



MORRIS

Advanced Air Seeding and Tillage Systems

**Rangler III
PACKER HARROW BAR**

**OPERATOR'S
Manual**

H20518-04

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Section 1: Safety

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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 result in **DEATH OR SERIOUS INJURY**.



WARNING

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



CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in **MINOR OR MODERATE 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.

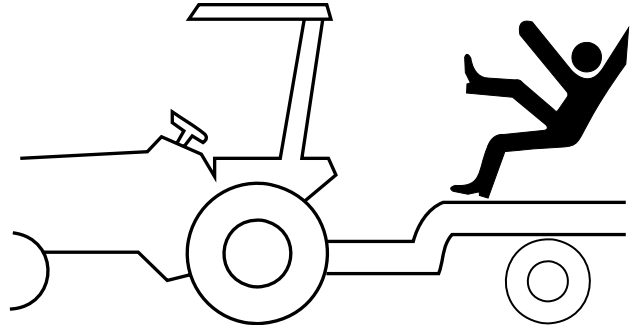
The words **Important** and **Note** are not related to personal safety but are used to give additional information and tips for operating or servicing this equipment.

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.

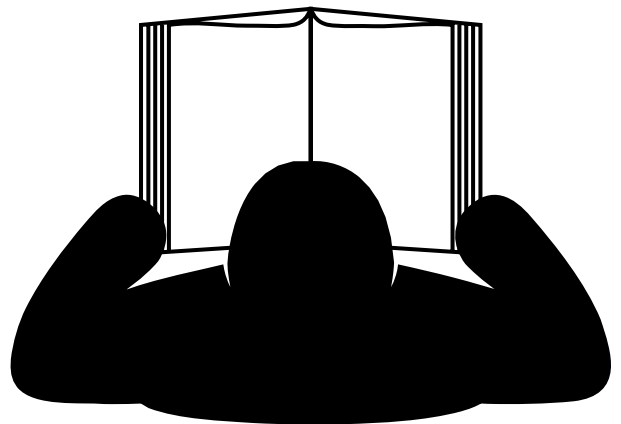
General Operation

- **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.
- **Stand clear** when raising or lowering wings.



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.

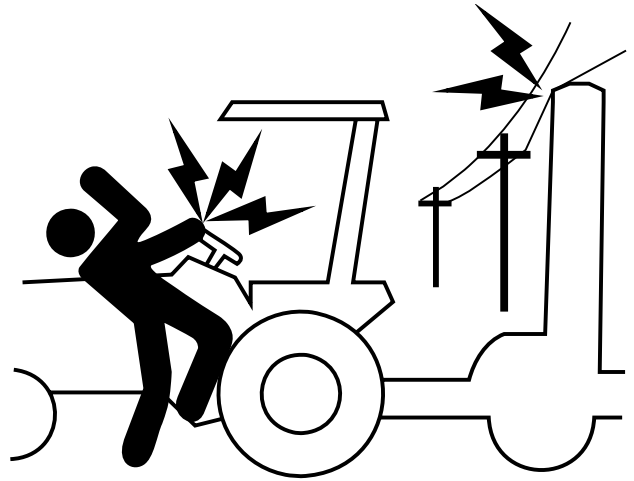
Always be sure pressure is relieved before disconnecting hoses or parts.

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.

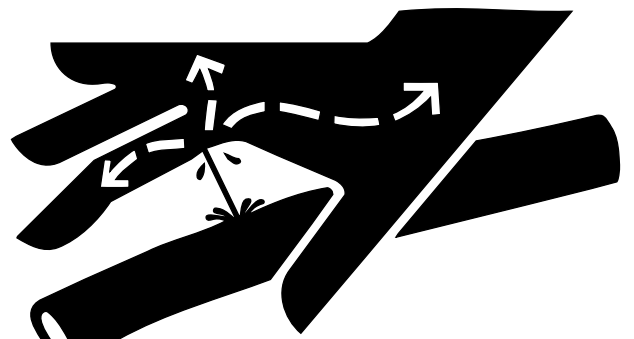
Transporting

- **Be aware** of the height, length and width of implement. Make turns carefully and be aware of obstacles and overhead electrical lines.
- Do Not Exceed 20 M.P.H. (32 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 implement.
- Check that wings are firmly seated in transport wing stops, and lock pins installed.
- Be familiar with and adhere to local laws.



Hydraulics

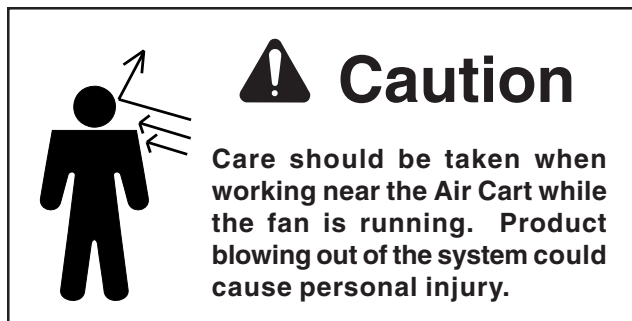
- **Do not** search for high pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, thereby requiring immediate medical attention.
- Use cardboard or wood to detect leaks - never your hands.
- Double check that all is clear before operating hydraulics.
- **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


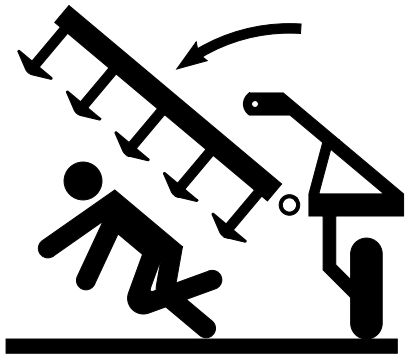
- **Shut tractor engine off** before making any adjustments or lubricating the machine.
- **Block** machine securely to prevent any movement during servicing.
- Wear close fitting clothing and appropriate personal protective equipment for the job.
- **Always wear** safety goggles, breathing apparatus 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. 	<small>C13704</small>

	 <h1 style="margin: 0;">DANGER</h1>
<h3 style="text-align: center;">ELECTROCUTION HAZARD</h3> <p>To prevent serious injury or death:</p> <ul style="list-style-type: none"> • This machine is not insulated. • Keep away from overhead electric wires and devices. • Electrocutation can occur without direct contact. <p style="text-align: center;">FAILURE TO KEEP AWAY WILL RESULT IN SERIOUS INJURY OR DEATH</p>	
<small>N15194</small>	


	 <h1 style="margin: 0;">DANGER</h1>
<h3 style="text-align: center;">UNHITCHING HAZARD</h3> <p>To prevent serious injury or death:</p> <ul style="list-style-type: none"> • Hitch may rise rapidly when unhitched from tractor if equipped with harrows. • Lower implement to ground or secure Anti-Tip Leg in lower most position before unhitching. • Secure hitch jack in place before unhitching from tractor. 	
<small>H21692</small>	



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

Safety

Safety Signs - continued

**WARNING**

Personal injury or property damage may result from loss of control.

- Always use large enough tractor with sufficient braking capacity.
 - 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.


N24301

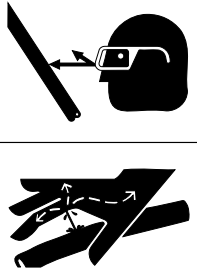
**WARNING**



Keep off while machine is moving or mechanism is running.

D13705

**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.

C-4262

**WARNING**

This implement may exceed maximum road regulations. Before you transport this implement contact a local agency regarding road regulations concerning maximum allowable implement dimensions.

C31201

**CAUTION**

To prevent serious injury or death:

- Lower Drawbar completely before connecting/disconnecting packers or harrows.

