



MORRIS

RUSTLER
HEAVY HARROW



MORRIS

Specifications

RUSTLER "Heavy Harrow Bar" Specifications and Options

Base Size	55 feet (16.76 m)	68 feet (20.72 m)	78 feet (23.77 m)
Harrows - Sections 5 Bars - 18" (460mm) Spacing Between Rows - 2-3/8" Diameter Pipe	5 - 11' (3.4m)	2 - 6 1/2' (2 m) 5 - 11' (3.4 m)	7 - 11' (3.4m)
Tines - Straight with 4" high wear edge 9/16" x 28 (1.4 cm x 69 cm)	Standard	Standard	Standard
Hydraulic Tine Adjustment	Standard	Standard	Standard
Main Frame -Single Axle -Tire Size -	(2) 16.5L x 16.1 10 ply rating	(2) 16.5L x 16.1 10 ply rating	(2) 16.5L x 16.1 10 ply rating
Wing Axle (1 per wing) - Tire Size	(2) 12.5L x 15 8 ply rating	(2) 12.5L x 15 8 ply rating	(2) 12.5L x 15 8 ply rating
Weight	11,950 lbs. (5,420 kg)	13,560 lbs. (6,151 kg)	14,720 lbs. (6,677 kg)
Transport Length	44' 8" (13.7 m)	51' 8" (15.8 m)	55' 10" (17.0 m)
Transport Height	11' 8" (3.6 m)	11' 8" (3.6 m)	11' 8" (3.6 m)
Transport Width	14' 9" (4.5 m)	14' 9" (4.5 m)	14' 9" (4.5 m)
Cart Frame - 8" (20.3 cm) x 4" (10 cm) Structural Tubing	Standard		
Main Frame - 8" (20.3 cm) x 8" (20.3 cm) Structural Tubing	Standard		
Wing Frames - 8" (20.3 cm) x 8" (20.3 cm) Structural Tubing	Standard		
Safety Chain	Standard		
Safety Lights	Standard		
Harrow Arms	Self-Levelling Parallel Linkage		
Harrow Tine Length	28" (69 cm)		
Harrow Tine Diameter	9/16" (1.4 cm)		
Harrow Tine Spacing	2.75 inches (7 cm)		
Harrow Tine Angle Degree Range	40 - 85		
Hydraulics	Requires 3 control valves		

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.

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

Adopt a good lubrication and maintenance program.



TAKE SAFETY SERIOUSLY.
**DO NOT TAKE
NEEDLESS CHANCES!!**

OWNER REFERENCE

Model: _____

Serial No: _____

Dealer: _____

Town: _____ State: _____

Phone: _____

OWNER/OPERATOR _____

Date: _____

Note: Pre-Delivery Inspection Form must be completed and submitted to Morris Equipment within 30 days of delivery date.

Warranty Void if Not Registered

Pre-Delivery Inspection

General

- Remove wrapping and wash unit, removing all road debris. (Road salt, mud, snow, etc.)
- Inspect paint, decals and general appearance of unit.
- Verify that the owners manual is in the manual storage tube.
- Verify 'SLOW MOVING VEHICLE' sign (SMV) is on unit
- Verify that jacks are with the unit and function properly.
- Check wheel bolts for proper torque.
- Check for proper tire pressure (PSI).
- Verify that the wheel hubs are lubricated.
- Verify that locking pins and / or ram locks are in place.
- Lubricate all components as per operators manual recommendation.
- Check that all bolts and fasteners are at the proper torque specifications.

Note: All cap screws that have lock nuts joining moving pieces should not be tightened completely, they must allow movement. i.e. Spring pressure kits, rock shaft connector, draft arm, etc.

- Check sprocket alignment and chain tension. (If applicable)
- Check locking collars and set screws for proper tension. (If applicable)
- Verify operation of lights. (If applicable)
- Verify the unit moves 'IN' and 'OUT' of transport without any binding.
- Verify that tires are tracking properly when in transport mode.

Hydraulics

- Insure that all hydraulic hoses and lines are routed properly and secured.
- Verify that all hydraulic fittings / hoses are secure and there are no oil leaks.
- Inspect all cylinders for leakage and the cylinder shaft for rust, pits, or scratches.
- Verify operation of all hydraulic functions - Cycle hydraulic cylinders to remove air from the system.

