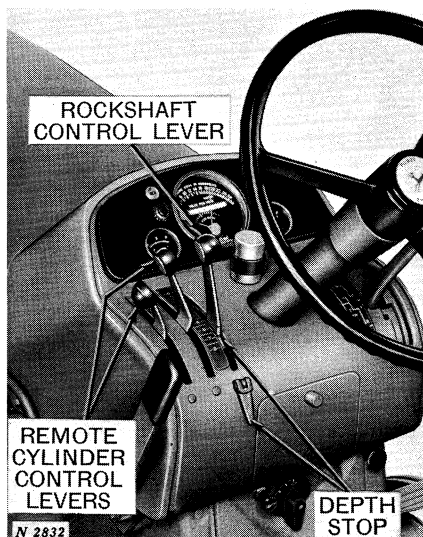
Specifications

- Tractor John Deere 3020, 4020, 3010, and 4010 Row-Crop Tractors with Double or Single Front Wheels or with Adjustable Tread Front Axle. Tractor must be equipped with 3-Point Hitch. Tire size is 7.50 x 15 - 6 ply for double front wheel and 11 x 12 - 12 ply for single front wheel. If Roll-O-Matic is used, it must be the heavy-duty model.
- Cultivator Models AT12BB-R Operated by Rear Rockshaft.
AT12BB-F Operated by Front Rockshaft.
- Row Spacing When set for 12 rows—20- or 22-inch rows.
- Rear Tool Frames. . . . 91 inches (Regular equipment).
124 inches (No. 125) (Optional equipment).
136 inches (No. 135) (Optional equipment).
- Standards. Straight or curved rigid, spring or pin break for shovels, sweeps, and irrigating or double-point shovels; 1-1/2-inch offset for weeding knives, disk and bed knives; spear point.
Only the regular standards can be used on this cultivator. Long and high clearance standards cannot be used.
- Tool Equipment. Weeding Knives:
Round turn—6-, 8-, 10-, and 12-inch.
Square turn—6- and 8-inch.
Low point—6- and 8-inch.
Sweeps:
Extra flat duckfoot sweep—6-, 8-, 10-, and 12-inch.
Flat sweeps—4-, 5-, 6-, 8-, 10-, and 12-inch.
Shovels:
Irrigating shovels—6- and 7-inch.
Double point shovels.
Spearpoints
Bed Knives
Disk Weeders
Shields
- Special Equipment. . . . Rotary hoe attachment.
Clod breaker attachment.
Gauge wheels (steel), with or without chains.
Gauge wheels (rubber), with or without chains.

(Specifications and design subject to change without notice.)

Operation

Controls

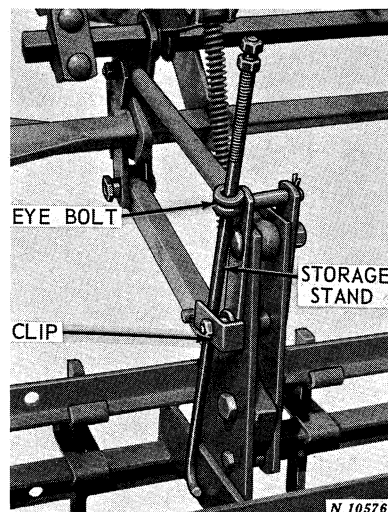


The AT12BB-R Cultivator is controlled by the rockshaft control lever on the tractor. Push the lever forward to raise the cultivator (both front and rear rigs) and pull it to the rear to lower the cultivator. Use the depth stop to regulate the working depth of the cultivator. See your tractor operator's manual.

The front rigs of the AT12BB-F Cultivator are controlled by the remote cylinder operating levers. Push the levers forward to raise the cultivator and to the rear to lower the cultivator.

The rear rigs are controlled by the rockshaft control lever. Install and operate the hydraulic controls as instructed in your tractor operator's manual.

Storage stands



Make sure the storage stands are secured behind the clip on the coupling plates before raising or operating the cultivator. Be sure the nut on the clip is tight.

Tractor tire inflation

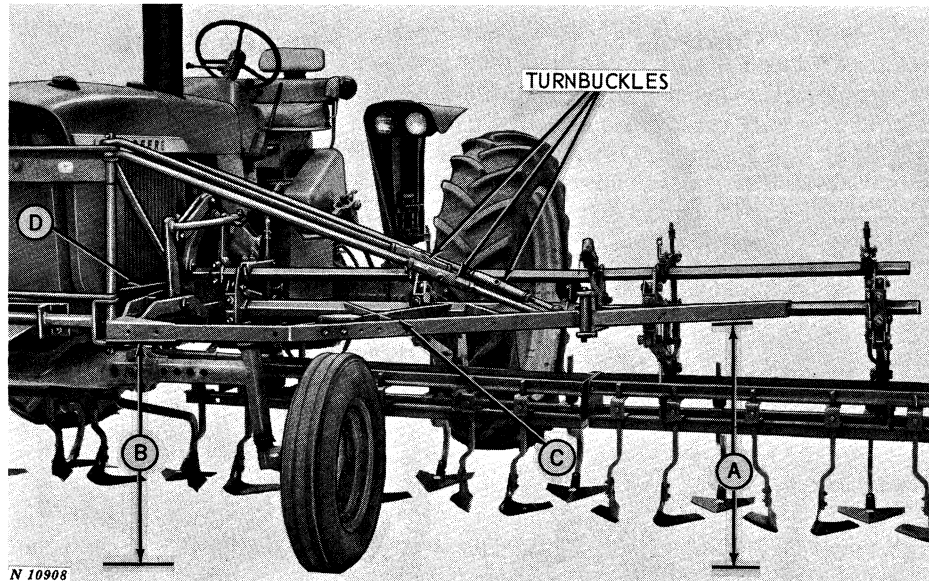
Refer to your tractor operator's manual for operating instructions on tractor tire inflation pressures.

Keep your cultivator a John Deere Cultivator

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

6 operation

Leveling front frames



To do a good job of cultivating, the front frames of the cultivator must be level.

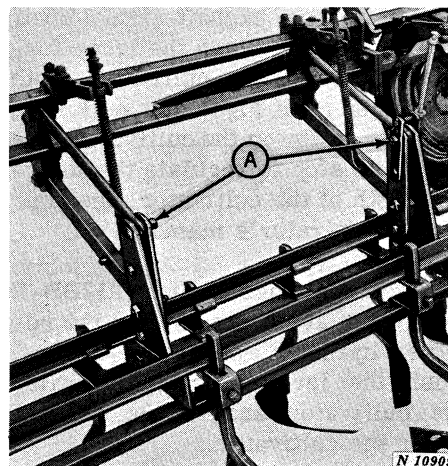
At the outer end of the frame, the distance "A," should be the same or slightly greater than distance "B" next to the tractor.

If the frame is not level, adjust the turnbuckles on the three truss rods.

The cultivator also must be level fore-and-aft. To check, stand at the front of the cultivator and look inward toward the tractor. Sight along the cultivator frame at "C" and see if it is parallel to the tractor side cowl at "D."

If frame is not level, adjust the upper and lower truss rods and tighten the turnbuckle lock nuts.

Tilting front frames



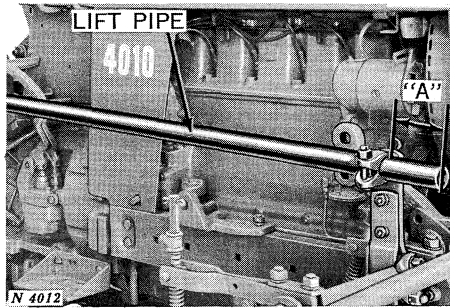
Each frame can be tilted at "A" (above) so the frames will be level.

Sight across the frames from the side of the cultivator to see that they are all tilted the same.

Height of lift of front frames

Adjustments are provided on the lift rods and lift pipes to obtain the correct height of lift. Make these various adjustments on the cultivator as shown, if necessary.

Lift pipe (AT12BB-R Cultivators)

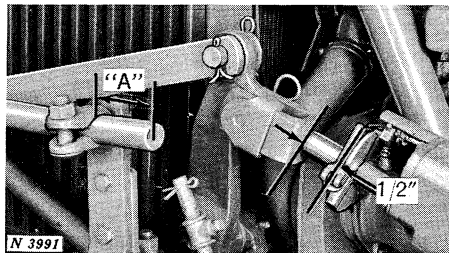


Set the distance at "A" (from the end of the lift pipe to the clamp) on both sides of the tractor as follows:

Tractor	Dimension "A"
3010, 3020	14-1/2"
4010	4"
4020	3"

NOTE: Dimensions above apply to 84-1/2-inch lift pipes. Add 2 inches to these dimensions for 86-1/2-inch lift pipes.