H18275



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

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.

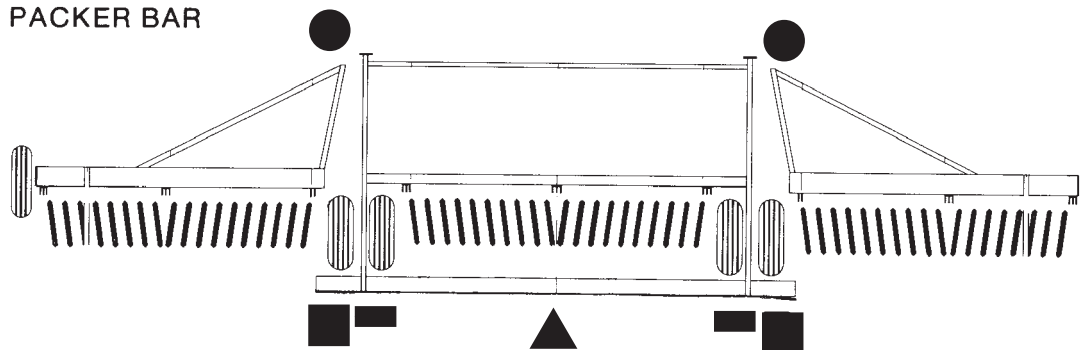
Note: Always replace missing or damaged lights and/or connectors.

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.

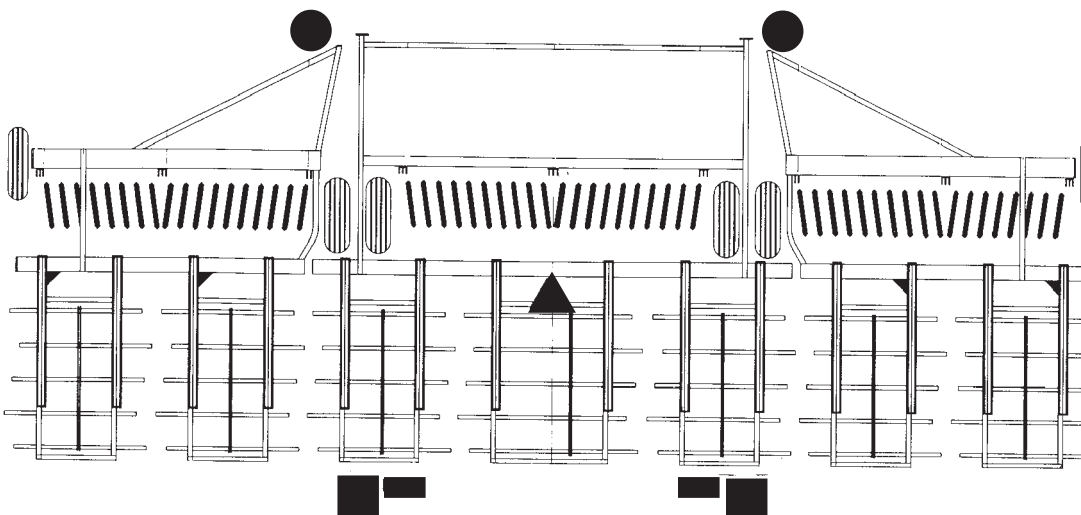
Note: Always replace missing or damaged front, side, rear reflectors and SMV emblem.

- Amber Reflector N34477
- Red Reflector N34476
- Flourecent Reflector N34478
- ▲ SMV Sign N34475

