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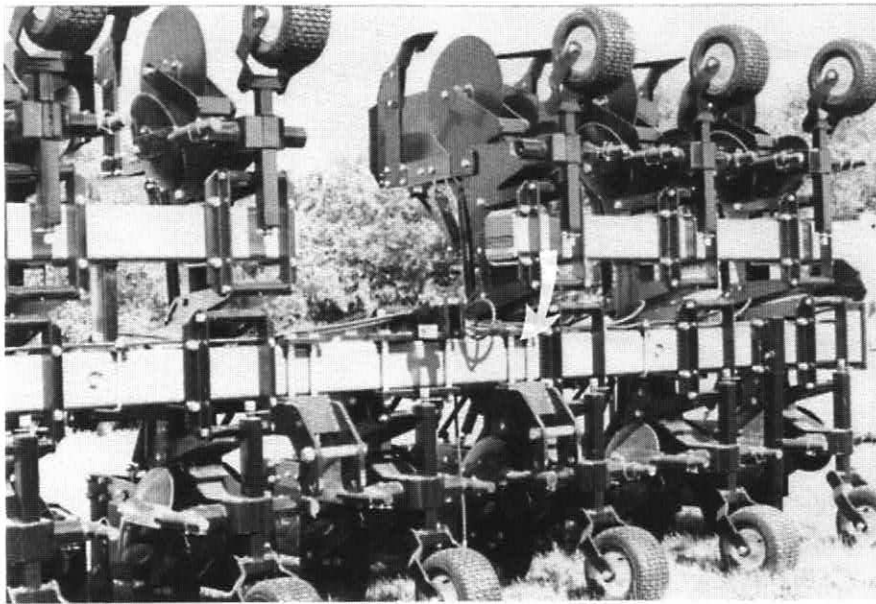
SERIAL NUMBER LOCATION

Always give your dealer the serial number of your Row Crop Cultivator when ordering parts or requesting service or other information.

The serial number plate is stamped in the frame where indicated. Please mark the number in the space provided for easy reference.



Sold Bar



Folding Bar

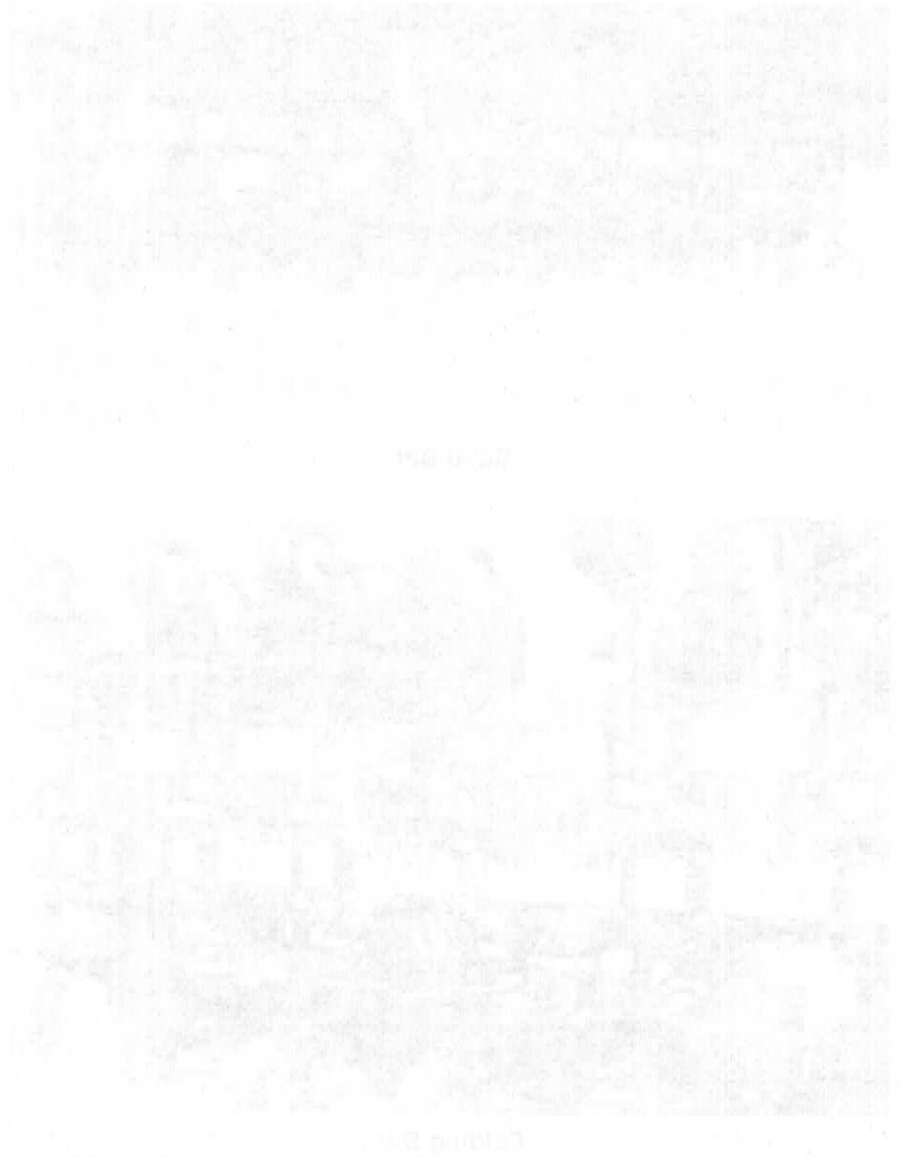
SERIAL NUMBER LOCATION

Model Number _____

Serial Number _____

SERIAL NUMBER LOCATION

Always use your own judgement to determine the correct location of the serial number. The location of the serial number is indicated by the location of the serial number on the product. The location of the serial number is indicated by the location of the serial number on the product.



SERIAL NUMBER LOCATION

Serial Number

Serial Number

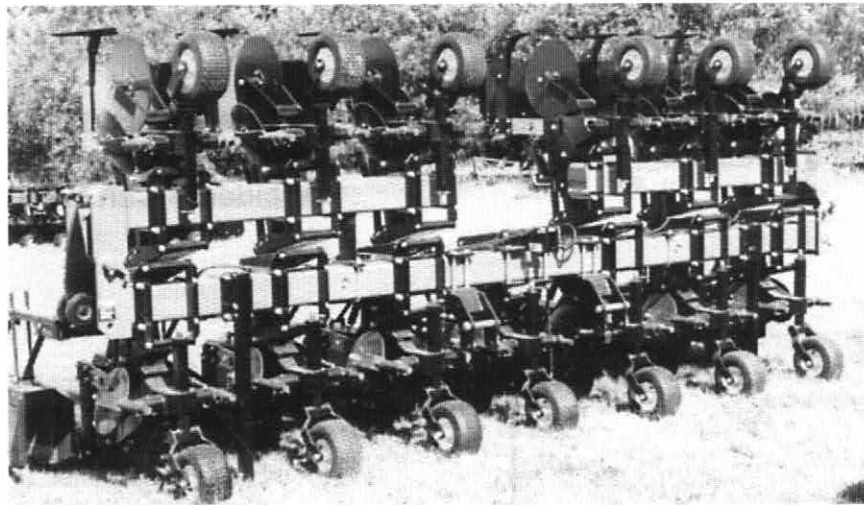
1 INTRODUCTION

Congratulations on your choice of a B&H Row Crop Cultivator to complement your farming operation. It has been designed and manufactured to meet the needs of a discriminating buyer for the efficient cultivating of all row crops.

Safe, efficient and trouble free operation of your B&H Cultivator requires that you and anyone else who will be operating or maintaining the Cultivator, read and understand the Safety, Operation, Maintenance and Trouble Shooting information contained within the Operator's Manual.



Solid Bar



Folding Bar

This manual covers all row crop cultivators made by B&H Manufacturing. Differences are covered and explained where appropriate.

Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your B&H dealer or distributor if you need assistance, information, or additional copies of the manuals.

OPERATOR ORIENTATION - The directions left, right, front and rear, as mentioned throughout the manual, are as seen from the tractor driver's seat and facing in the direction of travel.

2 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on the B&H Cultivator and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

DANGER - Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

WARNING - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION - Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

SAFETY

YOU are responsible for the **SAFE** operation and maintenance of your B&H Row Crop Cultivator. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Cultivator be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating this equipment.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

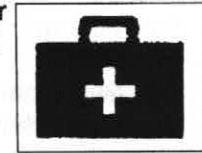
- Cultivator owners must give operating instructions to operators or employees before allowing them to operate the Cultivator, and at least annually thereafter per OSHA regulation 1928.57.
- The most important safety device on this equipment is a **SAFE** operator. It is the operator's responsibility to read and understand **ALL** Safety and Operating instructions in the manual and to follow these. All accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes themselves and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think **SAFETY!** Work **SAFELY!**

2.1 GENERAL SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, maintaining or adjusting the Cultivator.



2. Install and properly secure all shields and guards before operating.
3. Have a first-aid kit available for use should the need arise and know how to use it.



4. Have a fire extinguisher available for use should the need arise and know how to use it.



5. Clear the area of people and remove foreign objects from the machine before starting and operating.

6. Wear appropriate protective gear. This list includes but is not limited to:

- A hard hat
- Protective shoes with slip resistant soles
- Heavy gloves
- Protective clothing



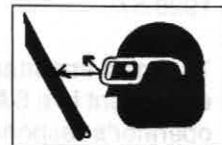
7. Do not allow riders.
8. Stay away from overhead power lines when raising or lowering the wings. Electrocution can occur without direct contact.
9. Place all controls in neutral, stop tractor engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
10. Review safety related items with all operators annually.

2.2 OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before using.
2. Place all controls in neutral, stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Stay away from overhead power lines when raising or lowering the wings. Electrocution can occur without direct contact.
4. Stay away from beneath the wings when they are being raised or lowered. Keep others away.
5. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
6. Do not allow riders on the Cultivator or tractor during operation or transporting.
7. Keep all shields and guards in place when operating.
8. Clear the area of all bystanders, especially children, before starting.
9. Be careful when working around or maintaining a high-pressure hydraulic system. Ensure all components are tight and in good repair before starting.
10. Clean all reflectors, lights and the SMV before transporting on a highway or public road. Be sure to check with local highway authorities and comply with their lighting requirements.
11. Review safety instructions annually.

2.3 MAINTENANCE SAFETY

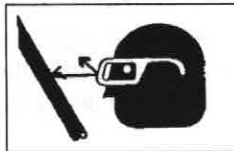
1. Review the Operator's Manual and all safety items before working with, maintaining or operating the cultivator.
2. Place all controls in neutral, stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Keep hands, feet, clothing and hair away from all moving and/or rotating parts.
4. Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
5. Place safety stands or blocks under the frame before working beneath the machine.
6. Always position wings over-center before working on or under them.
7. Be careful when working around or maintaining a high-pressure hydraulic system. Wear proper eye and hand protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop when searching for a pin hole leak in a hose or a fitting.



2.4 HYDRAULIC SAFETY

1. Always place all tractor hydraulic controls in neutral before dismounting.
2. Make sure that all components in the hydraulic system are kept in good condition and are clean.
3. Replace any worn, cut, abraded, flattened or crimped hoses and metal lines.
4. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.

5. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.



6. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
 7. Before applying pressure to the system, make sure all components are tight and that lines, hoses and couplings are not damaged.
- Think SAFETY! Work SAFELY!

2.5 TRANSPORT SAFETY

1. Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when operating the Cultivator in the field/yard or on the road.
2. Check with local authorities regarding Cultivator transport on public roads. Obey all applicable laws and regulations.
3. Always travel at a safe speed. Use caution when making corners or meeting traffic.
4. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
5. Check that the 3 point mounting pins are seated and each pin is secured with a retainer before moving.
6. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
7. Always use hazard warning flashers on tractor when transporting unless prohibited by law.
8. Position wings over-center and rest on frame before moving or transporting.

2.6 STORAGE SAFETY

1. Store unit in an area away from human activity.
2. Store Cultivator only with wings folded.
3. Do not permit children to play around the stored unit.

2.7 TIRE SAFETY

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.
4. When replacing original tire make sure specifications are equal to or exceed manufacturers OEM tires.

2.8 SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs are available from your Distributor or the factory.

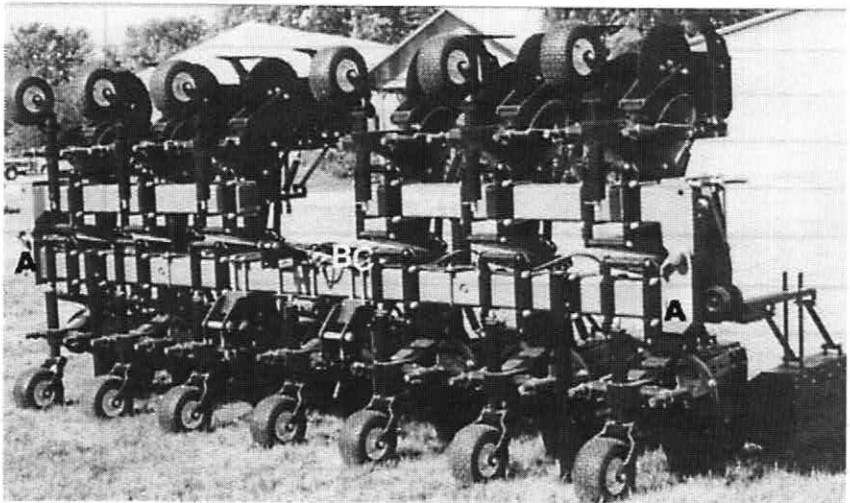
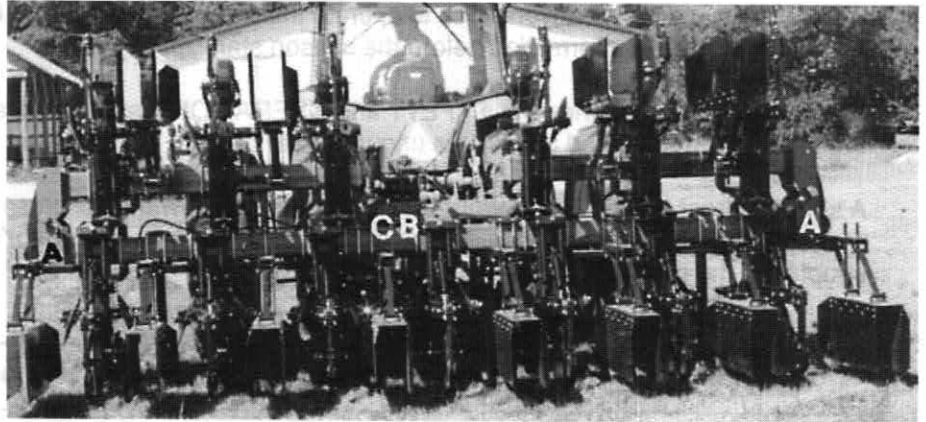
How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

3 SAFETY SIGN LOCATIONS

The types of safety signs and locations on the equipment are shown in the illustration below. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

3 SAFETY SIGN LOCATIONS

The types of safety signs and locations on the equipment are shown in the illustration below. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



B

! DANGER

**ELECTROCUTION HAZARD
KEEP AWAY FROM POWER LINES**

To prevent serious injury or death from electrocution:

1. Stay away from overhead power lines when raising or lowering the wings.
2. This machine is not grounded. Electrocution can occur without direct contact.

2303

C

! CAUTION

1. Read and understand Operator's Manual and Safety Signs before using.
2. Place all controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Install and secure guards before operating.
4. Keep hands, feet, hair and clothing away from moving parts.
5. Do not allow riders.
6. Stay away from overhead power lines when raising or lowering the wings. Electrocution can occur without direct contact.
7. Use hazard flasher on tractor when transporting.
8. Clean reflectors, SMV and lights before transporting.
9. Keep hydraulic lines, fittings, and couplers tight and free of leaks before using.
10. Review safety instructions with all operators on an annual basis.

2302

REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

4 OPERATION



OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before using.
2. Place all controls in neutral, stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Stay away from overhead power lines when raising or lowering the wings. Electrocutation can occur without direct contact.
4. Stay away from beneath the wings when they are being raised or lowered. Keep others away.
5. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
6. Do not allow riders on the Cultivator or tractor during operation or transporting.
7. Keep all shields and guards in place when operating.
8. Clear the area of all bystanders, especially children, before starting.
9. Be careful when working around or maintaining a high-pressure hydraulic system. Ensure all components are tight and in good repair before starting.
10. Clean all reflectors, lights and the SMV before transporting on a highway or public road. Be sure to check with local highway authorities and comply with their lighting requirements.
11. Review safety instructions annually.

4.1 TO THE NEW OPERATOR OR OWNER

B&H Row Crop Cultivators are designed to efficiently remove weeds and work the soil between plants when crops are planted in rows.