Lift rod (AT12BB-F Cultivators)



There are two places where adjustments can be made when using a front mounted rockshaft.

For normal operation, dimension "A" on the cultivator lift rod should be four inches when the AT12BB-F Cultivator is on a 3020 or 3010 Tractor and three inches when the Cultivator is on a 4020 or 4010 Tractor.

On all tractors, set the distance from the hydraulic cylinder stop to the cylinder yoke at 1/2-inch for average conditions.

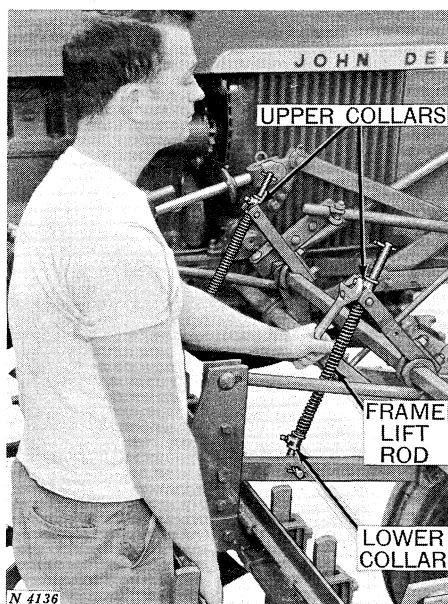
IMPORTANT: Be sure the cylinder is attached to the lower hole of the front rockshaft arm as shown. The lift linkage is attached to the upper hole in the rockshaft arm.

All cultivators

It may be necessary to change the dimensions at "A." When raising cultivator for first time, raise it slowly. If the cultivator hits the tractor, loosen all the upper collars on the frame lift rods. Then raise the cultivator to its fully raised position and check to see if the arm on the outer end of the lift shaft is in position so the transport pin can be installed. See page 11. If not, adjust the dimension at "A" until the transport pin can be installed.

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Frame lift rods



To set the frame lift rods for the highest possible lift raise the cultivator to its fully raised position. Then raise the inside frame by hand as high as possible and set the upper collars down next to the swivels as shown above.

Raise the outside frame as high as the inside frame and set the upper collars down next to the swivels so both frames will be level.

Adjusting down pressure on front frame

Down pressure on the front frame sweeps, knives or shovels can be increased by raising the lower collars on the frame lift rods. If no down pressure is desired, loosen the lower collars on the rig lift rods and let them slide down to the bottom of the rod.

Down pressure is desirable and should be adjusted for when soil conditions do not allow for proper sweep penetration.

Adjusting depth of cultivation

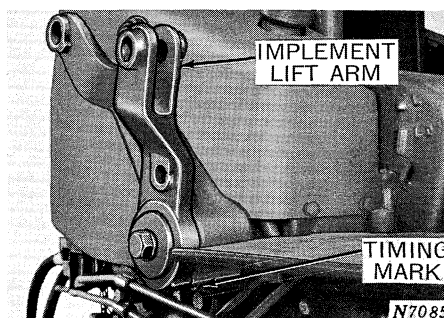
The cultivator can be set to go deeper by adjusting the depth stop on the cylinder of the front operated cultivators or by the depth stop on the rockshaft control lever of the rear operated cultivators.

To go deeper with the front rockshaft operated cultivators, move the cylinder depth stop up next to the cylinder yoke.

For the rear rockshaft operated cultivators, adjust the quadrant depth stop to obtain the same effect as the front rockshaft operated cultivators.

NOTE: If gauge wheels are installed, they control the depth of cultivation.

Timing implement lift arms on AT12BB-R Cultivator



It is very important that the implement lift arms, attached to the tractor to operate the cultivator, are properly timed. If the cultivator is equipped with a rear tool frame and the arms are not timed, it could mean the front and rear tool frames will not operate at the same depth.

The implement lift arm is timed properly when the timing mark on the arm is in line with the timing mark on the tractor rockshaft.

Rear tool frame

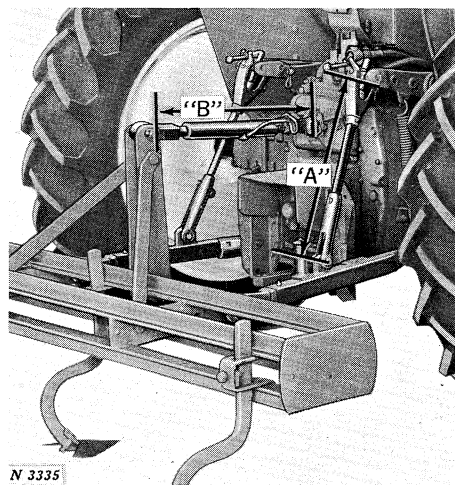
The rear tool frame is operated by the tractor rockshaft and controlled by the rockshaft control lever.

Working depth

On all AT12BB-R Cultivators the working depth is controlled by the length of the lift links on the 3-point hitch. It should be checked after the working depth of the front frames has been determined. Use the adjusting cranks to lengthen or shorten the lift links so the rear tool frames will operate at approximately the same depth as the front frames. Keep the tool frame level.

On AT12BB-F Cultivators, use the adjustable depth stop on the rockshaft control lever to set the working depth. The length of the lift links on the 3-point hitch can be changed for leveling if required.

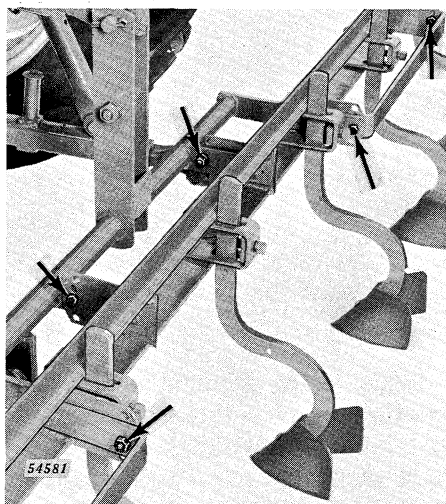
Adjusting 3-point hitch



The recommended length "A" for the right- and left-hand lift links is 28 inches.

The length of the center link at "B" is 25-1/2 inches. The 3-point hitch should be adjusted so that the standards are vertical when the frame is at working depth.

Adjusting 124- or 136-inch rear tool frame



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

The pitch and suction of the tools can be adjusted by changing the angle of the tool frame. This is done by relocating the six bolts used to connect the tool frame to the inner and outer frame bars as shown by the arrows. A choice of five bolt holes is provided for each bolt.

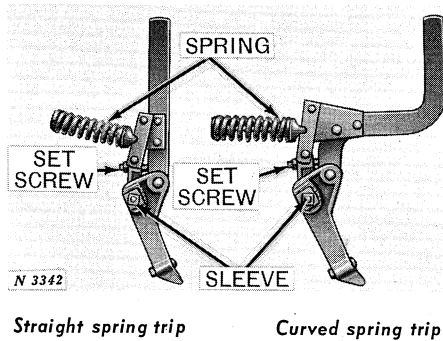
Set the standards so all the tools operate at the same depth.

BE SAFE

It pays to be careful,
It costs to be careless!

Adjusting tilt of sweeps and knives

Spring-trip standard



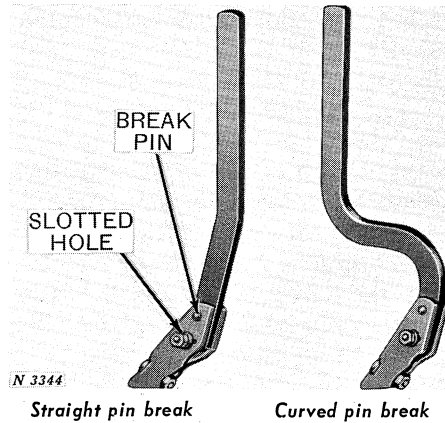
If your cultivator is equipped with adjustable standards, it is important that the sweep or shovel be set properly.

When using straight spring-trip or curved spring-trip standards, adjust the sleeve to tilt sweep so that it is in correct relationship to the ground as illustrated below.

Adjust spring-trip shanks so they do not trip under ordinary cultivating conditions. Turn set screw out, trip holds tighter. Turn set screw in, trip releases easier.

IMPORTANT: Adjust tripping action of shank only at set screw. Do not set trip by adjusting nut on spring. Spring nut should be tightened only to keep spring slightly compressed.