PACKER BAR

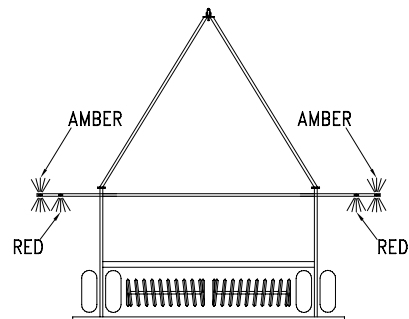


PACKER - HARROW BAR

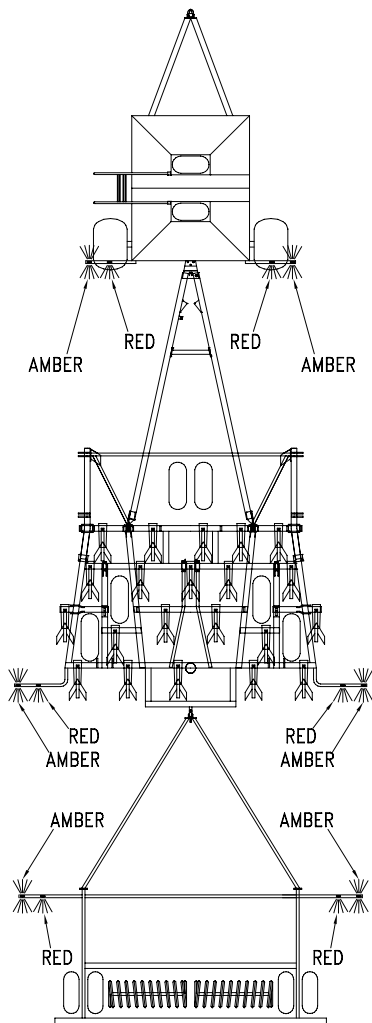


Safety

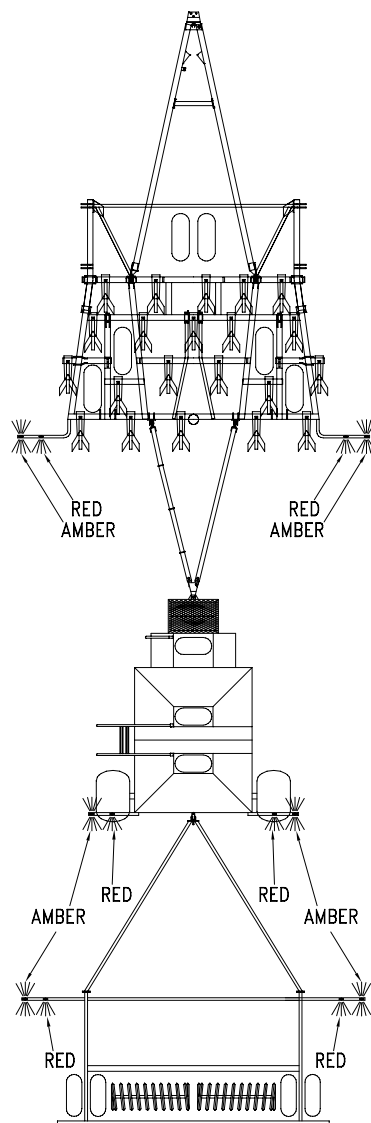
Lighting and Marking - continued



**Seeding Unit - Tow Between
with Packer Bar**



**Seeding Unit - Tow Behind
with Packer Bar**



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Specifications

RANGLER III Specifications and Options

Model	36 feet		38 feet		41 feet		43 feet	
	STD.	OPT.	STD.	OPT.	STD.	OPT.	STD.	OPT.
1 1/2" (3.81 cm) Square Coil Packer, 100 lb./ft. (1.49 kg/cm) 18" (46 cm) Dia. 5 3/4" (14.6 cm) pitch with 2 Tapered Roller Bearing Sets.		X		X		X		X
1 3/4" (4.45 cm) Square Coil Packer, 130 lb./ft. (1.94 kg/cm) 19 3/4" (50 cm) Dia. 5 3/4" (14.6 cm) pitch with 2 Tapered Roller Bearing Sets.		X		X		X		X
4-Bar Harrows with Bent or Straight Tine. 3/8" (0.95 cm) x 15" (38 cm) Long Tines.		X		X		X		X
5-Bar Harrows with Bent or Straight Tine. 3/8" (0.95 cm) x 15" (38 cm) Long Tines.		X		X		X		X
Dual Axle Main Frame - Tire Size - 11L x 15 FI - Load Range D	4		4		4		4	
Wing Axle Tire -7.60 x 15 - 6 ply rating	2		2		2		2	
Lift Cylinders - 4 1/2" (11.4 cm) Dia. x 30" (76.2 cm) Stroke	2		2		2		2	
Cart Frames - 2" (5 cm) x 6" (15 cm) Structural Tubing	X		X		X		X	
Wing Frames - 6" (15 cm) x 8" (20.3 cm) Structural Tubing	X		X		X		X	
Harrow Arms - 3" (7.6 cm) x 3" (7.6 cm) Angle		X		X		X		X
Track Eradicator Kit (Main Frame) - Used only with Packer Bar Without Coil Packer Kits.		X		X		X		X
Track Eradicator Kit (Wings) - Used Only With Packer Bar.		X		X		X		X
1 1/2" (3.81 cm) Square Coil Packer Kit (To pack behind the main frame tires). Used only with Packer Bar.		X		X		X		X
1 3/4" (4.45 cm) Square Coil Packer Kit (To pack behind the main frame tires). Used only with Packer Bar.		X		X		X		X
Safety Lights	X		X		X		X	
Safety Chain	X		X		X		X	
Standard Hitch - 133 7/8" (340 cm) Long	X		X		X		X	
Optional Hitch - 238 7/8" (607 cm) Long		X		X		X		X
Weight - With 1.5" Packers and 5 Bar Harrows	8,550 lbs. (3,886 kg)		8,850 lbs. (4,023 kg)		9,310 lbs. (4,232 kg)		9,680 lbs. (4,400kg)	
Transport Height	14' 4" (4.37 m)		15' 2" (4.62 m)		16' 9" (5.10 m)		17' 9" (5.41 m)	
Transport Width	20' 3" (6.17 m)		20' 5" (6.22 m)		20' 8" (6.30 m)		20' 10" (6.35 m)	
Overall Length with Standard Hitch and Harrows	25' 5" (7.75 m)		25' 5" (7.75 m)		25' 5" (7.75 m)		25' 5" (7.75 m)	
60" (152 cm) Wide Harrows	6		5		3		1	
75" (190.5 cm) Wide Harrows	1		2		4		6	
31.75" (80.6 cm) Long Packer Coil	0		0		2		0	
43.75" (111 cm) Long Packer Coil	2		0		4		6	
54" (137 cm) Long Packer Coil	4		6		2		2	

Section 3: Checklist

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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: Pre-Delivery Inspection 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 H20516

Assembly Manual

Order Part Number H20517

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

- ☐ Hinge Pivot Joints
- ☐ Axle Pivots
- ☐ Wheel Hubs
- ☐ Packer Bearings

Tire Pressure

- ☐ See maintenance, section 6

Level Frames

- ☐ Front to back

Transport

- ☐ Tighten wheel bolts
- ☐ Transport lock pins are in place
- ☐ 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

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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 Rangler III.

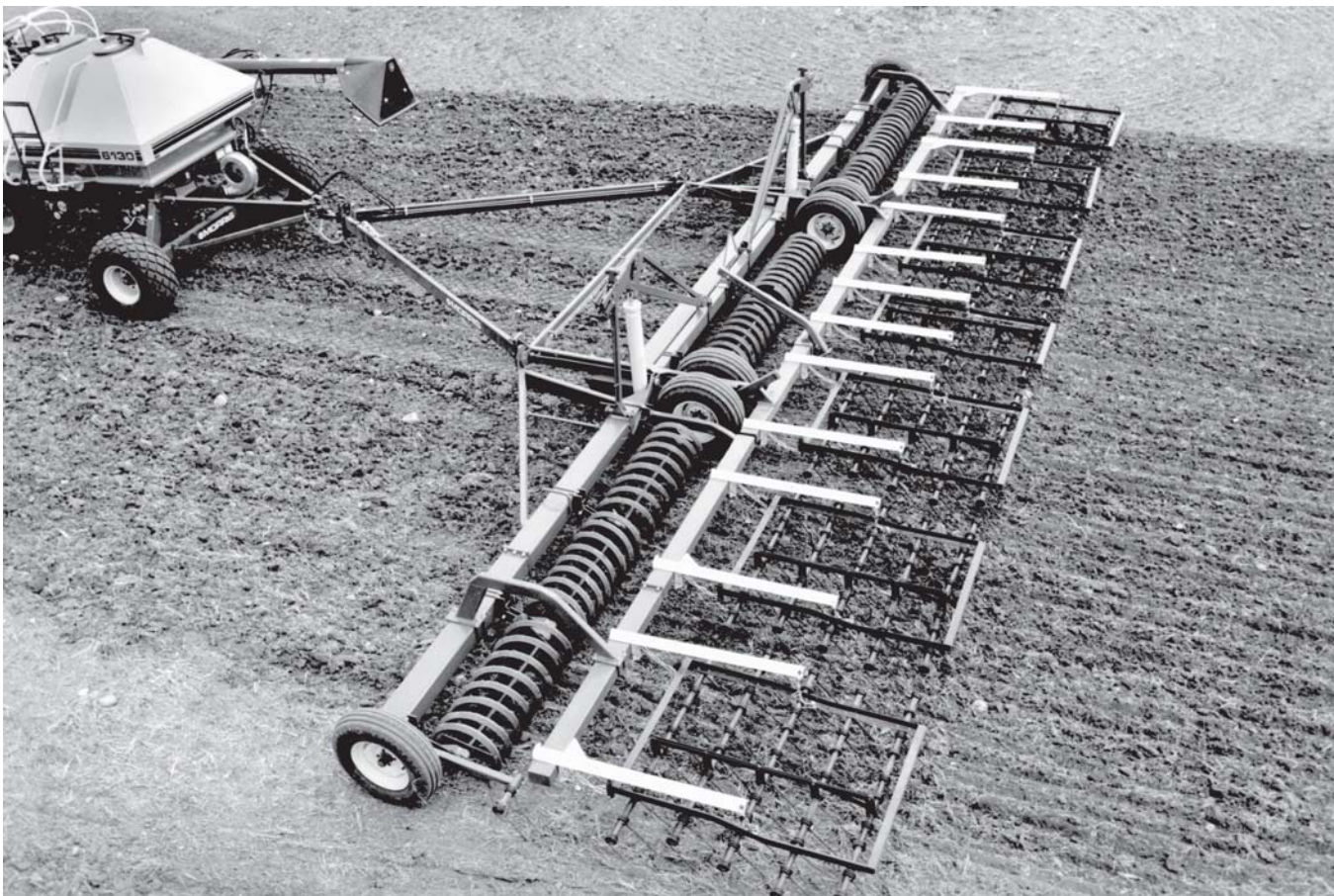
To protect your investment, study your manual before starting or operating in the field. Learn how to operate and service your Rangler III correctly, failure to do so could result in personal injury or equipment damage.

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 Rangler III.

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

Occasionally, your Rangler III 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 Rangler III 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.

Section 5: Operation

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Operation

CAUTION



BE ALERT

SAFETY FIRST

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

Application

The Morris Rangler III packs and harrows, giving excellent seed bed preparation and more uniform seed depth when used after an air seeder. In the majority of soil conditions, the Rangler III will perform an excellent job.

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.

