



MORRIS

Advanced Air Seeding and Tillage Systems

Never Pin Disc Drill

N33824-01

OPERATOR'S Manual

Table of Contents

Section 1:	
Safety	1-1
Signal Words	1-2
General Operation	1-3
Tractor Operation	1-3
Chemicals	1-4
Transporting	1-5
Hydraulics	1-5
Maintenance	1-6
Storage	1-6
Safety Signs	1-7
Locations	1-9
Lighting and Marking	1-10
Section 2:	
Specifications	2-1
Specifications and Options	2-2
Transport Dimensions	2-3
Section 3:	
Checklist	3-1
Manuals	3-2
Parts Manual	3-2
Assembly Manual	3-2
Checklist	3-3
Section 4:	
Introduction	4-1
Introduction	4-2
Options	4-3
Marker	4-3
Fertilizer Coulter	4-3
Section 5:	
Operation	5-1
Application	5-3
Tractor	5-3
Tires	5-3
Hydraulics	5-3
Drawbar	5-3
Hitching to Tractor	5-4
Unhitching from Tractor	5-5
Transport	5-5
Speed	5-5
Lights	5-5
Transport to Field Position	5-6
Field to Transport Position	5-8
Never Pin Opener Settings	5-10
Introduction	5-10
Units without Coulter Option	5-12
Units with Coulter Option	5-12
Soil Retaining Wheel	5-13
Fertilizer Coulter	5-14
Soil Retaining Wheel	5-14
Initial Adjustments	5-14
Final Adjustments	5-14

Table of Contents

Cleaning Time	5-15
Initial Adjustments	5-15
Closing Time	5-16
Coulter Positions	5-16
Operation Hints	5-17
Coulter Positions	5-19
Storage Position	5-19
Working Position	5-20
Hydraulic Depth Control System	5-21
All Models	5-21
Wing Lift Hydraulics	5-22
Wing Lift Hydraulics	5-23
28 ft and 34 ft Model	5-23
40 ft Model	5-23
General Guidelines	5-24
Section 6:	
Maintenance	6-1
General	6-2
Safety	6-2
Tighten Bolts	6-3
Tires	6-3
Daily Maintenance	6-4
Rotating Parts	6-4
Lubrication	6-5
1. Tool Bar Wheel Hubs	6-5
2. Tool Bar Gauge Wheel Castor Pivot	6-5
3. Never Pin Pincher Wheels	6-5
4. Never Pin Closing Wheel	6-5
5. Never Pin Disc Hub	6-5
6. Optional Fertilizer Coulter Disc Hub	6-5
Hydraulics	6-6
Toolbar	6-7
Wheel Bearings	6-7
Fertilizer Coulter	6-8
Scraper Positions	6-8
NH3 applications only	6-8
Granular or liquid applications	6-8
Closing Time	6-8
Axle Pivot Bushings	6-9
Section 7:	
Storage	7-1
Preparing for Storage	7-2
Cylinder Shaft Protection	7-3
Removing From Storage	7-3
Section 8:	
Troubleshooting	8-1
Never Pin Opener	8-2
Parallel link bolts loosening.	8-2
Plugging with trash continually in same area.	8-2
Side of disc building up with mud.	8-2
Soil being thrown by disc.	8-2
Trash building up under scraper.	8-2

Table of Contents

Pincher wheels wearing on sides.	8-2
Radical movement of parallel links and hammering of assemblies.	8-2
Poor disc penetration.	8-2
Excessive hair-pinning of trash.	8-2
No seed or fertilizer coming out of seed tube/scrapper.	8-3
Fertilizer Coulter	8-3
Refer to Operation section under Fertilizer Coulter Operation Hints.	8-3
Tool Bar	8-3
Machine not operating straight.	8-3
Lack of penetration.	8-3
Wing lifting too slowly.	8-3
Wings not lowering.	8-3
Oil accumulation.	8-4
One wing will lift, other will not.	8-4
Depth control not working.	8-4
Depth control slow lifting.	8-4
One wing or one whole side will drop when machine is fully raised.	8-4

Table of Contents

Notes

Section 1: Safety

Section Contents

Signal Words	1-2
General Operation	1-3
Tractor Operation	1-3
Chemicals	1-4
Transporting	1-5
Hydraulics	1-5
Maintenance	1-6
Storage	1-6
Safety Signs	1-7
Locations	1-9
Lighting and Marking	1-10

Safety

SAFETY-ALERT SYMBOL



Watch for this symbol. It identifies potential hazards to health or personal safety. It means:

ATTENTION - BE ALERT.
Your Safety is involved.

Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.

Signal Words

The words **DANGER**, **WARNING** or **CAUTION** are used with the safety alert symbol. Learn to recognize the safety alerts, and follow the recommended precautions and safe practices.

Three words are used in conjunction with the safety-alert symbol:



DANGER

Indicates an imminently hazardous situation that, if not avoided, will cause **DEATH OR VERY SERIOUS INJURY**.



WARNING

Indicates a potentially hazardous situation that, if not avoided, could cause **DEATH OR SERIOUS INJURY**.



CAUTION

Indicates a potentially hazardous situation that, if not avoided, may cause a **MINOR INJURY**.

Replace any **DANGER**, **WARNING**, **CAUTION** or instructional decal that is not readable or is missing. The location and part number of these decals is identified later in this section of the manual.

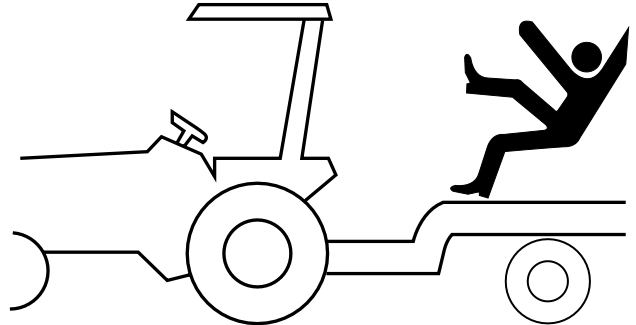
The words **Important** and **Note** are not related to personal safety but are used to give additional information and tips for operating or servicing this equipment.

IMPORTANT: Identifies special instructions or procedures which, if not strictly observed could result in damage to, or destruction of the machine, process or its surroundings.

NOTE: Indicates points of particular interest for more efficient and convenient repair or operation.

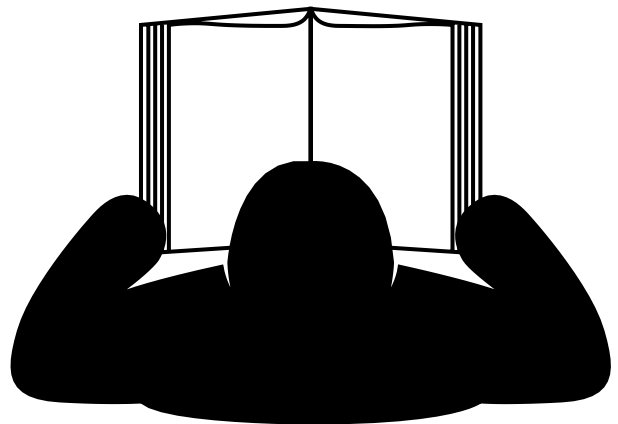
General Operation

- **DO NOT RIDE!!** Do not allow riders on the implement when in motion.
- Do not allow extra riders in the tractor unless an instructor seat and seat belt are available.
- **Check behind** when backing up.
- **Reduce speed** when working in hilly terrain.
- Never allow anyone within the immediate area when operating machinery.
- **Keep all shields in place**, replace them if removed for service work.
- Always lock auger attachment in raised position.
- Keep hands clear of tank opening when closing lid. Keep lid seal clean to ensure proper sealing.
- **Do Not enter tank unless another person is present and the tractor engine has been shut off.**



Tractor Operation

- Be aware of the correct tractor operating procedures, when working with implements.
- Review tractor operator's manual.
- Secure hitch pin with a retainer and lock drawbar in centre position.



Safety

Chemicals

- **Use extreme care** when cleaning, filling or making adjustments.
- **Always read** granular chemical or treated seed manufacturer's warning labels carefully and remember them.
- Wear close fitting clothing and appropriate personal protective equipment for the job as specified by the chemical and/or seed manufacturer.
- **Always wear** safety goggles, breathing apparatus and gloves when handling with granular chemical or treated seed.
- **Do not feed** any treated seed to livestock. Treated seed is poisonous and may cause harm to persons or livestock.
- **Wash exposed skin immediately** - do not leave chemicals on your skin.
- **Properly store** chemicals in original containers with labels intact per the manufacturer's instructions.
- Always follow the manufacturer's operating instructions and warning labels when operating an ammonia tank with the equipment.
- **Do Not enter tank unless another person is present and the tractor engine has been shut off.**



Danger

Failure to comply may result in death or serious injury.

Read Operator's Manual and decals on **Ammonia** tank before operating Air Cart. Become familiar with all warnings, instructions, and controls.

Always wear gloves and goggles when transferring or handling ammonia.

Always stay clear of hose and valve openings.

Always be sure pressure is relieved before disconnecting hoses or parts.

Always secure connecting parts and safety chains before towing ammonia trailer.

Always have ample water available in case of exposure to ammonia liquid or gases.

Transporting

- **Be aware** of the height, length and width of implement. Make turns carefully and be aware of obstacles and overhead electrical lines.
- Always travel at a safe speed. Do Not Exceed 20 M.P.H. (32 kph) with an empty air cart.
- **REDUCE SPEED** with material in Air Cart tanks. **Do Not** Exceed a speed of 10 M.P.H. (16 kph).
- Use an agricultural tractor that is large enough with sufficient braking capacity so that the weight of the loaded equipment towed **does not exceed 1.5 times** the weight of the tractor.
- Use flashing amber warning lights, turn signals and SMV emblems when on public roads.
- Do not transport in poor visibility.
- The slow moving vehicle (SMV) emblem and reflectors must be secured and be visible on the machine for transport.
- Avoid soft surfaces, the additional wing weight on the centre wheels could cause the machine to sink.
- Ensure safety chain is attached correctly to the towing vehicle and the hitch of the implement.
- Check that wings are firmly seated in transport wing stops, and lock pins installed.
- Secure transport locks on depth control cylinders.
- Be familiar with and adhere to local laws.

Hydraulics

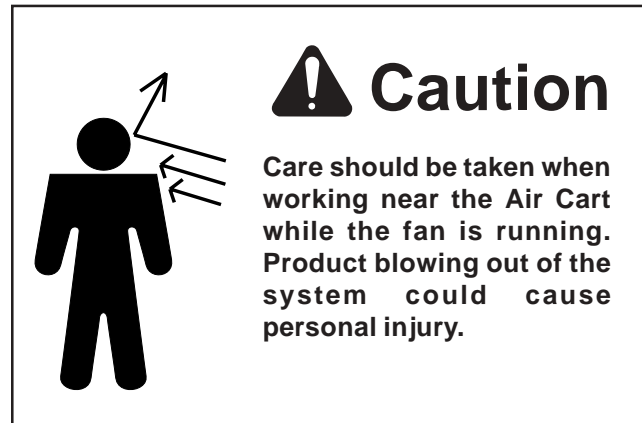
- **Do not** search for high pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, thereby requiring immediate medical attention.
- Use cardboard or wood to detect leaks - never your hands.
- Double check that all is clear before operating hydraulics.
- **Never** remove hydraulic hoses or ends with machine elevated. Relieve hydraulic pressure before disconnecting hydraulic hoses or ends.
- Maintain proper hydraulic fluid levels.
- Keep all connectors clean for positive connections.
- Ensure all fittings and hoses are in good condition.
- Do not stand under wings.



Safety

Maintenance


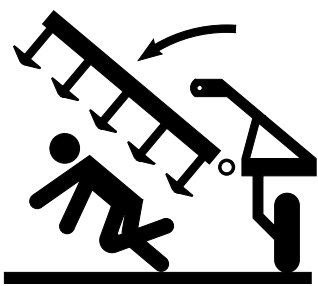
- **Shut tractor engine off** before making any adjustments or lubricating the machine.
- **Block** machine securely to prevent any movement during servicing.
- Wear close fitting clothing and appropriate personal protective equipment for the job.
- **Always wear** safety goggles, breathing apparatus and gloves when working on seeder filled with granular chemical or treated seed per the manufacture's instructions.
- Do not modify the machine.





Storage

- Store implement away from areas of main activity.
- Level implement and block up securely to relieve pressure on jack.
- Do not allow children to play on or around stored implement.

Safety Signs

 <h1 style="margin: 0;">DANGER</h1>	
<ul style="list-style-type: none"> • WINGS MAY FALL RAPIDLY CAUSING BODILY INJURY. • ALWAYS STAY CLEAR OF FOLDING WINGS WHEN BEING RAISED, LOWERED, OR IN ELEVATED STATE. • ALWAYS INSTALL ALL LOCKUP DEVICES PROVIDED WHEN WINGS ARE IN ELEVATED POSITION. • ENSURE CYLINDER IS COMPLETELY FILLED WITH HYDRAULIC FLUID TO AVOID UNEXPECTED MOVEMENT. 	

 <h1 style="margin: 0;">DANGER</h1>
<p style="text-align: center;">Failure to comply may result in death or serious injury.</p> <p>Read Operator's Manual and decals on Ammonia tank before operating Machine. Become familiar with all warnings, instructions, and controls.</p> <p>Always wear gloves and goggles when transferring or handling ammonia.</p> <p>Always stay clear of hose and valve openings.</p> <p>Always be sure pressure is relieved before disconnecting hoses or parts.</p> <p>Always secure connecting parts and safety chains before towing ammonia trailer.</p> <p>Always have ample water available in case of exposure to ammonia liquid or gases.</p> <p style="text-align: right; font-size: small;">S29378</p>

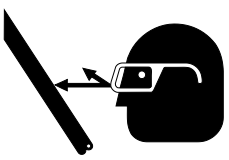

 <h1 style="margin: 0;">WARNING</h1>
<p>Personal injury or property damage may result from loss of control.</p> <ul style="list-style-type: none"> • Always use large enough tractor with sufficient braking capacity. <ul style="list-style-type: none"> ➢ Weight of fully loaded implement should not be more than 1.5 times weight of tractor. • Maximum recommended towing speed is 20 mph (32 km/h). • Use flashing amber warning lights and SMV emblem when on public roads, except where prohibited by law. • Refer to tractor and implement Operator's Manuals for weights and further information. <p style="text-align: right; font-size: small;">N24301</p>



Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.