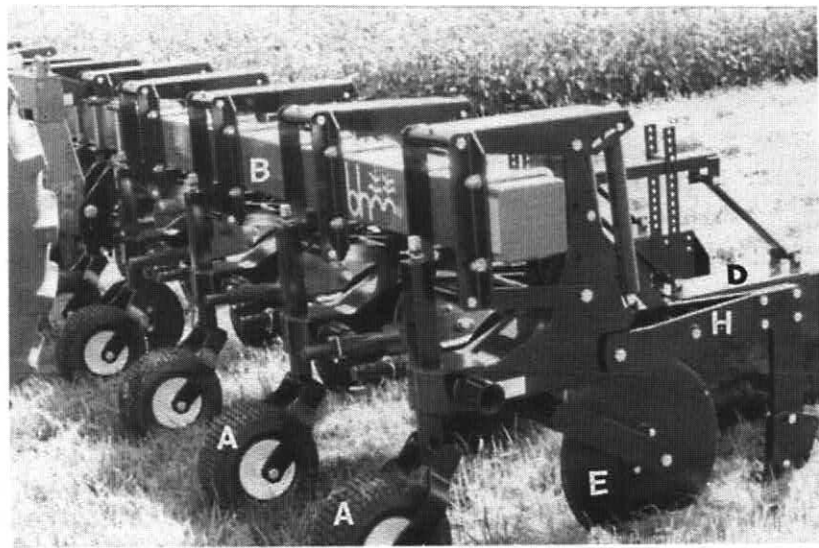
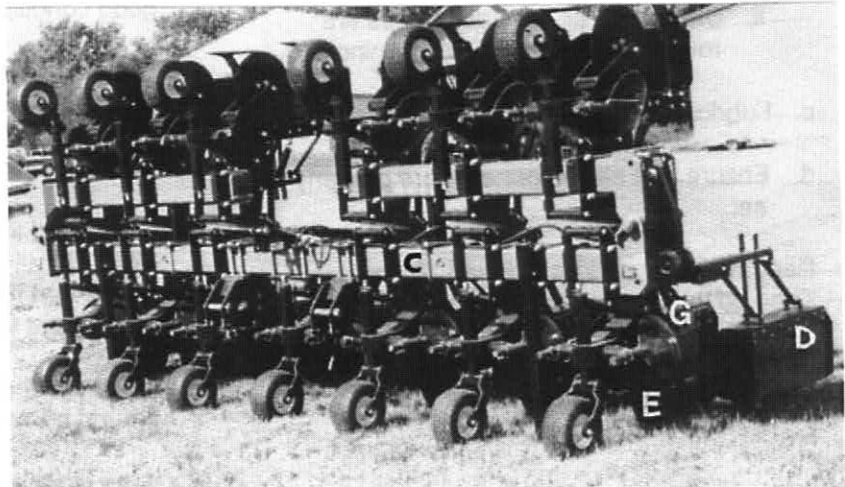
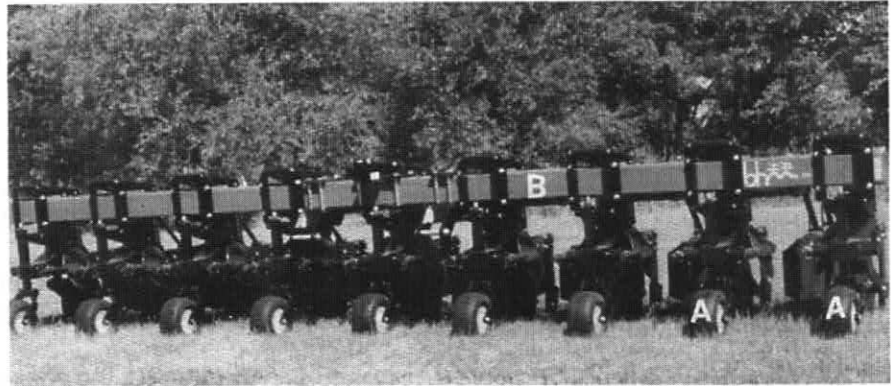
It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the worksite. Untrained operators are not qualified to operate the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum efficiency. By following the operating instructions in conjunction with a good maintenance program, your Cultivator will provide many years of trouble-free service.

4.2 PRINCIPLE COMPONENTS

The B&H Row Crop Cultivator uses a solid or folding tool bar to carry a series of gangs used for mounting soil contacting components. Each gang is equipped with a flat-proof gauge wheel, a coulter for cutting crop residue, tunnel shields and a rear sweep.

An optional automatic spring-loaded rear shank is also available. Each gauge wheel and coulter have a screw-type depth adjustment system.



- A Gauge Wheels
- B Solid Tool Bar
- C Folding Tool Bar
- D Shields
- E Coulter
- F Lift Assist (Not Shown)
- G Spring-Loaded Shank
- H Standard Shank

Fig. 1 PRINCIPLE COMPONENTS

4.3 MACHINE BREAK-IN

Although there are no operational restrictions on the Cultivator when first starting to use it, there are recommendations to follow to insure the mechanical integrity of the unit. At initial start-up, follow this procedure:

1. After operating in the field for 1/2 hour or after completing 5 acres:
 - a. Ensure that all "U" clamps, bolts, set screws and other hardware are tight. Tighten as required.
 - b. For machines with folding wings or the optional lift assist wheels:
 - i. Check that no hydraulic fittings are leaking. Tighten fittings if there are leaks.
 - ii. Check that all lines and hoses are routed to prevent binding or pinching.
 - c. Lubricate all grease points.
 - d. Ensure that all components are properly set.
2. Repeat this procedure at 5 and 10 hours. Then go to the regular maintenance schedule.

4.4 PRE-OPERATION CHECKLIST

Efficient and safe operation of the Cultivator requires that each operator reads and understands the operating procedures and all related safety procedures outlined in this manual. A pre-operational checklist is provided for the operator. It is important for both personal safety and maintaining the good mechanical condition of the Cultivator that this checklist be followed.

Before operating the machine and each time thereafter, the following areas should be checked off:

1. Lubricate the machine per the schedule outlined in the "Maintenance Section".
2. Use only a tractor of adequate power and weight to carry the cultivator.
3. Inspect the shovels to ensure that they are in good condition.
4. Check that the gauge wheels are properly adjusted to set the depth of the shovels.
5. Check that the coulters are properly set.
6. Check that the weeding discs are properly set.
7. Check that the crop shields are free to float and are set to provide protection to the plants.
8. Ensure that all gangs move freely to follow the ground contours.
9. If the machine has folding wings:
 - a. Inspect all hydraulic lines, hoses, fittings and couplers for tightness. Tighten as required. Replace any damaged components.
 - b. Use a clean cloth to wipe any accumulated dirt from the couplers before connecting to the hydraulic system of the tractor.
 - c. Ensure that the hydraulic level in the tractor is to the required specification.
10. Ensure that the unit is securely attached to the tractor 3 point hitch. All mounting pins should be secured in position with a mechanical retainer.

4.5 EQUIPMENT MATCHING

To insure the safe and reliable operation of the cultivator, it is necessary to use a tractor of appropriate size and power. As a guide, use the following list to identify areas that should be matched.

1. Horsepower:

Use Table 1 as a guide in selecting the tractor PTO horsepower class appropriate for your width of machine.

Increase the power level by 25% when operating in hilly conditions.

Although it takes some power to pull the machine, tractor horsepower translates directly into tractor size, weight, stability and 3 point hitch lift capacity. The latter parameters are even more important than power level.

Table 1 Tractor Horsepower vs Width

Width	Horsepower
15	80
20	100
25	120
30	140
40	150

2. Three Point Hitch:

a. Category:

The tractor must be equipped with a Category II or Category III 3 point hitch or one that is convertible to either. Use the top pin position for Category III and bottom for Category II. It is also recommended that a Quick Hitch be installed on the 3 point hitch to make machine attachment easy and to provide sufficient space between the tires and tool bar when larger tires are used.

IMPORTANT

If your 3 point is convertible, always use the larger Category to provide more stability.

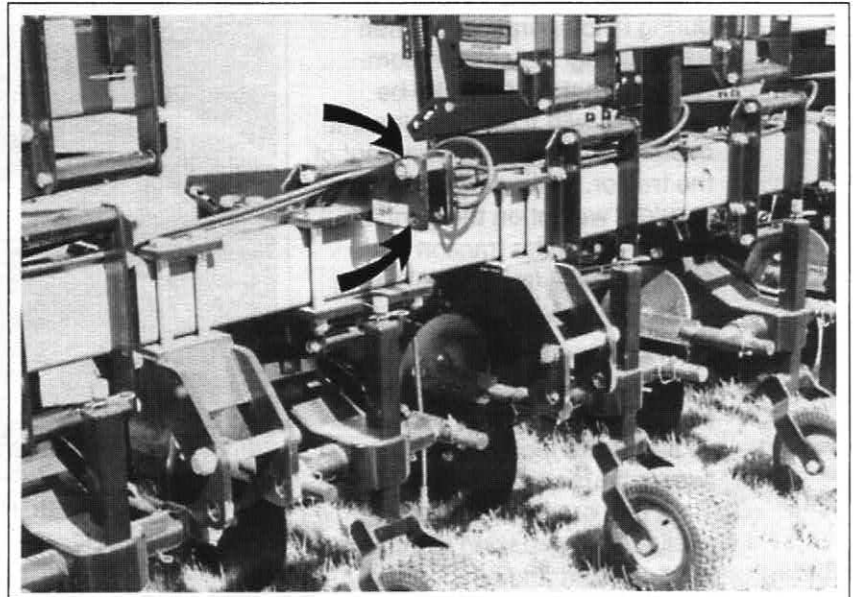


Fig. 2 MOUNTING PIN POSITION

b. Lift Capacity:

Determine the 3 point lift capacity before starting. A cultivator can weigh up to 250 lbs per foot of width. If the tractor lift capacity does not have a 20% reserve, it is recommended that:

- i. A larger tractor with more lift capacity be used or
- ii. Lift assist system be installed.

Either one will give the machine the reserve lift capacity.

c. 3 Point Hitch Setting:

- i. Set the 3 point in its non-sway configuration to minimize side-to-side movement.
- ii. Use the gauge wheels to set the depth of the cultivating components and place the 3 point hitch in float. In this way, the cultivator will follow the contour of the ground.

Refer to your tractor manual for adjustment and setting procedures.

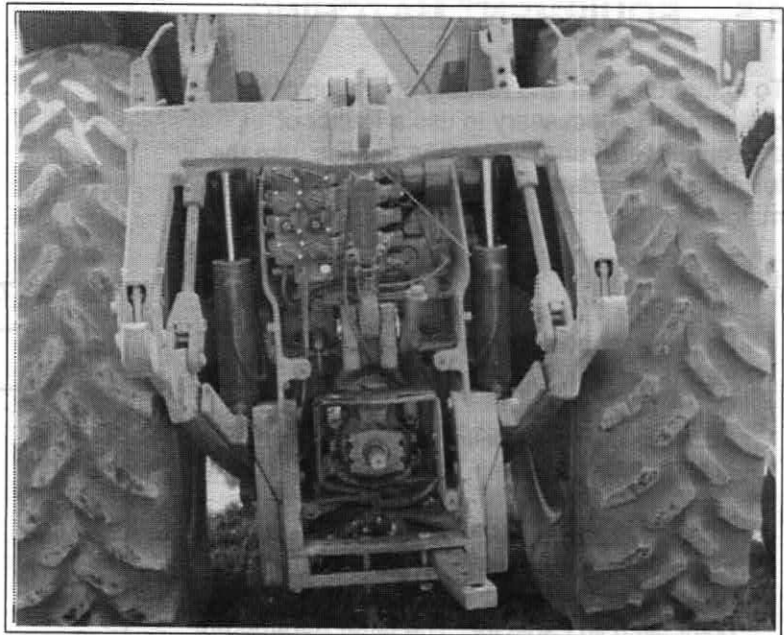


Fig. 3 FREE FLOAT

3. Tractor Weight:

By following the recommendations for the tractor power, the tractor will have sufficient weight to provide stability for the unit during field operation or when transporting. It is also recommended that each tractor be equipped with a full complement of suitcase weights on the front of the tractor. This will provide the required weight on the front for turning and extra traction if equipped with front wheel assist.

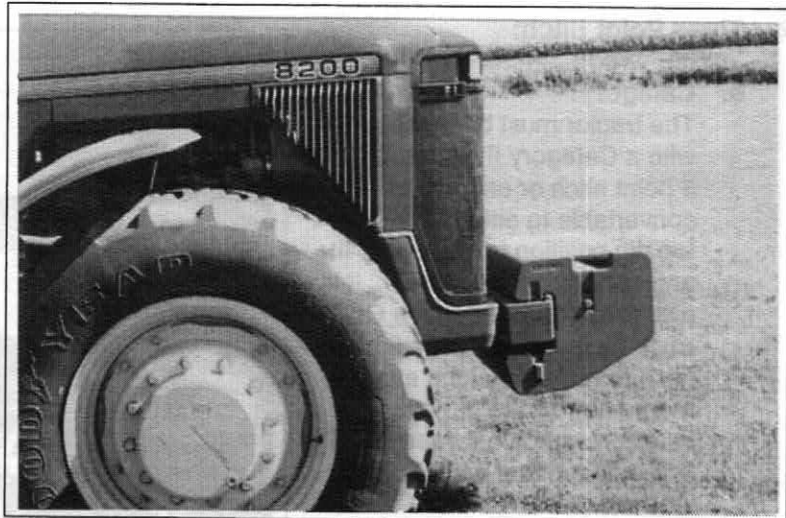


Fig. 4 FRONT WEIGHT PACKAGE

4. Tire Configuration:

It is recommended that a tire width be used on the tractor that will allow the tire footprint to fit between the rows being cultivated. Tires that are too wide for the available row spacing will compact the seed bed and affect plant growth.

On machines wider than 20 feet, it is recommended that duals be used on the tractor to provide the required stability.

Although it is recommended to use a Quick Hitch on the 3 point at all times, it is particularly important when tires larger than 38 inches are used on the tractor. The Quick Hitch will provide extra clearance between the tire and tool bar and allow for machine movement.



Fig. 5 CLEARANCE

4.6 ATTACHING/UNHOOKING TRACTOR

The Cultivator should always be located on a level, dry area that is free of debris and other foreign objects. When attaching the machine to a tractor, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Make sure there is enough room and clearance to safely back up to the cultivator.
3. Swing the drawbar to one side and secure or remove the drawbar completely (Refer to tractor manual).
4. Back up slowly and align the Quick Hitch claws with the mounting pins.



Fig. 6 DRAWBAR



CAUTION

Do not allow anyone to stand between the tractor and cultivator when backing the tractor.

5. Adjust the height of the 3 point hitch so the Quick Hitch claws are lower than the mounting pins.

IMPORTANT

Use a Quick Hitch on the 3 point to provide sufficient clearance between the tool bar and the tires.

6. Lock the Quick Hitch pin retainers in the open position.
7. When the claws are under the pins, slowly raise the 3 point hitch. Be sure each of the mounting pins seat in their respective claw.

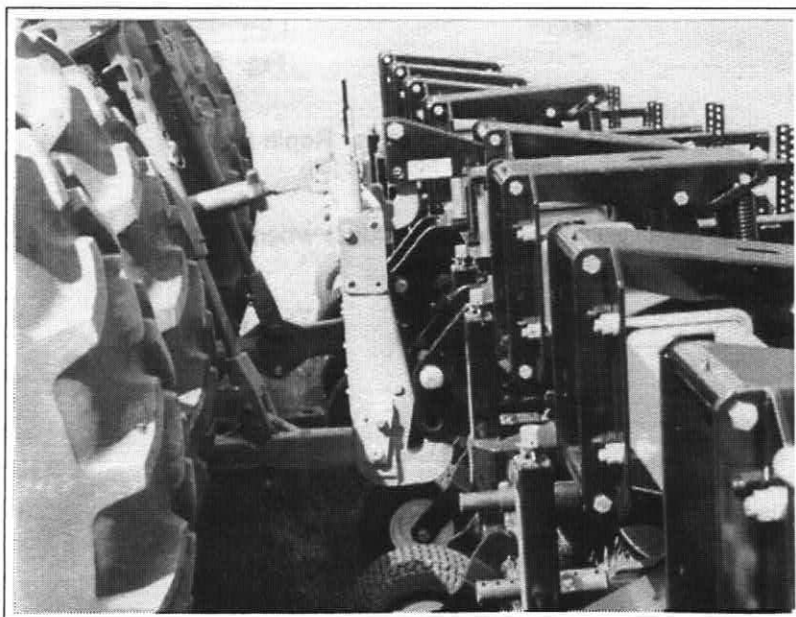


Fig. 7 ATTACHING

8. Release the claw retainer lock to hold the mounting pin in the claw.
9. Connect the hydraulic system if your machine has a folding tool bar.
 - a. Use a clean cloth or paper towel to wipe any accumulated dirt from the male ends and from around the couplers on the tractor.
 - b. Relieve the pressure in the hydraulic system.
 - c. Insert the couplers into the tractor. Be sure they lock into position.

! WARNING




HIGH-PRESSURE FLUID HAZARD

To prevent serious injury or death:

1. Relieve pressure on system before repairing or adjusting.
2. Wear proper hand and eye protections when searching for leaks. Use wood or cardboard instead of hands.
3. Keep all components in good repair.

10. Slowly raise the 3 point hitch to lift the machine.

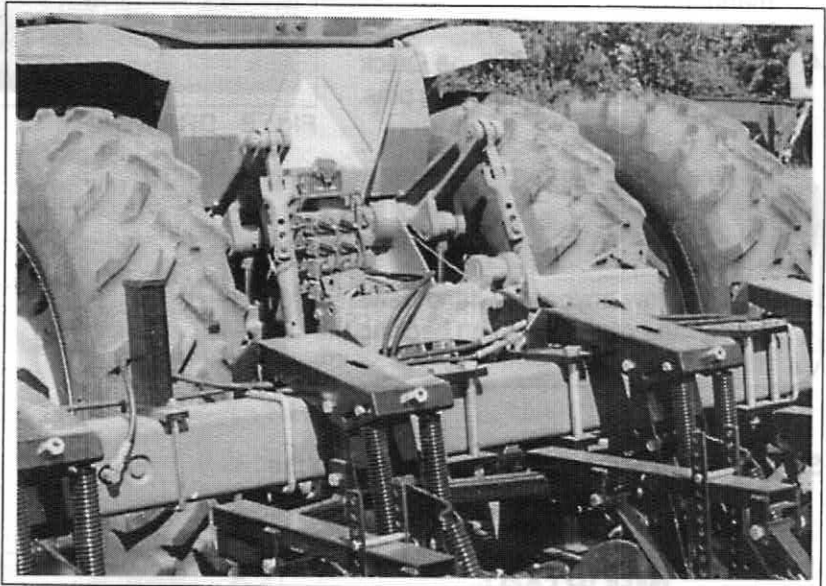


Fig. 8 ATTACHED

11. Unpin and raise the stands. Repin and secure the stands
12. Reverse the above procedure when unhooking from the tractor.

4.7 FIELD OPERATION



OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before using.
2. Place all controls in neutral, stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Stay away from overhead power lines when raising or lowering the wings. Electrocutation can occur without direct contact.
4. Stay away from beneath the wings when they are being raised or lowered. Keep others away.
5. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
6. Do not allow riders on the Cultivator or tractor during operation or transporting.
7. Keep all shields and guards in place when operating.
8. Clear the area of all bystanders, especially children, before starting.
9. Be careful when working around or maintaining a high-pressure hydraulic system. Ensure all components are tight and in good repair before starting.
10. Clean all reflectors, lights and the SMV before transporting on a highway or public road. Be sure to check with local highway authorities and comply with their lighting requirements.
11. Review safety instructions annually.

The Cultivators are designed with the flexibility to be used in any type of crop, row spacing, soil and moisture conditions. Always set the machine for the specific operating conditions of the job. Time spent to properly set the machine, before starting will pay rich dividends in a quality job. Follow this procedure when working in the field.

1. Attach tractor to the machine (see Section 4.6).
2. Review and follow the pre-operation checklist (see Section 4.4).
3. Review the location and function of all controls (see tractor manual).
4. Transport the machine to the working area (see Section 4.8).

- Pull into the field and line the machine up with the first set of rows.

IMPORTANT

Be sure to align the cultivator with similar planter rows. Do not overlap planter passes. Overlapping planter passes will lead to lost crop as row spacing changes.