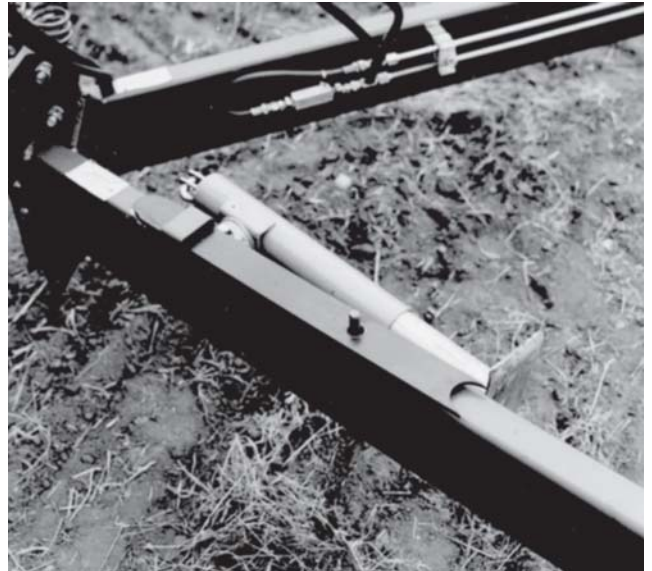


Warning

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.

Hitching

- Ensure swinging drawbar is locked in the centre position.
- Insure 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.
- Raise anti-tip bar into up most position.
- 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.

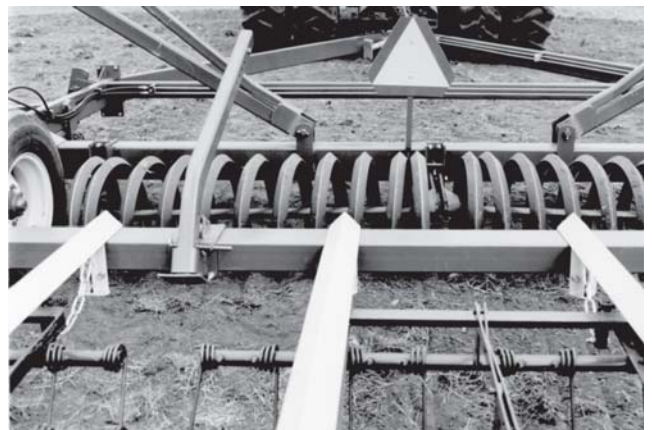


HITCH JACK RAISED



Caution

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



Anti-Tip Bar

Operation

Hitching - Continued

- Route Safety Chain through chain support and drawbar support.
- Lock safety hook onto chain.

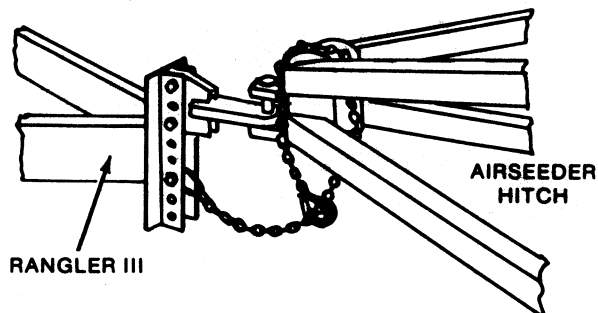
Note: Provide only enough slack in chain to permit turning.



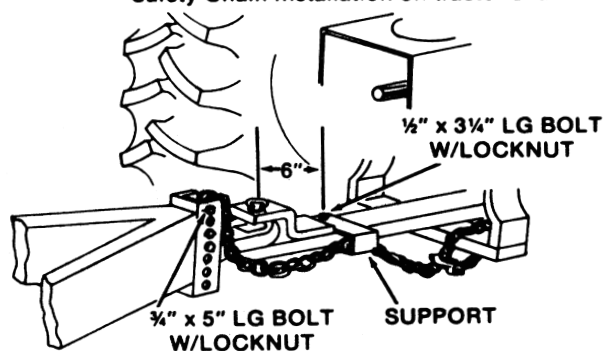
Caution

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.

Safety Chain Installation on Air Seeder



Safety Chain Installation on tractor Drawbar.



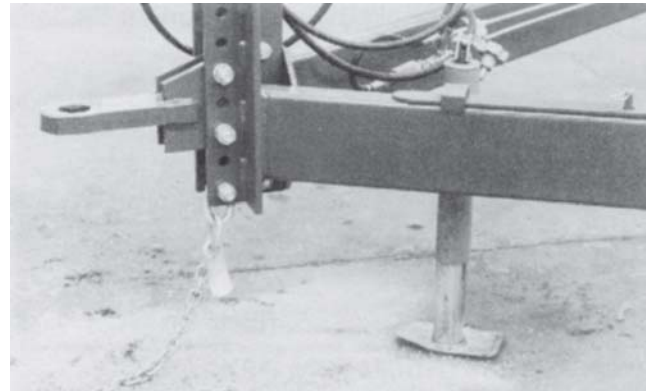
Attach safety chain to the tractor drawbar support or other specified anchor location with the appropriate parts.

Unhitching

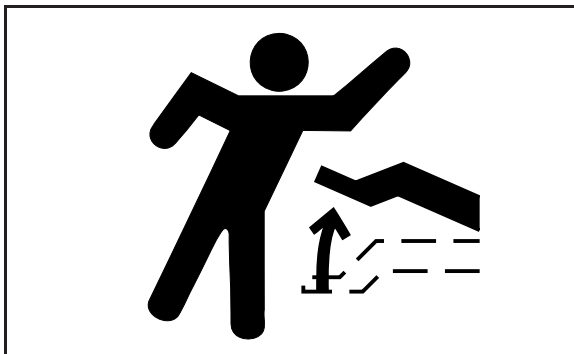
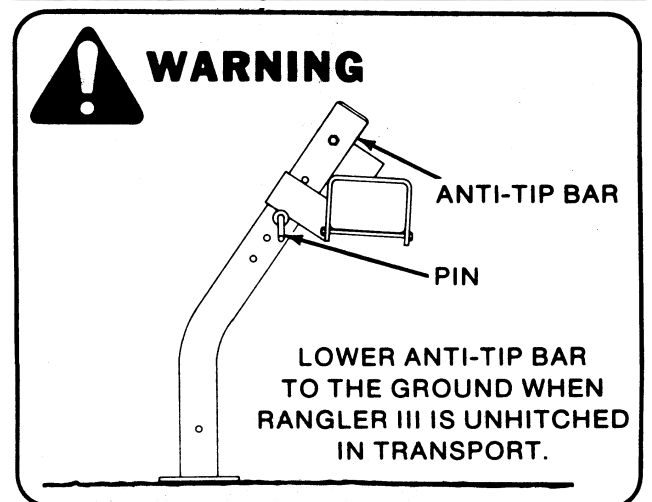
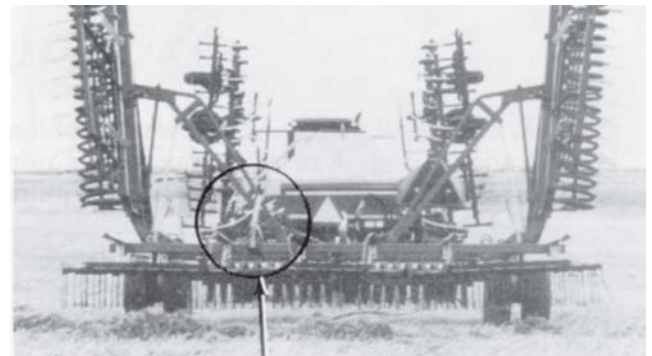
Transport Position

- Lower anti-tip bar to lower most position possible.
- Pin hitch jack in storage position on the main frame.
- Lower hitch jack taking the weight off the 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 unit.