Safety

Safety Signs - continued

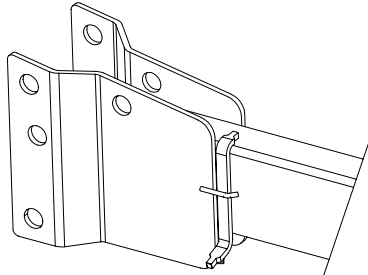
	! WARNING HIGH-PRESSURE FLUID HAZARD To prevent serious injury or death: <ul style="list-style-type: none">• Relieve pressure on hydraulic system before servicing or disconnecting hoses.• Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.• Keep all components in good repair.
	<small>C-4262</small>

! WARNING
<p>This implement may exceed maximum road regulations. Before you transport this implement contact a local agency regarding road regulations concerning maximum allowable implement dimensions.</p>
<small>C31201</small>

! WARNING

<p>Keep off while machine is moving or mechanism is running.</p>
<small>D13705</small>

! CAUTION
<p>TRANSPORT LOCK ... MUST BE INSTALLED BEFORE TRANSPORTING MACHINE. SEE OPERATOR'S MANUAL</p>
<small>F-4644</small>

<p>ADJUSTMENT HANDLE STORAGE POSITION</p> 
<small>934377</small>



Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.

Safety

Lighting and Marking

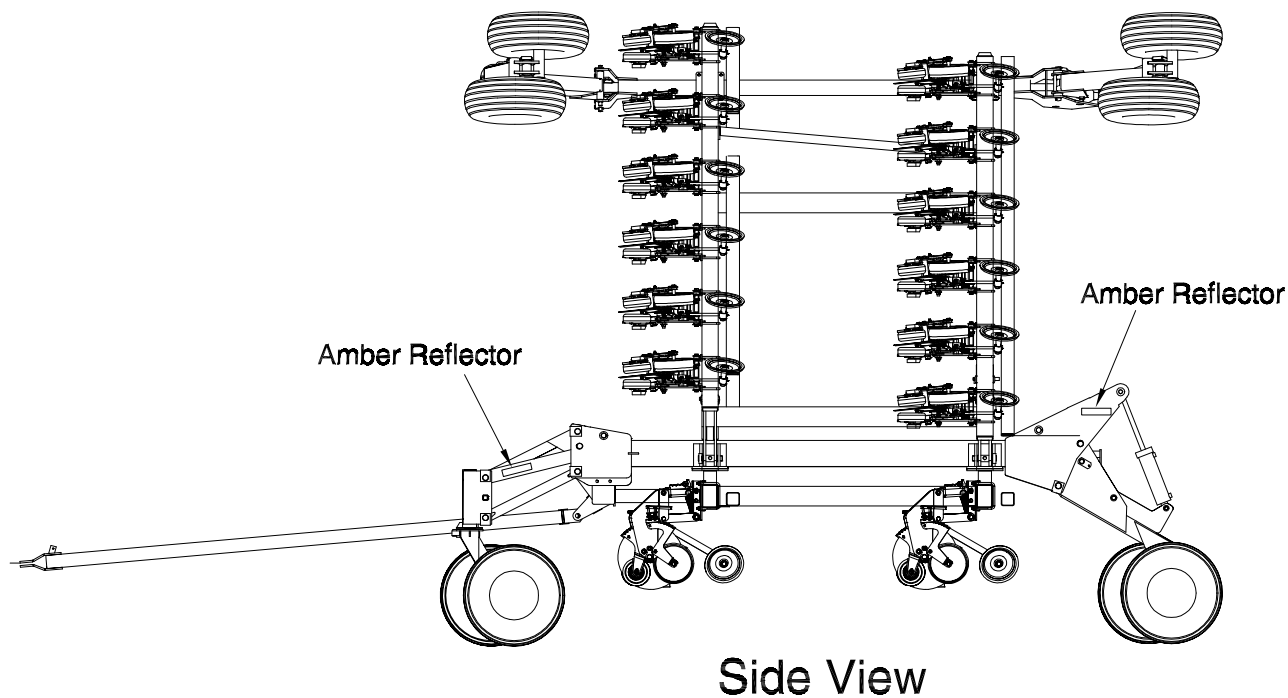
MORRIS recommends the use of the correct lighting and marking to meet the ASAE standard for roadway travel. Be familiar with and adhere to local laws.

Amber warning and red tail lights secured on the machine promote correct transportation of this implement.

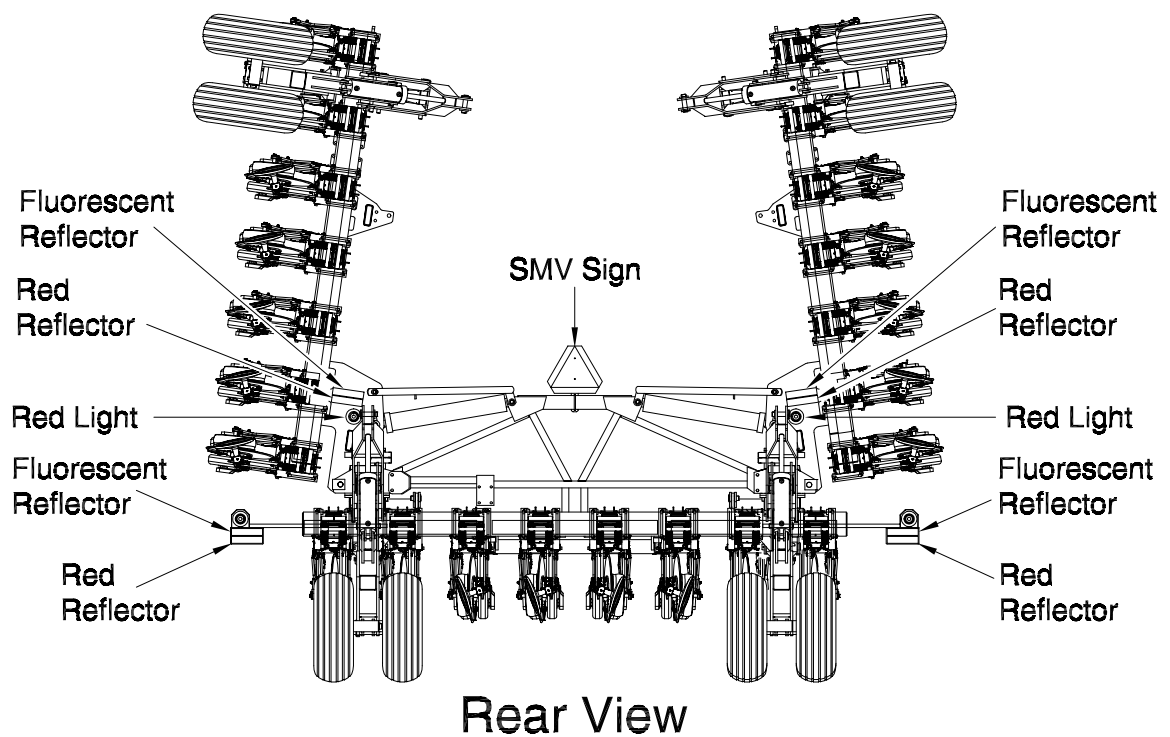
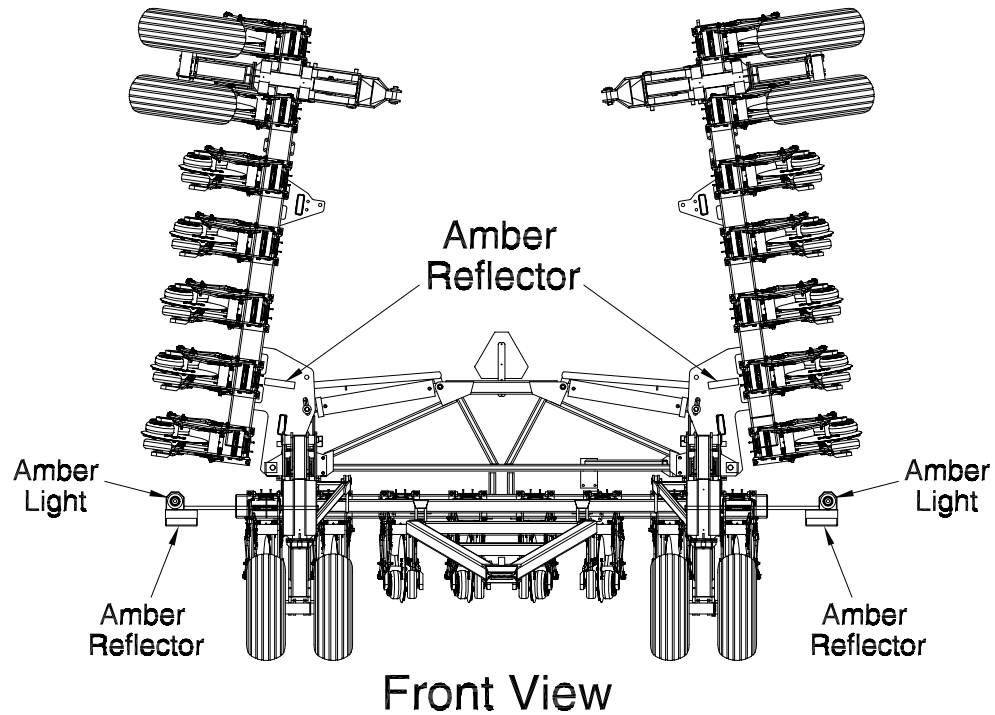
Note: Always replace missing or damaged lights and/or connectors.

Amber warning and red tail lights must be mounted to the rear of the implement and be visible from front and rear. The lights must be within 16 inches (41 cm) of the extremities of the machine and at least 39 inches (99 cm) but not over 10 feet (3 m) above ground level.

Note: Always replace missing or damage front, side, rear reflectors and SMV emblem.



Lighting and Marking - continued

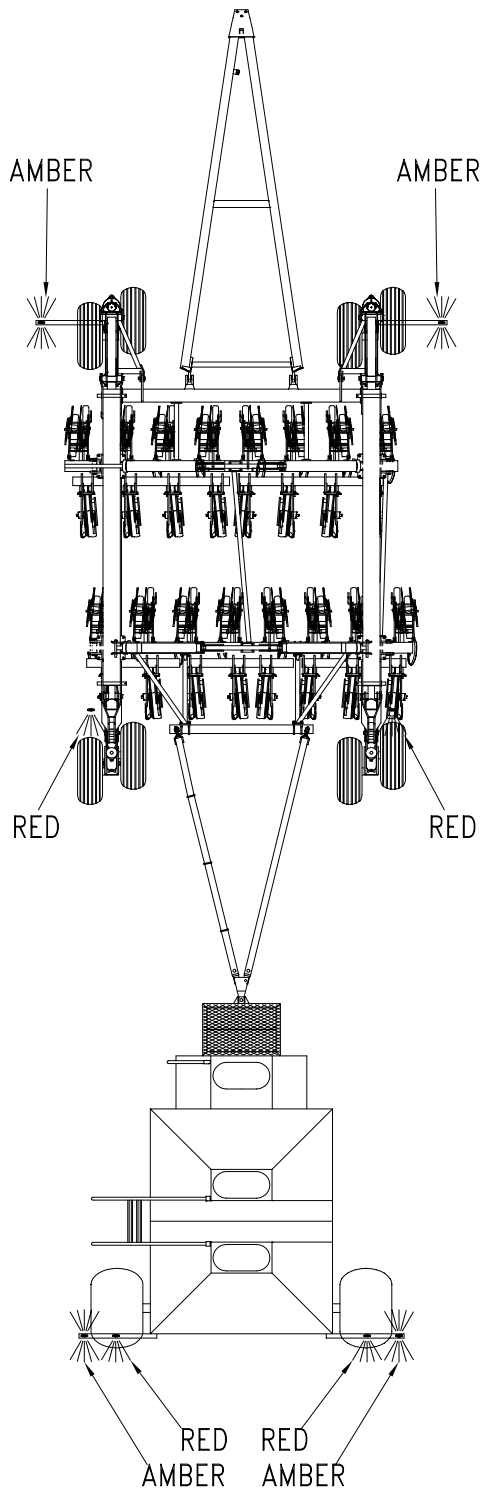


Safety

Lighting and Marking - continued

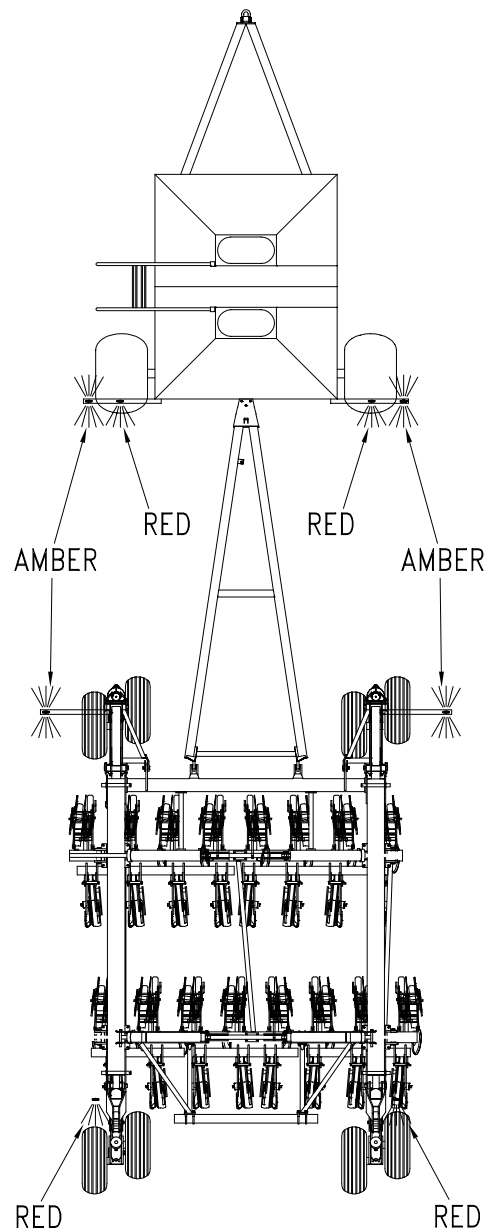
Seeding Unit

Tow Between



Seeding Unit

Tow Behind



Section 2: Specifications

Section Contents

Specifications and Options	2-2
Transport Dimensions	2-3

Specifications

NEVER PIN Specifications and Options				
Base Size		3 Frame Models		
		28' (8.53 m)	34' (10.36 m)	40' (12.19 m)
Weight (Single Shoot)	7 1/2" (19.0 cm) Spacing	24,324 lbs. (11,056 kg)	24,620 lbs. (11,191 kg)	29,500 lbs. (13,409 kg)
	10" (25.4 cm) Spacing	21,480 lbs. (9,764 kg)	21,776 lbs. (9,898 kg)	25,652 lbs. (11,660 kg)
Working Width	7 1/2" (19.0 cm) Spacing	27.5' (8.38 m)	32.5' (9.91 m)	40' (12.19 m)
	10" (25.4 cm) Spacing	26.7' (8.14 m)	33.3' (10.16 m)	40' (12.19 m)
Number of Openers	7 1/2" (19.0 cm) Spacing	44	52	64
	10" (25.4 cm) Spacing	32	40	48
Frame Width	Main	13' (3.96 m)	13' (3.96 m)	13' (3.96 m)
	Inner Wing	8' (2.44 m)	10.5' (3.20 m)	10.5' (3.20 m)
	Outer Wing	N/A	N/A	3.5' (1.07 m)
Overall Length Working Position (clevis to back of rear tire)		31' (9.45 m)	31' (9.45 m)	31' (9.45 m)
Transport Position	Width	19.2' (5.85 m)	19.2' (5.85 m)	19.2' (5.85 m)
	Height	16' (4.88 m)	16' (4.88 m)	16' (4.88 m)
Tires	Main Frame Castor Wheels	(4) 11L x 15 FI Load Range D 6 Bolt Hub	(4) 11L x 15 FI Load Range F 8 Bolt Hub	(4) 12.5L x 15 FI Load Range F 8 Bolt Hub
	Main Frame Transport Wheels	(4) 11L x 15 FI Load Range D 6 Bolt Hub	(4) 11L x 15 FI Load Range F 8 Bolt Hub	(4) 12.5L x 15 FI Load Range F 8 Bolt Hub
	Wing Frame Castor Wheels (per wing)	(2) 11L x 15 SL 6 Ply Rating	(2) 11L x 15 SL 6 Ply Rating	(2) 12.5L x 15 SL 8 Ply Rating
	Wing Frame Transport Wheels (per wing)	(2) 11L x 15 SL 6 Ply Rating	(2) 11L x 15 SL 6 Ply Rating	(2) 12.5L x 15 SL 8 Ply Rating
Road Clearance		10" (25.4 cm)		
Frame Depth		84" (2.13 m) (2 ranks)		
Planting Configurations		7 1/2" spacing - Single Shoot, Double Shoot (Mid Row Band) 10" spacing - Single Shoot, Double Shoot (Side Band and Mid Row Band)		
Seed Opener	Disk Size	20" (50.8 cm) with a 6 Degree Angle		
	Pincher Wheels	8" (20.3 cm) diameter - Solid Rubber		
	Packing Pressure	Adjustable from 30 - 60 lbs. (14 to 27 kg)		
	Opener Down Force	Adjustable from 260 - 375 lbs.- (118 to 170 kg) at optimum position		
	Seeding Depth	Adjustable from 0.25" - 3.5" (0.64 - 8.9 cm), in increments of 0.25" (0.64 cm)		
Fertilizer Opener	Disk Size	20" (50.8 cm) with a 5 Degree Angle		
	Opener Down Force	350 lbs. (159 kg)		
	Fertilizer Depth	Adjustable from 0" - 3.5" (8.9 cm), in increments of 0.5" (0.64 cm)		
Wheel Markers		Optional		
Safety Lights		Standard		
Safety Chain		Standard		