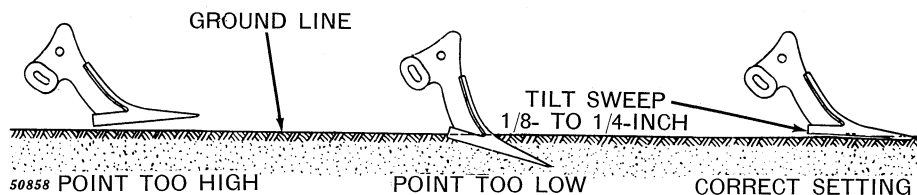
Pin break standard



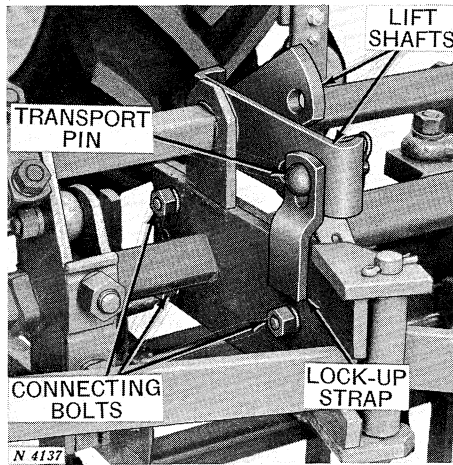
Tilt adjustment can be made on the straight pin break and curved pin break shanks at the slotted hole.

Weeding knives

Use slotted holes in the knives to adjust the knives to various soil and crop conditions.



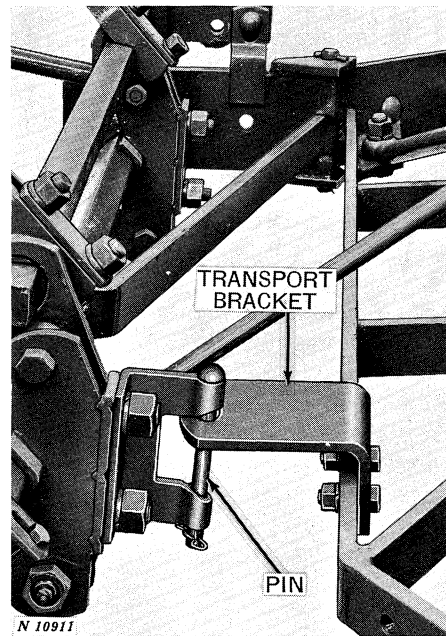
Transporting cultivator



To reduce the width of the 12-row cultivator for transporting, raise the cultivator to its fully raised position. Remove the transport pin connecting the inner and outer lift shafts.

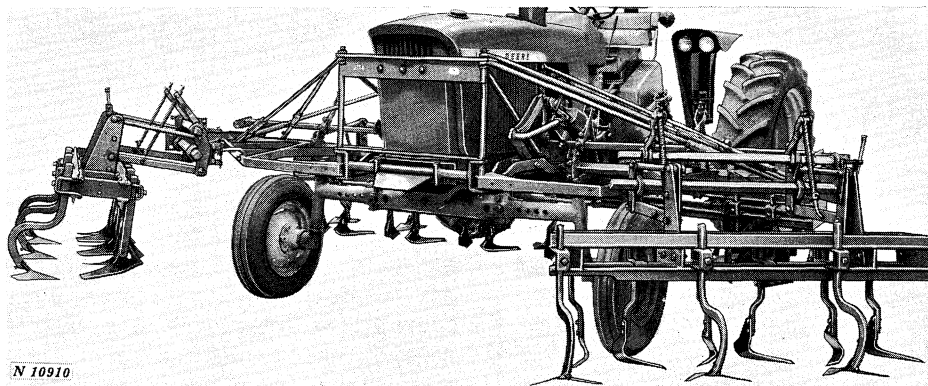
Insert the pin through the lock-up strap and outer lift shaft arm as shown.

Lower the cultivator inner sections and remove the three bolts connecting the outer section to the inner section.



Swing the outer sections forward and inward until the transport bracket engages the transport lock-out bracket as shown.

Insert the pin in the transport bracket.



Using the tractor hydraulic system, raise the cultivator.

The cultivator is now ready for transporting. Be sure to never transport the cultivator more than 10 miles per hour.

To prepare the cultivator for field operation, first lower the inner section. Then reverse the procedure as described above.

Safety suggestions

The safety of the operator is one of the prime considerations in the minds of John Deere engineers when designing farming equipment. Shielding, simple adjustments, and other safety features are built into machines whenever possible.

However, investigation of thousands of farm 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 below. Study these suggestions given below carefully and insist that they be followed by those working with you and for you.

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

Never ride or allow others to ride on the cultivator or the tractor. The tractor operator should be the only person on the tractor while it is being operated.

Drive at speeds slow enough to insure your safety. Reduce speed

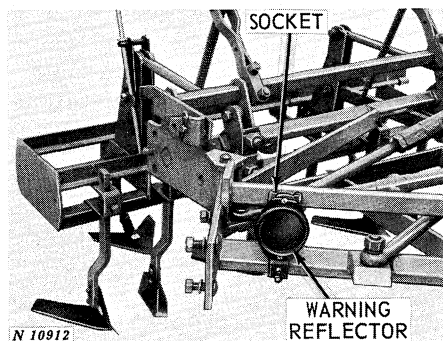
before turning quickly or applying individual brakes. Drive slowly over rough ground.

Be sure that clothing worn by tractor or machine operator is fairly tight and belted. Loose jackets, skirts, shirts, or sleeves should not be permitted because of the danger of getting into moving parts.

All women operators should wear trousers or slacks.

Always keep tractor in gear when going down steep grades.

Keep a firm grip on the steering wheel at all times when the speed is increased.



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.



Maintenance suggestions



Never attempt to clean, oil or adjust a machine while it is in motion

The following suggestions are recommended to help keep the cultivator in good condition.

Nuts and bolts

To insure trouble-free service, it is important to keep all nuts and bolts tight. If they are allowed to become loose, they may bend, strip threads, or cause parts to be lost. Check all nuts and bolts daily before operation.

It is also important that the pivot studs on the lower rig frames be checked periodically and tightened, if needed, to prevent excessive wobble of the tool frames.

Tool frame

The cultivator tool frames should never be allowed to become loose because of wear. They can easily and quickly be tightened. Keep all nuts tight and cotter pins spread.

Shovels, sweeps and knives

The life of shovels, sweeps and knives can be increased and their work made more efficient by greasing the polished faces with a coat of multipurpose grease or heavy oil during the periods of intermittent use and between seasons.

They will also scour much easier if they are cleaned at the end of each cultivating day.

Sharpening shovels, sweeps and knives

Dull or worn-out shovels, sweeps or knives will not destroy weeds, nor permit an even depth of cultivation. They are expensive to operate. Keep your shovels and sweeps sharp!

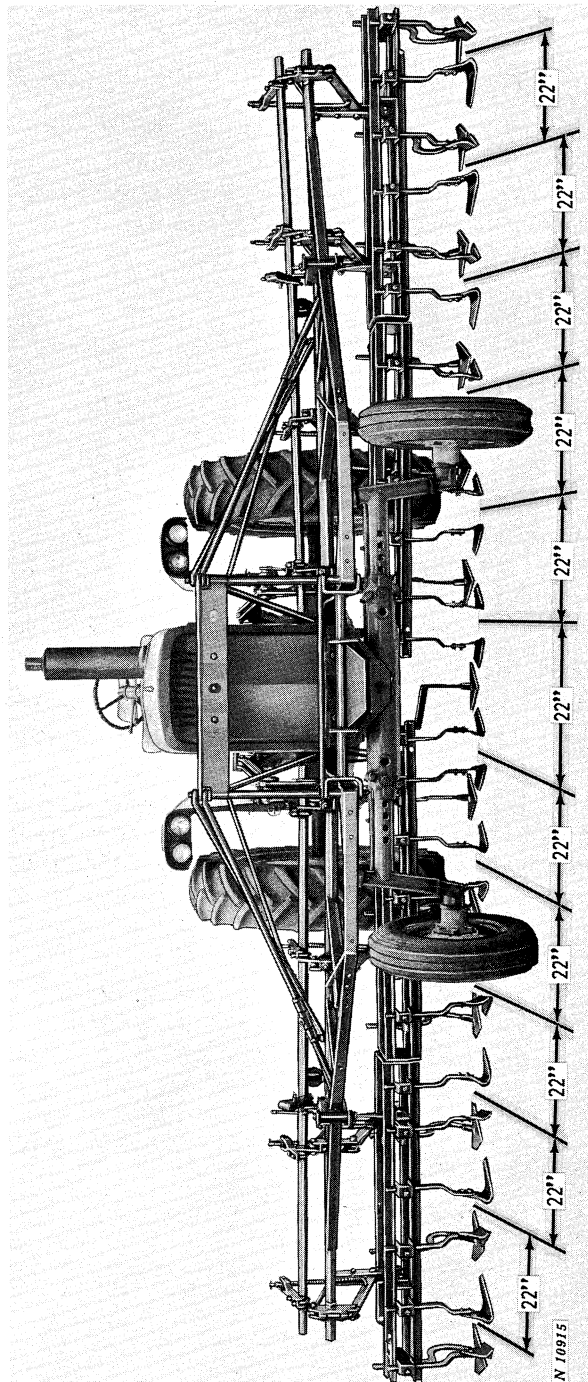
Between seasons or during periods of intermittent use, inspect your cultivator for worn or damaged parts. Failure to do this may cause an expensive delay when attempting to put your cultivator back in service.