Note: Anti-tip bar is only required when Rangler III is equipped with harrows.



Storage Position



Warning

To prevent serious injury or death:

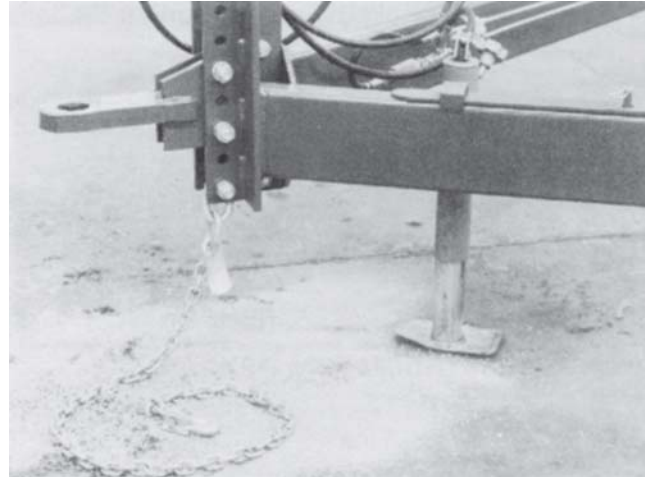
- Tongue rises rapidly when unhitched from tractor.
- Lower anti-tip bar to lower most position

Operation

Unhitching - Continued

Field Position

- Pin hitch jack on the main frame.
- Lower hitch jack taking the weight off the harrow cart clevis.
- 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 unit.



Field Position

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!
- Always connect safety chain provided 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.
- Ensure all transport pins are secured.

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.
- Use additional caution when towing loads under adverse surface conditions, when turning, and on inclines.

Lights

- Ensure proper reflectors are in place, refer to Safety Section 1.
- Be familiar with and adhere to local laws.

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

Transport - Continued

Transport to Field Position

- Operate tractor hydraulics to fully raise wings, to relieve pressure on wing locks.
- Unlatch wing locks by pushing up on the latch lever.
- Operate tractor hydraulics to fully lower machine.

Note: Ensure cylinders are fully retracted.

Field to Transport Position

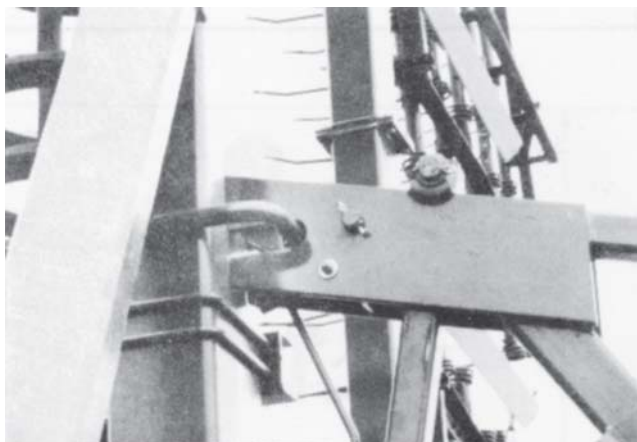
- Stop tractor.
- Raise Harrow Bar into transport position using hydraulic cylinders.
- Ensure transport locks are secured.



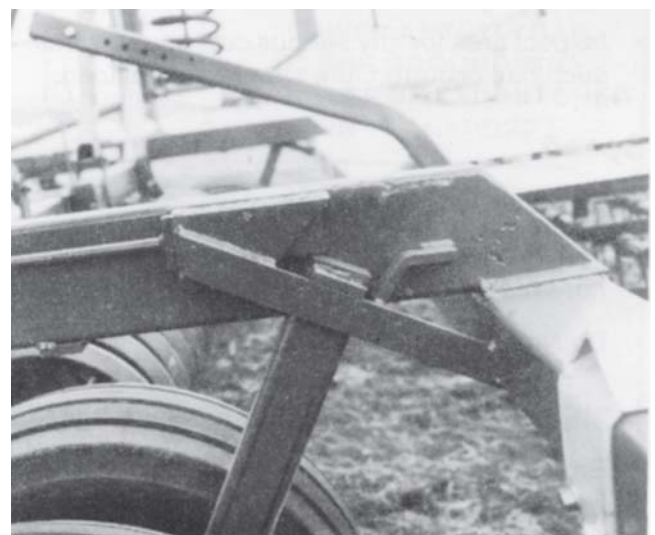
Wing frame TRANSPORT LOCK

Warning

FULLY RAISE wings to ensure the wing and main frame locks are securely latched.



Wing frame TRANSPORT LOCK



Main frame TRANSPORT LOCK

Operation

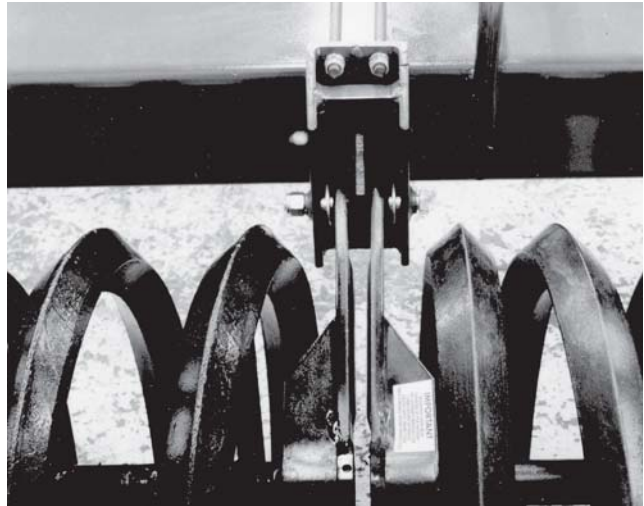
Packers

Removal

- Lower machine into field position.
- Remove all the bolts holding packers on frame.
- Raise machine fully, so harrows clear packers.
- Carefully drive ahead leaving packers behind.
- Reinstall bolts and locknuts into packer hangers on the frame.

Installation

- Raise machine fully, so harrows clear packers.
- Back machine up to packers, aligning the mainframe with the middle two packers.
- Carefully lower machine into field position, making sure that the wings clear the packers.
- Align packers using walking action to assist in alignment of packer arms and hangers as illustrated.
- Connect packers using the bolts with locknuts.



Packer Arm mounting



Warning

DO NOT work under raised harrows.



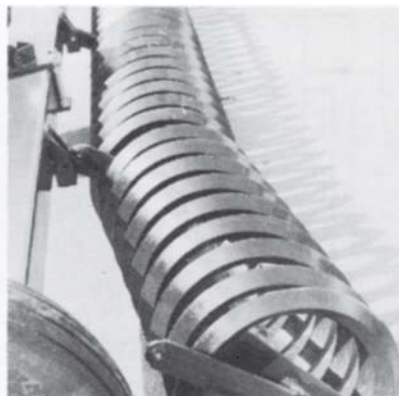
Caution

Replace any locknuts that are defective.
DO NOT replace with a regular nut.



Caution

Use extreme care to avoid personal injury.