Transport Dimensions



Specifications

Notes

Section 3: Checklist

Section Contents

Manuals	3-2
Parts Manual	3-2
Assembly Manual	3-2
Checklist	3-3

SAFETY-ALERT SYMBOL



Watch for this symbol. It identifies potential hazards to health or personal safety. It points out safety precautions. It means:

ATTENTION - BE ALERT.
Your safety is involved.

Manuals

Note: Owner Verification Form must be completed and submitted to Morris Industries within 30 days of delivery date.

Warranty Void if Not Registered

Parts Manual

Order Part Number N33826

Assembly Manual

Order Part Number N33825

Checklist

Please read the Operator's Manual carefully and become a "SAFE" operator.

Adopt a good lubrication and maintenance program.

General

___ Check if assembled correctly.

___ Check hose connections

Lubrication - Grease

___ Pincher Wheels

___ Closing Wheel

___ Disc Hub

___ Wheel Hubs

___ Castor Pivots

Tire Pressure

___ See maintenance, section 6

Transport

___ Tighten wheel bolts.

___ Check hose connections.

OWNER REFERENCE

Model: _____

Serial No: _____

Dealer: _____

Town: _____ State: _____

Phone: _____

OWNER/OPERATOR: _____

Date: _____



TAKE SAFETY SERIOUSLY.

**DO NOT TAKE
NEEDLESS CHANCES!!**

Checklist

Notes

Section 4: Introduction

Section Contents

Introduction	4-2
Options	4-3
Marker	4-3
Fertilizer Coulter	4-3

Introduction

Introduction

This Operator's Manual has been carefully prepared to provide the necessary information regarding the operation and adjustments, so that you may obtain maximum service and satisfaction from your new MORRIS NeverPin Disc Drill.

To protect your investment, study your manual before starting or operating in the field. Learn how to operate and service your NeverPin Disc Drill correctly, failure to do so could result in personal injury or equipment damage.

If you should find that you require information not covered in this manual, contact your local MORRIS Dealer. The Dealer will be glad to answer any questions that may arise regarding the operation of your MORRIS NeverPin Disc Drill.

MORRIS Dealers are kept informed on the best methods of servicing and are equipped to provide prompt efficient service if needed.

Occasionally, your NeverPin Disc Drill may require replacement parts. Your Dealer will be able to supply you with the necessary replacement parts required. If the Dealer does not have the necessary part, the MORRIS Factory will supply the Dealer with it promptly.

Your MORRIS NeverPin Disc Drill is designed to give satisfaction even under difficult conditions. A small amount of time and effort spent in protecting it against rust, wear and replacing worn parts will increase the life and trade-in value.



Keep this book handy for ready reference at all times. It is the policy of Morris Industries Ltd. to improve its products whenever it is possible to do so. The Company reserves the right to make changes or add improvements at any time without incurring any obligation to make such changes on machines sold previously.

Options

Marker

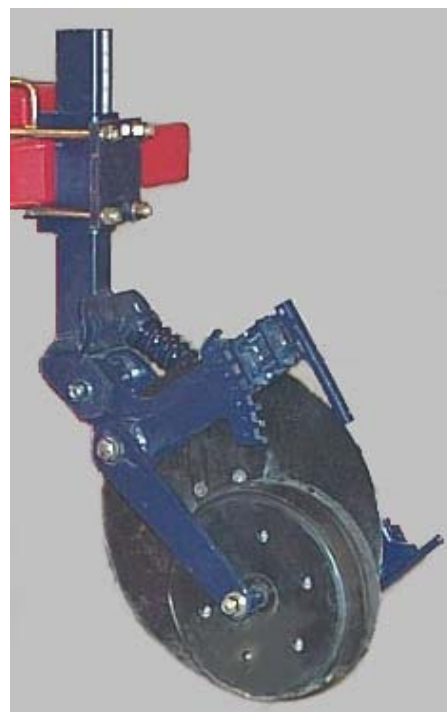
- The optional marker system is a swing-arm style allowing for a low profile in both working and transport position. The hydraulic valving allows for automatic operation for the marker as the unit is raised and lowered. The significant reduced soil disturbance produced by the Neverpin Disc Drill makes a marker system a highly recommended option.



Marker Assembly

Fertilizer Coulter

- The optional fertilizer coulter is available in various versions. The unit can place dry fertilizer, liquid fertilizer or anhydrous ammonia using different scraper assemblies mounted to the same base unit so conversion is easy and affordable.
- The coulter assemblies are mounted to a sub-frame that is in turn mounted to each row of the the toolbar.
- Various fertilizer placement configurations are available for row spacings offered including mid-row placement as well as side placement.
- The coulter is independently mounted from the NeverPin opener. Settings are similar to the NeverPin and the nature of the coulter give minimal soil disturbance.



Fertilizer Coulter

Introduction

Notes

Section 5: Operation

Section Contents

Application	5-3
Tractor	5-3
Tires	5-3
Hydraulics	5-3
Drawbar	5-3
Hitching to Tractor	5-4
Unhitching from Tractor	5-5
Transport	5-5
Speed	5-5
Lights	5-5
Transport to Field Position	5-6
Field to Transport Position	5-8
Never Pin Opener Settings	5-10
Introduction	5-10
Units without Coulter Option	5-12
Units with Coulter Option	5-12
Soil Retaining Wheel	5-13
Fertilizer Coulter	5-14
Soil Retaining Wheel	5-14
Initial Adjustments	5-14
Final Adjustments	5-14
Cleaning Tine	5-15
Initial Adjustments	5-15
Closing Tine	5-16
Coulter Positions	5-16
Operation Hints	5-17
Coulter Positions	5-19
Storage Position	5-19
Working Position	5-20

Section Contents

Hydraulic Depth Control System 5-21

 All Models 5-21

Wing Lift Hydraulics 5-22

Wing Lift Hydraulics 5-23

 28 ft and 34 ft Model 5-23

 40 ft Model 5-23

General Guidelines 5-24

CAUTION



BE ALERT

SAFETY FIRST

**REFER TO SECTION 1 AND REVIEW
ALL SAFETY RECOMMENDATIONS.**

Application

The Never Pin Disc Drill utilizes independent parallel link seed disc openers. This system ensures the most accurate in depth control and seed placement within the row.

The heavy duty disc opener allows the unit to be used in all zero till applications.

Tractor

Tires

- Proper ballast and tire pressure are required when pulling heavy implements.
- Consult your tractor operator's manual and follow all recommended procedures.

Hydraulics

- Wipe all hydraulic fittings and couplers with a clean cloth to avoid contaminating the system.
- Check that hydraulic reservoir is filled to the proper level.

Drawbar

- Centre and pin in a fixed position for easier hitching and greater stability.



Warning

Do not permit smoking, sparks or an open flame where combustible fuels are being used. Keep the work area well ventilated.



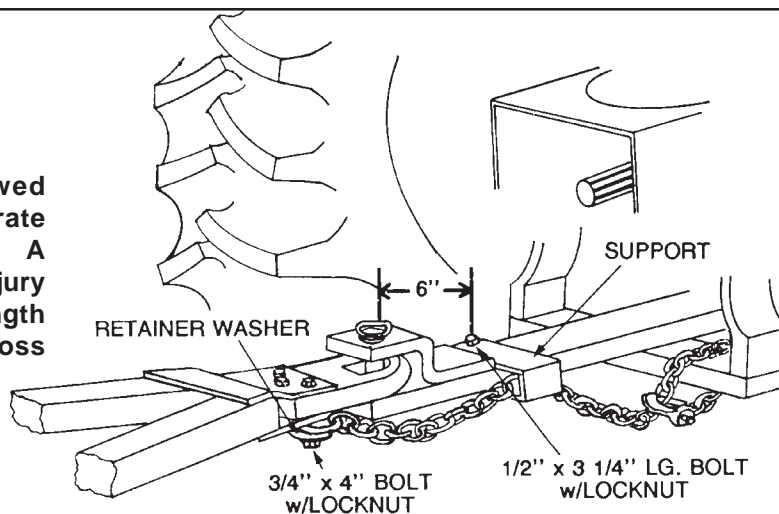
Warning

Do not search for high pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, that requires immediate medical attention.

Operation

Caution

A safety chain will help control towed machines should it accidentally separate from the drawbar while transporting. A runaway machine could cause severe injury or death. Use a safety chain with a strength rating equal to or greater than the gross weight of the towed machines.



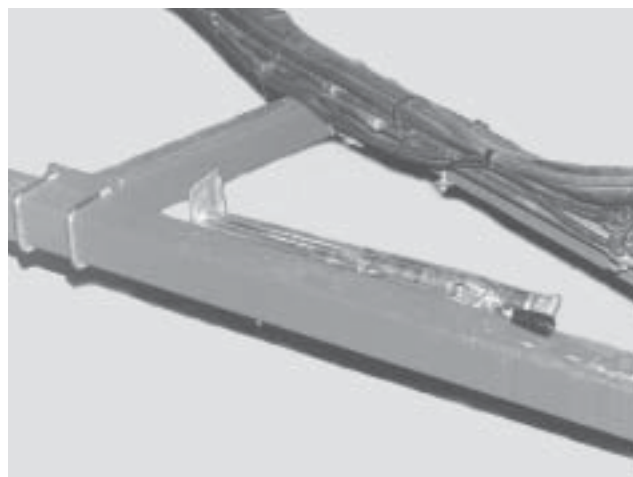
Attach safety chain to the tractor drawbar support or other specified anchor location with the appropriate parts.

Hitching to Tractor

- Ensure swinging drawbar is locked in the centre position.
- Ensure hitch pin is in good condition.
- Level clevis with tractor drawbar using hitch jack.
- Back tractor into position and attach hitch clevis to drawbar, using an adequate hitch pin.
- Lock hitch pin in place with a hairpin or other proper locking device.
- After tractor to implement connection is made, relieve pressure off the hitch jack.
- Place hitch jack in raised position.
- Route Safety Chain through chain support and drawbar support.
- Lock safety hook onto chain.

Note: Provide only enough slack in chain to permit turning.

- Ensure hydraulic hose quick couplers are dirt free.
- Inspect all fittings and hoses for leaks and kinks. Repair as necessary
- Connect the hydraulic hoses to the tractor quick couplers.



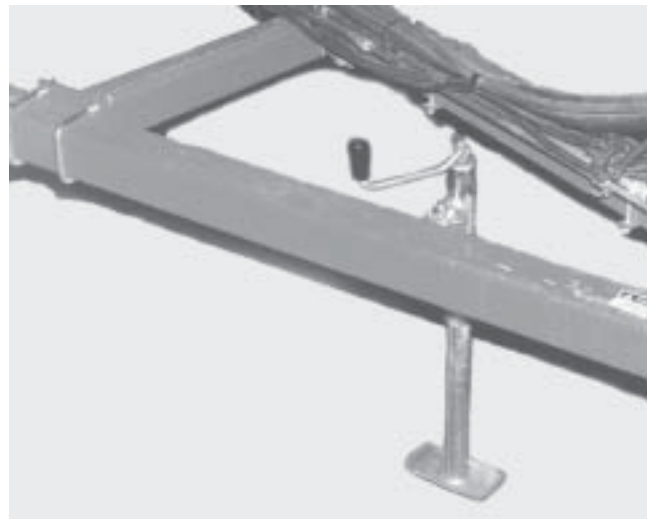
Hitch Jack Raised

Caution

Dirt in the hydraulic system could damage O-rings, causing leakage, pressure loss and total system failure.

Unhitching from Tractor

- Pin hitch jack in storage position.
- Lower hitch jack taking the weight off the hitch clevis.
- Ensure all transport locks are properly secured.
- Relieve pressure in the hydraulic hoses by positioning tractor hydraulic lever in "float" position or turn tractor engine off and cycle lever back and forth several times.
- Disconnect the hydraulic hoses.
- Remove the safety chain.
- Remove the drawbar pin.
- Slowly move tractor away from cultivator.



Hitch Jack Lowered

Transport

Observe all applicable safety precautions under transport heading in Safety, Section 1.

- Refer to Specifications, Section 2 for weight, transport height and width.
- Transport with tractor only!
- Ensure safety chain is attached correctly to the towing vehicle and the hitch of the implement.
- Inspect tires for any serious cuts or abrasions. If such has occurred, tire should be replaced.
- Raise and lower wings on **level ground**.
- Never raise or lower wings when moving.

MORRIS INDUSTRIES LTD. WILL NOT BE RESPONSIBLE FOR ANY DAMAGES OR OPERATOR INJURY RESULTING FROM NON-USE OR IMPROPER USE OF TRANSPORT LOCKS.

Speed

- Always travel at a safe speed. Do Not Exceed 20 M.P.H. (32 kph).
- The weight of the implement being towed *must not exceed 1.5 times* the weight of towing vehicle.

Lights

- Ensure proper reflectors are in place, refer to Safety Section 1.
- Use flashing amber warning lights, turn signals and SMV emblems when on public roads.
- Be familiar with and adhere to local laws.