Delivery

- Verify that 'The customer is aware of warning decals and proper jack placement for transport.'
- Verify that 'The customer is aware of proper operation and transportation of the unit.'
- Verify that 'The customer has received an operators manual.'
- Explain all maintenance and service intervals to the customer (From operators manual).
- Advise the customer of grease zerk locations and maintenance schedules.
- Level the unit per operators manual and instruct the customer on the proper procedures.
- Verify that the center harrow section has been rotated to working position.

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 RUSTLER Heavy Harrow.

To protect your investment, study your manual before starting or operating in the field. Learn how to operate and service your RUSTLER Heavy Harrow 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 RUSTLER Heavy Harrow.

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

Occasionally, your RUSTLER Heavy Harrow 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 RUSTLER Heavy Harrow 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 Equipment 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.

MORRIS

CAUTION



BE ALERT

SAFETY FIRST

REFER TO SECTION 1 AND REVIEW ALL SAFETY RECOMMENDATIONS.

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.

Note: Use a clevis-type tractor hitch with a retained type of hitch pin.

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.

General Information

- In transport position, the maximum turning angle is 40°. Turning too tight will cause severe damage to the machine.
- Always choose a level area when folding the unit in or out of transport mode.
- Lubricate all pins, axles and bearings regularly to prevent premature failure.
- Clean hydraulic hose ends prior to coupling with tractor hydraulic system.
- The RUSTLER requires three sets of hydraulic remotes to operate the machine, further detailed in this section.

Hitching to Tractor

- Ensure swinging drawbar is locked in the centre position.
- Insure hitch pin is in good condition.
- Level clevis with tractor drawbar using hitch jack(s) on the wings.
- 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 jacks.
- Place hitch jacks in raised storage position.

Note: Ensure that the parking jack handle is secured by chain prior to moving the machine. Failure to do so can destroy the jack handle.

- 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.

Recommended Hydraulic Connections:

Red - Remote 1 - Tine angle adjust

Yellow - Remote 2 - Wing lift/lower

Green - Remote 3 - Wing wheel pivot



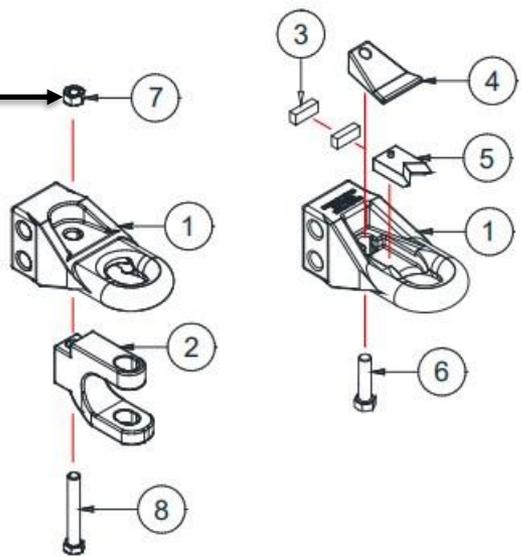
Caution

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



Perfect Hitch

Torque o 200
ft/lbs



Item	Part No.	Description
1	423-0005	Base Hitch (PP1-301VH)
2	423-0006	Clevis (PP1-208VR-10)
3	423-0019	Neoprene Cushion (PP1-205H)
4	423-0017	Top Plate Perfect Hitch (PP1-302V)
5	423-0018	V-Block (PP1-203VR)
6	526-1224	3/4" x 3" Capscrew, NC, Gr.5, Pltd.
7	526-6107	3/4" Stover Lock Nut, NC, Gr.B, Pltd.
8	526-1241	3/4" x 5-1/2" Capscrew, NC, Gr.5, Pltd.

The sliding V-block has a polyurethane cushion which is made to flex. The cushion also acts as a shock absorber to reduce driveline stress, giving driveline components longer life. **Do not remove all the cushions! Install the perfect hitch components with bolt head on the bottom and the top plate on top.**

Always adjust the V-block to your tractor draw pin size by following these steps:

1. Remove top plate by unscrewing 3/4" bolt from bottom of Perfect Hitch and lifting top plate off.
2. The polyurethane cushion can be laid flat to achieve an extra 1/4" of adjustment.
3. If more closure is needed metal spacers (not supplied) can be placed behind the cushions to push the V-block forward and closer to the draw pin hole to tractor draw pin size.
4. Replace top plate and re-install 3/4" bolt tightly (Approx. 200 ft/lb).