- Convert into field configuration if you have a folding toolbar model.
 - Stay away from overhead power lines when extending the wings.
 - Fold one wing out until it rests on the ground.
 - Repeat with the other wing.

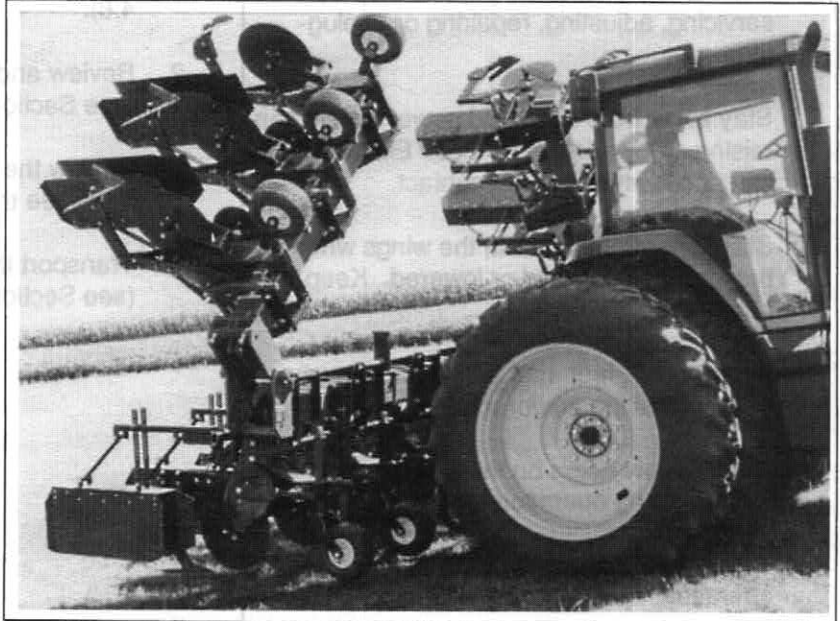
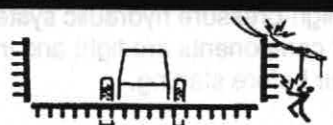


Fig. 9 EXTENDING WINGS

- Tractor tire spacing:**
The tires on the tractor should be set to run in the center of the crop rows. Measure from the center line of the tractor to the center line of the tires to be sure. Adjust if required.

⚠ DANGER



**ELECTROCUTION HAZARD
KEEP AWAY FROM POWER LINES**

To prevent serious injury or death from electrocution:

- Stay away from overhead power lines when raising or lowering the wings.
- This machine is not grounded. Electrocution can occur without direct contact.

9. Lateral leveling:

The cultivator must be level from side-to-side to obtain a consistent working depth across the width of the machine. Use the turnbuckles on the 3 point hitch lift arms to level the tool bar. If the turnbuckles are the same length the unit will be level. Measure the length of each turnbuckle to be sure.

10. Longitudinal leveling:

The cultivator must be level front to back to allow each of the ground contacting components (weeding disc, coulter and sweep) to do their job. Use the top link on the 3 point hitch to level the machine in the front to back direction at its operating position. The top link is also used to set the depth of the sweeps.

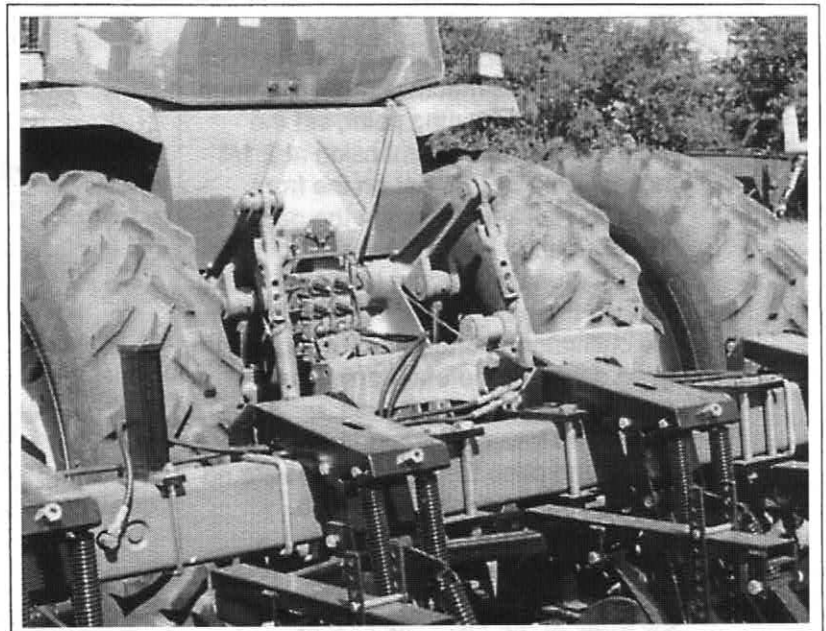


Fig. 10 3 POINT HITCH

11. Centering in rows:

Each gang must be set in the center of the crop rows. Normally a cultivator will be used in one row spacing its entire life. However, if the spacing changes, it will be necessary to loosen the gang mounting U bolts and slide the gang to its new spacing position. Always measure from the center line of the tool bar when determining gang position. Tighten mounting bolts when the gangs are properly positioned.

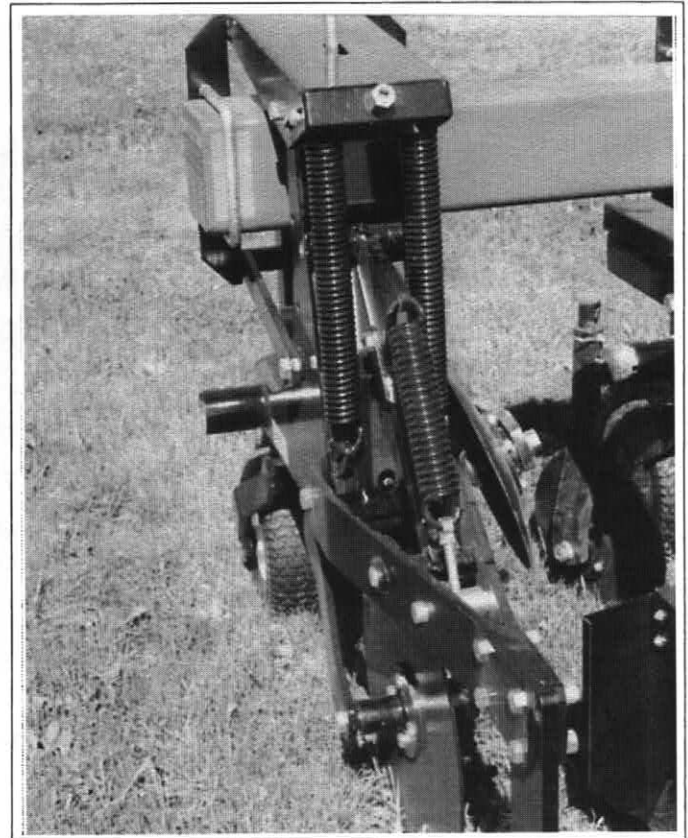


Fig. 11 GANG MOUNTING

12. Gauge wheel depth:

The front gauge wheel sets the depth of the gang as the machine moves through the field. As a starting point, set the gauge wheel shank dimension at 2 1/4 inches. Use the "T" bar on the front adjusting socket to change the gauge wheel setting. Raise the wheel to have the gang go deeper and lower the wheel to raise the gang. Check the field behind the cultivator to determine the required gang depth. If there are any weeds remaining between the rows, raise the wheel and lower the gang. Lower the wheel and raise the gang if there are no weeds and the draft load is high.

NOTE

Six turns of the adjusting socket will move the gauge wheel one inch.

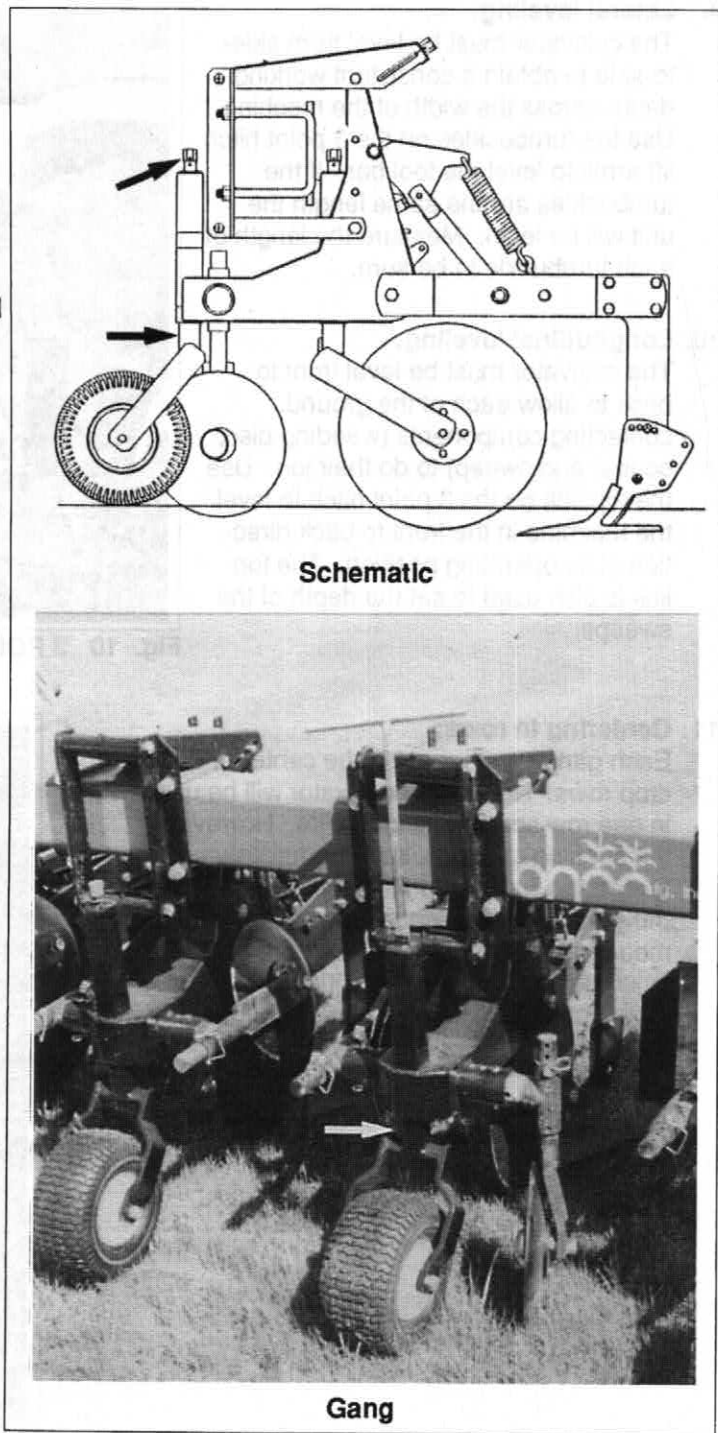


Fig. 12 GAUGE WHEEL DEPTH

13. Weeding discs:

Each gang (except the end) is equipped with a set of weeding discs that can be moved in 3 different directions to suit the application.

a. Positioning:

Holes in the mounting tube allow the disc assembly to be rotated 90° and be positioned into its working or non-working position. Plants with wide well-developed root systems may be damaged by the weeding disc. Under those conditions, place the weeding disc assembly in its stowed position.

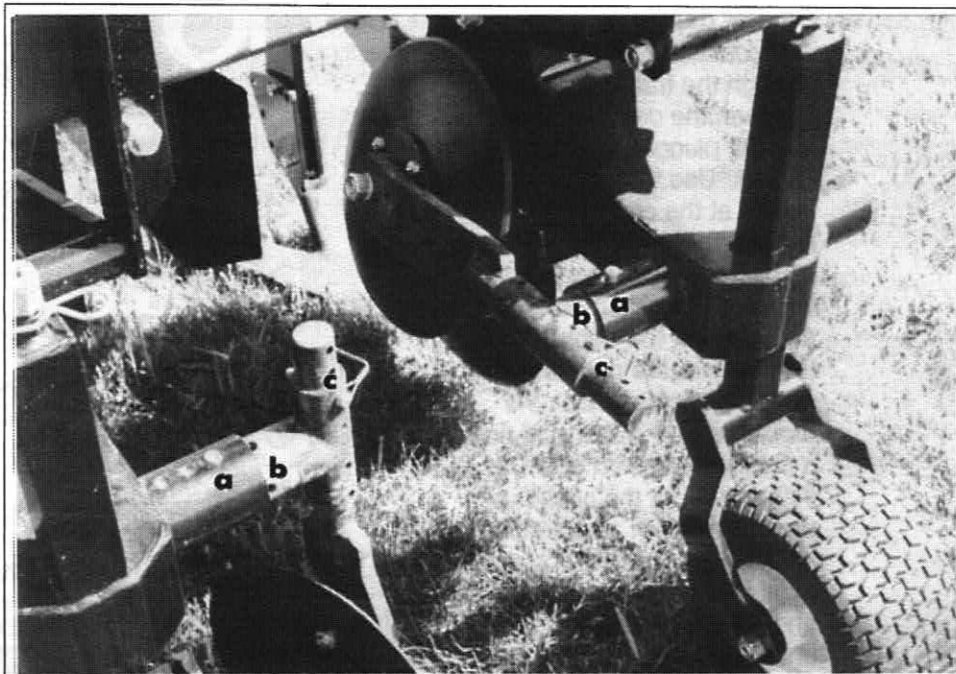


Fig. 13 WEEDING DISCS

b. Spacing:

A series of holes in horizontal mounting tubes sets the spacing of the weeding disc from the plants. Set the disc close to the plant when the crop is small and move the disc away from the plant as it grows and its root system expands. Do not allow the discs to damage the crop root system.

c. Depth:

A series of holes in the vertical mounting tubes sets the depth of the weeding disc. Set the weeding discs to run approximately 1 to 1 1/2 inches deeper than the gauge wheel.

14. Coulters depth:

The coulters are used to cut through the trash residue between the crop rows to prevent plugging of the sweep. Use the adjusting socket at the center of the parallel linkage to set the coulters depth. Measure the coulters assembly mounting shank to set the depth. When the coulters are new and sweep pitch is set with the mounting bolt in the third hole, a shank dimension of 3 1/2 inches will put the coulters at the same depth as point of sweep. Start with 2 1/2 inch coulters shank in wheel tracks and 3 1/2 inches in uncompacted rows. Or set coulters cutting edge 0 to 1/2 inch sweep tip in uncompacted rows. Lower the coulters if operating in loose soil conditions or if the trash is not being cut. Raise the coulters when operating in hard ground if the coulters is raising the sweep out of the ground.

NOTE

Six turns of the adjusting socket will move the coulters one inch.

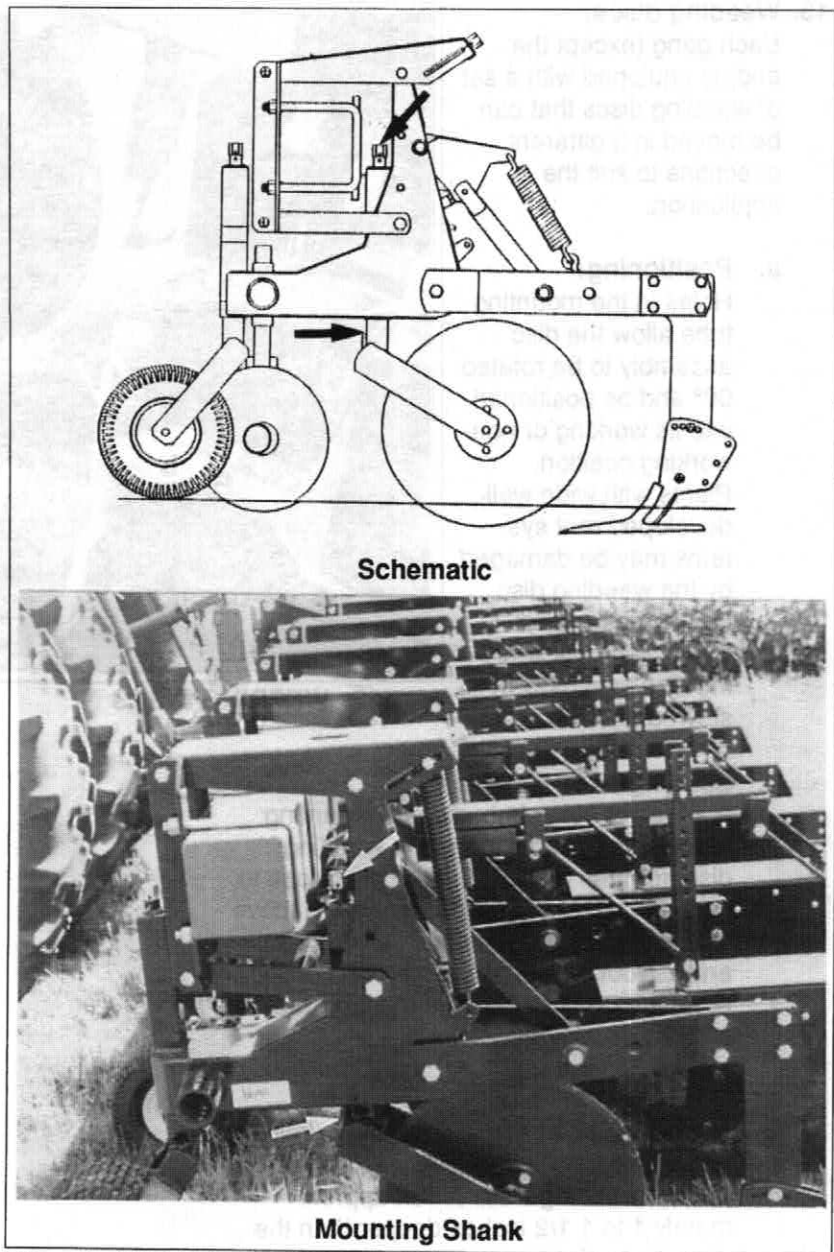


Fig. 14 COULTER DEPTH

15. Sweep:

A sweep is mounted on the bottom of the shank to move the soil for killing weeds and hilling the rows. The sweep angle (pitch) and depth can be set as required for your application.

a. Pitch:

The pitch of the sweep determines how the soil between the rows is moved as the machine moves through the field. Start with the shank assembly anchor bolt in its third mounting hole. Pitch further ahead when using ridging sweeps.

b. Depth:

The sweep should penetrate the soil deep enough to remove all the weeds and gather sufficient soil to hill the rows. Use the top link of the 3 point hitch to set the operating depth of the sweeps. Lengthen the top link to increase the depth and shorten link to raise the sweep.