Caution

**Raise and lower wings on level ground.
Never raise or lower wings when moving.**

Operation

Transport - continued

Transport to Field Position

- Position machine on **level ground**.
- Stop tractor, and engage park brake.
- As a precaution, check surrounding area to be sure it is safe to lower wings.
- Raise machine completely by fully extending **depth** hydraulic cylinders.
- Remove transport pins from the **wing lift** transport locks and **store** in **holes** provided in the wing lift plates. **Do not** store in slotted holes in the wing lift plates.
- Remove transport lock pins from both **rear** and **front** mainframe transport wheels. **Store** pins in positions provided.

Important

Keep tire air pressure at the listed specifications to achieve and maintain proper level.



Wing lift Locks



Rear Main Frame Locks



Front Main Frame Locks

Transport - continued

Transport to Field Position

- Move wing lift **hydraulic-lock** lever located at the front of the hitch to the **open** position.

Never raise or lower wings when moving.

- Operate the wing lift hydraulics **lowering** the wings fully. Outer wings on the 40 ft model will unfold and lock automatically.
- **Lower** machine retracting depth cylinders fully. Cylinders **must be fully closed** for the correct operation of the Never Pin Opener.

Danger

Always stay clear of wings being raised, lowered or in elevated position. Ensure cylinders are completely filled with hydraulic fluid - Wings may fall rapidly causing injury or death.

- Move wheel marker **hydraulic-lock** lever located on each wheel marker to the **open** position.



Wing Lift Lock Valve



Wheel Markers

Operation

Transport - continued

Field to Transport Position

- Position machine on **level ground**.
- Stop tractor, and engage park brake.
- Ensure wing lift cylinders are fully extended.

Note: On five-section models the wing lift cylinders must be fully extended to ensure proper operation of the FCV manifold.

- Raise Drill to highest position by **extending** the **depth control** hydraulic cylinders.
- Install **transport** lock pins for the mainframe **front** depth wheels. Install the transport lock pins for the **rear** mainframe depth wheels.
- Move wheel marker **hydraulic-lock** lever to the lock position - lever handle at **right angles** to the valve.

Important

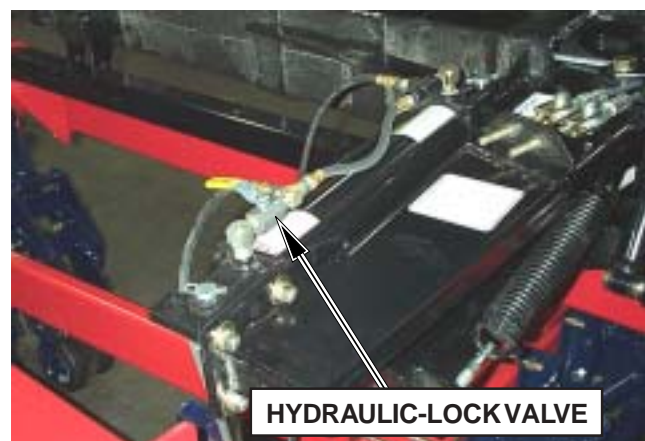
Keep tire air pressure at the listed specifications.



Front Main Frame Locks



Rear Main Frame Locks



Wheel Markers

Transport - continued

Field to Transport Position

- Ensure the **hydraulic-lock** lever located at the front of the hitch is in the open position (lever aligned with hydraulic hose). **Operate** the **wing** lift hydraulics and raise wings fully.
- Move **hydraulic-lock** lever to the lock position - lever handle at **right angles** to the hydraulic hoses on the hitch.
- **Do not walk** under raised wings. Secure wing transport lock strap pins in the holes provided.
- Ensure **safety** chain is properly installed, see page two of Operation Section.



Wing Lift Lock Valve

Danger

Always stay clear of wings being raised, lowered or in elevated position. Ensure cylinders are completely filled with hydraulic fluid - Wings may fall rapidly causing injury or death.



Wing lift Locks

Operation

Never Pin Opener Settings

Introduction

- This type of opener is strictly a zero -till, stubble, or firm ground opener.
- **Important!** The opener assembly **must always be run with the frame depth hydraulic cylinders completely closed.** This places the parallel links of each opener assembly at the correct angle to ensure correct operation over a wide variation of settings.
- Initially setup two or three openers first. Note each opener is independent of each other so ensure that the settings are the same for all unless uneven disc wear is evident.
- Use this general guideline when setting up. Each **Pincher wheel** supports 1/3 of the load and the **Soil-retaining wheel** takes the remaining 1/3. You should be able to rotate the **Soil-retaining wheel** with some resistance while not being able to rotate the **Pincher wheels.**
- Adjustments are made with the Special Tool provided with each machine. A 1/2" Johnson Bar or long handled ratchet can be substituted for the special tool.
- If soil type is wet or firm the Soil-retaining wheel can be tight to disc for better cleaning. However, you will experience higher power requirements. If the soil type is sandy or dry, little draft is being applied to turn the disc blade, so less pressure on blade would be required (Factory setting).

Step 1

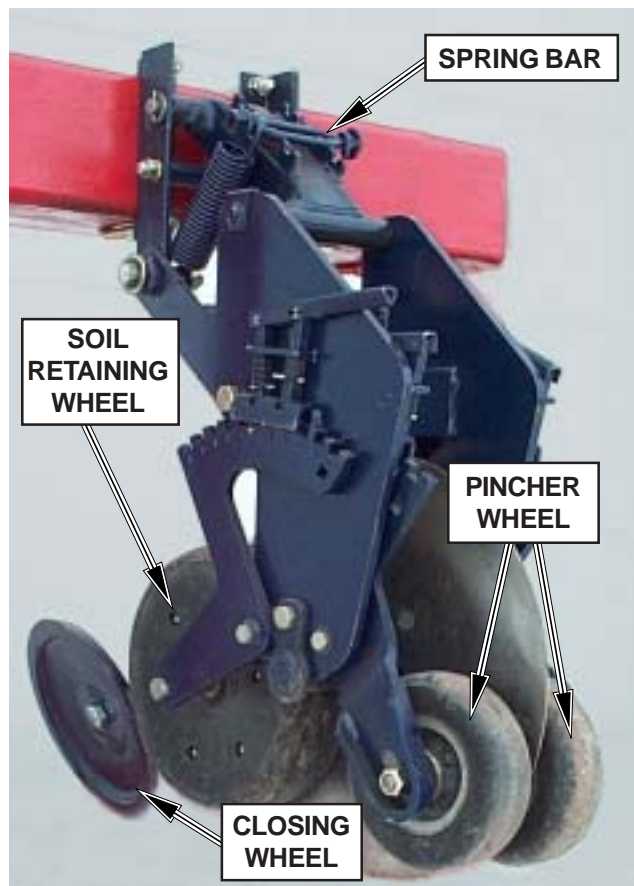
- Raise machine fully so that openers are completely off the ground.

Step 2

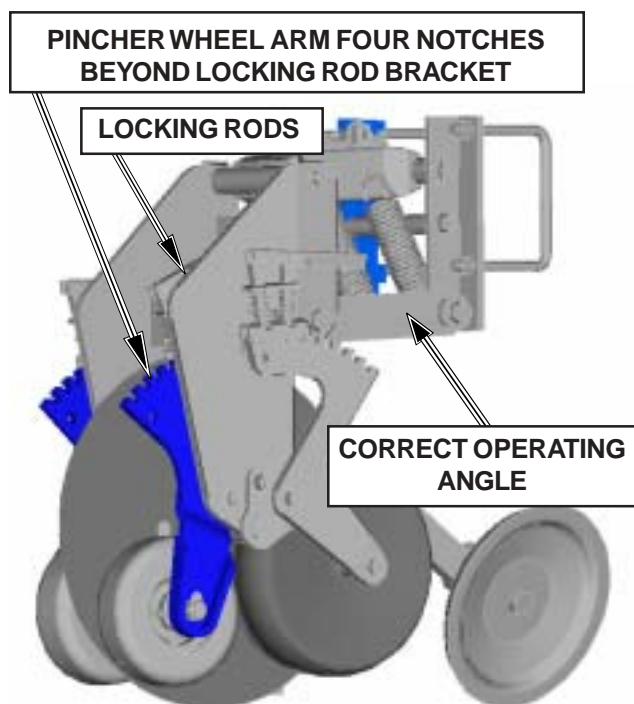
- Select three openers, 1LH and 1RH assembly from the front row and 1 RH assembly from the rear row.

Step 3

- Set both **Pincher wheels** to the Initial setting shown, **four notches** showing to the front of the machine. The ratcheting system functions with one rod locked in the notch and one rod out. Using the Special Tool provided assists setting the Pincher Wheels.



Never Pin Opener



Pincher Wheel Settings

Never Pin Opener Settings - continued

Important

Ensure that the locking rod is completely inserted into the notch.

Step 4

- Set the **Soil-retaining wheel** to the setting shown, flush with the Locking rod bracket welded to the side plate. Use the Special Tool provided to assist in the setting.
- If necessary adjust the clearance between the **Soil-retaining wheel** and the Coulter as follows:-

Measure gap between the **Soil-retaining wheel** and coulter at the closest point. See "Soil-retaining wheel" for detailed instructions.

Step 5

- The **Closing wheel** is factory set at its maximum of 60 pounds force. **Closing wheel** pressures can be reduced if required. This varies from 40 to 60 pounds force.

Step 6

- Lower machine completely. **Hydraulic depth cylinders must be fully closed**. Move ahead at the operating speed with the Air Cart delivering seed to the openers. Check seed depth.

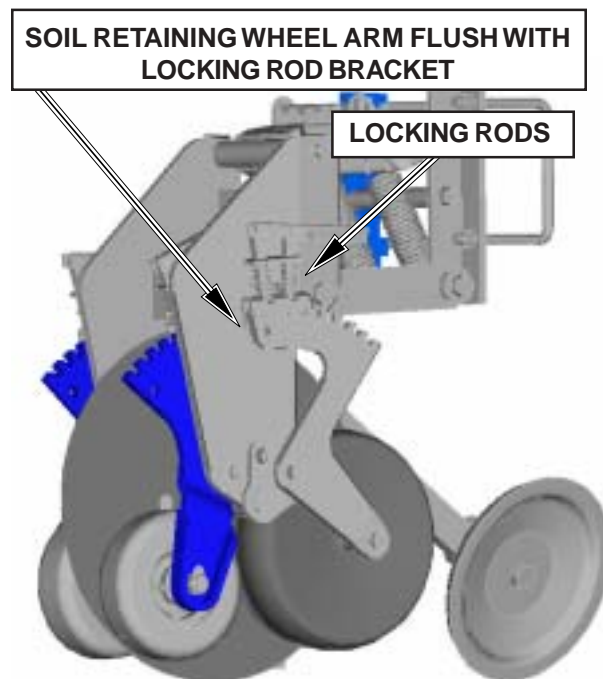
Settings may vary due to soil type, compaction as well as normal wear on the individual assemblies.

Step 7

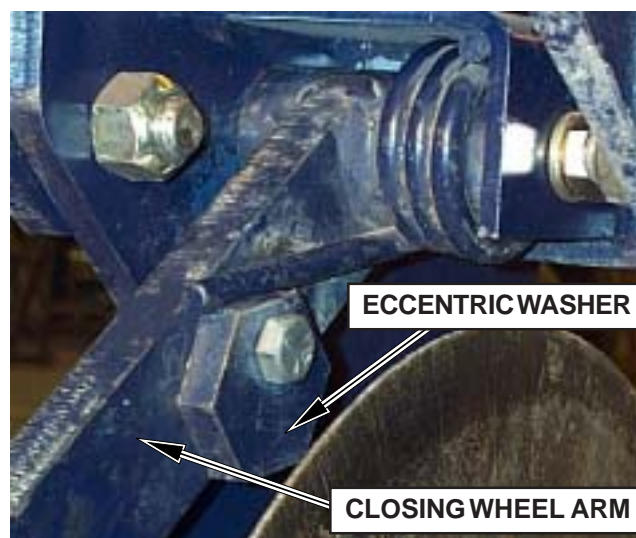
- Repeat Steps 1-6 if necessary to obtain the correct seeding depth. Note: If the **Pincher wheel** setting is changed then the **Soil retaining wheel** must also be adjusted the same amount.

Step 8

- Set all openers using the same adjustment as the initial three openers checked.



Soil Retaining Wheel Setting



Closing Wheel Setting

Operation

Never Pin Opener Settings - continued

Step 9 - Never Pin Opener Operation

Units without Coulter Option

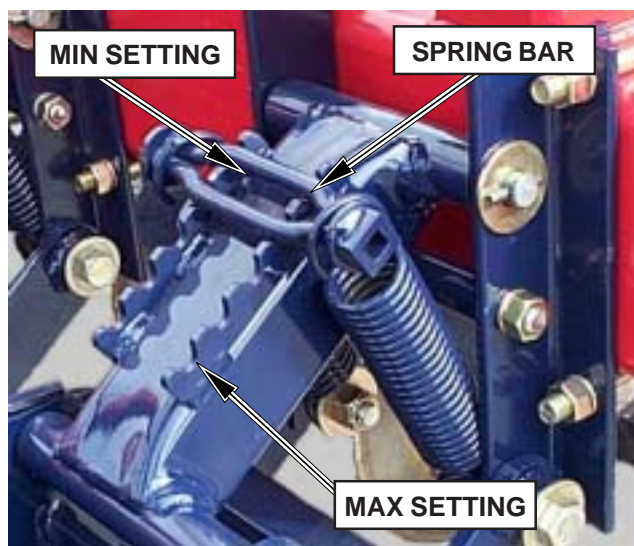
- Once all settings for the **Pincher wheels** and **Soil-retaining wheel** are made, run machine in the field and check to see the running position of the toolbar's rear wheels. Lower the tool bar until all cylinders **fully** retract.
- The ideal position is when the **rear** wheels see no load and are just clearing the soil surface. This ensures that the openers' **Parallel Links** are running at the correct angle. If the links are allowed to run at a steeper angle excessive wear and poor functionality will result.
- If the **rear** wheels are running **off** the ground then the **Parallel Link** down force needs to be **reduced**. The factory setting for the **Parallel Link** is the second lowest setting. Rotate the **Spring bar** to the **back** of the machine so that it sits over the lugs on the side plates. Raise the machine fully so that openers clear the ground, this allows easy movement of the **Spring bar**.
- If the **rear** wheels are running **on** the ground and the **Never Pin Pincher Wheels** are pushing soil with the parallel links running significantly below the horizontal then the **Parallel Link** down force needs to be **reduced**. Rotate the **Spring bar** towards the **back** one setting and run the machine in the field at operating speed. (See Decal On Hitch) Raise the machine fully so that openers clear the ground, this allows easy movement of the **Spring bar**.
- If the **Pincher wheels** still push soil with the above adjustments then the Pincher wheels need to be readjusted to **reduce** the load on the Pincher Wheels and increase the load on the **Soil Retaining Wheel**.