Storage suggestions

Before storing the cultivator at the end of the season, clean all mud, dirt, grease, or other foreign material from the cultivator.

Always replace the tractor attaching bolts in the cultivator so you won't have to spend valuable time looking for them when you go to put the cultivator back on the tractor.

Be sure to perform the maintenance suggestions on this page before storing the cultivator at the end of the season.

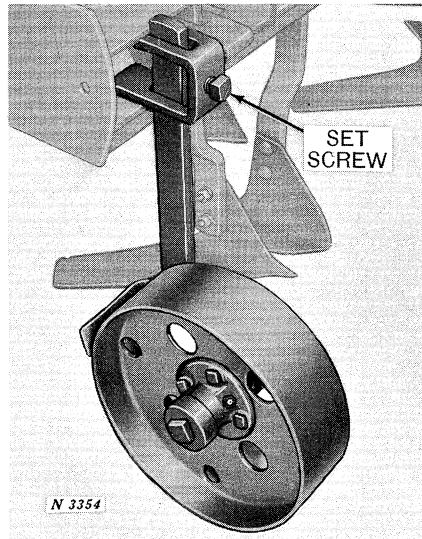


Tools spaced for twelve 22-inch rows

Special equipment

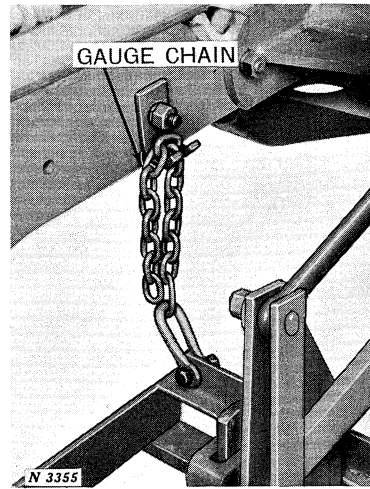
Gauge wheels and chains

Whenever gauge wheels are used, they determine the depth of cultivation. Two types of gauge wheels are available—the rubber tired gauge wheel and the steel gauge wheel.

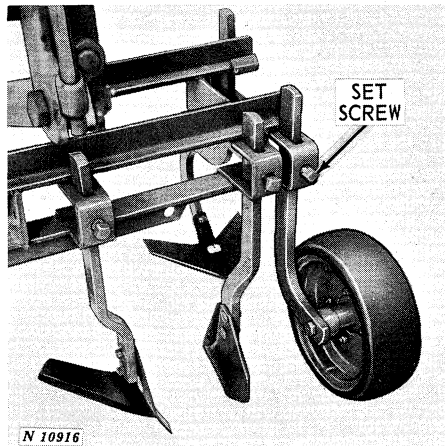


Steel gauge wheel

Loosen the set screw and adjust the cultivating depth by setting the gauge wheels one to two inches above the floor or ground.

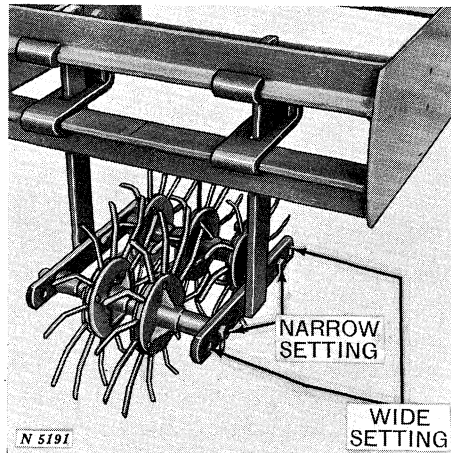


Gauge chains are available for use with gauge wheels. They hold the inside of the cultivator beet and bean frame level.



Rubber tired gauge wheel

Rotary hoe

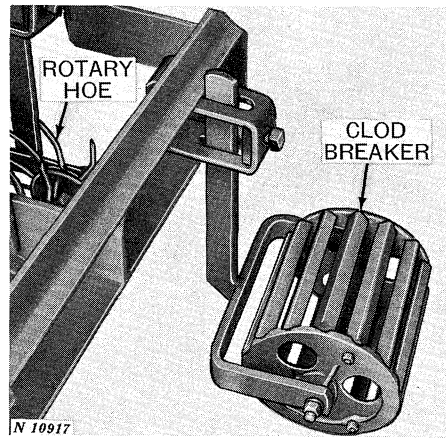


This attachment is ideal for breaking crusted soils and for early cultivation of beets, beans, and all other vegetables. It can be used alone or with the clod breaker shown at the right.

The rotary hoe attaches to the front tool frame with two MD312DN clamps. One attachment is required for each row. If less penetration and less digging are desired, the rotary hoe attachment can be reversed so the wheel tines point rearward.

The rotary hoe is normally used in its narrow setting as shown above. When operating in soils that contain a lot of trash or clods, the hoe sections can be moved to the wide setting to give more clearance between the wheel tines.

Clod breaker

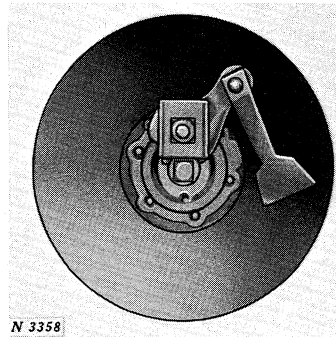


This attachment is the ideal companion tool for the rotary hoe. When used behind the rotary hoe it firms the ground and breaks up the clods. It can also be used alone for breaking crust when the crust is thin and easily broken.

It has a single standard which attaches to the rear of the tool frame with one MD312DN clamp. If used alone, the clodbreaker roller should be attached to the front of the tool frame.

Tools and standards

Disk weeders

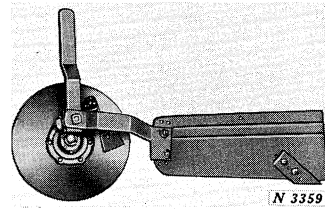


Disk weeders are available in either 9- or 11-inch sizes. They both have adjustable scrapers. Disk weeders are shipped individually. Use one M1916DN standard and one MD312DN clamp with each weeding disk.

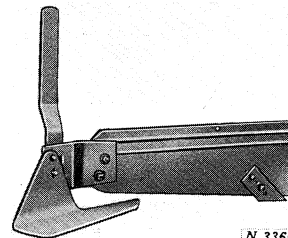
Size	Part Number	Description
9"	MD 377 DN	Right-hand
9"	MD 378 DN	Left-hand
11"	MD 61R DN	Right-hand
11"	MD 61L DN	Left-hand
11"	AN130086	Right-hand*
11"	AN130087	Left-hand*

*Anti-friction bearings.

Shields



Shield for disk weeders



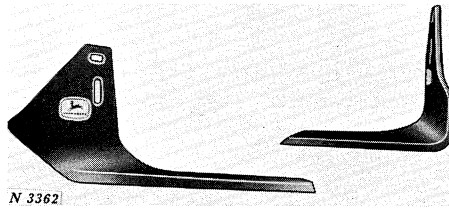
Shield for weeding knives

Two types of shields are available with this cultivator. One shield is used in conjunction with the disk weeders. Another shield is used when the cultivator uses weeding knives.

Part Number	Description
MD 129 DN	Pair of shields for disk weeders
MD 130 DN	Pair of shields for weeding knives

Weeding knives

Round-turn knives



Round-turn weeding knives can be used in abrasive soils and are designed to prevent cutting shallow feeder roots. The upward pitch of the points provides exceptional work in soils that tend to crust after rain or irrigation.