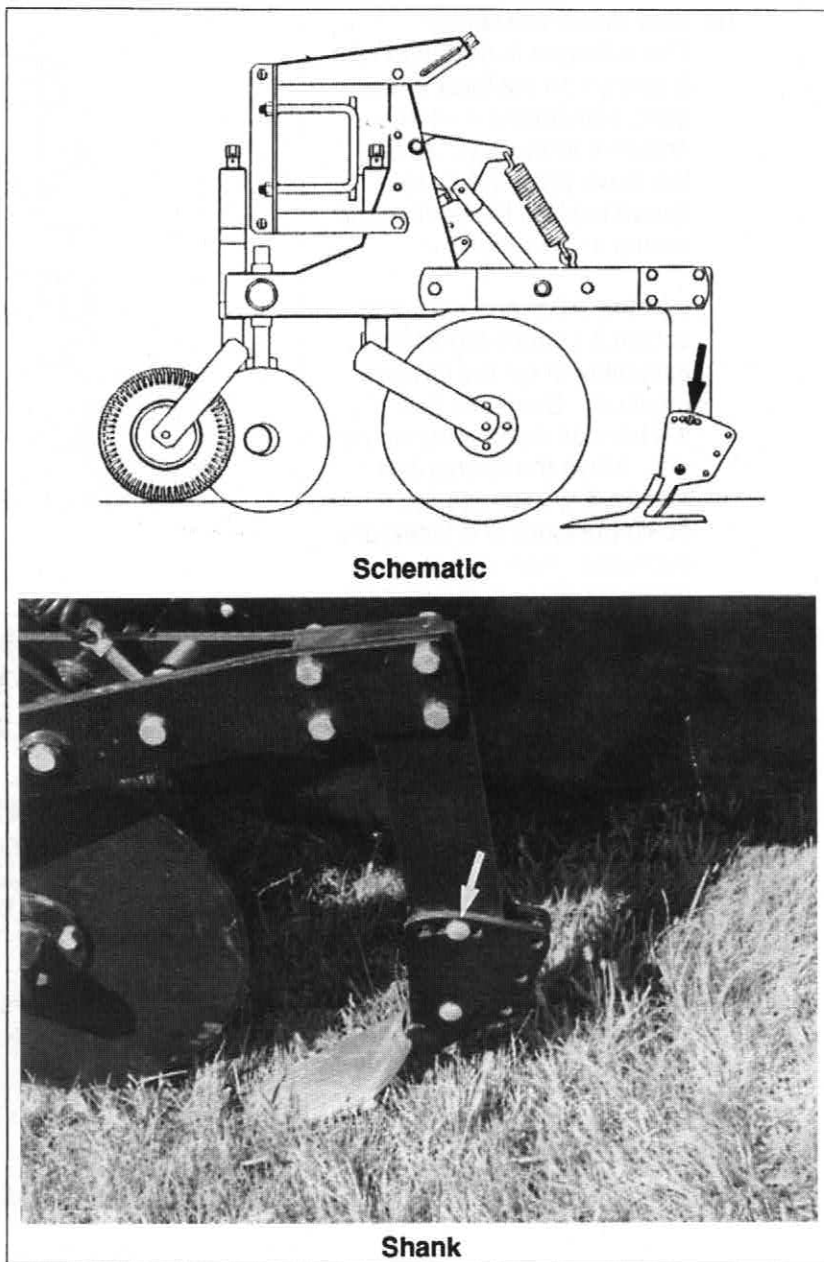
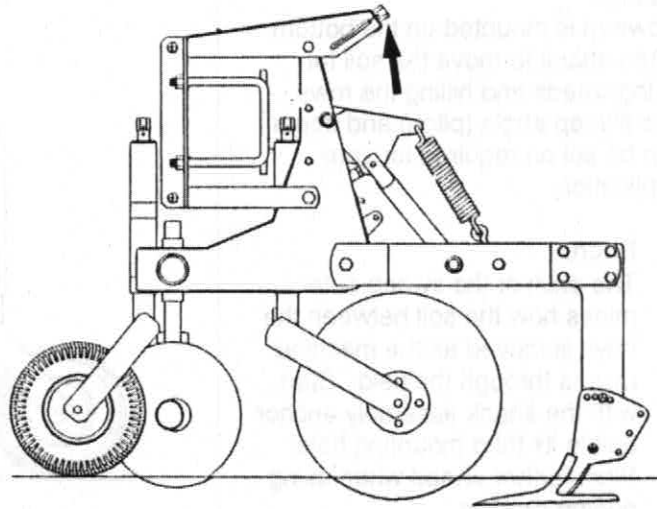


Fig. 16 SWEEP

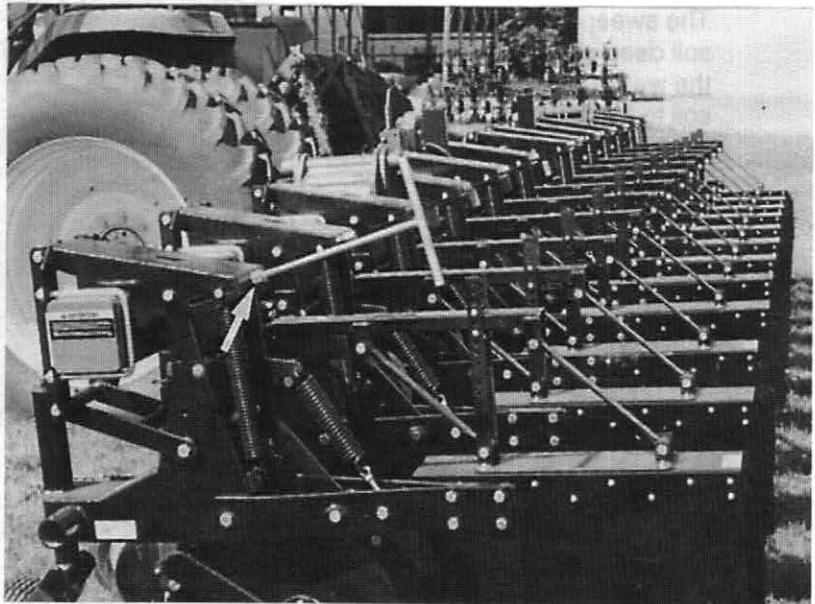
16. Row down-pressure:

The cultivator is designed with 2 springs on the back of the gang that applies a down-pressure to the unit. Adjust the down-pressure as required to keep the coulter and sweep in the ground.

Use the T bar and adjusting socket on the spring anchor assembly to set the down-pressure. Start with the anchor bolt in the center of the slot. Move the anchor bolt rearward to increase the down-pressure and forward to decrease. Normally more down-pressure is required for wheel-track rows where the soil has been packed.



Schematic



Assembly

Fig. 17 DOWN-PRESSURE ADJUSTMENT

17. Trip spring (Optional):

An optional trip is available for the rear shank assembly to allow the assembly to swing back when encountering an obstruction in the field. A spring on the back of the gang sets the reset force for bringing the assembly back into working position. Setting the spring pressure too tight prevents the shank assembly from properly tripping when an obstruction is hit in the field. Setting too loose will not move the shank back into working position as required.

Start by tightening locknut on the end of the eyebolt just enough to take up the slack in the spring. Then tighten one turn. Tighten more only if the shank is cheating or not resetting properly.

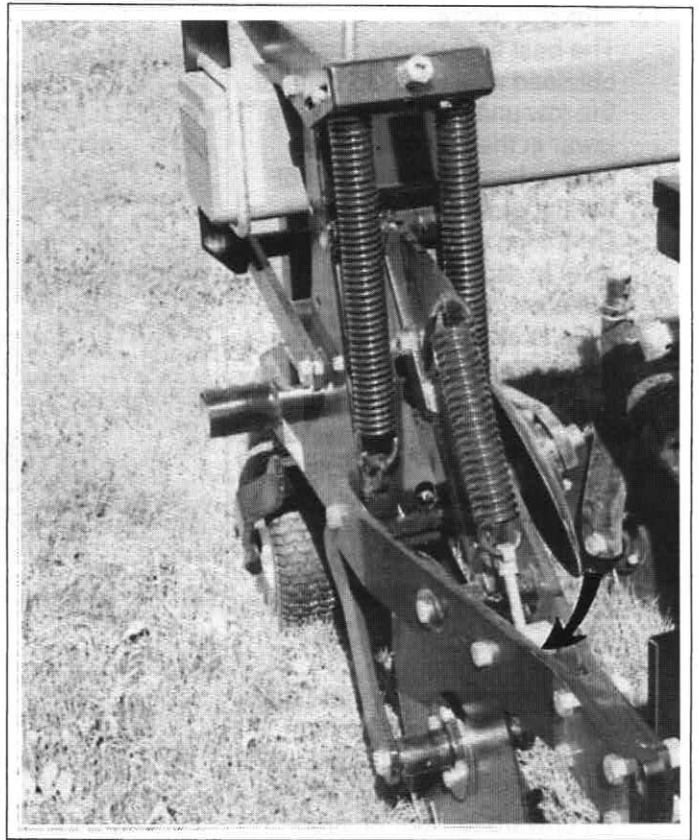


Fig. 18 TRIP SPRING ADJUSTMENT

18. Linkage angle:

The best field results are obtained when the top plate of the row unit is level to slightly lower in the front and the toolbar floats in the center of the upper and lower linkage. Operating with the top plate level to slightly lower in front will allow more travel for row units to clear rocks and other obstructions. Use the position of the gauge wheel and the depth of the sweep to set the angle of the top plate and position of the toolbar. Always set the 3 point hitch in float.

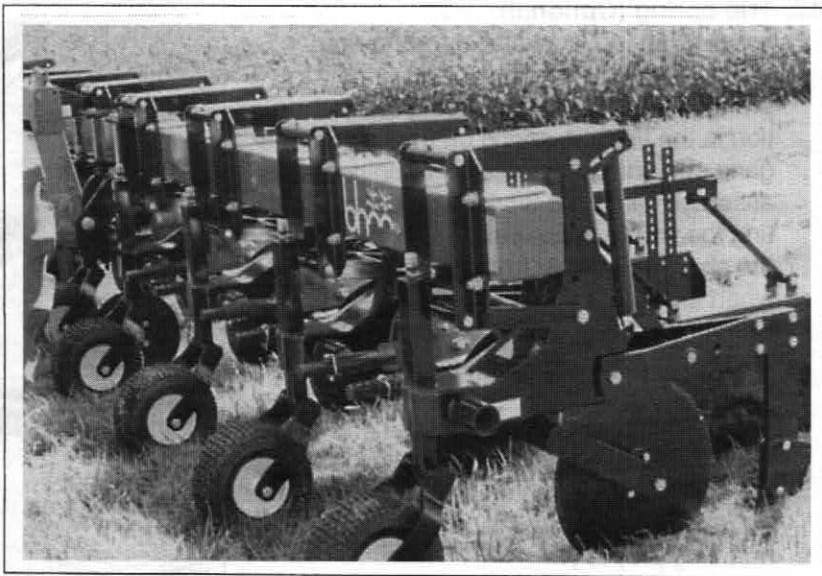


Fig. 19 LINKAGE ANGLE

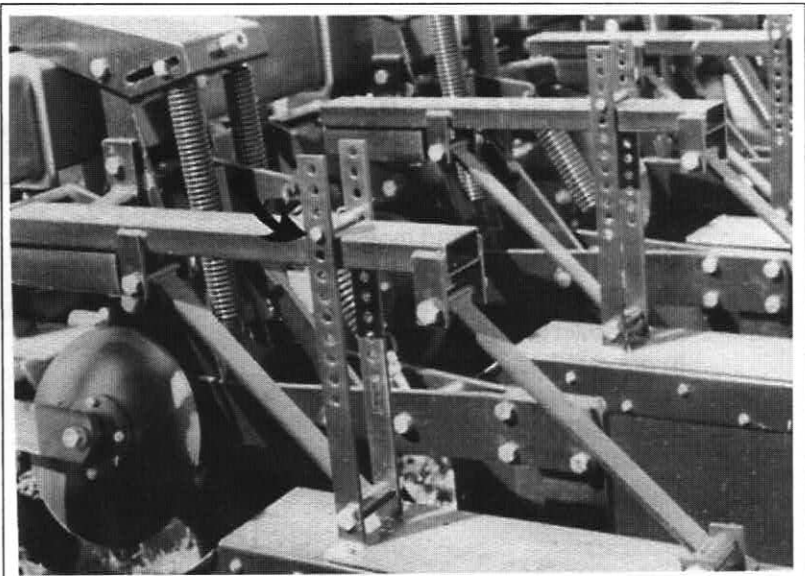
NOTE

Do not install a pin under the support arm unless the row unit is on a wing. This pin will prevent the shield from moving upward to clear obstructions in the field. Always leave 2 open holes under the support arm on the wing row units to allow shield movement during operation.

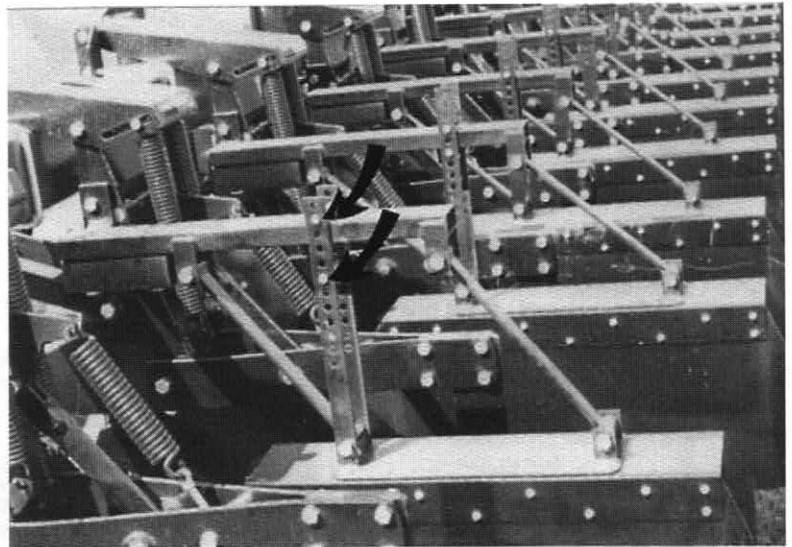
19. Shields:

Each row unit is equipped with shields to protect the crop when cultivating. Each is suspended on a parallel linkage and positioned using vertical brackets. Place a pin through the bracket on top of the support arm to set the height of the shield. Set the shield in a low position when the crop is young and the plants are small to prevent cover by the soil from the sweep. Raise as the plants get larger to allow for hilling.

Install a pin through the bracket under the support arm only on the folding wings. This pin prevents the shield from moving upward and holds the shield in place when the wings are folded.



Center Section of Solid Toolbar



Folding Wings

Fig. 20 SHIELD PINS

20. Travel speed:

The best results are obtained when traveling between 5 and 8 mph. At this speed the sweeps will move the soil sufficiently to remove all the weeds between the rows and move enough soil to cover the weeds between the plants. Slow down in rough terrain to prevent losing control. Never exceed a safe and comfortable operating speed.



Fig. 21 CULTIVATING

21. When the cultivating is completed, raise the unit out of the ground. Fold the wings (folding toolbar model only) until they are resting on the center frame.



Fig. 22 FOLDING

22. Operating hints:

- a. Be familiar with all the machine settings and adjustments before starting to work. These adjustments will allow the machine to be set for any soil, crop and operating condition.

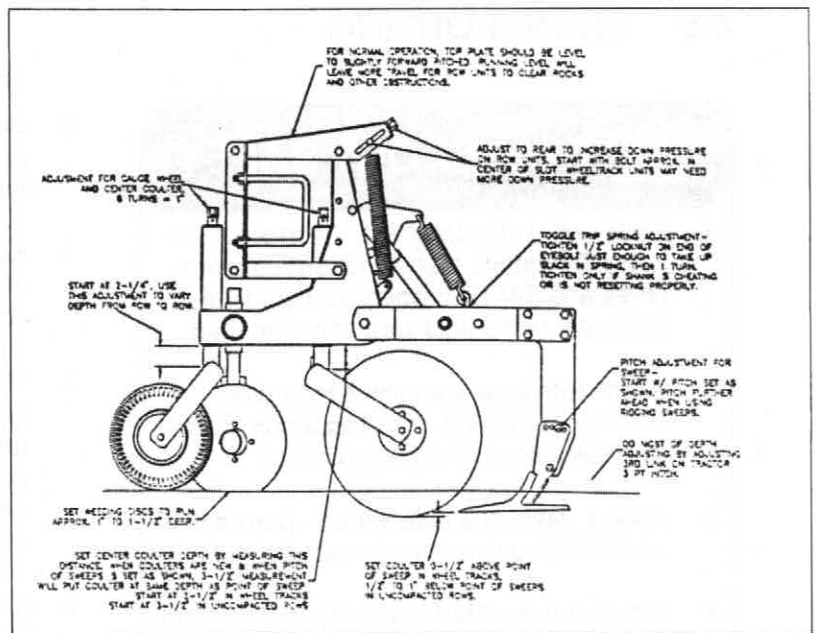


Fig. 23 ADJUSTMENT SUMMARY

- b. Use the optional ridding sweeps during the last cultivating pass of the year. They will hill the row and cover the most weeds between the plants.

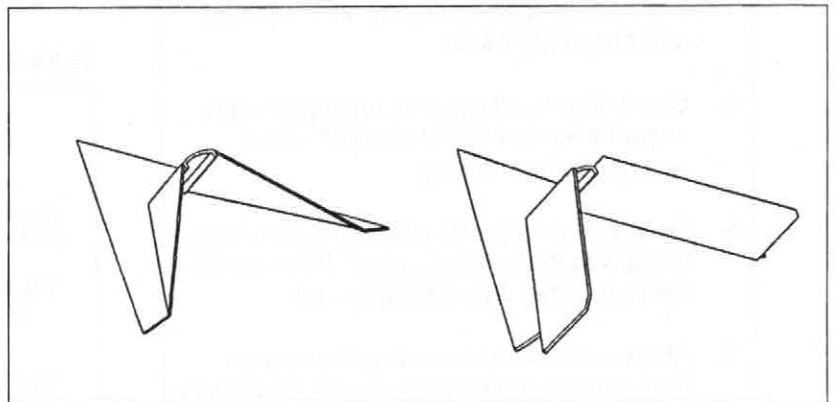


Fig. 24 RIDDING SWEEPS

- c. Set the 3 point hitch in float to all the cultivator to follow ground contours.
- d. Swing wide at the ends of the field and align with the next set of rows while turning.
- e. Stay in the center of the rows to minimize potential damage to the crop.