Units with Coulter Option

- Once all settings for the **Pincher wheels** and **Soil-retaining wheel** are made run machine in the field and check to see the running position of the toolbar's rear wheels. Lower the tool bar until all cylinders **fully** retract.
- The ideal position is when the **rear** wheels see no load and are just clearing the soil surface. This



Never Pin Opener



Spring bar Assembly

Never Pin Opener Settings - continued

ensures that the openers' **Parallel Links** are running at the correct angle. If the links are allowed to run at a steeper angle excessive wear and poor functionality will result.

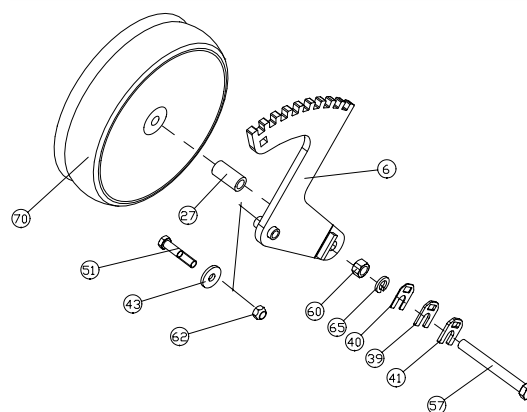
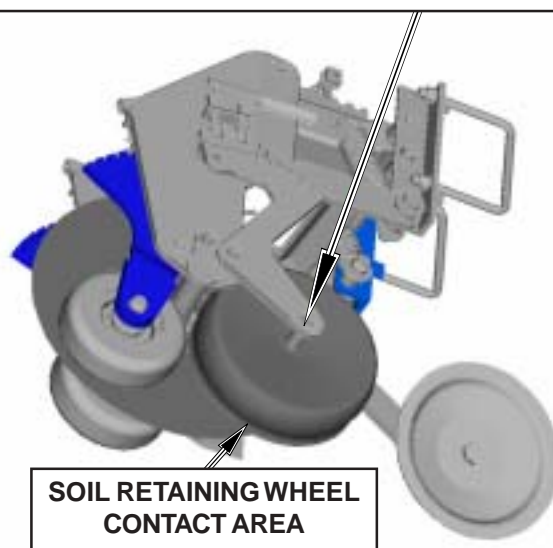
- If the rear wheels are running off the ground then the **Fertilizer Coulter** assembly needs to be **raised** by one inch. Raise each individual coulter by loosening the **5/8" U-Bolts** and raising the whole assembly **one inch**. Use the decal on the Fertilizer Coulter Mount (See Coulter Initial Adjustments) as a guide for setting. Run the machine at working depth and speed and check for correct operation of the Never Pin Openers.
- If the rear wheels are running **on** the ground and the **Never Pin Pincher Wheels** are pushing soil with the parallel links running significantly **below** the horizontal then the **Parallel Link** down force needs to be **reduced**. Rotate the **Spring bar** towards the **Back** one setting and run the machine in the field at operating speed. Raise the machine fully so that openers clear the ground, this allows easy movement of the **Spring bar**.
- If the **Pincher wheels** still push soil with the above adjustments then the Pincher wheels need to be readjusted to **reduce** the load on the Pincher Wheels and increase the load on the **Soil Retaining Wheel**.

Soil Retaining Wheel

- The **Soil-retaining wheel** is factory set with clearance between the wheel and the coulter.
- Adjust the **Soil-retaining wheel** to soil type. Adjust the amount of pressure exerted by loosening the **Soil-retaining wheel** mounting bolt and move the appropriate sized shim, 1/16", 1/8" or 3/16" to the inside of the mounting bracket for more pressure and to the outside of the mounting bracket for less pressure. Retighten the mounting bolt.



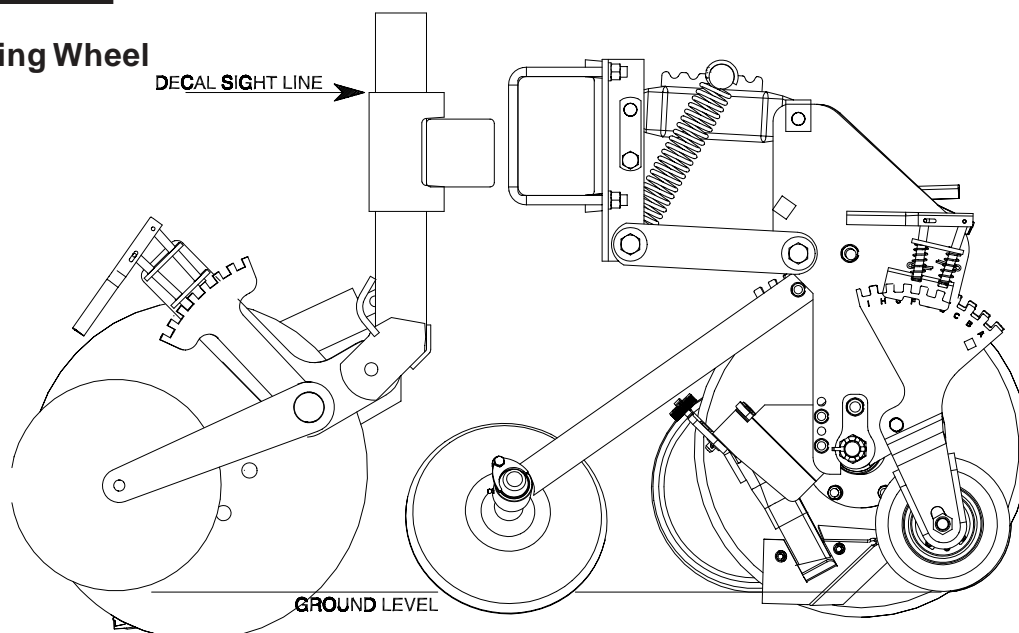
MOVE SHIMS TO OTHER SIDE OF ARM TO OBTAIN CORRECT SETTING.



Operation

Fertilizer Coulter

Soil Retaining Wheel



Initial Adjustments

- Determine seed planting depth:

For 28' and 34' with 11L x 15 FI tires.

- For seed planting depth of 1/2" to 1 1/2" set fertilizer coulters to read 27 3/4" along decal sight line .
- For seed planting depth of 1 3/4" to 2 3/4" set fertilizer coulters to read 28 3/4" along decal sight line .

For 40' with 12.5L x 15 FI tires.

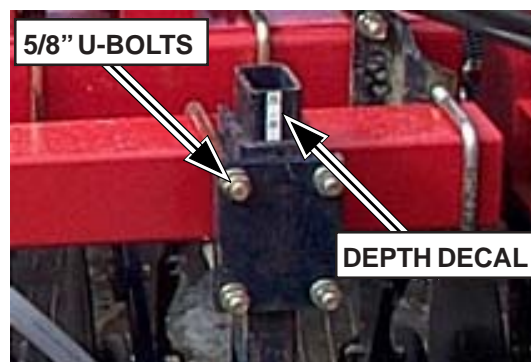
- For seed planting depth of 1/2" to 1 1/2" set fertilizer coulters to read 28 3/4" along decal sight line .
- For seed planting depth of 1 3/4" to 2 3/4" set fertilizer coulters to read 29 3/4" along decal sight line .

Final Adjustments

- Now that the correct mounting position and preload has been set, adjust the soil retaining wheel by using the ratchet lever to set the fertilizer placement depth. Initial Setting is with two (2) notches exposed to the rear of the assembly. Check for fertilizer depth and adjust if necessary.
- The soil retaining wheel must be in slight contact with the disc to ensure that the disc will remain clean when operating in wet conditions.

Note: Binding should not occur when rotating disc by hand. CAUTION must be used when performing this procedure.

Note: Each Coulter has to have a preload for correct operation. So when the machine is raised out of the ground the Fertilizer Coulter will appear to be set much lower than necessary.



Coulter Initial Setting

Fertilizer Coulter

Cleaning Tine

Initial Adjustments

- Determine seed planting depth:

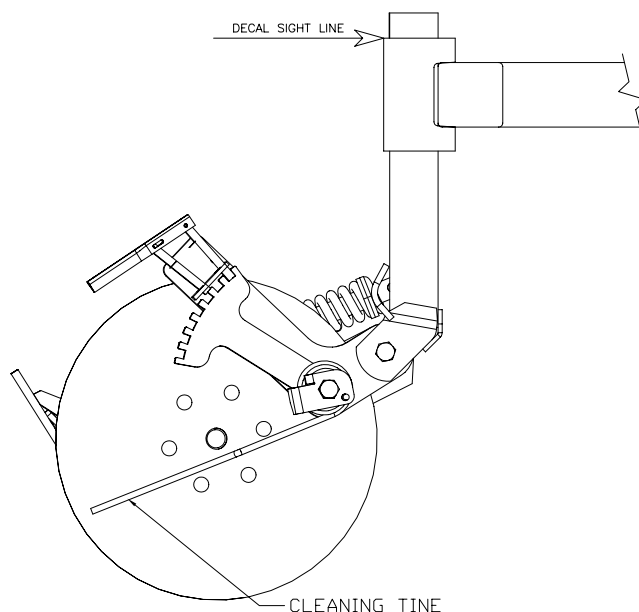
Note: Fertilizer Depth will vary depending on soil conditions because the depth is not regulated with the Soil-retaining wheel.

For 28' and 34' with 11L x 15 FI tires.

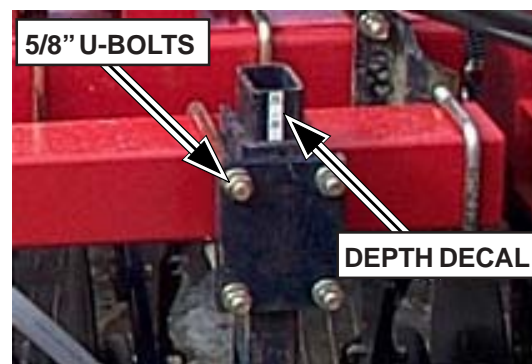
- For seed planting depth of 1/2" to 1 1/2" set fertilizer coulters to read 27 3/4" along decal sight line. **Fertilizer Depth up to 3 1/2" below the soil Surface**
- For seed planting depth of 1 3/4" to 2 3/4" set fertilizer coulters to read 28 3/4" along decal sight line. **Fertilizer Depth up to 4 1/2" below the soil Surface**

For 40' with 12.5L x 15 FI tires.

- For seed planting depth of 1/2" to 1 1/2" set fertilizer coulters to read 28 3/4" along decal sight line. **Fertilizer Depth up to 3 1/2" below the soil Surface**
- For seed planting depth of 1 3/4" to 2 3/4" set fertilizer coulters to read 29 3/4" along decal sight line. **Fertilizer Depth up to 4 1/2" below the soil Surface**
- Adjust cleaning tine to clear soil surface without having straw bunching. If bunching of straw occurs raise tine one notch at a time until bunching is eliminated.



Note: Each Coulter has to have a preload for correct operation. So when the machine is raised out of the ground the Fertilizer Coulter will appear to be set much lower than necessary.



Coulter Initial Setting

Operation

Fertilizer Coulter

Closing Tine

These tines can be placed on all coulters as an option if so desired.

Mount the tine as follows:

- There are left and right tines.
- The tine coil should face outward and be positioned to the top as shown.
- Secure tine with set screw and jam nut.
- Adjust tine for desired closing action.



Closing Tine

Important

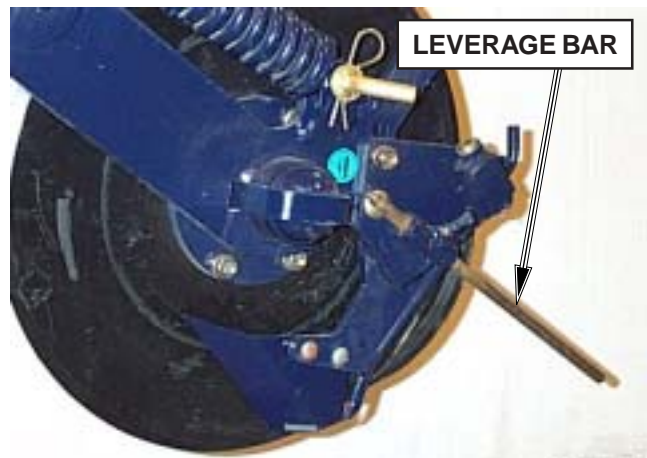
Re-tighten setscrew after the first 20 acres.

Coulter Positions

The coulter has two positions the working or field position and storage position. **See "Coulter Position"** for instructions to switch from one position to the other.

The storage position is used when the coulter is not being used during field operation, this prevents unnecessary wear on the coulter unit.

The working position is used when the coulter is being used during field operations.



Leverage Bar



Working Position

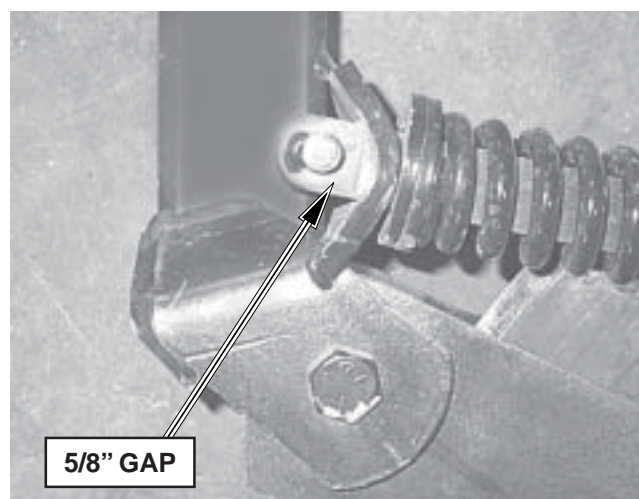


Storage Position

Fertilizer Coulter

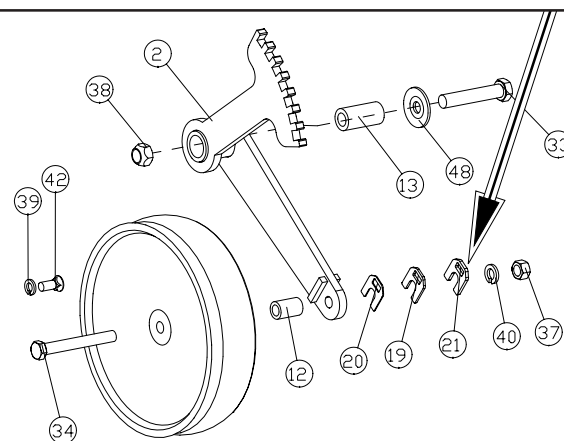
Operation Hints

1. With the machine raised out of ground, the coulter will always sit 2" lower than the desired relative distance from the seed. This is because of the 2" floatation designed into the assembly.
2. With the machine in the ground the coulter spring rod should extend with a gap of 5/8" between the stop rod and the seat. This ensures that there is adequate down pressure and that the scraper is running at the correct angle.
3. If hint one is set correctly hint two can be achieved by adjusting the soil retaining wheel. This wheel does three things, it controls the depth of the fertilizer, cleans the disc and retains the soil from peeling up or blowing out. Note that the **Soil-retaining wheel** runs **parallel** with the coulter disc.
4. Adjust the **Soil-retaining wheel** to soil type. Adjust the amount of pressure exerted by loosening the **Soil-retaining wheel** mounting bolt and move the appropriate sized shim, 1/16", 1/8" or 3/16" to the inside of the mounting bracket for more pressure and to the outside of the mounting bracket for less pressure. Retighten the mounting bolt.
5. The Soil Retaining Wheel may build up with mud behind the tractor tires and gauge wheels. This is possible in some conditions where sub soil moisture is high. This situation can be resolved by using the Coulter Blade Tine in these areas.