Harrow arms removed for clarity

Harrows

Tine Adjustment

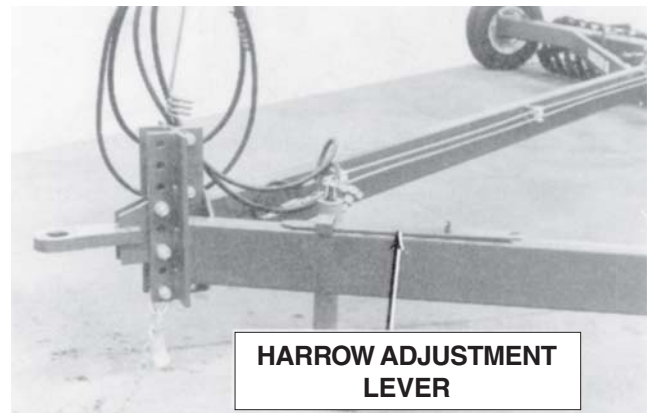
- Adjust tine angle to desired position using the harrow adjusting lever, located at front of cart.
- Place adjusting lever over the rear harrow tube and the strap bolt.
- Remove hair pin from the adjusting link.
- Pull on lever to free adjusting link.
- Adjust tine angle to desired position using the harrow adjusting lever.
- Secure adjusting link with hair pin.
- Move pull chains to maintain even pull on harrow.
- Initial setting should have the pull chains positioned in the harrow arm and harrow as shown
- Repeat the above procedure for all harrow sections.

Harrow Removal

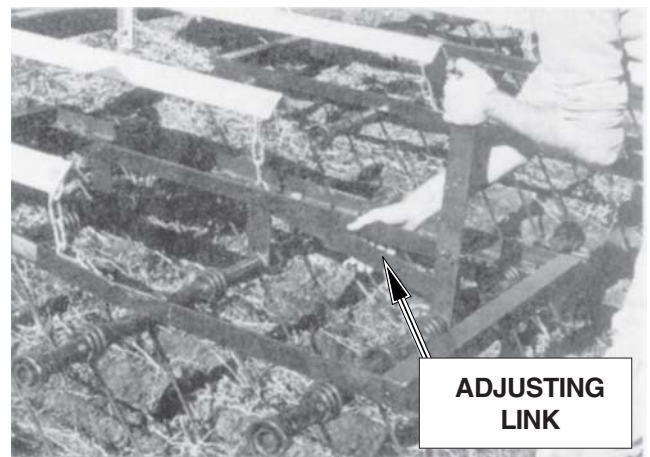
- Lower machine in field position.
- Remove button head pins from harrow carrier arms.
- Drive forward carefully.
- Reinstall button head pins in carrier arms.

Harrow Installation

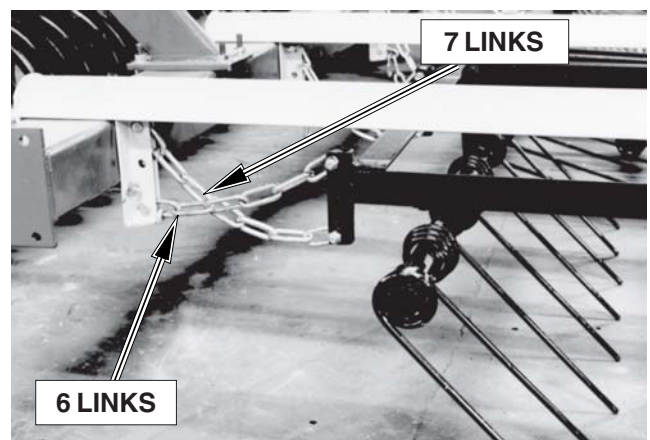
- Lower machine in field position.
- Back machine up to harrows.
- Connect harrows to carrier arms.



Adjustment Lever



Adjust Harrows



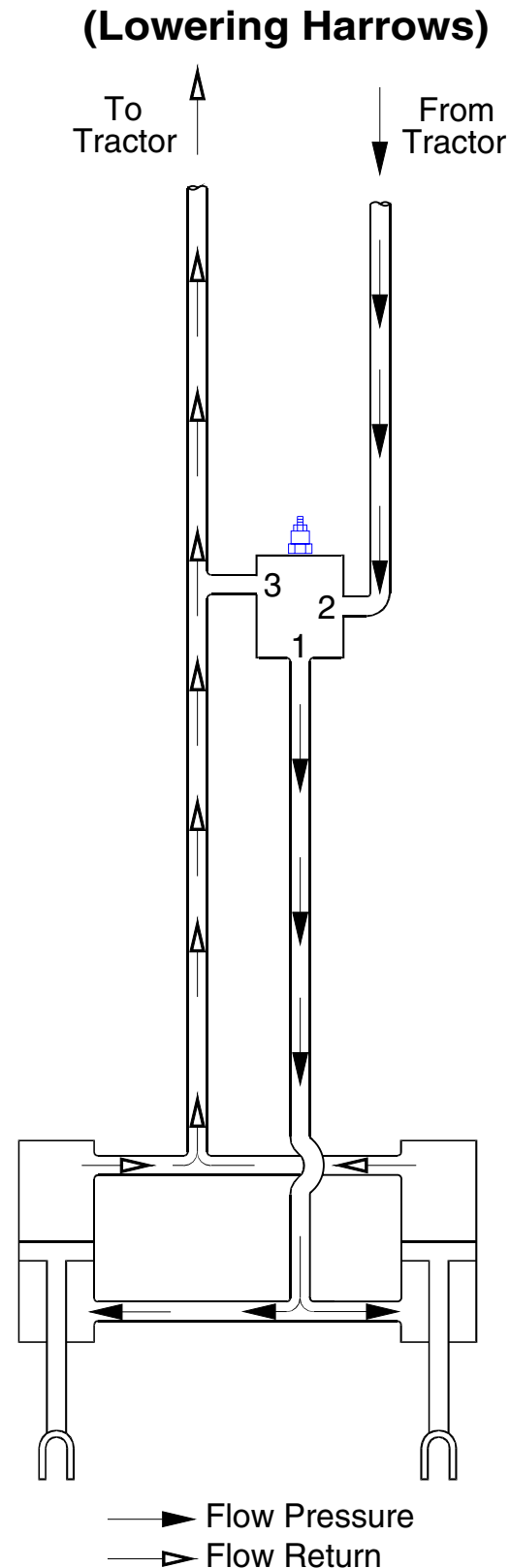
Pull Chains

Operation

Hydraulic System

The Rangler III is controlled by a parallel hydraulic system.

- To lower the packers and harrows fluid is forced from the tractor through a common line which feeds the gland end of both cylinders simultaneously, forcing both cylinders to retract.
- While the packers and harrows are being raised, hydraulic fluid displaced from the gland end of the cylinder returns through a common line to the tractor.
- To lower the packers and harrows fluid is allowed to flow into the gland end of both cylinders, causing fluid from the butt ends of the cylinders to return to the tractor.
- A Pressure Reducing Valve is installed to prevent damage to the machine if the lock up pins were not removed prior to lowering the packers and harrows. If this occurs, the oil bypasses back to the tractor.



General Guidelines

The results obtained from the Rangler III are directly related to uniform adjustments of the unit. Poor levelling, worn/bent tines, uneven tire pressures, and incorrect tine angles must be avoided to obtain optimum field results.

Level

- Level unit front to back by adjusting hitch clevis position.
- Adjust pull chains to maintain level running of harrow frames.
- Keep tire pressure at the listed specifications to maintain proper level. See Maintenance Section.

Worn or Bent Tines

- Repair or replace any bent tines. Bent tines cause uneven field finish.
- Adjust pull chains to maintain even operation of harrows when tines have worn.

Tine Angle Adjustments

Correct tine angle adjustment for field conditions is very important for optimum field results.

- The more aggressive angles are ideal for dry straw conditions and chemical incorporation.
- The middle tine angles are ideal for levelling and breaking down large soil clumps which often result from prior banding or tillage operations.
- The least aggressive position is ideal for a finishing harrow without being too aggressive. The result is good seed to soil contact combined with packing action for a firm but not over-packed seed bed.