Fig. 25 WORKING

4.8 TRANSPORTING



TRANSPORT SAFETY

1. Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when operating the Cultivator in the field/yard or on the road.
2. Check with local authorities regarding Cultivator transport on public roads. Obey all applicable laws and regulations.
3. Always travel at a safe speed. Use caution when making corners or meeting traffic.
4. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
5. Check that the 3 point mounting pins are seated and each pin is secured with a retainer before moving.
6. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
7. Always use hazard warning flashers on tractor when transporting unless prohibited by law.
8. Position wings over-center and rest on frame before moving or transporting.

Care must be taken by an operator when transporting a wide machine like the cultivator. Ensure that the following checklist and procedure are followed when moving the unit from place to place.

1. Raise the machine out of the ground.
2. Clear the area of bystanders, especially small children.

3. Be sure that the Cultivator is hitched positively to the towing vehicle with retainers through the mounting pins.
4. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
5. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
6. It is not recommended that the machine be transported faster than 20 mph (32 km/hr). Table 2 gives the acceptable transport speed as the ratio of tractor weight to Cultivator weight.

Table 2 Travel Speed vs Weight Ratio

<u>Road Speed</u>	<u>Weight of fully equipped or loaded implement(s) relative to weight of towing machine</u>
Up to 32 km/h (20 mph)	1 to 1, or less
Up to 16 km/h (10 mph)	2 to 1, or less
Do not tow	More than 2 to 1

7. Do not allow riders on the machine or tractor.
8. During periods of limited visibility, use pilot vehicles or add extra lights on the machine.
9. Always use hazard flashers on the tractor when transporting unless prohibited by law.

10. If your machine is equipped with wings, install pins under the support arm to hold the wing in position when the wing goes over-center.

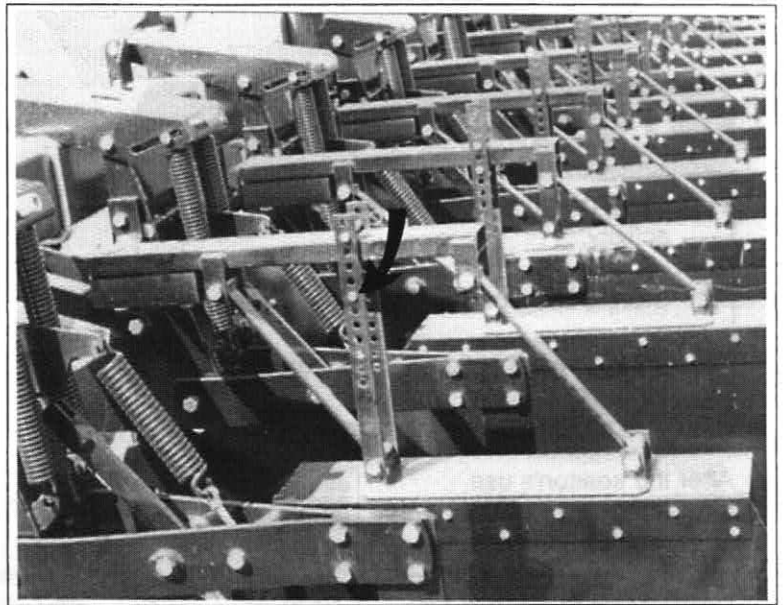


Fig. 26 WING SHIELD SUPPORT PIN

11. For folding tool bars:

- a. Slowly raise the wings.

⚠ DANGER



**ELECTROCUTION HAZARD
KEEP AWAY FROM POWER LINES**

To prevent serious injury or death from electrocution:

1. Stay away from overhead power lines when raising or lowering the wings.
2. This machine is not grounded. Electrocution can occur without direct contact.



Fig. 27 FOLDED

- b. Raise until they go over center and rest them on their support bracket.

12. Do not exceed a safe travel speed.

4.9 STORAGE



STORAGE SAFETY

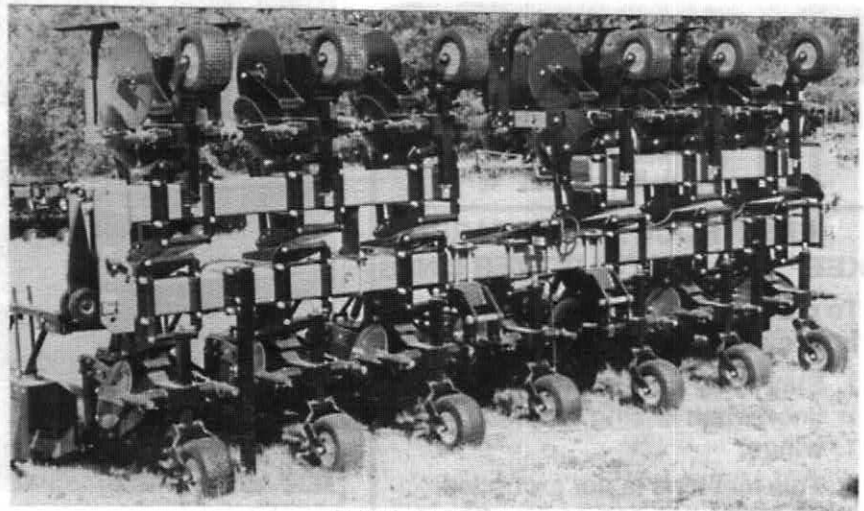
1. Store unit in an area away from human activity.
2. Store Cultivator only with wings folded.
3. Do not permit children to play around the stored unit.

After the season's use, inspect all major components of the cultivator. Repair or replace any worn or damaged components to prevent any unnecessary down time at the start of next season. To insure a long, trouble free life, this procedure should be followed when preparing the unit for storage:

1. Thoroughly wash the machine using a water hose or pressure washer to remove all dirt, mud, debris and residue.
2. Inspect the sweeps, shields, weeding disc assemblies, coulters and gauge wheels to see if any are bent, broken or worn. Repair or replace as required.
3. Lubricate cutaway shanks and tees thoroughly with a light oil to prevent corrosion between parts, or remove cutaway for storage.
4. Inspect all hydraulic hoses, lines, couplers and fittings. Tighten any loose fittings. Replace any hose that is badly cut, nicked, abraded or is separating from the crimped end of a fitting.
5. Lubricate all grease fittings. Make sure that all grease cavities have been filled with grease to remove any water residue from the washing.
6. Touch up all paint nicks and scratches to prevent rusting.
7. Store the machine with the wings retracted.
8. Unhook the machine by referring to the procedure in Section 4.6.



Solid Toolbar



Folding Toolbar

Fig. 28 STORED

5 SERVICE AND MAINTENANCE



MAINTENANCE SAFETY

1. Review the Operator's Manual and all safety items before working with, maintaining or operating the cultivator.
2. Place all controls in neutral, stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Keep hands, feet, clothing and hair away from all moving and/or rotating parts.
4. Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
5. Place safety stands or blocks under the frame before working beneath the machine.
6. Always position wings over-center before working on or under them.
7. Be careful when working around or maintaining a high-pressure hydraulic system. Wear proper eye and hand protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop when searching for a pin hole leak in a hose or a fitting.

5.1 SERVICE

5.1.1 LUBRICANTS

1. Grease
Use an SAE multi-purpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multi-purpose lithium based grease.
2. Storing Lubricants
Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

5.1.2 GREASING

Use the Maintenance Checklist provided to keep a record of all scheduled maintenance.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

5.1.3 SERVICING INTERVALS

20 Hours - 2 Days

1. Grease the tool bar hinge pins (2 locations each side) (folding toolbar model only).

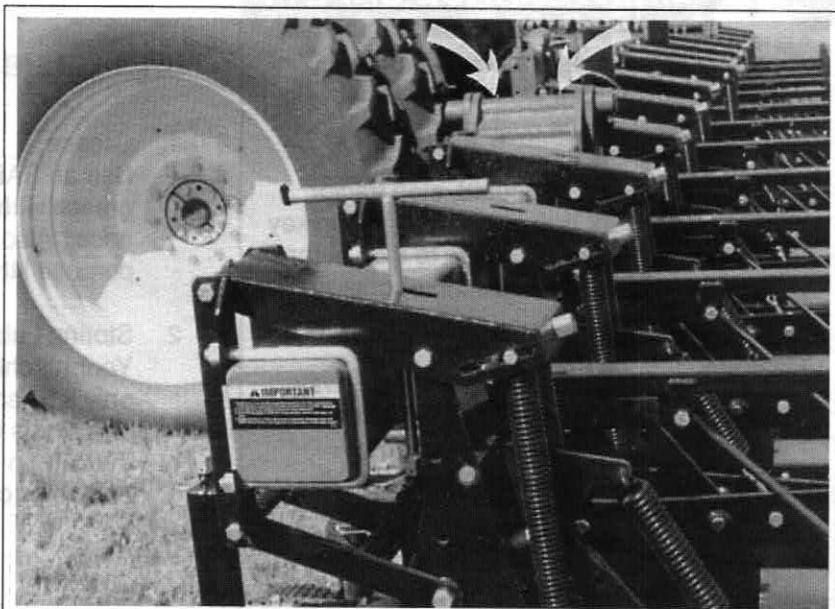


Fig. 29 HINGE

2. Grease the row unit parallel linkage pins (4 locations each row unit).

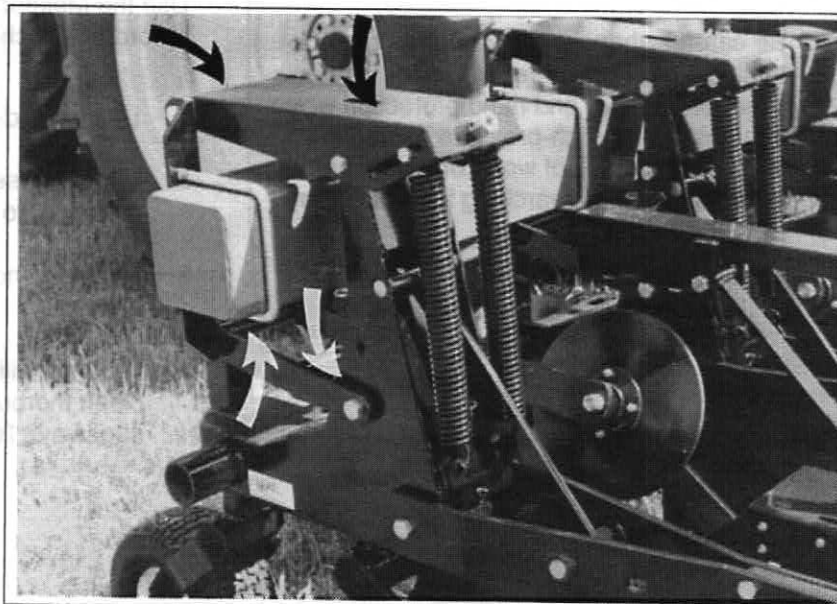


Fig. 30 PARALLEL LINKAGE PINS

- Grease spring trip pivot pins
(3 locations each row unit)
(spring trip models only).

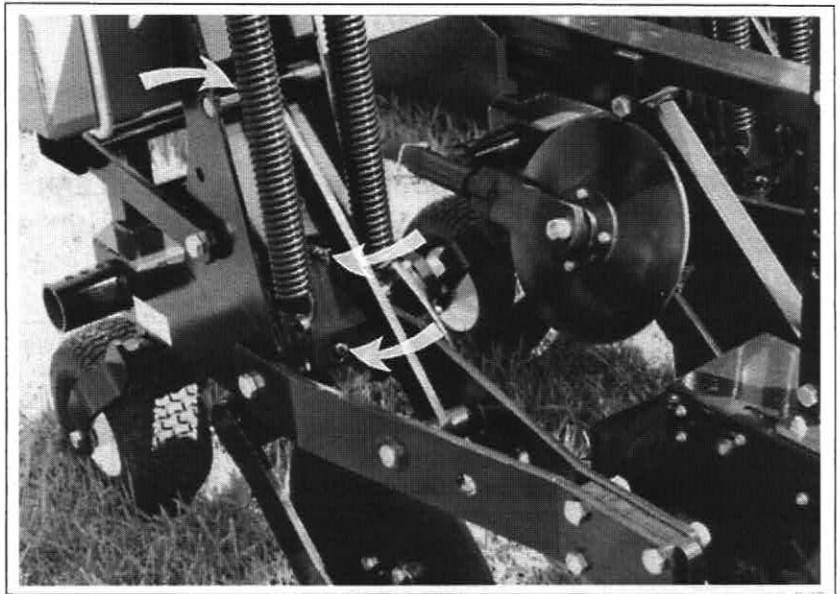


Fig. 31 SPRING TRIP PIVOT PINS

250 Hours or Annually

- Clean and wash machine.

5.1.4 SERVICE RECORD

See Lubrication and Maintenance sections for details of service. Copy this page to continue record.

ACTION CODE: L LUBRICATE CL CLEAN

<div style="display: flex; justify-content: space-between;"> MAINTENANCE HOURS SERVICED BY </div>																				
	20 Hours - 2 Days																			
L Tool Bar Hinge Pins (4 ea. side)																				
L Row Unit Parallel Link. Pins (4)																				
L Spring Trip Pivot Pins (3)																				
250 HOURS OR ANNUALLY																				
CL Machine																				

5.2 MAINTENANCE

By following a careful service and maintenance program for your machine, you will enjoy many years of trouble-free service.

5.2.1 GAUGE WHEEL POSITION

Use the T bar on the front adjusting socket to set the height of the gauge wheel. Six turns moves the gauge wheel 1 inch.



Fig. 32 GAUGE WHEEL POSITION

5.2.2 COULTER DEPTH

Use the T bar on the center adjusting socket to set the coulters depth. Six turns moves the coulters 1 inch.

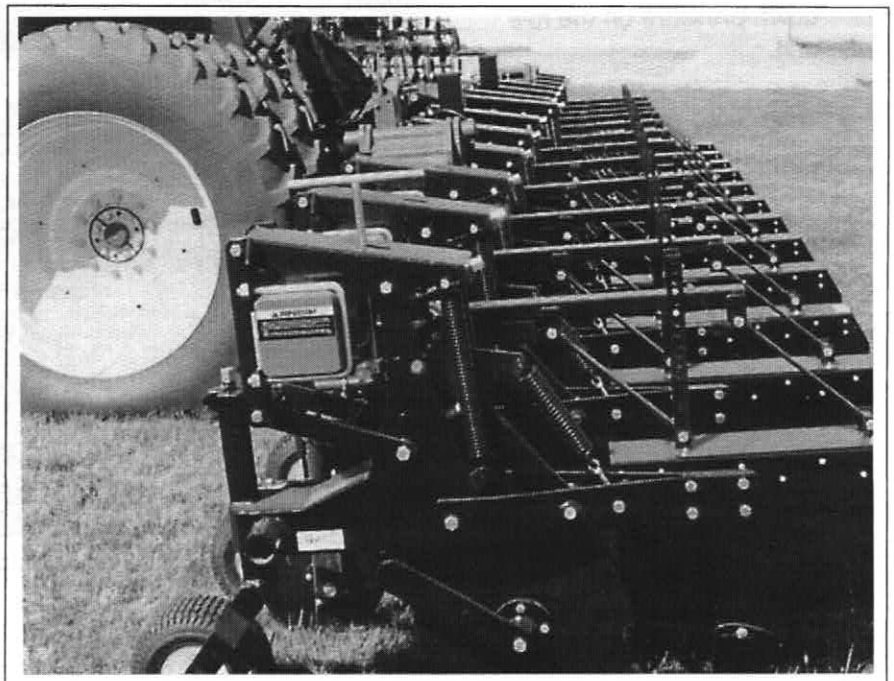


Fig. 33 COULTER DEPTH

5.2.3 WEEDING DISC ASSEMBLY

The position of the weeding disc assembly is set by the pins in the mounting frame.

- a. Depth.
- b. Distance from row.
- c. Weeding.
- d. Stowed.

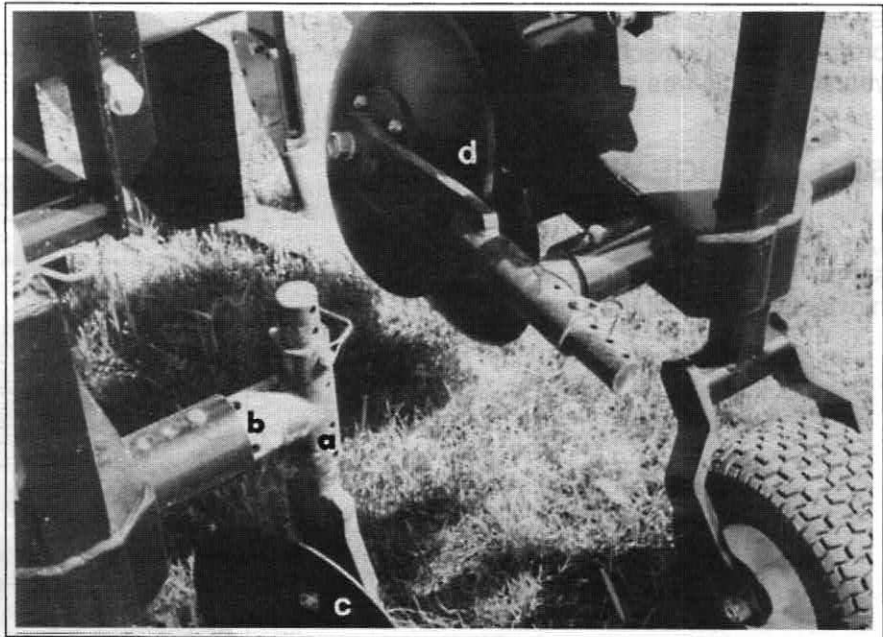


Fig. 34 WEEDING DISC ASSEMBLY

5.2.4 DOWN-PRESSURE

Use the T bar on the top adjusting socket to set the down-pressure on the row unit.