These weeding knives are shaped to do the fast, accurate and close work required for growing vegetable crops profitably. The high sides protect the small, tender plants.

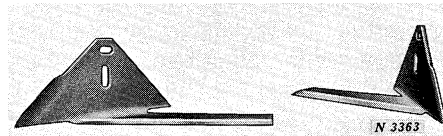
They are made of tough, durable, high-carbon 5/32-inch thick steel with a smooth surface.

Round-turn knives are available in several sizes.

All knives have two slotted holes. This permits more adjustments to meet varying soil and cultivating conditions.

Size	Knife number	Description
6"	M 2325 DN	Right-hand
6"	M 2324 DN	Left-hand
8"	M 2333 DN	Right-hand
8"	M 2332 DN	Left-hand
10"	Y 982 N	Right-hand
10"	Y 983 N	Left-hand
12"	Y 984 N	Right-hand
12"	Y 985 N	Left-hand

Low-point knives

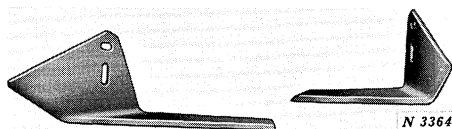


Low-point knives are extremely tough and durable and are available in square turn only. They are designed to work very close to young plants. The backward slope of the point lifts leaves up and out of the way preventing plant damage.

Like other weeding knives, they are made of wear-resistant 5/32-inch steel and slotted for easy adjustment.

Size	Knife number	Description
6"	M 2322 DN	Right-hand
6"	M 2323 DN	Left-hand
8"	Y 996 N	Right-hand
8"	Y 997 N	Left-hand

Square-turn knives



Square-turn knives are designed for close work in young crops and can be set extremely flat to prevent ridging. The upward pitch of the points makes them favorable for work in soils that tend to crust after rain or irrigation.

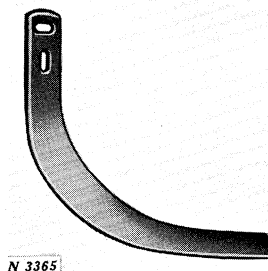
John Deere square-turn knives are often preferred by growers for close work in young crops. They are shaped properly to do fast, accurate, and close work, and the high sides protect the small tender plants.

They are made of tough, durable, high-carbon 5/32-inch thick steel with a smooth surface.

All these knives have two slotted holes. This permits more adjustments to meet varying soil and cultivating conditions.

Size	Knife number	Description
6"	M 2320 DN	Right-hand
6"	M 2321 DN	Left-hand
8"	M 2340 DN	Right-hand
8"	M 2341 DN	Left-hand

Bed knives



Bed knives quickly and easily destroy heavy weed growth. These high-carbon steel knives are made for heavy-duty work.

The knives are 1/4-inch thick and have two attaching slots for proper cutting angle, according to the weed growth that is being destroyed. They are available in one size only.

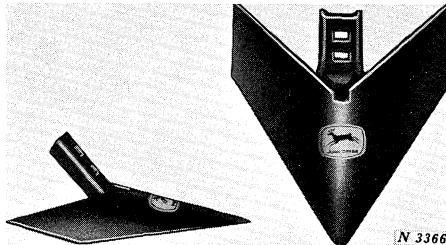
Size	Knife number	Description
6"	M 1617 DN	Right-hand
6"	M 1618 DN	Left-hand

**A Careful Operator
IS THE BEST INSURANCE
AGAINST AN ACCIDENT**

—National Safety Council

Sweeps

Extra-flat duckfoot sweeps



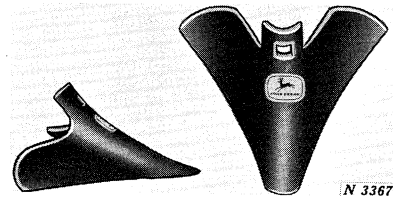
The extra-flat duckfoot sweeps are for early cultivation of crops while the plants are still in the seedling stage. These sweeps are set down flat for high-sweep cultivation and will cut the weeds while hardly disturbing the soil.

The extra-flat sweeps are available in 6-, 8-, 10-, and 12-inch widths and are attached with a 3/8-inch carriage bolt. They are made of thin, tough 1/8-inch steel. They will cut weed roots but will not ridge soil over seedlings as other sweeps may do. They have a smooth finish.

A frog is riveted to the sweep blade to make possible the extra-flat design. Two holes are provided in the frog for varying suction.

Size	Sweep number	Description
6"	MD 36 DN	Full sweep
8"	MD 30 DN	Full sweep
10"	MD 32 DN	Full sweep
12"	MD 34 DN	Full sweep

Flat sweeps



Flat sweeps are for general-purpose cultivating and close cultivating after the crops have passed the seedling stage. They are one-piece construction in 4-, 5-, 6-, 8-, 10-, and 12-inch sizes and are attached by one 3/8-inch carriage bolt.

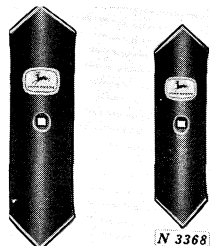
They will scour under difficult soil conditions due to their smooth finish.

The flat sweeps are made of tough, durable, high-carbon 5/32-inch steel.

Size	Sweep number	Description
4"	N 61112 N	Full sweep
5"	N 61110 N	R.H. half sweep
5"	N 61111 N	L.H. half sweep
6"	M 2334 DN	Full sweep
8"	M 2335 DN	Full sweep
10"	M 2336 DN	Full sweep
12"	M 2337 DN	Full sweep

Shovels

Double point shovels



N 3368

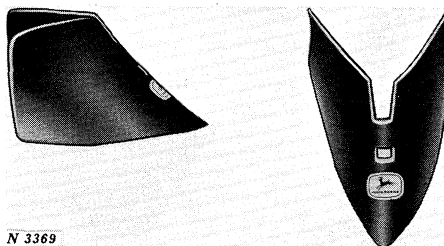
John Deere double pointed shovels are oval-shaped and pointed on both ends. Their length and shape permit either deep or shallow cultivation.

They are regularly furnished with a bolt polished to fit the curve of the shovel.

The points are reversible for extra life and are made from high-carbon steel.

Size	Shovel number	Description
1-1/4" x 8-1/4"	M 403 DN	High Carbon Steel, 1/4"
1-3/4" x 8-3/4"	Y 622 AN	High Carbon Steel, 5/32"
2-1/4" x 9"	Y 777 AN	High Carbon Steel, 5/32"

Irrigating shovels



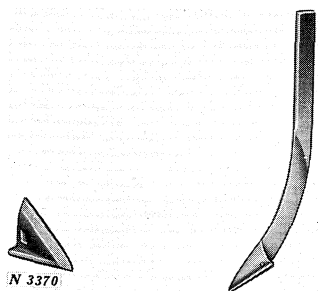
N 3369

John Deere irrigating shovels are shaped for making small irrigation furrows between narrow-planted rows without throwing soil over small growing plants. These shovels are highly polished for good scouring.

The shovels are 1/8-inch thick and come in either 6- or 7-inch width. They are attached with a 3/8-inch carriage bolt.

Size	Sweep number	Description
6"	M 588 DN	4-1/2 inches from the point to the top of the front face of the sweep.
7"	M 589 DN	5-1/4 inches from the point to the top of the front face of the sweep.

Spear points



N 3370

A standard is available with spear points for crust-breaking, deep cultivation, or for breaking deep hardpan. Spear points are used for early

close cultivation. They are heat-treated for maximum durability and longer service.

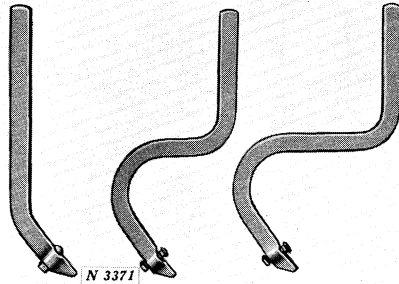
The lower part of the standard, just above the point, has a beveled edge for better penetration and less ground resistance in breaking up hard or tough soils.

The spear points are made of high carbon steel, are removable, and also replaceable.

Number	Description
MD 703 DN	Spear point and shank
MD 657 DN	Spear point with bolt

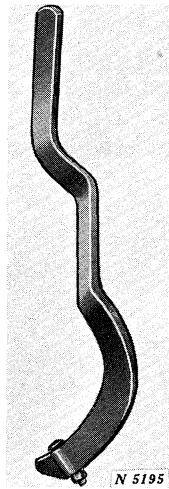
Standards

Stiff standards



Three stiff standards are available for shovels, sweeps, irrigating and double point shovels on your cultivator.