Operation

Notes

Section 6: Maintenance

Section Contents

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Hydraulics	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 machine.
- 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.

Tire Specifications		
SIZE	LOAD RANGE	PRESSURE
7.60 x 15	6 ply rating	28 P.S.I.
11L x 15FI	D	60 P.S.I.



Caution

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

Maintenance

Lubrication

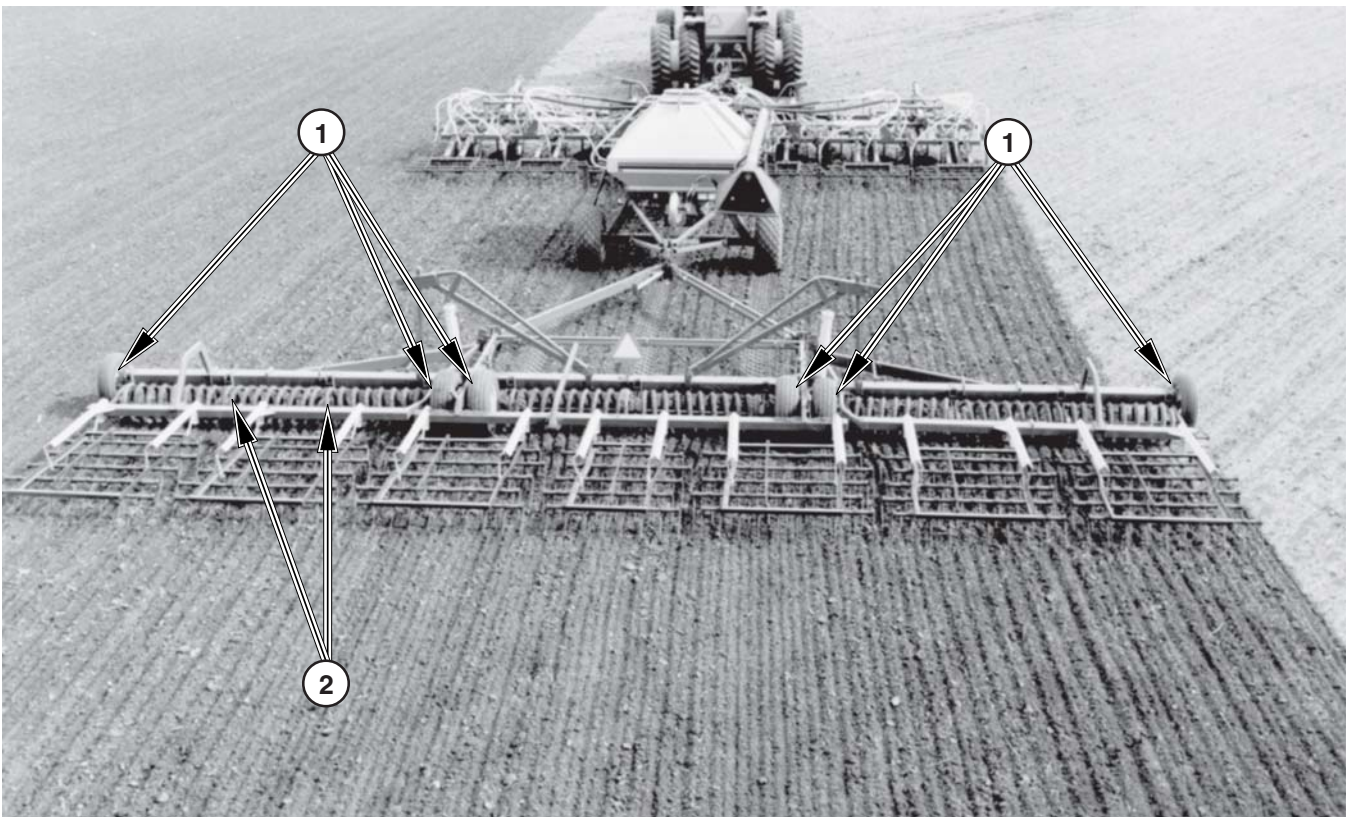
Greasing pivot points prevents wear and helps restrict dirt from entering. However, once dirt does enter a bearing, it combines with the lubricant and becomes an abrasive grinding paste, more destructive than grit alone.

- 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.

Refer to the photos for grease fitting locations.

1.Hubs

- Repack every 500 hours.



Lubrication - Continued

2.Packer Bearing

Grease bearings with the main frame tires locked in transport position.

- **All areas**, except the Pacific Northwest of the USA.
Apply 4 pumps of grease every 25 hours.
- **Pacific Northwest** of the USA only,
Apply 4 pumps of grease every 10 hours.
- When lubricating apply grease to the cone and seal assembly with **slow, gradual pressure** while **rotating packer**.
- If grease can be seen purging from the seal, **immediately stop applying lubricant**.

Important

The packers **must be rotated** while the grease is **slowly applied** to the bearings.



Maintenance

Packer Bearings

Adjustment Procedure

The bearing must have a certain preload to ensure correct operation and should be adjusted accordingly. The adjustment procedure is outlined below.

All bearings should be checked after initial 50 hours and once a season thereafter.

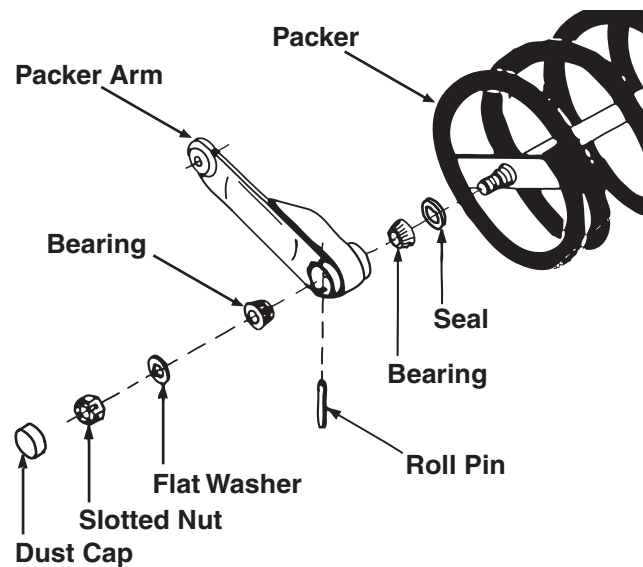
Note: Bearings do not require repacking.

- Check for excessive play in the bearings.

Note: There should not be any play in the bearings.

- If adjustment is required remove the packer.
- Remove the dust cap and roll pin from the packer arm.
- Tighten nut while turning the packer arm until a medium drag is felt. (25 in-lbs torque) (282 Ncm)
- Install roll pin, if necessary slacken nut to align slots in the nut and hole in the shaft.
- Install dust cap into packer arm.

Note: Packer arm must have a preload applied to the bearings.