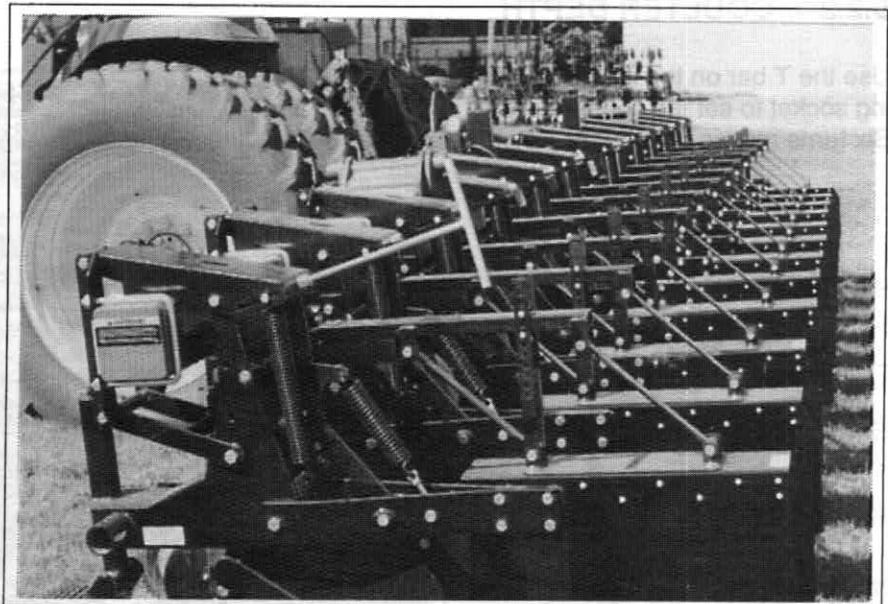


Fig. 35 DOWN-PRESSURE ADJUSTMENT

5.2.5 SPRING TRIP (OPTIONAL)

Use the nut on the end of the trip spring eyebolt to adjust the reset force.

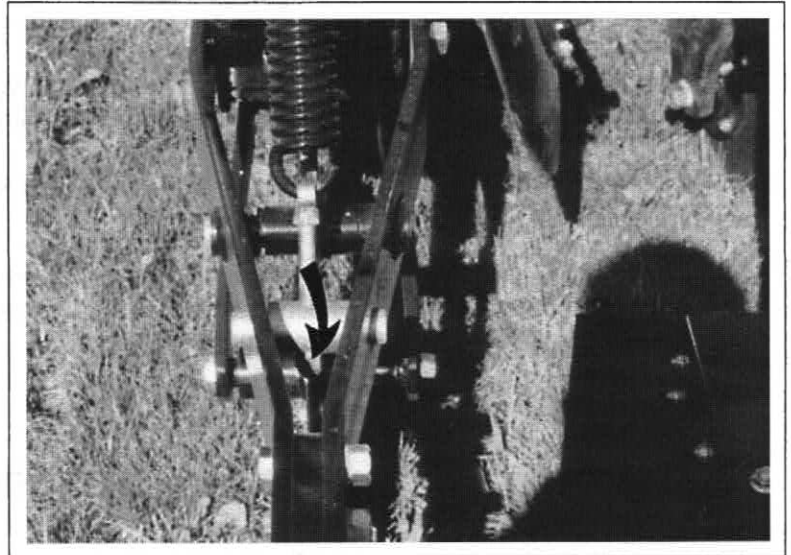


Fig. 36 SPRING TRIP ADJUSTMENT

5.2.6 SWEEP PITCH

The sweep is bolted to the end of the shank. Use the anchor bolt to set the pitch angle.

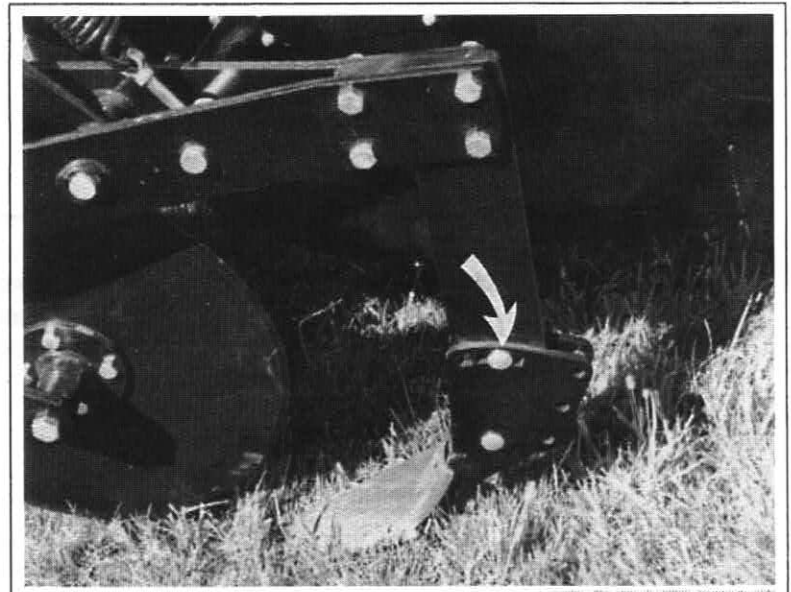


Fig. 37 SWEEP PITCH

5.2.7 SHIELD POSITION

Shield height is set by repinning the mounting bracket in a new hole. Adjust as required to protect the plants.

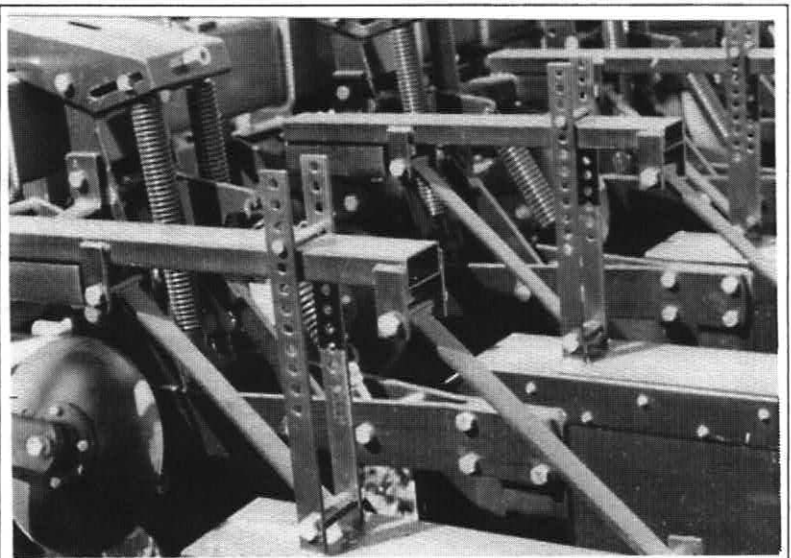


Fig. 38 SHIELD POSITION

6 TROUBLE SHOOTING

The B&H Row Crop Cultivator is an adjustable row crop cultivator that uses a parallel linkage to provide even soil penetration. It is a simple system that requires minimal maintenance.

In the following trouble shooting section, we have listed many of the problems, causes and solutions to the problems that you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this trouble shooting section, please call your local B&H dealer or distributor. Before you call, please have this Operator's Manual and the serial number from your machine ready.

PROBLEM	POSSIBLE CAUSES	SOLUTION
Plugging with trash between center coulter and sweep.	Residue is not being cut by the center coulter.	Set coulter 1/2" to 1" below point of sweep. The looser the soil is, the deeper the coulter can be set. If is set too deep in hard soils it will cause the sweep to ride out of the ground and up into the trash layer.
Plugging with trash between shank and shields.	Rear sweep is not set deep enough. Trash is wrapped on sweeps and preventing soil from flowing over sweep.	Tip entire cultivator back to set all sweeps deeper, or raise gauge wheels only in rows that are bothering. Be certain sweep is in the ground and not just operating in loose soil thrown from weeding discs.
	Rear sweep is not penetrating and is running too shallow. Gauge is not touching the ground or is just barely touching.	Adjust sweeps to pitch nose of sweep down. Too much pitch will hinder trash flow over sweep. Too little pitch and sweep will not penetrate. Adjust down pressure springs to give more pressure on units that are bothering.
	Center coulter is set too deep and causing row unit to ride up and sweep to run too shallow.	Raise center coulter. Run only deep enough to cut trash.
	Shields are set too low and are dragging trash.	Raise shields so they are at least 1/2" to 1" off the ground.
	Weeding discs are piling up too much loose soil and trash in front of rear sweep.	Weeding disc are too deep. Adjust so they are operating at about 1" to 1 1/2" deep.

PROBLEM

POSSIBLE CAUSES

SOLUTION

Cultivator plugs when going over a knoll.

Operating depth becomes shallower because of pitch of tractor and/or soil is harder and coulters are holding row units out of ground.

Be certain cultivator is set deep enough and sweeps are going in the ground. Try lowering the toolbar slightly and/or slow down when going over hill.

Plugging between weeding discs and in front of center coulters.

Cutaway discs too deep.

Adjust weeding discs to operate at about 1" to 1 1/2" deep.

Center coulters is too deep.

Set coulters 1/2" to 1" below point of sweep.

Center coulters is too small so fork is running too close to the ground.

Replace coulters. Coulters are 20" diameter when new. When coulters wear to less than 18" diameter they may start causing problems when operating in adverse conditions.

Footpieces breaking.

Spring on toggle trip is set too tight, shank isn't tripping when hitting obstructions.

Loosen 1/2" locknut on trip spring eyebolt until there is slight tension on spring. Tighten only enough to keep shank from cheating.

Toolbar is running too low. Row units do not have any upwards travel left to clear obstructions.

Raise toolbar slightly. Bar may have to be tipped slightly rearward to compensate for change in operating depth from raising toolbar.

Sideplates on footpieces are old style 1/4" thick.

Contact your dealer or B&H Mfg. for warranty replacement.

Breaking clevis pins on weeding disc horizontal adjusting tees.

Toolbar is running too low. Row units do not have any upwards travel left to clear obstructions.

Raise toolbar slightly. Bar may have to be tipped slightly rearward to compensate for change in operating depth from raising toolbar.

Weeding discs are set too deep.

Adjust weeding discs to operate at about 1" to 1 1/2" deep.

Too many rocks.

Remove rocks. (The clevis pins holding cutaway tees in place are designed to shear, rather than bending or breaking anything).

7 SPECIFICATIONS

7.1 MECHANICAL

Item #	Rows	Width (In.)	Weight (lbs)	Tool Bar	Shields?	Rock Trips?	Operating Width (In.)	Transport Width (In.)
2059	4	30	2,417	Rigid	No	No	136	136
1221	4	30	2,417	Rigid	No	Yes	136	136
2080	4	30	2,677	Rigid	Yes	No	136	136
2041	4	30	2,677	Rigid	Yes	Yes	136	136
2060	4	36	2,461	Rigid	No	No	160	160
2038	4	36	2,461	Rigid	No	Yes	160	160
2081	4	36	2,721	Rigid	Yes	No	160	160
1220	4	36	2,721	Rigid	Yes	Yes	160	160
2061	4	38	2,476	Rigid	No	No	168	168
1222	4	38	2,476	Rigid	No	Yes	168	168
2082	4	38	2,736	Rigid	Yes	No	168	168
2042	4	38	2,736	Rigid	Yes	Yes	168	168
2062	4	40	2,490	Rigid	No	No	176	176
2039	4	40	2,490	Rigid	No	Yes	176	176
2083	4	40	2,750	Rigid	Yes	No	176	176
2043	4	40	2,750	Rigid	Yes	Yes	176	176
2063	6	30	3,294	Rigid	No	No	196	196
1223	6	30	3,294	Rigid	No	Yes	196	196
2003	6	30	3,684	Rigid	Yes	No	196	196
1646	6	30	3,684	Rigid	Yes	Yes	196	196
2064	6	36	3,360	Rigid	No	No	232	232
1224	6	36	3,360	Rigid	No	Yes	232	232
2084	6	36	3,750	Rigid	Yes	No	232	232
2044	6	36	3,750	Rigid	Yes	Yes	232	232
2065	6	38	3,382	Rigid	No	No	244	244
1225	6	38	3,382	Rigid	No	Yes	244	244
2085	6	38	3,772	Rigid	Yes	No	244	244
2045	6	38	3,772	Rigid	Yes	Yes	244	244
2066	6	40	3,404	Rigid	No	No	256	256
1226	6	40	3,404	Rigid	No	Yes	256	256
2086	6	40	3,794	Rigid	Yes	No	256	256
2046	6	40	3,794	Rigid	Yes	Yes	256	256
2072	8	30	5,121	Folding	No	No	256	159
1228	8	30	5,121	Folding	No	Yes	256	159
2091	8	30	5,641	Folding	Yes	No	256	163
2051	8	30	5,641	Folding	Yes	Yes	256	163
2067	8	30	4,171	Rigid	No	No	256	256
1227	8	30	4,171	Rigid	No	Yes	256	256

Item #	Rows	Width (In.)	Weight (lbs)	Tool Bar	Shields?	Rock Trips?	Operating Width (In.)	Transport Width (In.)
2002	8	30	4,691	Rigid	Yes	No	256	256
1442	8	30	4,691	Rigid	Yes	Yes	256	256
2073	8	36	5,338	Folding	No	No	304	183
1232	8	36	5,338	Folding	No	Yes	304	183
2092	8	36	5,858	Folding	Yes	No	304	193
2052	8	36	5,858	Folding	Yes	Yes	304	193
2068	8	36	4,538	Rigid	No	No	304	304
1230	8	36	4,538	Rigid	No	Yes	304	304
2087	8	36	5,058	Rigid	Yes	No	304	304
2047	8	36	5,058	Rigid	Yes	Yes	304	304
2074	8	38	5,338	Folding	No	No	320	191
1233	8	38	5,338	Folding	No	Yes	320	191
2093	8	38	5,858	Folding	Yes	No	320	203
2053	8	38	5,858	Folding	Yes	Yes	320	203
2069	8	38	4,582	Rigid	No	No	320	320
2040	8	38	4,582	Rigid	No	Yes	320	320
2088	8	38	5,102	Rigid	Yes	No	320	320
2048	8	38	5,102	Rigid	Yes	Yes	320	320
2075	8	40	5,338	Folding	No	No	336	199
1234	8	40	5,338	Folding	No	Yes	336	199
2094	8	40	5,858	Folding	Yes	No	336	213
2054	8	40	5,858	Folding	Yes	Yes	336	213
2070	8	40	4,626	Rigid	No	No	336	336
1231	8	40	4,626	Rigid	No	Yes	336	336
2089	8	40	5,146	Rigid	Yes	No	336	336
2049	8	40	5,146	Rigid	Yes	Yes	336	336
2076	10	30	6,051	Folding	No	No	316	219
1236	10	30	6,051	Folding	No	Yes	316	219
2095	10	30	6,701	Folding	Yes	No	316	223
2055	10	30	6,701	Folding	Yes	Yes	316	223
2071	10	30	5,338	Rigid	No	No	316	316
1235	10	30	5,338	Rigid	No	Yes	316	316
2090	10	30	5,998	Rigid	Yes	No	316	316
2050	10	30	5,998	Rigid	Yes	Yes	316	316
2077	10	36	6,213	Folding	No	No	376	255
1360	10	36	6,213	Folding	No	Yes	376	255
2096	10	36	6,863	Folding	Yes	No	376	265
2056	10	36	6,863	Folding	Yes	Yes	376	265
2118	10	36	5,503	Rigid	No	No	376	376
2117	10	36	5,503	Rigid	No	Yes	376	376
2120	10	36	6,153	Rigid	Yes	No	376	376
2119	10	36	6,153	Rigid	Yes	Yes	376	376

7.1 MECHANICAL (cont'd)

Item #	Rows	Width (In.)	Weight (lbs)	Tool Bar	Shields?	Rock Trips?	Operating Width (In.)	Transport Width (In.)
2278	10	38	6,213	Folding	No	No	396	267
2266	10	38	6,213	Folding	No	Yes	396	267
2280	10	38	6,863	Folding	Yes	No	396	279
2267	10	38	6,863	Folding	Yes	Yes	396	279
2274	10	38	5,558	Rigid	No	No	396	396
2287	10	38	5,558	Rigid	No	Yes	396	396
2276	10	38	6,208	Rigid	Yes	No	396	396
2288	10	38	6,208	Rigid	Yes	Yes	396	396
2279	10	40	6,213	Folding	No	No	416	279
2268	10	40	6,213	Folding	No	Yes	416	279
2281	10	40	6,863	Folding	Yes	No	416	293
2269	10	40	6,863	Folding	Yes	Yes	416	293
2275	10	40	5,613	Rigid	No	No	416	416
2264	10	40	5,613	Rigid	No	Yes	416	416
2277	10	40	6,263	Rigid	Yes	No	416	416
2265	10	40	6,263	Rigid	Yes	Yes	416	416
2010	12	30	6,980	Folding	No	No	376	219
1238	12	30	6,980	Folding	No	Yes	376	219
2009	12	30	7,760	Folding	Yes	No	376	223
1649	12	30	7,760	Folding	Yes	Yes	376	223
2114	12	30	6,270	Rigid	No	No	376	376
2113	12	30	6,270	Rigid	No	Yes	376	376
2116	12	30	7,050	Rigid	Yes	No	376	376
2115	12	30	7,050	Rigid	Yes	Yes	376	376
2078	12	36	7,895	Folding	No	No	448	255
1239	12	36	7,895	Folding	No	Yes	448	255
2097	12	36	8,675	Folding	Yes	No	448	265
2057	12	36	8,675	Folding	Yes	Yes	448	265
2282	12	38	7,895	Folding	No	No	472	267
2270	12	38	7,895	Folding	No	Yes	472	267
2284	12	38	8,675	Folding	Yes	No	472	279
2271	12	38	8,675	Folding	Yes	Yes	472	279
2283	12	40	7,895	Folding	No	No	496	279
2272	12	40	7,895	Folding	No	Yes	496	279
2285	12	40	8,675	Folding	Yes	No	496	293
2273	12	40	8,675	Folding	Yes	Yes	496	293
2079	16	30	9,561	Folding	No	No	496	279
1242	16	30	9,561	Folding	No	Yes	496	279
2098	16	30	10,601	Folding	Yes	No	496	283
2058	16	30	10,601	Folding	Yes	Yes	496	283

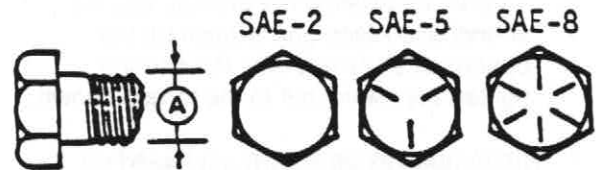
7.2 BOLT TORQUE

CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

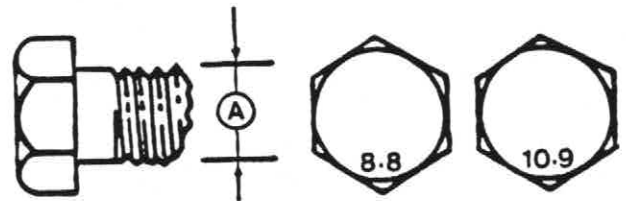
ENGLISH TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque *					
	SAE 2		SAE 5		SAE 8	
	N.m	(lb-ft)	N.m	(lb-ft)	N.m	(lb-ft)
1/4"	8	(6)	12	(9)	17	(12)
5/16"	13	(10)	25	(19)	36	(27)
3/8"	27	(20)	45	(33)	63	(45)
7/16"	41	(30)	72	(53)	100	(75)
1/2"	61	(45)	110	(80)	155	(115)
9/16"	95	(70)	155	(115)	220	(165)
5/8"	128	(95)	215	(160)	305	(220)
3/4"	225	(165)	390	(290)	540	(400)
7/8"	230	(170)	570	(420)	880	(650)
1"	345	(225)	850	(630)	1320	(970)



METRIC TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque			
	8.8		10.9	
	N.m	(lb-ft)	N.m	(lb-ft)
M3	.5	(.4)	1.8	(1.3)
M4	3	(2.2)	4.5	(3.3)
M5	6	(4)	9	(7)
M6	10	(7)	15	(11)
M8	25	(18)	35	(26)
M10	50	(37)	70	(52)
M12	90	(66)	125	(92)
M14	140	(103)	200	(148)
M16	225	(166)	310	(229)
M20	435	(321)	610	(450)
M24	750	(553)	1050	(774)
M30	1495	(1103)	2100	(1550)
M36	2600	(1917)	3675	(2710)



Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

7.3 HYDRAULIC FITTING TORQUE

TIGHTENING FLARE TYPE TUBE FITTINGS *

1. Check flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Lubricate connection and hand tighten swivel nut until snug.
4. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.