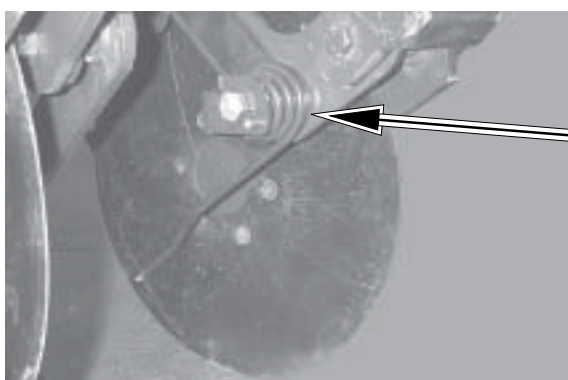


Coulter Spring Rod

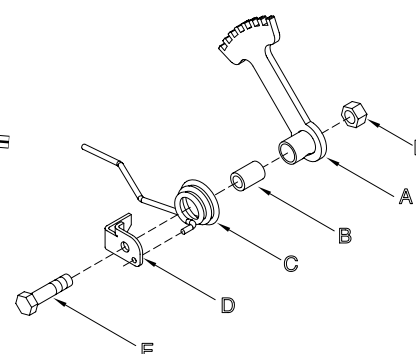
MOVE SPACER SHIMS TO CHANGE PRESSURE ON BLADE.



Soil Retaining Wheel Assembly



Coulter Blade Tine Assembly



Coulter Blade Tine Assembly

Operation

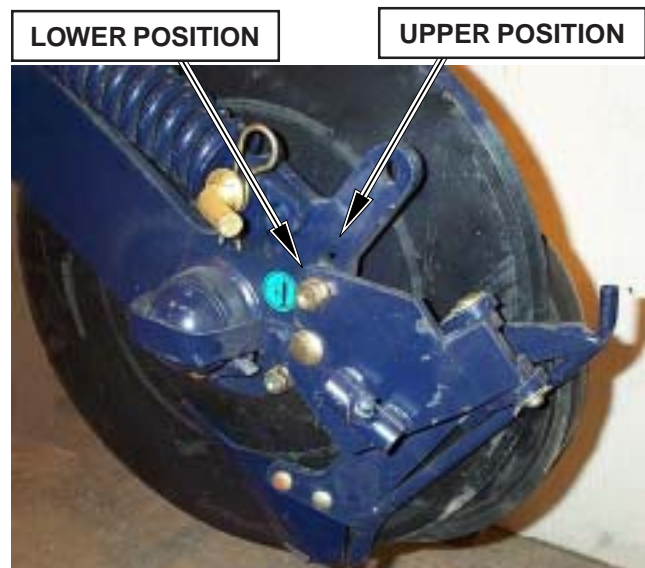
Fertilizer Coulter

Operation Hints

6. When using the coulter tine it is beneficial if the tines do not build up with trash. If buildup is happening raise tine until it starts to run clean.
7. When using coulter tine versus soil retaining wheel, increased gassing off may occur with NH₃. A closing tine could be used to assist in closing the furrow, refer to item 11.
8. Some straw may get under the scraper, but should clean itself without building up. If building up of trash occurs, ensure that the scraper is running flush with the blade and then increase spring pressure by adding a 5/8" flat washer under spring.
9. When the dry fertilizer tube/scraper is being used they should always be mounted in the highest position. The fertilizer will drop to the bottom of the furrow made by the blade and the wear on the scraper will be minimized.
10. When the NH₃ Fertilizer tube/scraper is used, soil moisture is the deciding factor in where to set the scraper position. In high moisture conditions the scraper can be raised to the highest position, and in dry conditions the scraper will need to be mounted on the bottom, although increased wear will occur.
11. The Closing Tine should be adjusted so that the tine is not keeping the Soil Retaining Wheel from controlling the depth, yet still creating enough agitation to close the furrow.
12. Always **raise machine fully** before backing up.



Scraper Spring



Closing Tine

Fertilizer Coulter

Coulter Positions

The coulter has two positions the working or field position and the storage position.

The storage position is used when the coulter is not required during field operation, this prevents unnecessary wear on the coulter unit.

The working position is used when the coulter is being required during field operations.

To change the position of the coulter follow the procedure below:

Storage Position

- Insert leverage bar or use closing tine if equipped, to relieve pressure on the spring retaining pin.
- Remove retaining pin.
- Release pressure on leverage bar and lift up on spring assembly
- Lift coulter with leverage bar and pin spring assembly in upper retaining hole.
- Remove leverage bar.



Remove Pin



Pin in Upper Hole



Storage Position

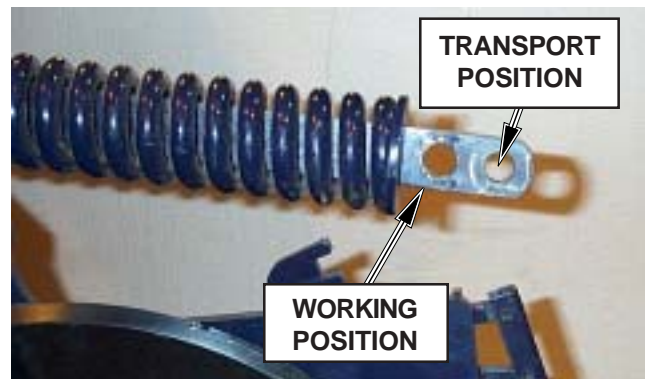
Operation

Fertilizer Coulter

Coulter Positions - continued

Working Position

- Insert leverage bar or use closing time to relieve pressure on the spring retaining pin.
- Remove retaining pin.
- Release pressure on leverage bar and lift up on spring assembly.
- Lower coulter completely with leverage bar.
- Press spring assembly into position.
- With leverage bar raise coulter slightly to align spring rod hole with lower retaining hole. Use indicator marks to aid hole alignment.
- Install retaining pin.
- Remove leverage bar.



Working Position



Press Spring into Place

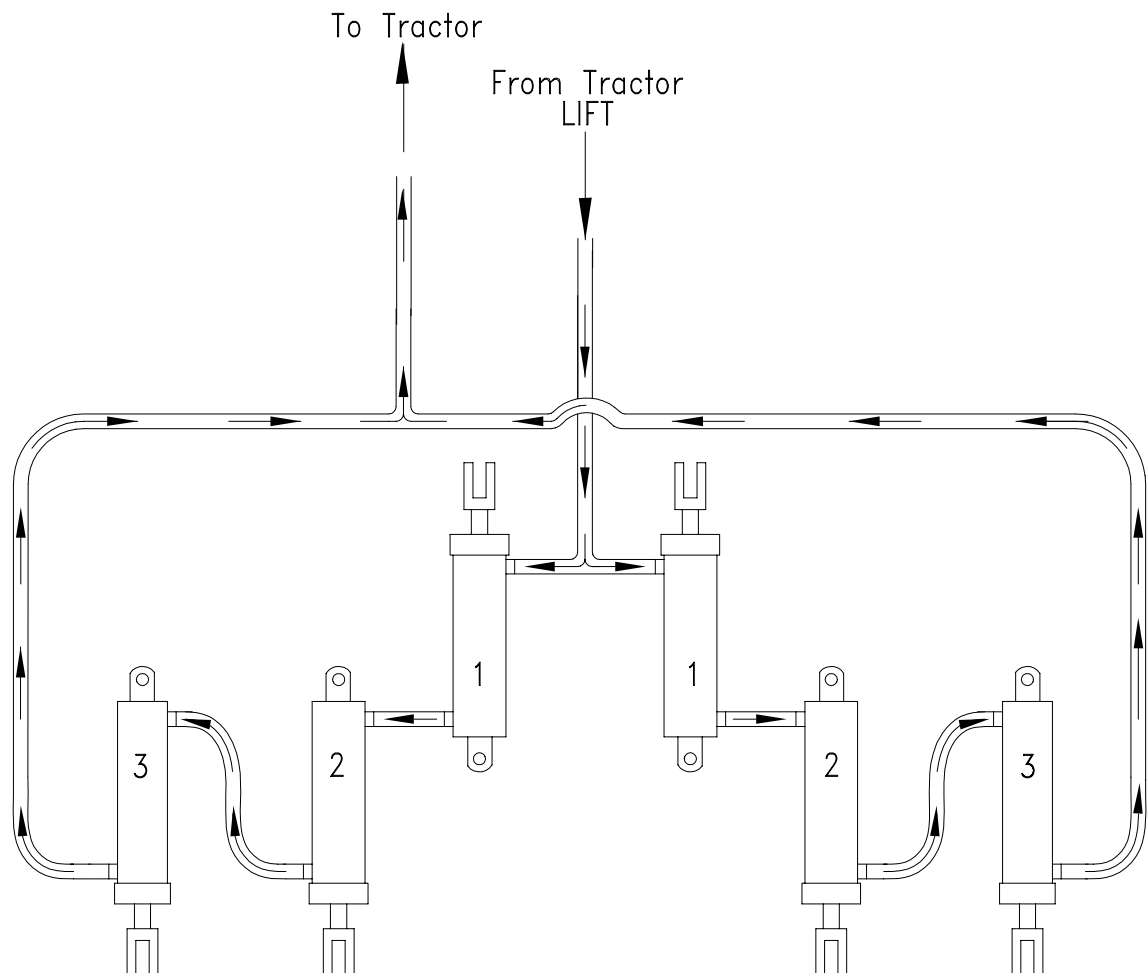
Hydraulic Depth Control System

All Models

The hydraulic depth control system is a series system.

To lift the Never Pin Disc Drill, hydraulic fluid is forced into the clevis end of flow divider cylinders 1. This causes the piston rods to contract and oil move from the butt side of the cylinder into the butt end of the main frame transport wheel cylinders. The wing transport wheel cylinders also extend at the same time due to the flow of oil from the shaft end of the main frame cylinders. Finally the fluid exits the shaft end of the wing cylinders and returns to the tractor hydraulic reservoir.

To lower the Never Pin Disc Drill, hydraulic fluid flows through the cylinders in the reverse direction to that described above, until the cylinder shafts attached to the depth control are fully retracted. This causes the flow of oil from the tractor to stop. The tool bar is set at fixed operating height so the height can not be varied.



Operation

Wing Lift Hydraulics

The wing lift hydraulic system is controlled by a parallel hydraulic system. A pressure compensated Flow Control Valve is used to control the flow of oil to the cylinders allowing both wings to fold and unfold simultaneously. While a hydraulic circuit Shut Off valve is used to lock the hydraulic circuit and prevent any leak back. Thus ensures the wings remain in transport and while also preventing any damage to the wing lock mechanism if the hydraulic circuit is inadvertently engaged.

The Flow Control Valve is located on the main frame and there are no adjustments associated with the valve.

The Shut Off valve is located at the front of the hitch for easy access

To unfold the Never Pin Disc Drill, the oil flows to the Flow Control Valve, from there to the butt end of all the wing lift cylinders extending the shafts and lowering the wings. All cylinders must be fully extended to ensure correct operation of the machine.

Placing the unit into transport is the reverse of unfolding the unit. Oil is fed to the shaft end of the cylinders and so retracting the cylinders and lifting the wings into transport position.



