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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.
Safety

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.

**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.

**Caution**

Keep service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment.

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

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

**DANGER**

- 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.

**ELECTROCUTION HAZARD**

To prevent serious injury or death:
- This machine is not insulated.
- Keep away from overhead electric wires and devices.
- Electrocution can occur without direct contact.

FAILURE TO KEEP AWAY WILL RESULT IN SERIOUS INJURY OR DEATH

**UNHITCHING HAZARD**

To prevent serious injury or death:
- 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.
Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.
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
Safety

Lighting and Marking - continued

Seeding Unit - Tow Between with Packer Bar

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

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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.
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Operation

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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.

Caution

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

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

LOWER ANTI-TIP BAR TO THE GROUND WHEN RANGLER III IS UNHITCHED IN TRANSPORT.

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.

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.

Warning

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

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.
Harrons

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.
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.
Section 6: Maintenance

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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.

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>Nm</th>
<th>lb. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
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<tr>
<td>Bolt Marking</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>17</td>
</tr>
<tr>
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<td></td>
<td>68</td>
<td>50</td>
</tr>
<tr>
<td>Grade 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bolt Marking</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>33</td>
</tr>
<tr>
<td></td>
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<td>61</td>
</tr>
<tr>
<td></td>
<td>70</td>
<td>95</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>SIZE</th>
<th>LOAD RANGE</th>
<th>PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.60 x 15</td>
<td>6 ply rating</td>
<td>28 P.S.I.</td>
</tr>
<tr>
<td>11L x 15FL</td>
<td>D</td>
<td>60 P.S.I.</td>
</tr>
</tbody>
</table>

**Caution**

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

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.
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.*

**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.

Note: Extreme care must be taken to maintain a clean hydraulic system. Use only new hydraulic fluid when filling reservoir.
Section 7: Storage

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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:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>W-4647</td>
<td>Red MORRIS Spray Can</td>
</tr>
<tr>
<td>W-4648</td>
<td>Blue MORRIS Spray Can</td>
</tr>
<tr>
<td>N31087</td>
<td>White MORRIS Spray Can</td>
</tr>
</tbody>
</table>

Litre Cans:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z-10</td>
<td>Red MORRIS Paint/Litre</td>
</tr>
<tr>
<td>Z-11</td>
<td>Blue MORRIS Paint/Litre</td>
</tr>
</tbody>
</table>
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.

Removing From Storage

- 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).
Section 8:
Troubleshooting

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Oil accumulation. .......................................................................... 8-2
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

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive harrow bounce.</td>
<td>Machine not level.</td>
<td>Level machine by adjusting hitch clevis, cylinders fully extended.</td>
</tr>
<tr>
<td></td>
<td>Pull chains not adjusted.</td>
<td>Adjust chains position to get straight pull.</td>
</tr>
<tr>
<td></td>
<td>Excessive speed for conditions.</td>
<td>Reduce speed.</td>
</tr>
<tr>
<td>Hydraulics will not lower.</td>
<td>Transport pins.</td>
<td>Unlatch transport locks.</td>
</tr>
<tr>
<td>Oil accumulation.</td>
<td>Damaged seal.</td>
<td>Replace seals.</td>
</tr>
<tr>
<td></td>
<td>Loose fittings.</td>
<td>Tighten hose and pipe connections.</td>
</tr>
<tr>
<td></td>
<td>Scored cylinder shaft will damage shaft seal.</td>
<td>Replace.</td>
</tr>
<tr>
<td></td>
<td>Normal.</td>
<td>Slight seepage from seal is normal.</td>
</tr>
<tr>
<td>Will not raise</td>
<td>Tractor hydraulics check valve</td>
<td>Installed incorrectly. Clean or replace check valve.</td>
</tr>
<tr>
<td>Machine not tracking straight.</td>
<td>Packers not installed correctly</td>
<td>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.</td>
</tr>
<tr>
<td>Wings raise out of sequence with main frame (36 foot only)</td>
<td>Optional packers on main frame</td>
<td>Wing tires should be filled with fluid.</td>
</tr>
</tbody>
</table>
It is the policy of Morris Industries Ltd. to improve its products whenever it is possible to do so. Morris reserves the right to make changes or add improvements at any time without incurring any obligation to make such changes on machines sold previously.