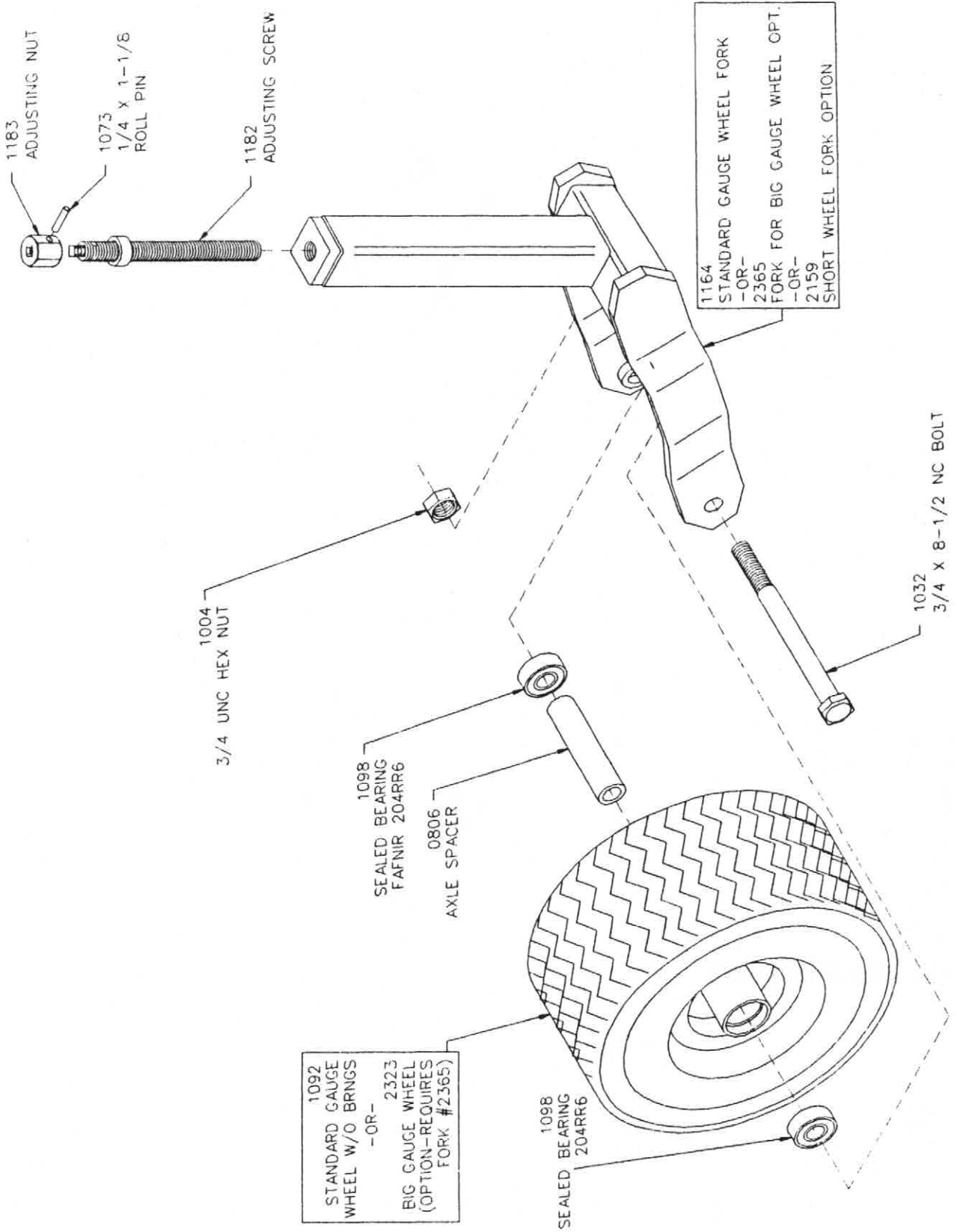
* The torque values shown are based on lubricated connections as in reassembly.

Tube Size OD	Nut Size Across Flats	Torque Value*		Recommended Turns to Tighten (After Finger Tightening)	
		(N.m)	(lb-ft)	(Flats)	(Turns)
3/16	7/16	8	6	1	1/6
1/4	9/16	12	9	1	1/6
5/16	5/8	16	12	1	1/6
3/8	11/16	24	18	1	1/6
1/2	7/8	46	34	1	1/6
5/8	1	62	46	1	1/6
3/4	1-1/4	102	75	3/4	1/8
7/8	1-3/8	122	90	3/4	1/8