Packer Bearings - Continued

Replacement Procedure

Normally bearing replacement will not be necessary, if it is, the following procedure must be followed for correct installation of the new bearing:

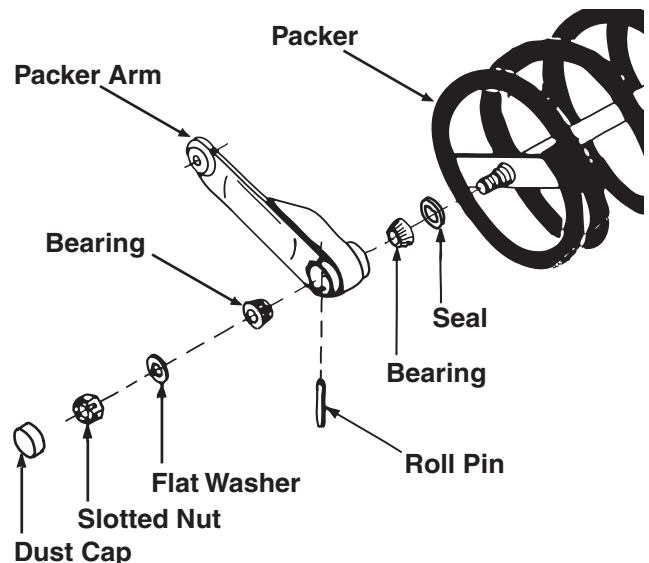
- Remove the packer.
- Remove the dust cap from the packer arm.
- Remove the roll pin through the holes in the packer arm and slotted nut from the shaft.
- Use a puller to remove the packer arm and outer bearing.
- Remove the inner bearing with a puller.
- Remove the seal from the shaft.
- Press out cups from the packer arm.
- Press new cups into the packer arm.
- Place grease in the palm of your clean hand and work grease into the bearing rollers, rotating the bearing as you progress.
- Install inner bearing and seal into packer arm.
- Slide packer arm onto shaft carefully to avoid damaging seal.
- Press inner bearing onto the shaft using a sleeve to press on the inner race of the bearing.
- Press the outer bearing onto the shaft.
- Tighten nut while turning the packer arm until a medium drag is felt. (25 in-lbs torque) (282 Ncm)
- Install roll pin. If necessary slacken nut to align slots in the nut and hole in the shaft.
- Install dust cap into the packer arm.

Note: Packer arm must have a preload applied to the bearings.

Important

**THE INNER AND OUTER CUPS
MUST BE A MATCHED SET.**

Use only genuine Morris Parts.



FILL BEARING CAVITY WITH GREASE

Once packer arm is correctly preloaded the bearing cavity must be filled with grease.

This is done with the unit in transport position. The packer must be rotated while grease is slowly applied to the packer bearing. The bearing cavity will be full when there is a slight increase in force required to pump the grease gun. At this point greasing should be **stopped immediately**.

Up to a maximum of 10 pumps of grease should be applied to each bearing.

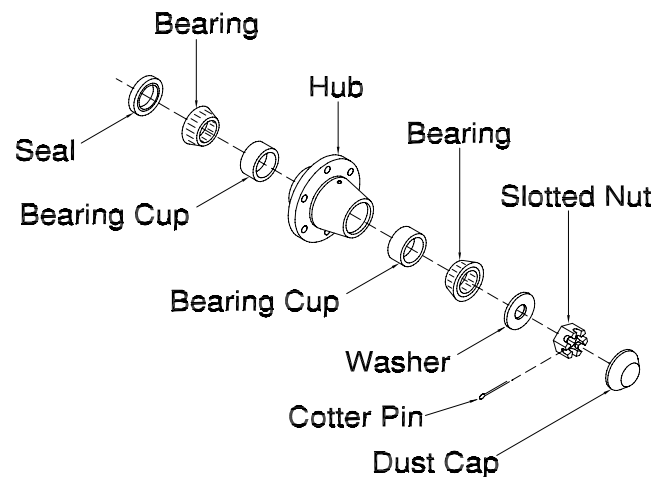
Once all the packer bearing cavities have been filled the unit will be ready for field use.

It is important to have the bearing cavity full of grease so that during operation the grease will work its way past the seals simultaneously lubricating and flushing out any contaminants.

Maintenance

Wheel Bearings

- Lower Rangler III fully into field position.
- Shut tractor off and remove key.
- Block wheel on tractor.
- Raise the wheel enough to clear ground surface.
- Securely block 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.



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.

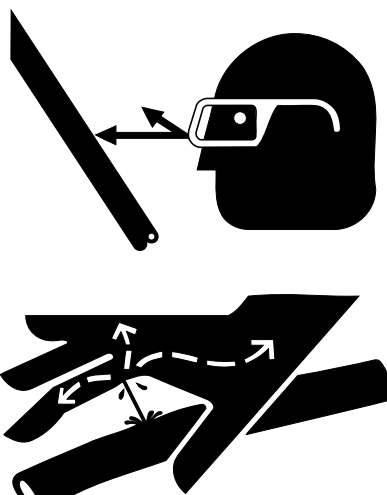


Contact your nearest Dealer for genuine repair parts. Dealers carry ample stocks and are backed by the manufacture and regional associations.

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.

Maintenance

Notes

Section 7: Storage

Section Contents

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Cylinder Shaft Protection	7-3
Removing From Storage	7-3

Storage

Preparing for Storage

- To insure longer life and satisfactory operation, store the Rangler III in a shed.
- If building storage is impossible, store away from areas of main activity on firm, dry ground.
- Clean machine thoroughly.
- 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 Lubricating Section).
- Tighten all bolts to proper specifications (Refer to Bolt Torque Chart).
- For a safer storage, lower the Rangler III into field position and release the hydraulic pressure.
- If Rangler III must be stored in a raised position, ensure that wings are properly secured with lock pins.
- Level Rangler III using hitch jack and block up.
- Relieve pressure from hydraulic system.
- Raise frames, block up and relieve weight from the tires.
- Cover tires with canvass to protect them from the elements when stored outside.
- Coat exposed cylinder shafts (Refer to Cylinder Shaft Maintenance).
- 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:

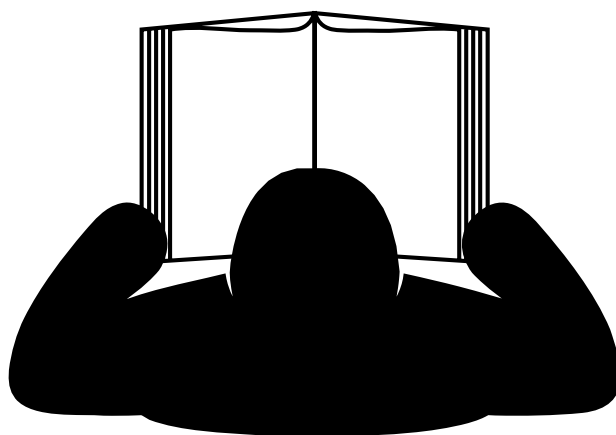
- Position the equipment as it will be stored, and identify all the exposed portions of the chrome plated shafts.
- Clean dirt and dust from the exposed portions of the shafting using a dry cloth or a cloth which has been dampened with an appropriate solvent.
- Prepare a mixture of 60% oil-based rust 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 Maintenance).
- Lubricate grease fittings. (Refer to Lubricating Section).
- Tighten all bolts to proper specifications (Refer to Bolt Torque Chart).



Storage

Notes

Section 8: Troubleshooting

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Will not raise.....	8-2
Machine not tracking straight.	8-2
Wings raise out of sequence with main frame (36 foot only)	8-2

Troubleshooting

Problem	Cause	Correction
Excessive harrow bounce.	Machine not level.	Level machine by adjusting hitch clevis, cylinders fully extended.
	Pull chains not adjusted.	Adjust chains position to get straight pull.
	Excessive speed for conditions.	Reduce speed.
Hydraulics will not lower.	Transport pins.	Unlatch transport locks.
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.
Will not raise	Tractor hydraulics	Check for adequate hydraulic pressure.
	Check valve	Installed incorrectly. Clean or replace check valve.
Machine not tracking straight.	Packers not installed correctly	Packer coils should be installed in sequence of left hand coil, right hand coil, left hand coil, right hand coil etc. across the entire width of machine.
Wings raise out of sequence with main frame (36 foot only)	Optional packers on main frame	Wing tires should be filled with fluid.



MORRIS

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