The standards give ground-to-frame clearance of 14 inches. They are made from heavy 5/8- by 1-1/2-inch steel stock for high speed cultivation.

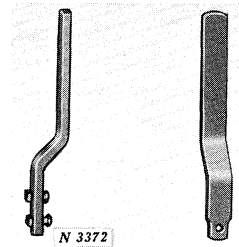


The offset center standard illustrated above attaches to the inside end of the right-hand tool frame. It then curves under the tractor to cultivate out the middle of the row.

Size	Standard number	Description
14'' MD	687 DN	Straight standard
14'' MD	686 DN	Curved standard
14'' AN	60619 N	Offset center standard
14'' MD	702 DB*	Long curved standard

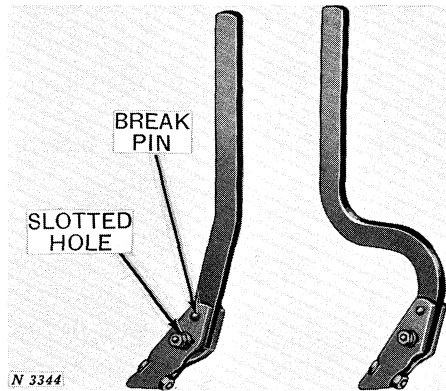
*Used for moving working tool farther to the rear.

Offset standards



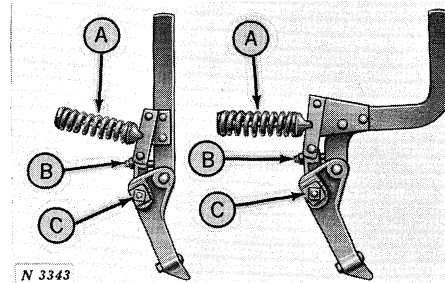
The offset standard illustrated at the left is available for use with weeding knives or bed knives. It is offset 1-1/2 inches and provides for 14-inch clearance from the ground-to-cultivator frame. Order MD464DN.

The offset standard illustrated on the right-hand side is available for use with disk weeders. It provides for 14-inch clearance and is 5/8- by 1-1/2-inch thick. Order M1916DN.

Break pin standards

These standards feature a trip-back action for low-cost protection of the ground working tool in soils where there are relatively few chances of the tool striking obstructions. They are available in two types, straight and curved. The sleeve, to which the ground tool is fastened, is pivot-attached to the lower part of the flat standard. When the ground working tool strikes an obstruction, the break pin shears, allowing the sleeve and ground tool to swing back, clearing the obstruction. It is a simple job to reset the sleeve and insert a new break pin. The lower attaching hole in the sleeve is slotted for changing the angle of the ground working tool.

Standard number	Description
MD 780 DN	Straight standard
MD 779 DN	Curved standard

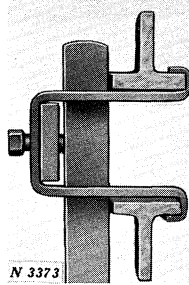
Spring-trip standards

The spring-trip shanks with straight or curved standards are designed for high-speed tractor cultivation in soils where the ground working tools may frequently encounter obstructions.

When the ground-working tool strikes an obstruction, the spring-trip automatically releases, permitting the tool to swing back until the obstacle has been cleared. The tension spring then returns the ground tool to its working position.

The spring tension (A), spring-trip pressure (B), and angle or suck of the tool (C), are easily and quickly adjusted to meet the soil conditions.

Standard number	Description
MD 689 DN	Straight shank
MD 688 DN	Curved shank

Clamps

Clamp Number	Description
MD 312 DN	Used on all 5/8" x 1-1/2" standards.
MD 468 DN	Used for attaching 1-1/8" round shanks to the tool frame.

All standards shown on the preceding pages are quickly and easily fastened to the cultivator frames by the simple but positive clamp shown above.

The standards are held in place by a single, sturdy set screw.

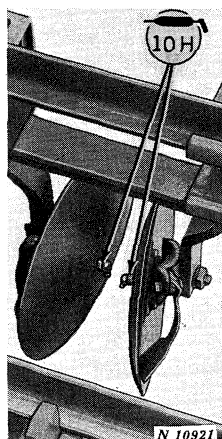
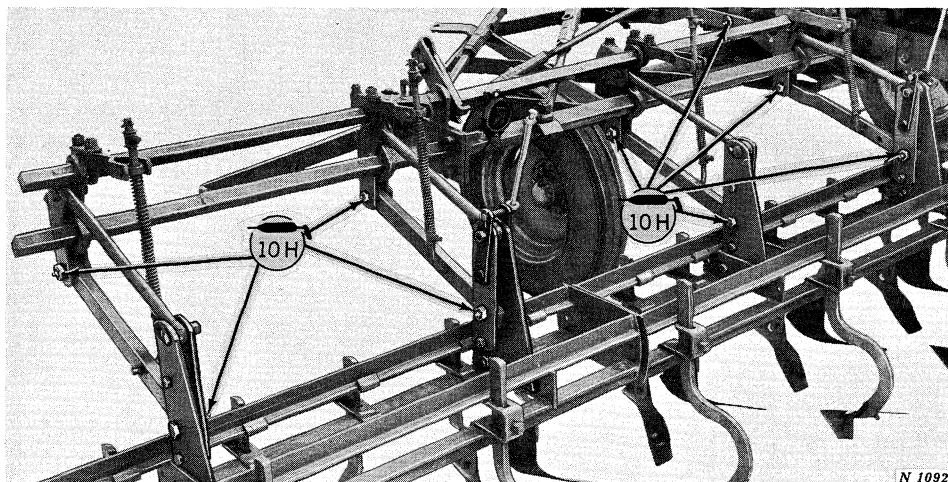
Be Careful



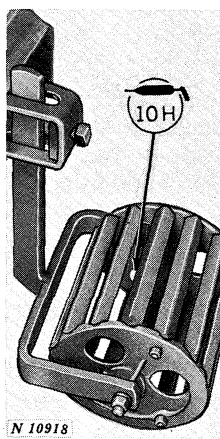
THE LIFE YOU SAVE MAY BE YOUR OWN...

NATIONAL SAFETY COUNCIL

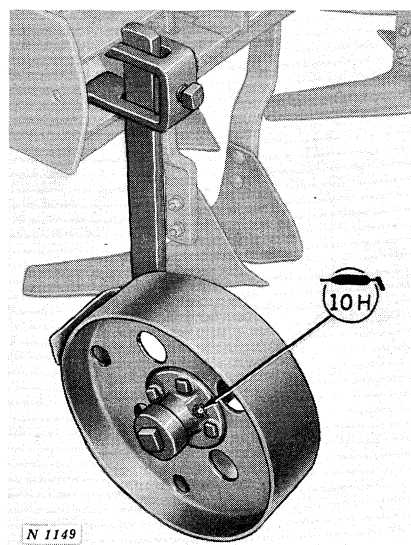
Lubrication



Disk weeders



Clod breaker



Gauge wheel



To avoid possible injury and to insure best result, always stop tractor operation and lower all units before lubricating the cultivator.

Oil moving parts and pivot points. Check to be sure all parts work smoothly. Lubricate grease fittings thoroughly and be sure fittings are firmly installed.

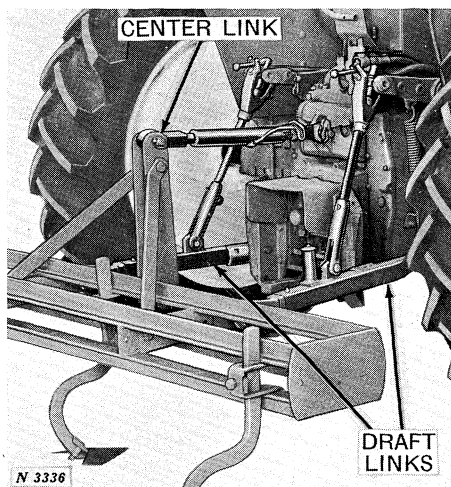
SYMBOLS



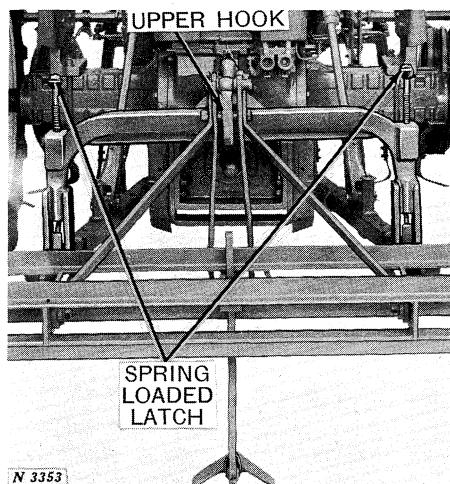
Lubricate every 10 hours with SAE Multipurpose-type grease.