8 PARTS LIST

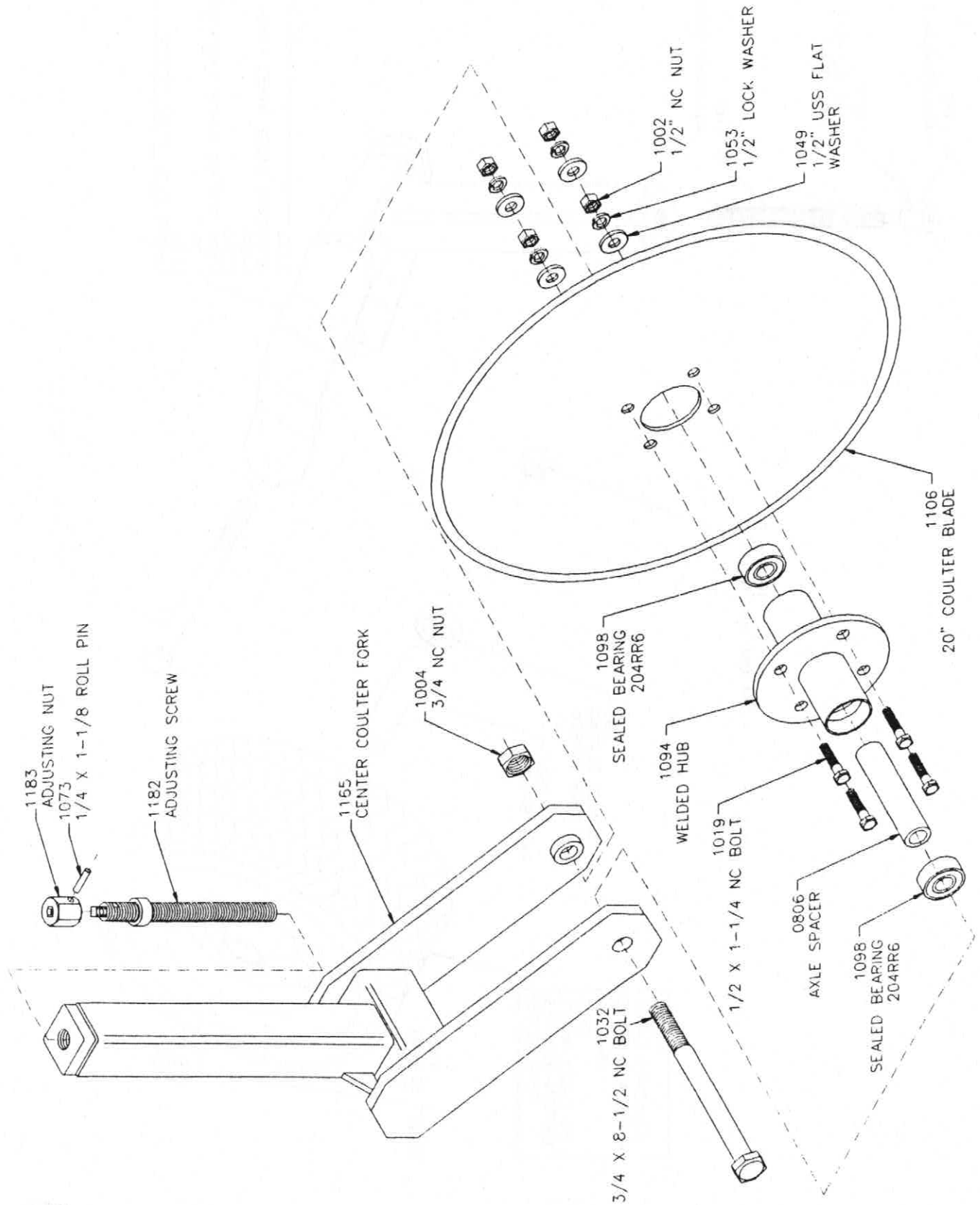
WHEEL ASSEMBLY



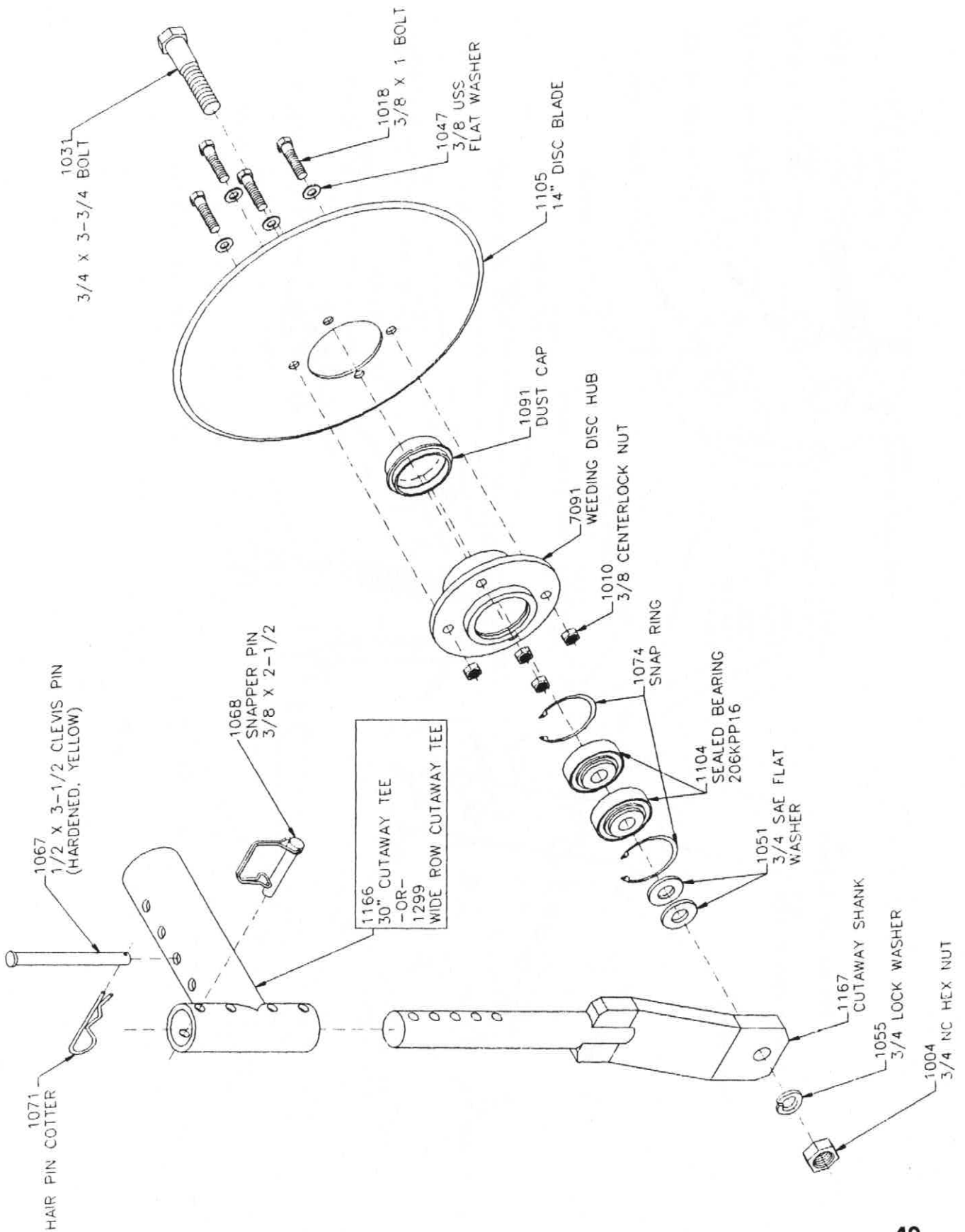
COULTER ASSEMBLY

8 PARTS LIST

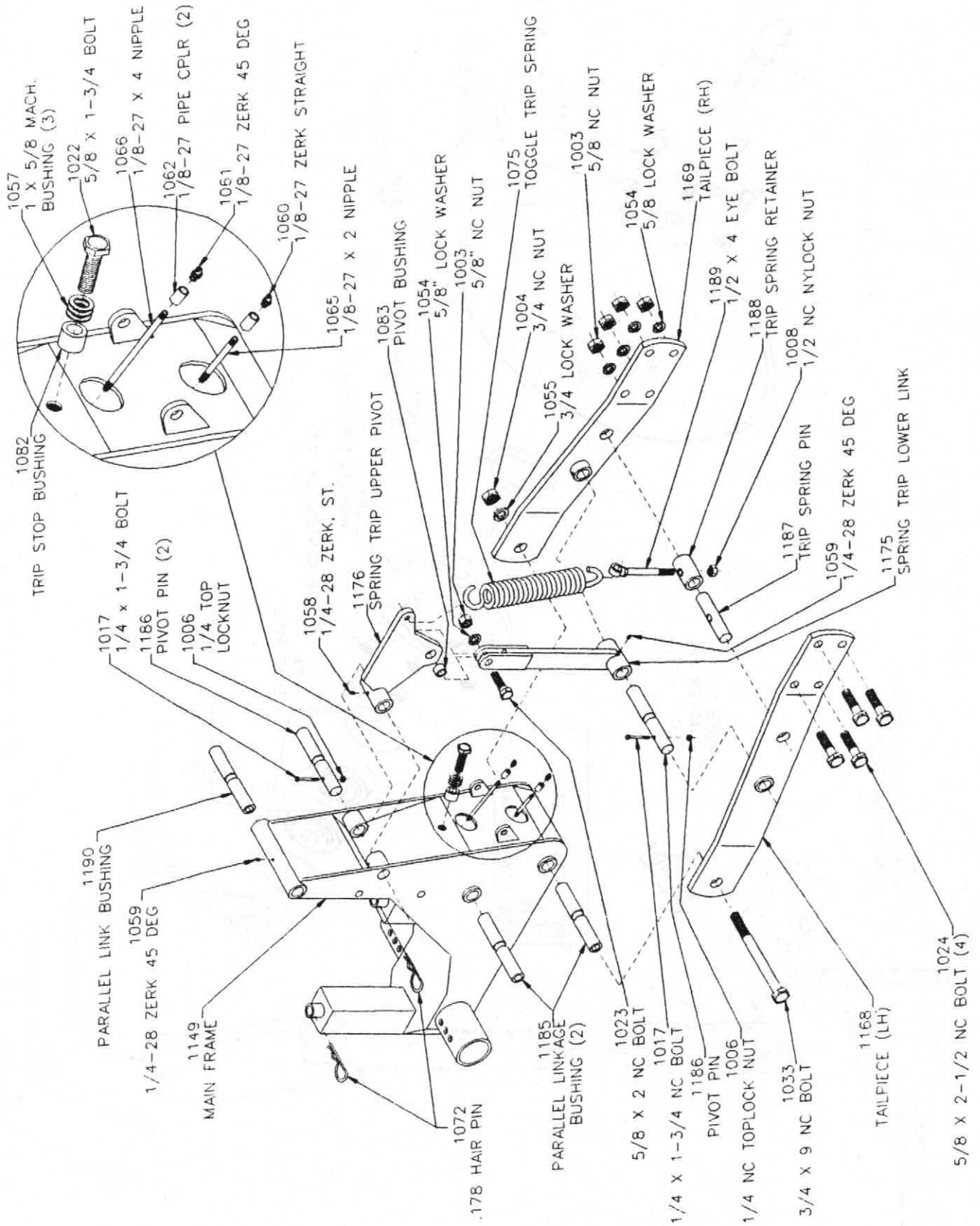
WHEEL ASSEMBLY



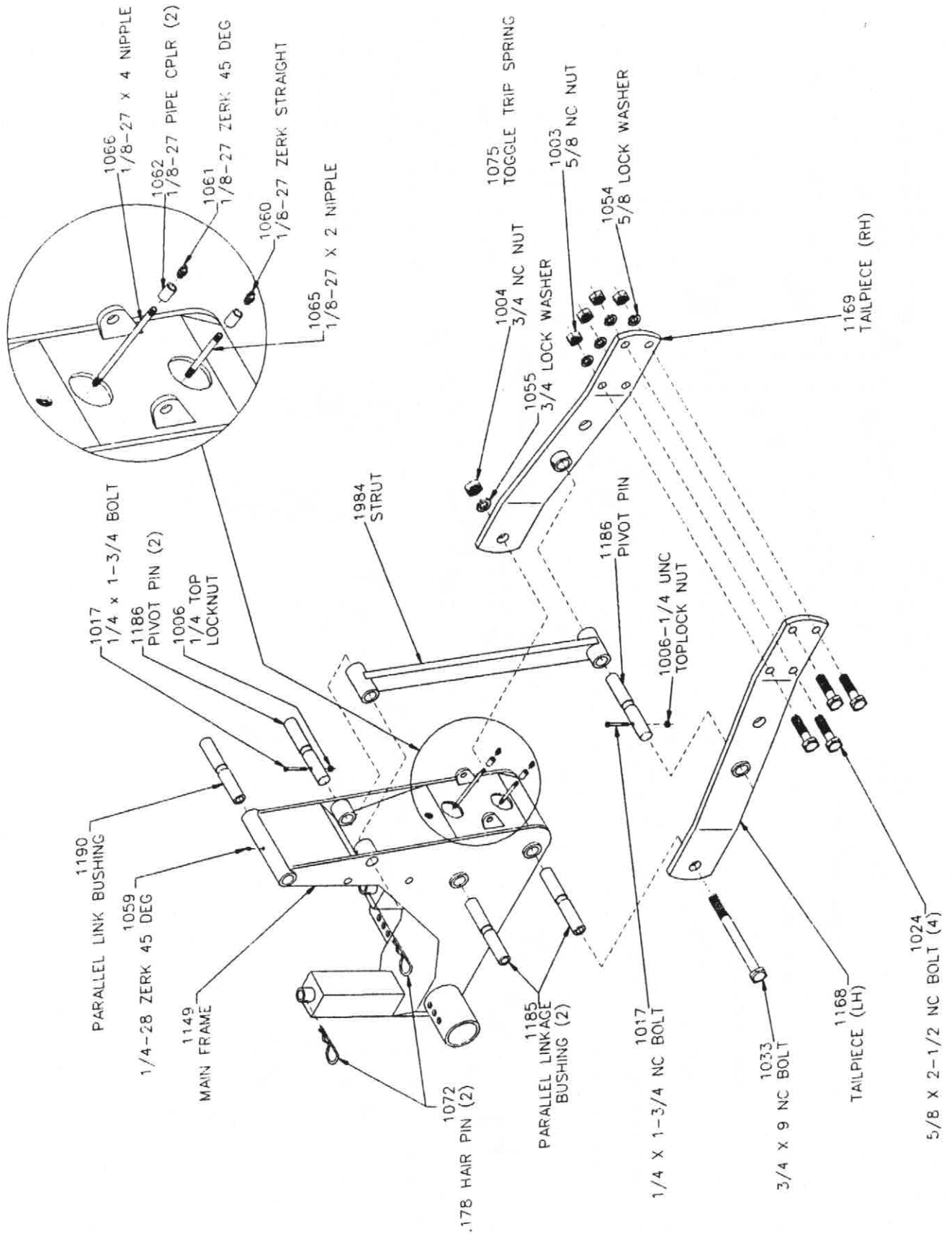
DISC BLADE ASSEMBLY



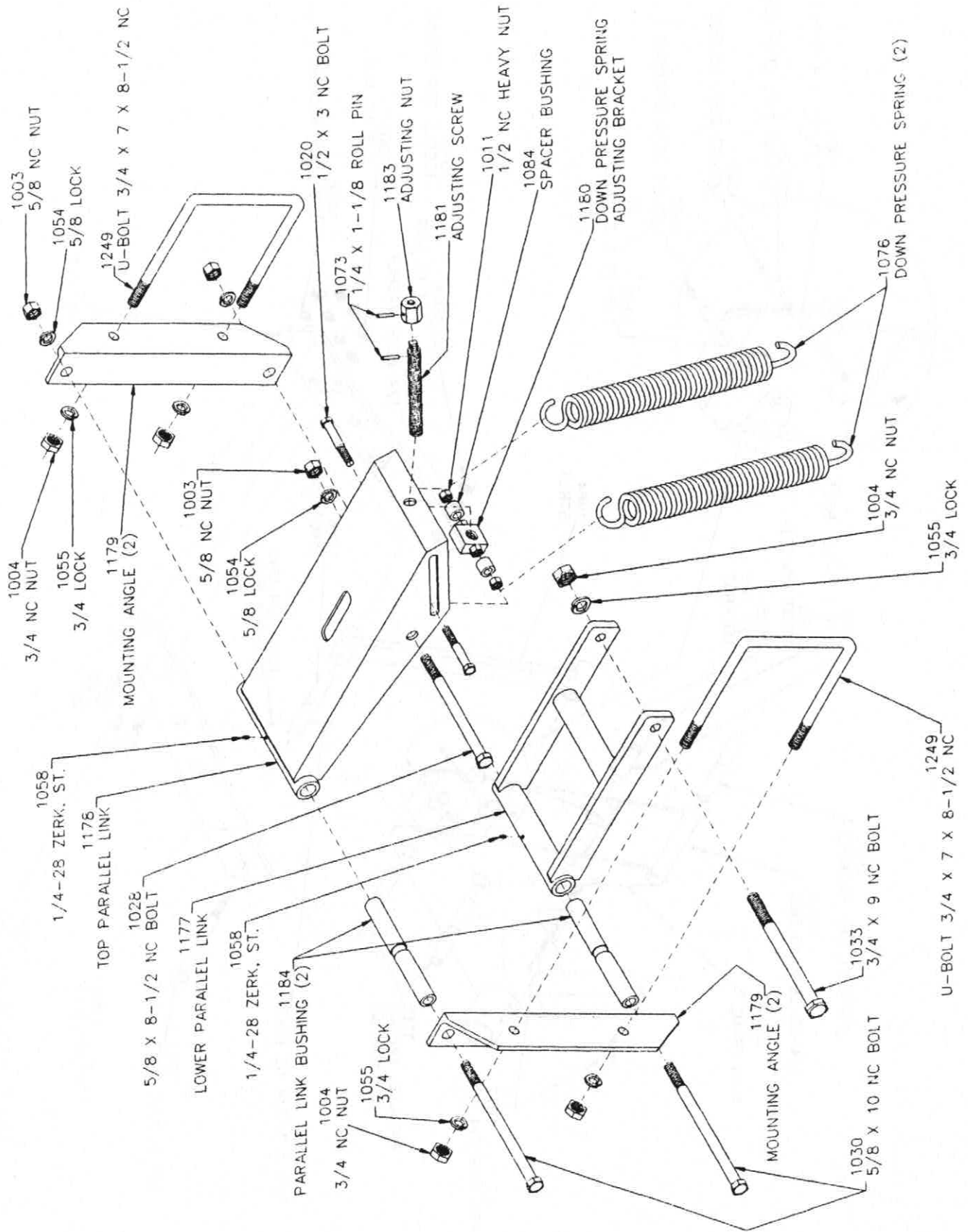
TRIP LINKAGE ASSEMBLY



PARALLEL LINKAGE ASSEMBLY



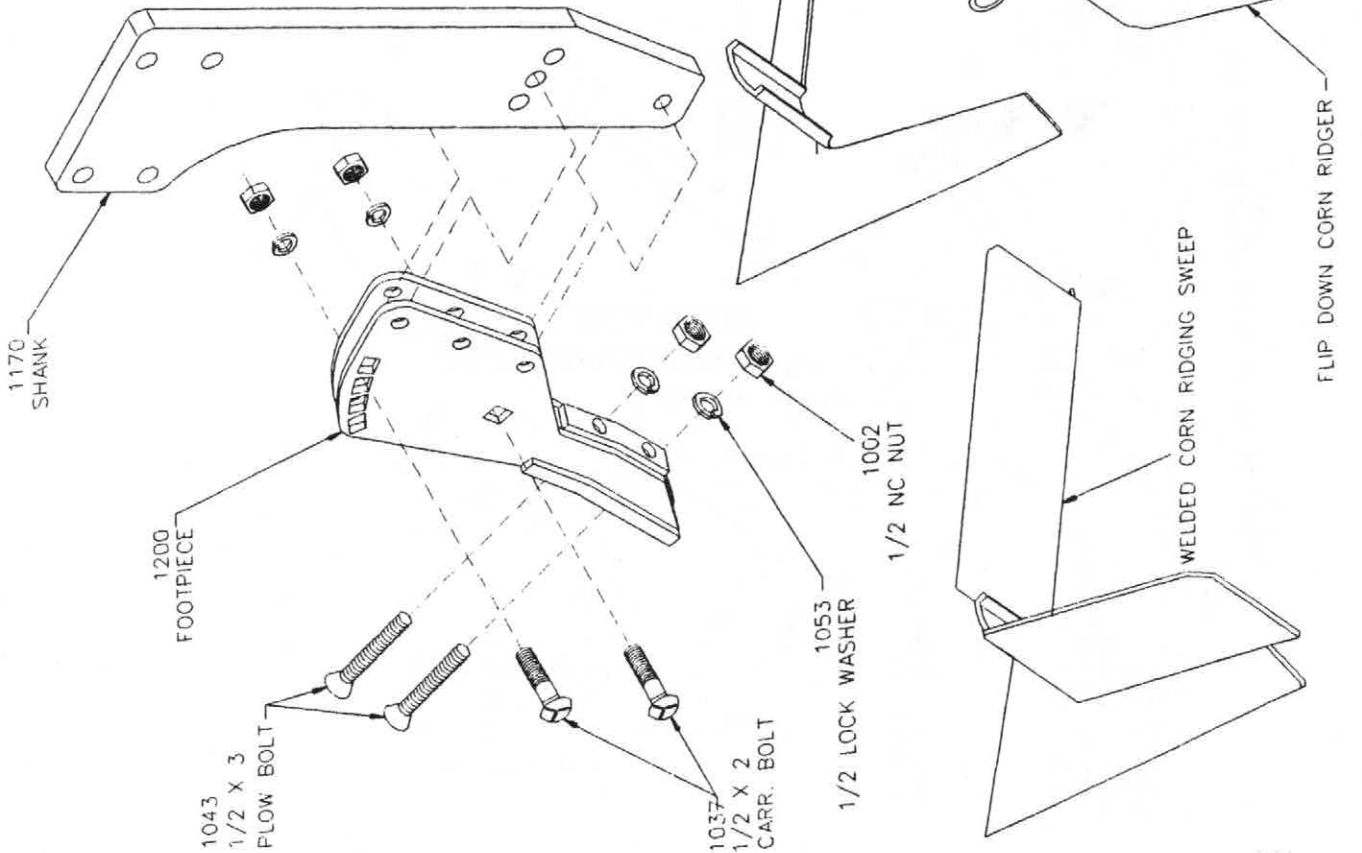
TOP LINKAGE FRAME



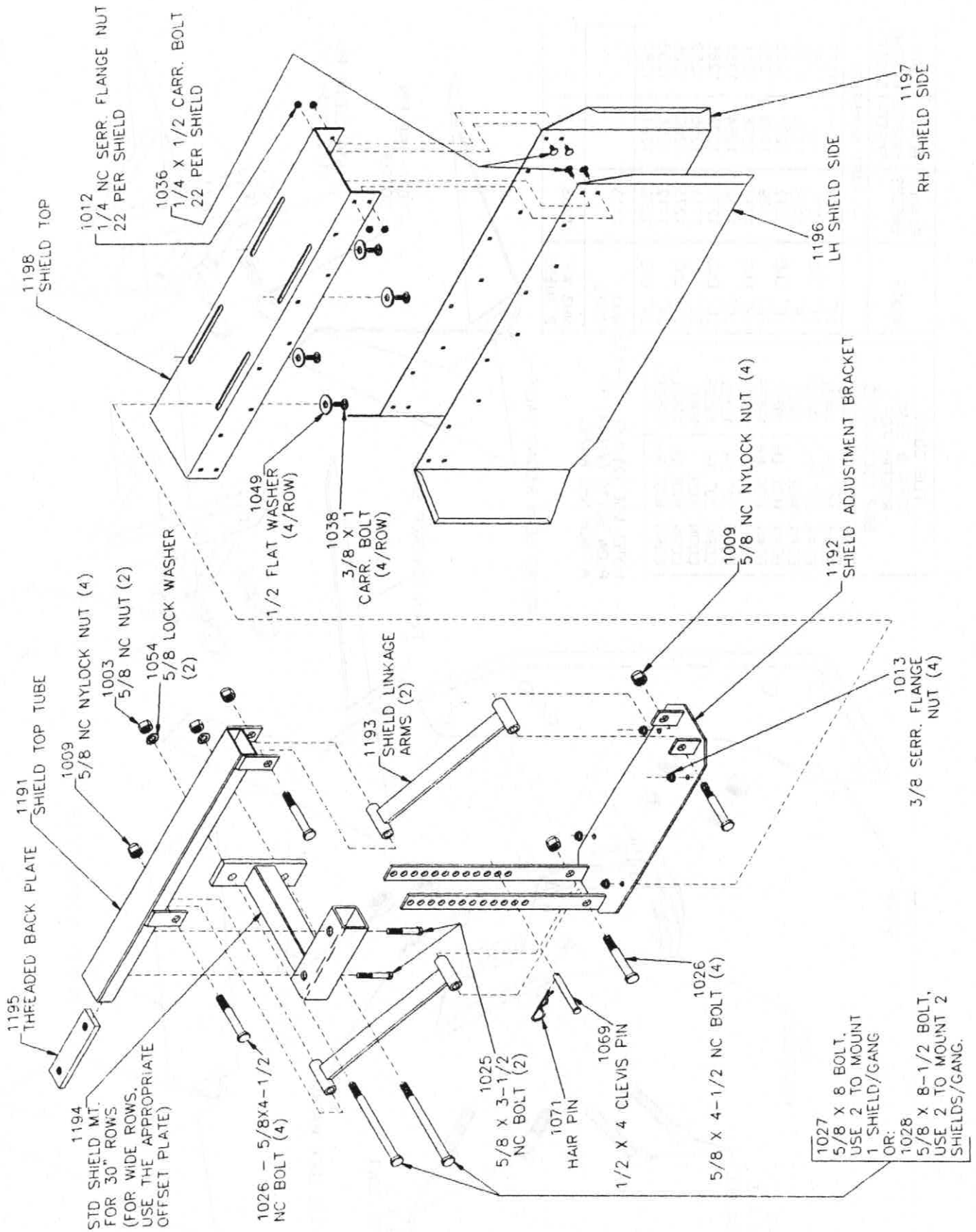
RIDGERS AND SWEEPS

FLIP DOWN CORN & BEAN RIDGERS FOR B&H CULTIVATORS	WIDTH	PLAIN SWEEPS	BEAN RIDGING SWEEP	CORN RIDGING SWEEP
BEAN, 30" LH 1965	14" END	1107	---	1117
BEAN, 30" LH 1965L	14" END	1271	---	1282
BEAN, 30" RH 1965R	16" END	1108	1118	1120
BEAN, WIDE LH 1963	16" END	1272	1277	1283
BEAN, WIDE LH 1963L	18" END	1109	1119	1250
BEAN, WIDE RH 1963R	18" END	1273	1278	1284
CORN, 30" LH 1952	20" END	1110	1254	1251
CORN, 30" LH 1952L	20" END	1274	1279	1285
CORN, 30" RH 1952R	22" END	1111	1255	1252
CORN, WIDE LH 1960	22" END	1275	1280	1286
CORN, WIDE LH 1960L	24" END	1112	1256	1253
CORN, WIDE RH 1960R	24" END	1276	1281	1287

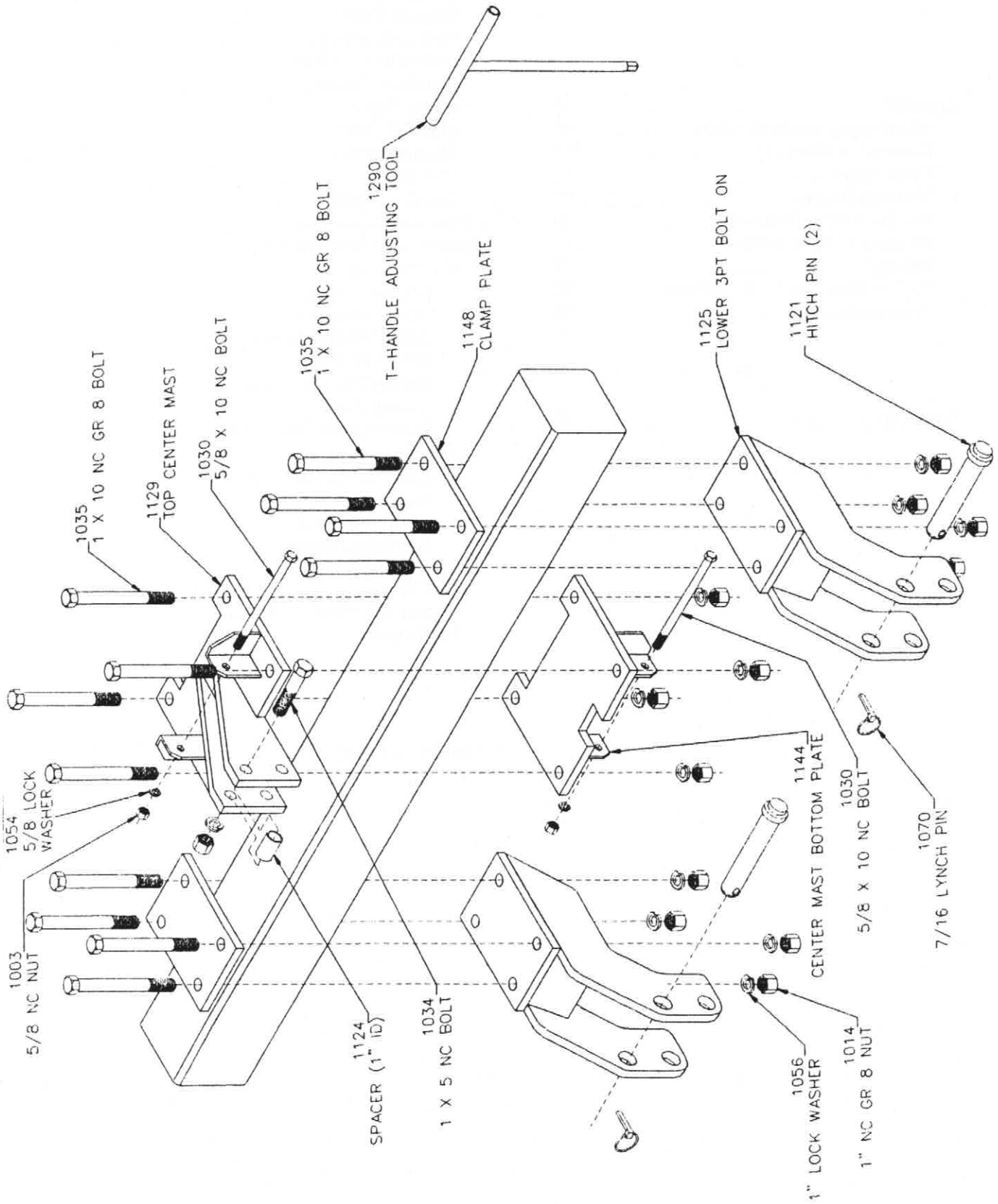
NOTE) USE (2) 1/2 X 3-1/2 PLOW BOLTS (#1044) TO ATTACH NH3 KNIFE.



SHIELD ASSEMBLY



MOUNTING FRAME



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