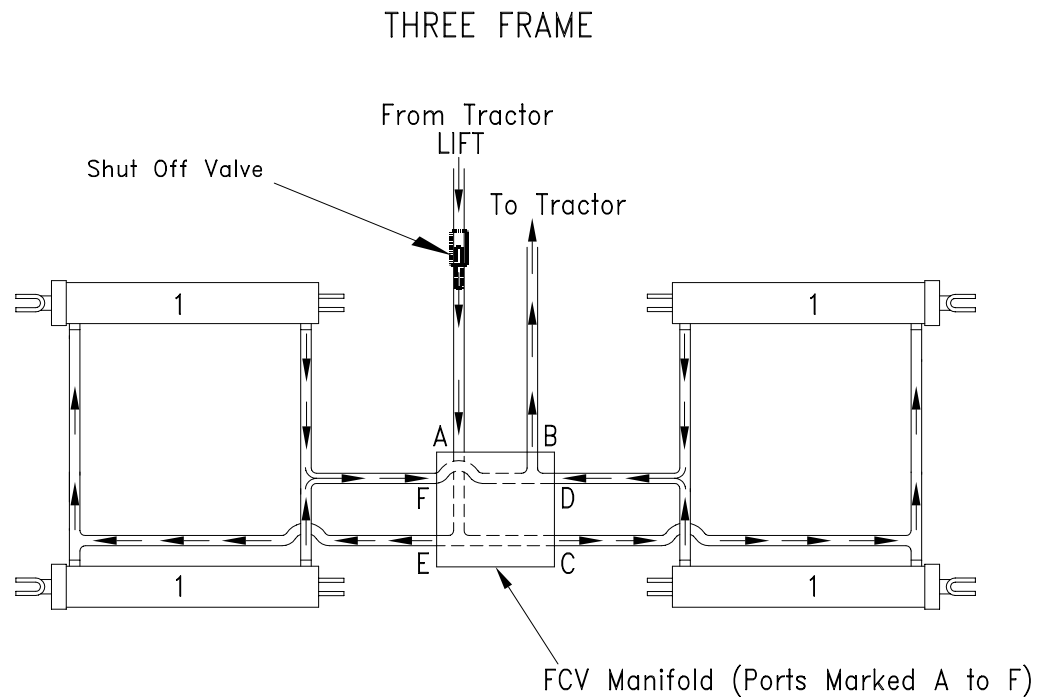
Flow Control Valve



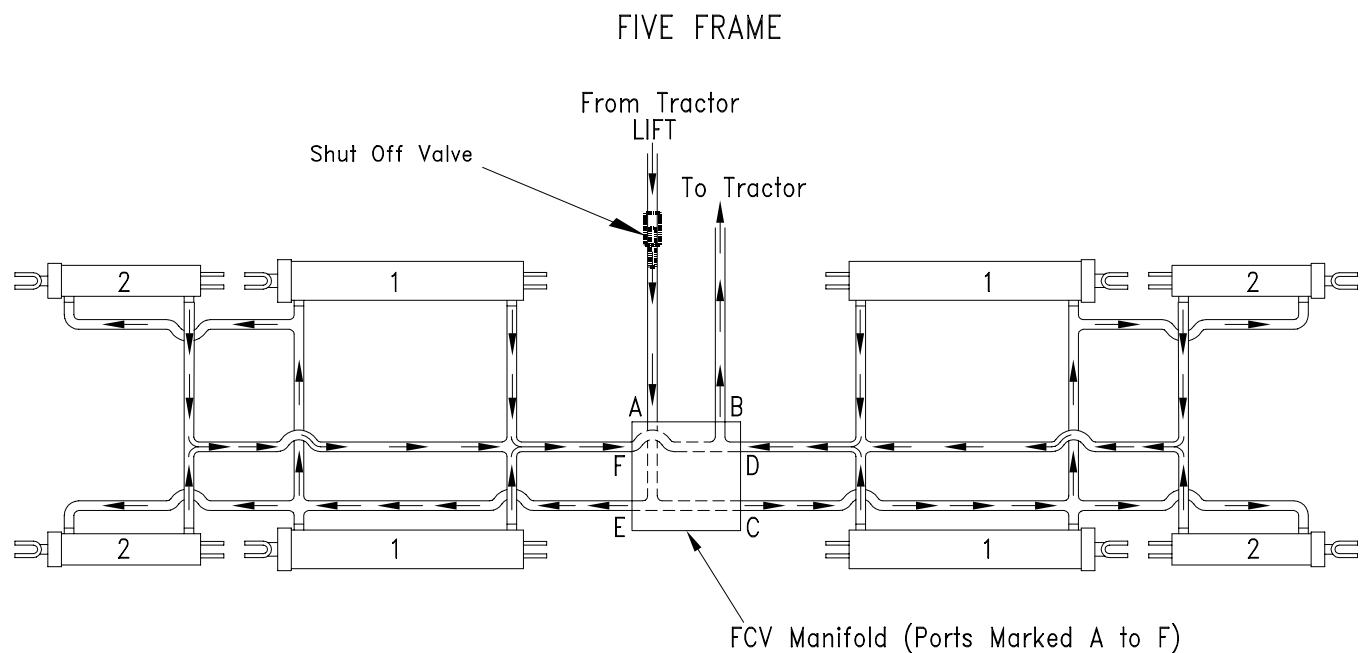
Shut Off Valve - Open Position

Wing Lift Hydraulics

28 ft and 34 ft Model



40 ft Model



Operation

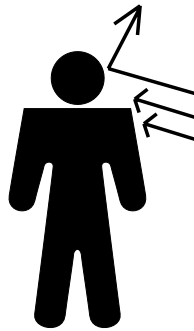
General Guidelines

The results obtained from the Never Pin Disc Drill are directly related to the depth uniformity of the unit. Poor opener settings, excessively worn discs, and excessively worn seed boots must be avoided to obtain optimum field results.

- Operating depth should be uniform at all disc locations, when spot checking the implement in the field. See Opener Setting and Rephasing Procedure.
- Seed Boots should be adjusted according to wear and replaced as necessary. See Maintenance Section.
- Replace worn discs. Worn discs can compromise penetration and seed depth.
- Keep tire pressure at the listed specifications. See Maintenance Section.
- Avoid sharp turns. Turns sharp enough to cause the inside disc openers of the Drill to reverse direction are not recommended. This may cause the seed openers to plug and prevent adequate packing of the seed.



TAKE SAFETY SERIOUSLY.
Do Not Take Needless Chances!



Caution

Care should be taken when working near the Air Cart while the fan is running. Product blowing out of the system could cause personal injury.



Section 6: Maintenance

Section Contents

General	6-2
Safety	6-2
Tighten Bolts	6-3
Tires	6-3
Daily Maintenance	6-4
Rotating Parts	6-4
Lubrication	6-5
1. Tool Bar Wheel Hubs	6-5
2. Tool Bar Gauge Wheel Castor Pivot	6-5
3. Never Pin Pincher Wheels	6-5
4. Never Pin Closing Wheel	6-5
5. Never Pin Disc Hub	6-5
6. Optional Fertilizer Coulter Disc Hub	6-5
Hydraulics	6-6
Toolbar	6-7
Wheel Bearings	6-7
Fertilizer Coulter	6-8
Scraper Positions	6-8
NH3 applications only	6-8
Granular or liquid applications	6-8
Closing Tine	6-8
Axle Pivot Bushings	6-9

Maintenance

CAUTION



BE ALERT

SAFETY FIRST

**REFER TO SECTION 1 AND REVIEW
ALL SAFETY RECOMMENDATIONS.**

General

This section deals with two goals, maximum life and dependable operation. Adopt a regular maintenance and lubrication program. Care and sufficient lubrication is the best insurance against delays.

Safety

- Always shut off the tractor and remove key before dismounting.
- Guard against hydraulic high pressure leaks with hand and face protection.
- Never work under the Implement unless it is in the down position or transport lock pins are in place and secured with hair pins. Do not depend on the hydraulic system to support the frame.
- Always wear safety goggles, breathing apparatus and gloves when working on seeder filled with chemical. Follow manufactures recommended safety procedures when working with chemicals or treated seeds.
- Do not feed left over treated seed to livestock, treated seed is poisonous and may cause harm to persons or livestock.



Warning

**Securely support any machine elements that
must be raised for service work.**



Caution





**Keep service area
clean and dry. Wet or
oily floors are slippery.**

Tighten Bolts

- Before operating the unit.
- After the first two hours of operation.
- Check tightness periodically thereafter.
- Use Bolt Torque Chart for correct values on various bolts.
- Note dashes on hex heads to determine correct grade.

Note: DO NOT use the values in the Bolt Torque Chart if a different torque value or tightening procedure is given for a specific application.

- Fasteners should be replaced with the same or higher grade. If higher grade is used, only tighten to the strength of the original.

Bolt Torque Chart				
Grade 5 Bolt Marking 		Bolt Size	Grade 8 Bolt Marking 	
Nm	lb. ft.		lb. ft.	Nm
11	8	1/4	12	16
23	17	5/16	24	33
41	30	3/8	45	61
68	50	7/16	70	95
102	75	1/2	105	142
149	110	9/16	155	210
203	150	5/8	210	285
366	270	3/4	375	508
536	395	7/8	610	827
800	590	1	910	1234
1150	850	1-1/8	1350	1850
1650	1200	1-1/4	1950	2600
2150	1550	1-3/8	2550	3400
2850	2100	1-1/2	3350	4550

Tires

- Inspect tires and wheels daily for tread wear, side wall abrasions, damaged rims or missing lug bolts and nuts. Replace if necessary.
- Tighten wheel bolts - refer to Bolt Torque Chart.
- Check tire pressure daily, when tires are cold.
- Correct tire pressure is important.
- Do not inflate tire above the recommended pressure.



Caution

Tire replacement should be done by trained personnel using the proper equipment.

Tire Specifications		
SIZE	LOAD RANGE	PRESSURE
11L x 15SL	6 ply rating	28 P.S.I.
11L x 15FI	D	60 P.S.I.
11L x 15FI	F	90 P.S.I.
12.5L x 15SL	8 ply rating	36 P.S. I.
12.5L x 15FI	F	90 P.S.I.

Maintenance

Daily Maintenance

Rotating Parts

- Clear any straw and or trash that has wrapped around any of the rotating parts this ensures the integrity of the seals and promotes longer bearing service life:
- Never Pin Pincher wheels
- Never Pin Disc Hub
- Never Pin Soil Retaining Wheel
- Never Pin Closing Wheel
- Optional Fertilizer Coulter Hub
- Optional Fertilizer Coulter Soil Retaining Wheel



Lubrication

Greasing pivot points prevents wear and helps restrict dirt from entering. However, once dirt does enter a bearing, it combines with the lubricant and becomes an abrasive grinding paste, more destructive than grit alone.

- Apply new lubricant frequently during operation to flush out old contaminated lubricant.
- Use a good grade of **lithium based grease**.
- Use a good grade of machine oil.
- Clean grease fittings and lubricator gun before applying lubricant.

1. Tool Bar Wheel Hubs

- Grease every 500 hours. (Once a season)

2. Tool Bar Gauge Wheel Castor Pivot

- Grease every 100 hours. (Bi-Weekly)

3. Never Pin Pincher Wheels

- Grease every 100 hours. (Bi-Weekly)

4. Never Pin Closing Wheel

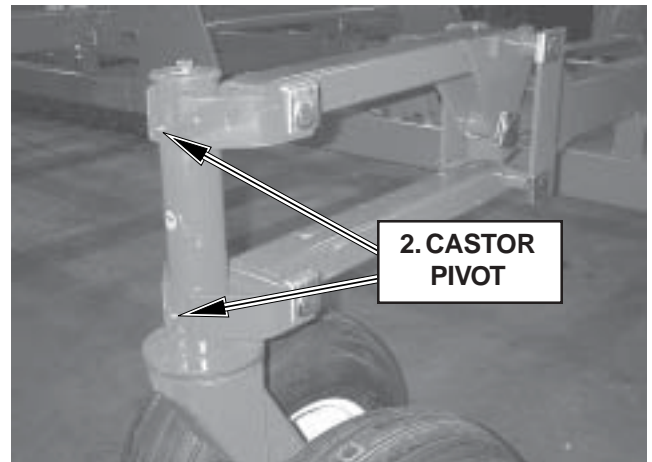
- Grease every 100 hours. (Bi-Weekly)

5. Never Pin Disc Hub

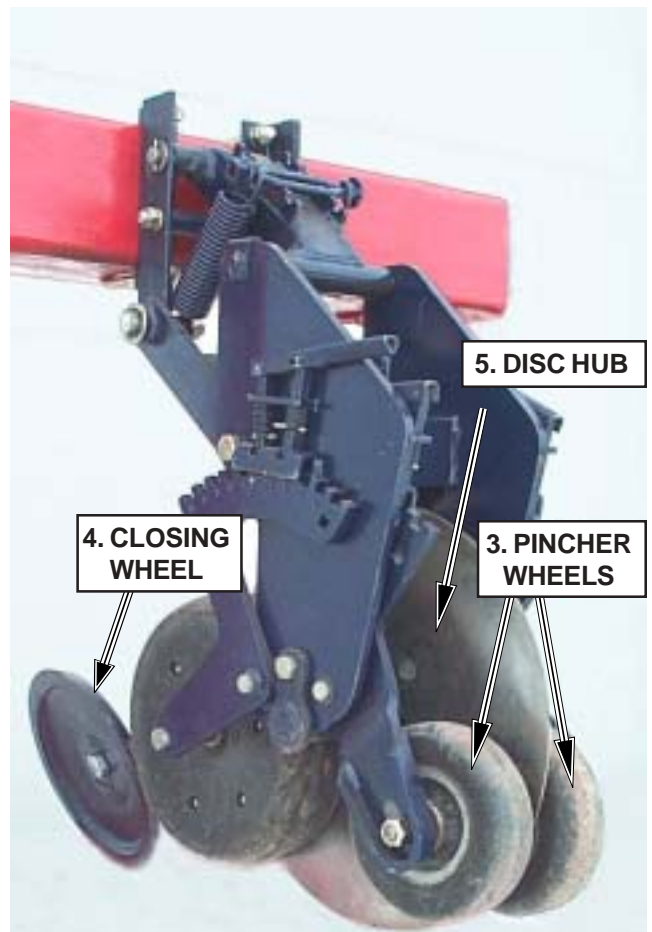
- Grease every 100 hours. (Bi-Weekly)

6. Optional Fertilizer Coulter Disc Hub

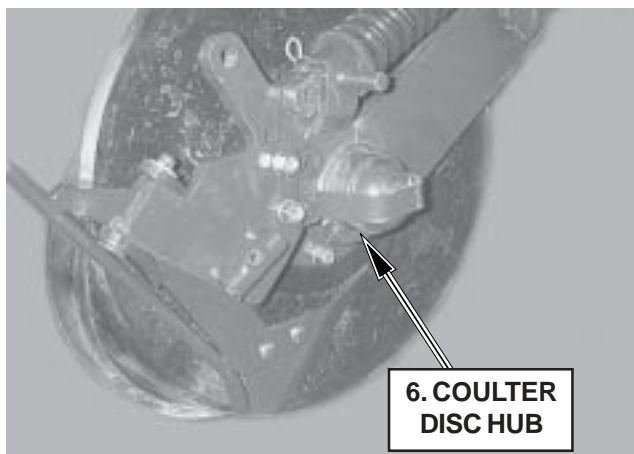
- Grease every 100 hours. (Bi-Weekly)



Tool Bar Gauge Wheel Castor



Never Pin Disc Opener



Optional Fertilizer Coulter

Maintenance

Hydraulics

Refer to Section 1 regarding hydraulic safety. In addition:

- Inspect hydraulic system for leaks, damaged hoses and loose fittings.
- Damaged Hoses and hydraulic tubing can only be repaired by replacement. **DO NOT ATTEMPT REPAIRS WITH TAPE OR CEMENTS.** High pressure will burst such repairs and cause system failure and possible injury.
- Leaking cylinders - install a new seal kit.
- Fittings - use liquid Teflon on all NPT hydraulic joints. **Do not use liquid Teflon or Teflon tape on JIC or ORB ends.**
- Hydraulic Hose Connections - when connecting the hoses to the cylinders, tubing, etc. always use one wrench to keep the hose from twisting and another wrench to tighten the union. Excessive twisting will shorten hose life.
- Keep fittings and couplers clean.
- Check the Tractor Manual for proper filter replacement schedule.

Refer to the Trouble Shooting Section.

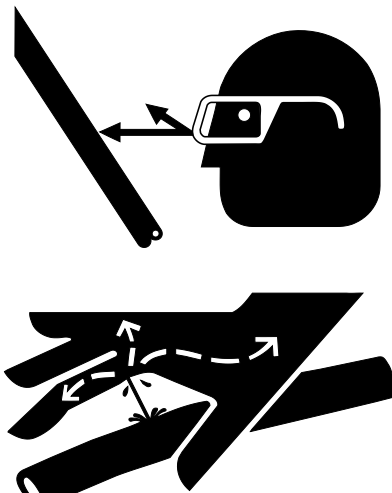


Contact your nearest Dealer for genuine repair parts. Dealers carry ample stocks and are backed by the manufacture and regional associations.

Caution

Dirt in the hydraulic system could damage O-rings, causing leakage, pressure loss and total system failure.

Note: Extreme care must be taken to maintain a clean hydraulic system. Use only new hydraulic fluid when filling reservoir.