Detaching cultivator from tractor

Rear cultivator frame



Lower the rear tool frame to the floor or ground. Disconnect the draft links from the hitch pins and the center link from the mast.

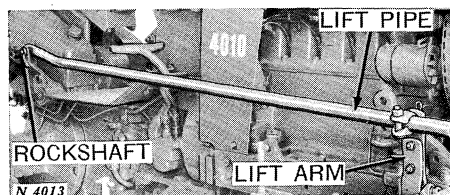


If the Quik-Coupler is used, lower the rear frame onto a level surface. Push down on the spring-loaded latches and lower the 3-point hitch.

Front cultivator frame

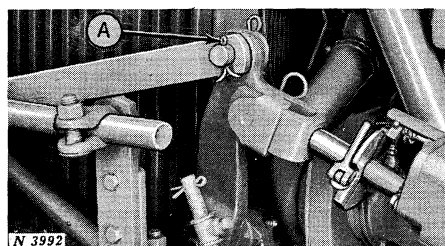
Lower the front cultivator frame on a level surface.

Rear rockshaft control



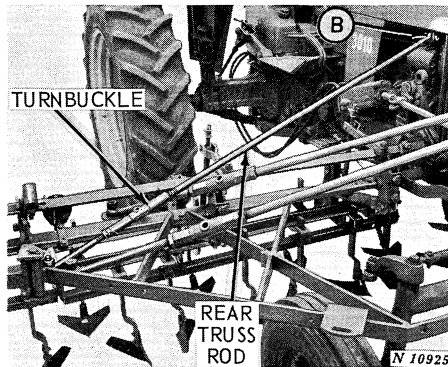
If the cultivator is operated by the rear rockshaft, remove the lift pipes, first at the cultivator lift arm and then from the tractor rear rockshaft.

Front rockshaft control

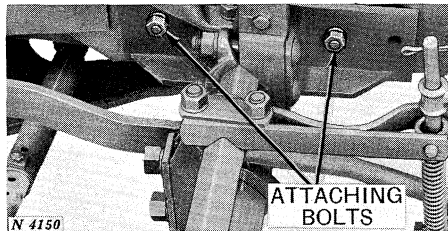


If the cultivator is operated by the front mounted rockshaft, remove the front rockshaft lift linkage at "A."

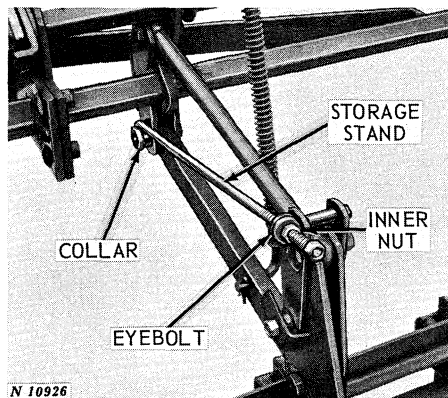
28 *detaching cultivator*



Disconnect the rear truss rod at "B." It may be necessary to turn the turnbuckle in order to free the truss rod from the implement attaching bracket. If the lock nuts are not loosened, the length of the truss rod will remain the same when the cultivator is attached to the tractor.



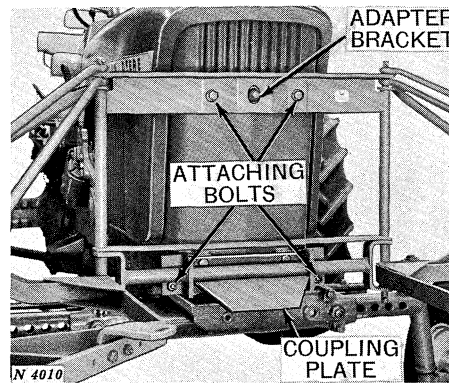
On both sides of the cultivator, remove the nuts from the two attaching bolts.



Hook the end of the storage stand over the collar on the rig hanger and secure the inner nut against the eyebolt on top of the coupling plate. Make sure all four storage stands are hooked and the nuts tight.

Back the tractor until the front rigs are at 90-degree angle to the tractor.

When done this way, the cultivator will be easier to attach to the tractor.

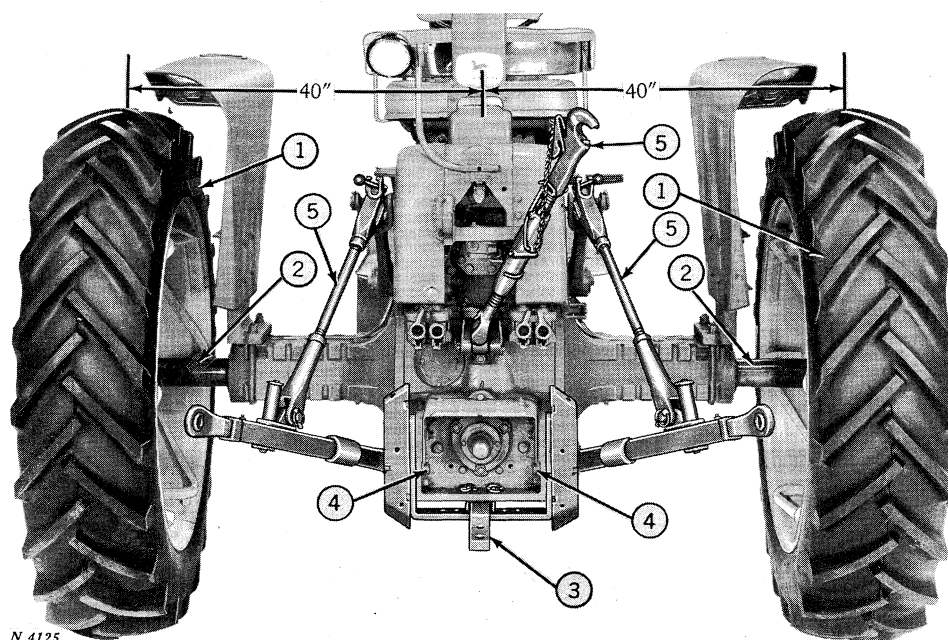


Remove the attaching bolts from the coupling plate and adapter support bracket.

The front coupling plate and adapter support bracket can be left on the tractor unless they interfere with other equipment which will be mounted on the tractor.

Attaching cultivator to tractor

Preparing the tractor



N 4125

1. Set the tractor rear wheels for the row spacing desired. The setting shown is for 20-inch rows. See the tractor operator's manual for instructions on adjusting wheel tread.

2. Grease the exposed portions of the tractor rear axles and wrap with burlap.

3. Move the tractor drawbar to the extreme forward position and pin in place with offset portion of drawbar down. Insert the locking bolts to prevent drawbar from swinging.

4. Sway blocks are required on the tractor. Use them in the category 2 position as shown so that all implement side sway is eliminated. See tractor operator's manual.

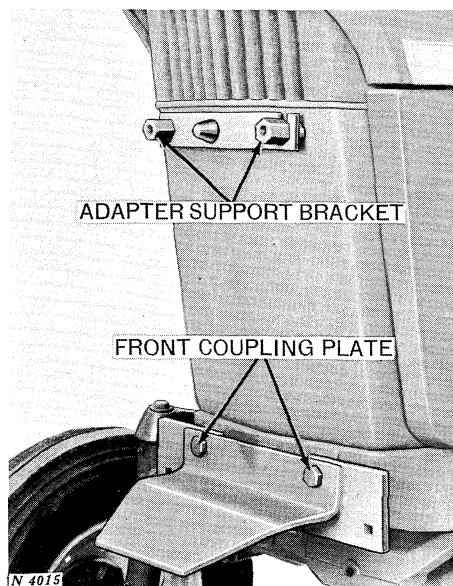
5. Set the lift links to the proper length. See page 9.

6. Move the load selector lever to the "D" (lower) position.

7. (Not illustrated.) For tractors with adjustable tread front axle, set the front wheel tread the same width as the rear wheels.