4 Very important to
torque to 200 ft/lbs

Operation

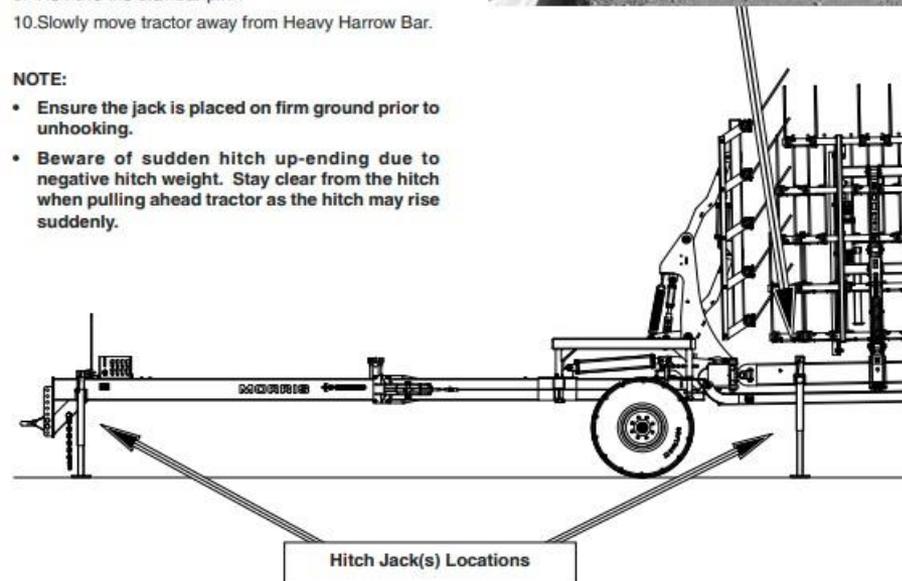
Tractor Disconnecting

1. Ensure that machine is in transport position.
2. Put all lock pins into place.
3. Block the A-frame tires, front and back, before disconnecting from the tractor.
4. Apply lifting pressure at stubs on the wings with parking jack(s).
5. Pin the hitch parking jack in the downward position and crank to extend until the clevis lifts off the tractor hitch.
6. 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.
7. Disconnect all hydraulic lines from the tractor.
8. Remove the safety chain.
9. Remove the drawbar pin.
10. Slowly move tractor away from Heavy Harrow Bar.



NOTE:

- Ensure the jack is placed on firm ground prior to unhooking.
- Beware of sudden hitch up-ending due to negative hitch weight. Stay clear from the hitch when pulling ahead tractor as the hitch may rise suddenly.



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.

Speed

- Always travel at a safe speed. Do Not Exceed 20 mph (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.

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



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



Operation

Transport to Field Position

1. Hook up harrow according to prior instructions.
2. Ensure that the safety pins are in transport position before towing on the road.
3. When entering the field from transport mode, find a level location.
4. Position the machine in-line with the tractor and bring the tractor to a full stop.
5. Remove both wheel pivot safety pins from transport position to field position and secure (fig. 2).
6. Remove the main lift safety pin (fig. 3).

NOTE: Failing to follow this procedure may cause severe damage to the machine.