Warning

HIGH-PRESSURE FLUID HAZARD

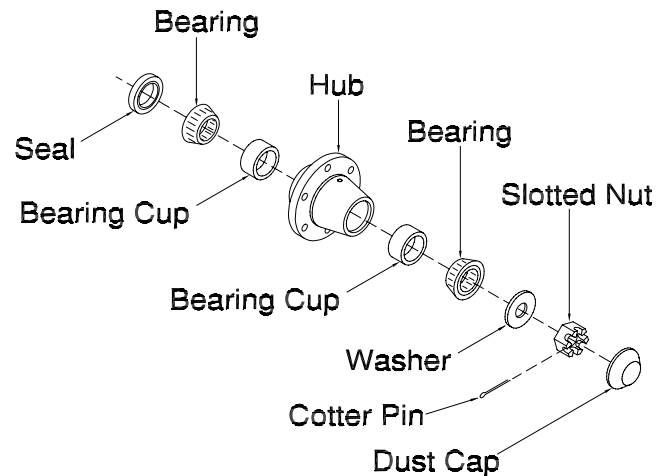
To prevent serious injury or death:

- Relieve pressure on hydraulic system before servicing or disconnecting hoses.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

Toolbar

Wheel Bearings

- Shut tractor off and remove key.
- Block wheel on tractor.
- Raise the unit's wheels enough to clear the surface.
- Securely block the frame.
- Remove wheel from hub.
- Remove the dust cap, cotter pin, and the slotted nut and washer.
- Be careful when pulling the hub off as not to drop the outer bearing.
- Clean spindle and bearing components with solvent.
- Inspect for wear on bearings, spindle and cups, replace parts as required.
- Do not reuse old seals. Use only new seals when assembling.
- Pack inner hub with bearing grease.
- Be sure bearing and cup are dry and clean.
- Work grease into the bearing rollers, until each part of the bearing is completely full of grease.
- Install inner bearing and cup first, then press new seals in place.
- Place hub on spindle.
- Install outer bearing, washer and slotted nut.
- Tighten nut while turning the wheel until a slight drag is felt.
- Back nut off one slot and install a cotter pin. Bend cotter pin up around nut.
- Pack grease inside the dust cap and tap into position.



Maintenance

Fertilizer Coulter

Scraper Positions

The scraper has two positions to extend the life of the coulter disc.

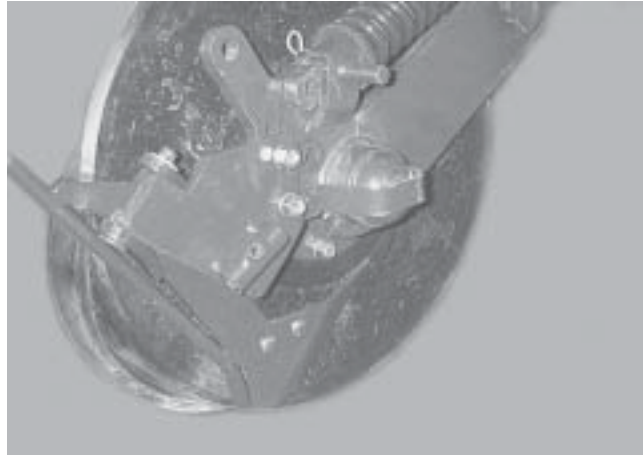
NH₃ applications only

Initially the opener is set in the lower position.

Once the coulter disc has worn approximately 1 inch the scraper is moved to the upper position.

Granular or liquid applications

Initially the scraper is set in the upper position.



Working Position

Closing Tine

The closing tine can be adjusted outward as it wears and can be reversed to use the other half of the tine.

Mount the tine as follows:

- There are left and right tines.
- The tine coil should face outward and be positioned to the top as shown.
- Secure tine with set screw and jam nut.



Closing Tine

Important

Re-tighten setscrew after the first 20 acres.

Axle Pivot Bushings

Inspect seasonally the axle pivots for wear. Replace bushings if excessive movement is found.

In the event the Axle Pivot Bushings need replacing, use the following procedure.

- Lower machine taking weight off axles.
- Shut tractor off and remove key.
- Block wheel on tractor.
- Remove roll pin (E) from pivot pin (D).
- Remove pivot pin (D).
- Remove seals. **Note Seal Lips Facing Out.**
- Remove pivot bushings.
- Thoroughly clean all parts.
- Inspect pivot pin for abrasions, replace if necessary.

Note: Any abrasions on the pin will severely limit the life of the bushings.

- Carefully press bushings in place, ensuring the inner lining of the bushings are not damaged.
- Install the seals with the **seal lips facing out.**

Note: Seal lips *must* face outward to prevent dust from entering bushings.

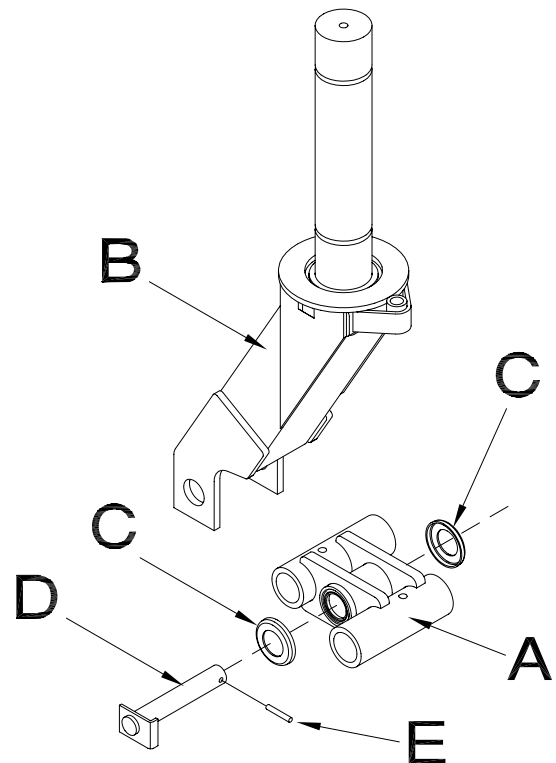
- Apply a thin layer of oil onto seal lips to ease in the installation of pivot pin.
- Place cupped washers (C) over seals.
- Align axle walking beam (A) with castor (B).
- Wrap a single layer of electrical tape over hole. This will ensure the edge of the hole will not damage the seal lips.

Note: Do not use grease on any components.

- Carefully install pivot pin, ensuring the seal lips and inner lining of the bushings are not damaged. **Do not force pin through the bushings.**



Tap Pivot Pin Hole



Maintenance

Notes

Section 7: Storage

Section Contents

Preparing for Storage	7-2
Cylinder Shaft Protection	7-3
Removing From Storage	7-3

Storage

Preparing for Storage

- To insure longer life and satisfactory operation, store the implement in a shed.
- If building storage is impossible, store away from areas of main activity on firm, dry ground.
- Clean machine thoroughly.
- Grease all discs.
- Inspect all parts for wear or damage.
- **Avoid delays** - if parts are required, order at the end of the season.
- Lubricate grease fittings. (Refer to Maintenance Section).
- Tighten all bolts to proper specifications (Refer to Maintenance Section).
- For a safer storage, lower the implement into field position and release the hydraulic pressure.
- If implement must be stored in a raised position, ensure that wings are properly secured with lock pins.
- Level implement using hitch jack and block up.
- Relieve pressure from hydraulic system.
- Raise frames, block up and relieve weight from the tires.
- Cover tires with canvas to protect them from the elements when stored outside.
- Coat exposed cylinder shafts (**Refer to Cylinder Shaft Protection**).
- Paint any surfaces that have become worn.



Warning

**Do not allow children to play
on or around the machine.**

MORRIS PAINT

Spray Cans:

Part Number	Description
W-4647	Red MORRIS Spray Can
W-4648	Blue MORRIS Spray Can
N31087	White MORRIS Spray Can

Litre Cans:

Part Number	Description
Z-10	Red MORRIS Paint/Litre
Z-11	Blue MORRIS Paint/Litre

Cylinder Shaft Protection

The steps summarized below should be followed when protecting chrome plated shafting on equipment:

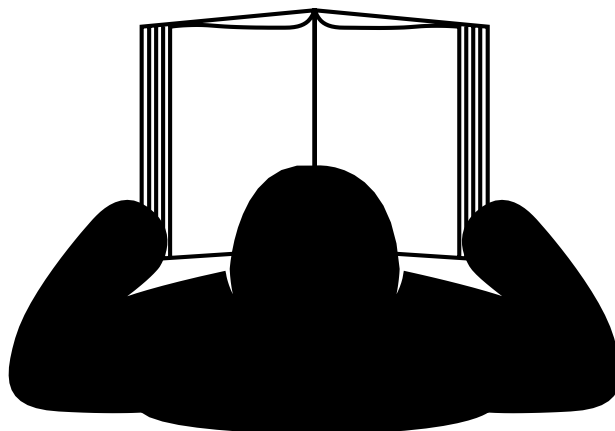
- Position the equipment as it will be stored, and identify all the exposed portions of the chrome plated shafts.
- Clean dirt and dust from the exposed portions of the shafting using a dry cloth or a cloth which has been dampened with an appropriate solvent.
- Prepare a mixture of 60% oil-based rust inhibitor and 40% Kerosene. Apply a thin coating of this mixture to the exposed surfaces of the chrome plated shafting. No. 1 fuel oil may be substituted for Kerosene. A cloth dipped in the mixture can be used to apply the coating.
- Inspect the shaft surfaces after six months and apply additional corrosion preventative mixture.
- If the equipment is to be moved and then stored again for an extended period of time, the steps above should be repeated for all shafts that were stroked during the move.
- **Before retracting the cylinders the protective coating should be removed**, to prevent fine sand and dirt that has accumulated in the coating, from damaging the shaft seal. **Under no circumstances should sandpaper or other abrasive be used to clean the surfaces.** Plastic or copper wool in combination with an appropriate solvent will remove most of the dirt.

Caution

Dirt in the hydraulic system could damage O-rings, causing leakage, pressure loss and total system failure.

Removing From Storage

- Review Operator's Manual.
- Check tire pressure (Refer to Tire Pressure List)
- Clean machine thoroughly. Remove coating from exposed cylinder shafts (**Refer to Cylinder Shaft Protection**).
- Lubricate grease fittings. (Refer to Lubricating Section).
- Tighten all bolts to proper specifications (Refer to Bolt Torque Chart).



Storage

Notes

Section 8: Troubleshooting

Section Contents

Never Pin Opener	8-2
Parallel link bolts loosening.	8-2
Plugging with trash continually in same area.	8-2
Side of disc building up with mud.	8-2
Soil being thrown by disc.	8-2
Trash building up under scraper.	8-2
Pincher wheels wearing on sides.	8-2
Radical movement of parallel links and hammering of assemblies.	8-2
Poor disc penetration.	8-2
Excessive hair-pinning of trash.	8-2
No seed or fertilizer coming out of seed tube/scraper.	8-3
Fertilizer Coulter	8-3
Refer to Operation section under Fertilizer Coulter Operation Hints.	8-3
Tool Bar	8-3
Machine not operating straight.	8-3
Lack of penetration.	8-3
Wing lifting too slowly.	8-3
Wings not lowering.	8-3
Oil accumulation.	8-4
One wing will lift, other will not.	8-4
Depth control not working.	8-4
Depth control slow lifting.	8-4
One wing or one whole side will drop when machine is fully raised.	8-4

Troubleshooting

Problem	Cause	Correction
Never Pin Opener		
Parallel link bolts loosening.	Improper torque value.	Torque nuts to 275 ft. lbs
	Faulty locknut.	Replace locknut and torque to 275 ft. lbs.
Plugging with trash continually in same area.	Tighten Pincher Wheel Assembly.	Check Wheel assemblies and bearings. Replace if necessary.
	Bearing failure.	Replace and adjust correctly.
	Improper positioning of Pincher Wheels.	Adjust assembly.
Side of disc building up with mud.	Incorrect setting of Soil-retaining wheel.	Move Soil retaining wheel closer to disc. See operation section for correct adjustment.
Soil being thrown by disc.	Position or setting of Soil-retaining wheel.	Adjust so that Soil-retaining wheel carries only 25% of the load. The remaining 75% carried by the Pincher wheels.
Trash building up under scraper.	Worn scraper.	Replace scraper.
	Insufficient spring pressure.	Clean out trash in pivot areas of scraper.
Pincher wheels wearing on sides.	Dry mud and trash build up on Pincher wheel arms.	Clean out mud and trash.
Radical movement of parallel links and hammering of assemblies.	Frame depth hydraulics not fully retracted.	Lower frames completely.
Poor disc penetration.	Inadequate down pressure.	Increase down pressure by adjusting Spring Bar - see Operation section for adjustments.
	Disc worn excessively.	Replace disc blade
Excessive hair-pinning of trash.	Pincher wheel adjustment incorrect.	Adjust Pincher wheels with 75% of load on the Pincher wheels. You should be able to rotate the soil-retaining wheel but not rotate the Pincher wheels when the unit is set at the operating depth.
	Worn disc.	Reposition Pincher wheel assembly by moving 1/2 moon shim in the Pincher wheel assembly.
		Excessive straw conditions.

Troubleshooting

Problem	Cause	Correction
Soil-retaining wheel hard to turn.	Incorrect adjustment.	Adjust Soil-retaining wheel. See Operation section for adjustments
	Possible bearing failure.	Remove Soil -retaining wheel and check bearing. Replace if necessary
No seed or fertilizer coming out of seed tube/scraper.	Plugged scraper assembly.	Check and clean out scraper assembly.
	Plugged seed hose.	Check and clean out seed hose.
	Plugged divider head.	Check and clean out divider head.

Fertilizer Coulter

Refer to Operation section under Fertilizer Coulter Operation Hints.

Tool Bar

Machine not operating straight.	Openers set incorrectly	Refer to Operation Section on levelling.
	Cylinders out of phase	Rephase cylinders.
	Tire pressure incorrect	Check tire pressure.
Lack of penetration.	Not levelled.	Refer to Operation Section on levelling.
	Discs Worn	Replace Discs
Wing lifting too slowly.	Tractor hydraulic pressure.	Repair pump. Pressure relief valve needs resetting.
	Hydraulic breakaways.	Foreign material or sticking. Check compatibility.
	Hose restriction.	Reroute hydraulic hoses.
Wings not lowering.	Transport pins installed.	Remove pins.
	Shut off valve not open.	Open Shut off valve.

Troubleshooting

Problem	Cause	Correction
Tool Bar		
Oil accumulation.	Damaged seal.	Replace seals.
	Loose fittings.	Tighten hose and pipe connections.
	Scored cylinder shaft will damage shaft seal.	Replace.
	Normal.	Slight seepage from seal is normal.
One wing will lift, other will not.	Assembly.	Hoses reversed at cylinder.
	Restriction in line.	Clean.
	Internal cylinder leak.	Repair cylinder.
Depth control not working.	Cylinders not phased.	Refer to Operation Section on rephasing.
	Leaks.	Use hand and eye protection - Check for external leaks.
	Low oil level.	Fill tractor reservoir.
	Plugged Hydraulic filter.	Replace tractor hydraulic filter.
Depth control slow lifting.	Insufficient oil to cylinders.	Connect hydraulic lines to the priority valve on the tractor.
One wing or one whole side will drop when machine is fully raised.	Internal cylinder leak.	Repair cylinder.



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Advanced Air Seeding and Tillage Systems

Corporate Head Office:	2131 Airport Drive Saskatoon, Saskatchewan S7L 7E1 Canada Phone: 306-933-8585 Fax: 306-933-8626
USA Head Office:	4400 Burdick Expressway East Minot, North Dakota 58701 USA. Phone: 701-852-4171 Fax: 701-838-9444
Manufacturing and Research & Development:	P.O. Box 5008, 85 York Road Yorkton, Saskatchewan S3N 3P2 Canada Phone: 306-783-8585 Fax: 306-782-5250
Manufacturing:	284 - 6th Ave. N.W. Minnedosa, Manitoba R0J 1E0 Canada Phone: 204-867-2713 Fax: 204-867-2678

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