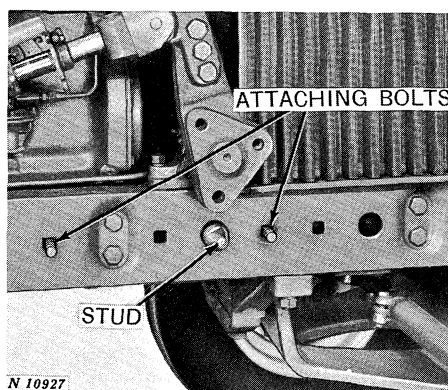
EXAMPLE: For 20-inch rows, set the front wheels to 80-inch tread. When adjusting the wheels, remember the spacing must be spaced equidistant from the center of the tractor. Refer to the tractor operator's manual for operating instructions.

Front frames

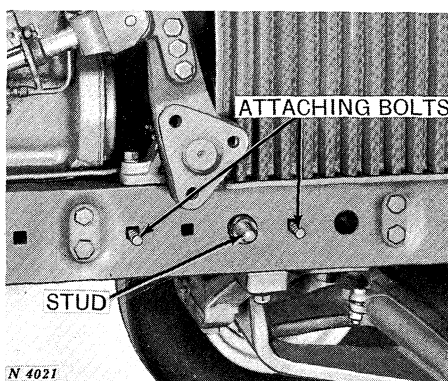


If removed, bolt the adapter support bracket for the upper portion of the Quik-Tatch frame to the front of the tractor. Make sure the vertical slot is on the left-hand side of the tractor as shown.

Bolt the front coupling plate to the front of the tractor.

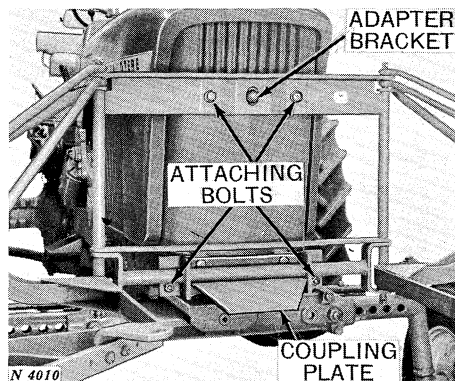


On 3020 and 3010 Tractor



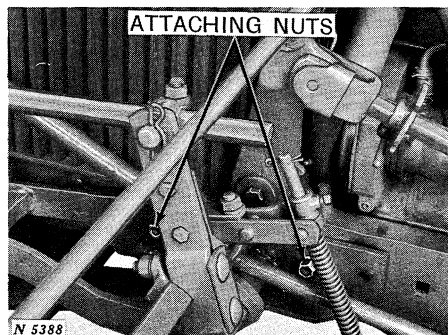
On 4020 and 4010 Tractor

Place the attaching bolts and cultivator stud in their proper places, depending on whether the AT12BB Cultivator is being mounted on a 3020, 4020, 3010, or 4010 Tractor.



Drive the tractor firmly into the cultivator. Drive the tractor forward until the Quik-Tatch frame is seated on the coupling plate.

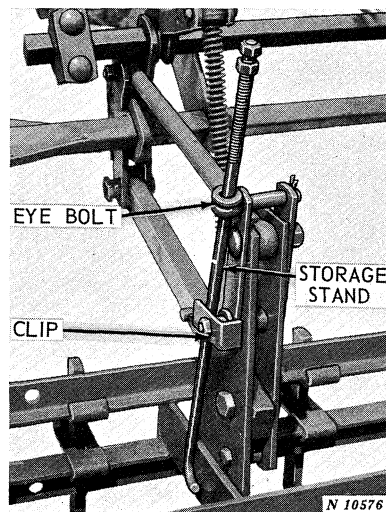
Bolt the bottom part of the Quik-Tatch frame to the coupling plate. Bolt the top of the Quik-Tatch frame to the adapter support bracket as shown.



Drive the tractor forward until the cultivator main frames fold back to the tractor frame.

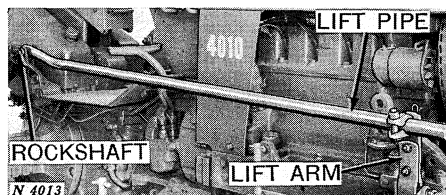
Secure the main frame to the tractor with the attaching bolts and nuts on each side.

Tighten or loosen the inner nut on the storage stands to raise or lower the frames if necessary to line up the attaching holes.



Release the storage stands from the collar on the rig hangers, and secure in place behind the clip on the rig coupling plate. Tighten the nut to hold stands in place.

Rear rockshaft control

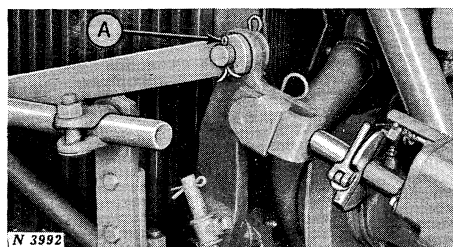


On cultivators controlled by the rear rockshaft, connect the lift pipe to the tractor rockshaft and then to the cultivator lift arm.

Safety is more than a slogan.
It is an attitude of mind
and a way of life.

32 attaching cultivator

Front rockshaft control



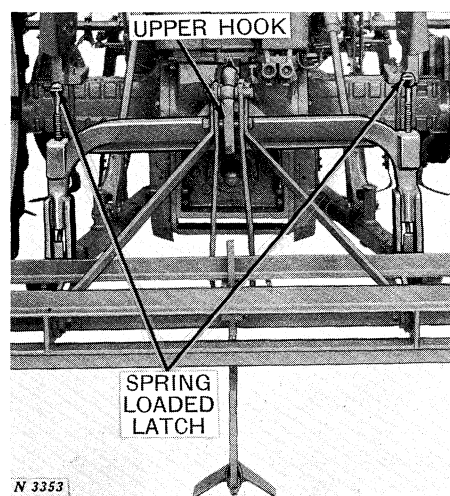
On the cultivators controlled by the front mounted rockshaft, attach the lift linkage to the tractor rockshaft at "A."

Rear truss rod

Attach the rear truss rod to the implement attaching bracket. See illustration on page 28.

Rear tool frames

With Quik-Coupler

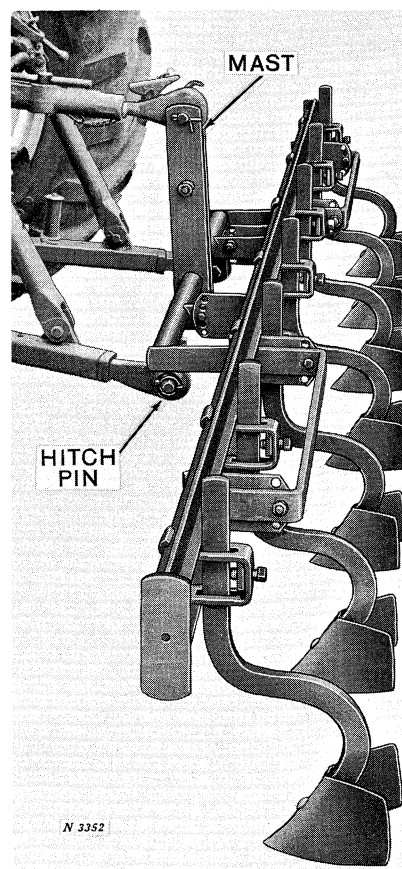


Have the rear frame resting on a level surface.

Lower the 3-point hitch so the upper hook will pass under the spacer between the tool frame mast plates.

Back the tractor up until the three jaws are under their respective hitch points and raise hitch. The lower jaws automatically lock in place.

Without Quik-Coupler



124- or 136-Inch rear tool frame

Have the rear frame resting on a level surface. Back the tractor until the draft links are approximately in line with the ends of the hitch pins.

Attach the left-hand lift link first and then the right-hand lift link. If necessary the leveling screws on the tractor can be used to line up the draft links with the hitch pins.

Attach the center link to the tool frame mast.



nobody can fill them like you can!

That's what the owner of this pair of work shoes is finding out—the hard way. Through a careless action, he has become the victim of an accident. It's a mighty tough way to find out that nobody else can wear your shoes or practice safety for you. And a needless, costly lesson to learn that safety is an everyday need.

Put safety into each of your workdays; read the operator's manual thoroughly; know how to operate each machine properly and safely; take the safety precautions specified; think before you act.

Make sure you wear your "shoes" everyday. Outfit yourself with a safety program now.

As a member of the National Safety Council, we are privileged to use the Green Cross for Safety to designate not only our interest in Safety, but to emphasize and call attention to the safety precautions in this manual.