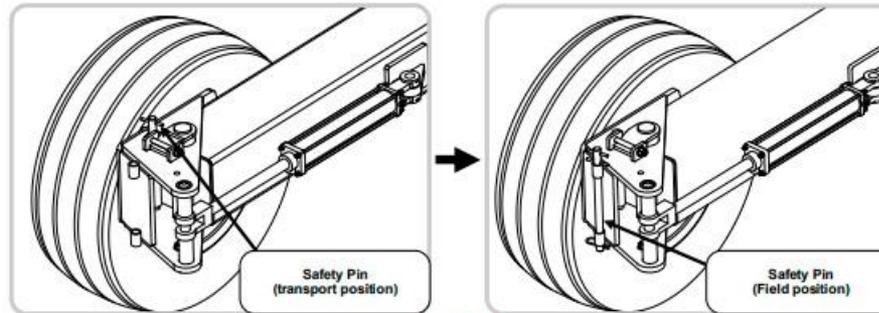


FIGURE 2

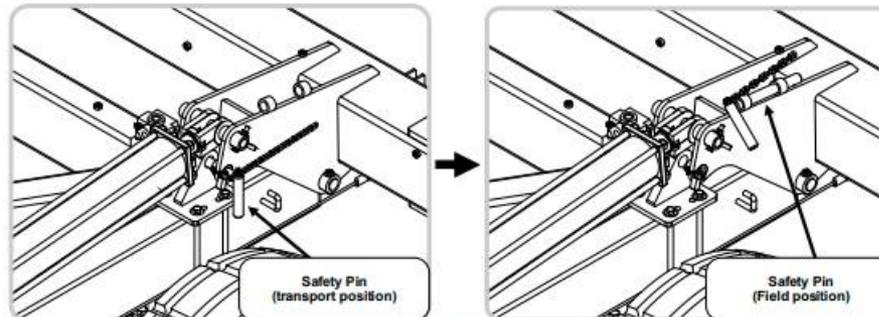


FIGURE 3

Transport to Field Position - Continued

7. From the cab of the tractor, rotate pivot wheels to 45° (Green hydraulic remote) (fig. 4).
8. Slowly back up the tractor to unfold (fig. 5).
9. Once wings are nearly fully unfolded, rotate pivot wheels to 90°.

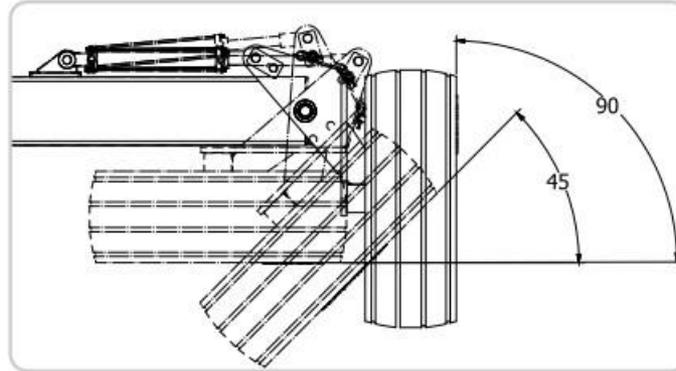


FIGURE 4



Operation

Transport to Field Position - Continued

10. Ensure that the draft arms have pushed the swing arms into the lock mechanism (fig. 6).
11. Carefully lower the harrow wing halfway to the ground (Yellow hydraulic remote). Ensure that the swing arms are both still locked in place.
12. Slowly drive the tractor ahead, while lowering the harrow wing the rest of the way down (fig. 7).

NOTE:

- Do not lower the harrow wings fully down to the ground without driving ahead simultaneously. Damage to the Heavy Harrow Sections could result.
- Check the level of A-frame hitch relative to the tractor. Adjust using hitch tongue to level
- Ensure all harrow prongs are tight.

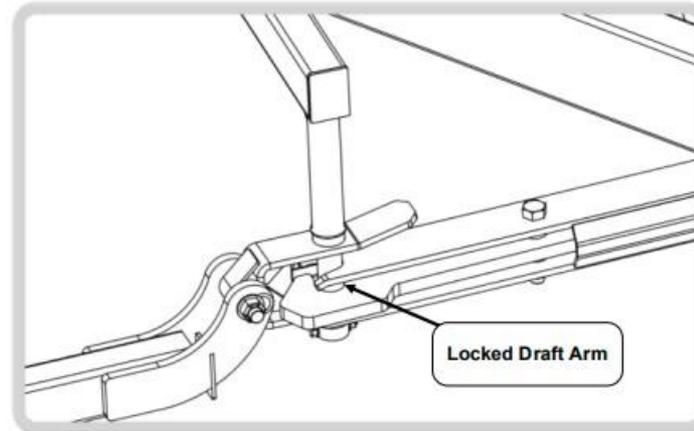


FIGURE 6

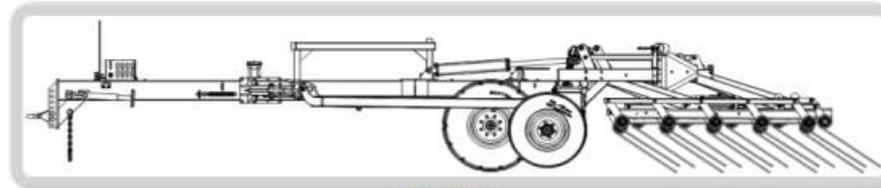


FIGURE 7

Operation

Levelling

1. Hitch unit up to tractor and unfold into field position on flat ground
2. Ensure the main lift cylinders are fully stoked outwards (measurement 60° eye to eye with full tine aggression)
3. Measure from the top of tubing on one of the lift arms to the ground (fig. 11).
4. Repeat measurement on the other end of the lift arm (fig. 11).
5. Adjust hitch clevis up or down accordingly until the measurements are within 1/4" of each other. (fig. 10).



FIGURE 10

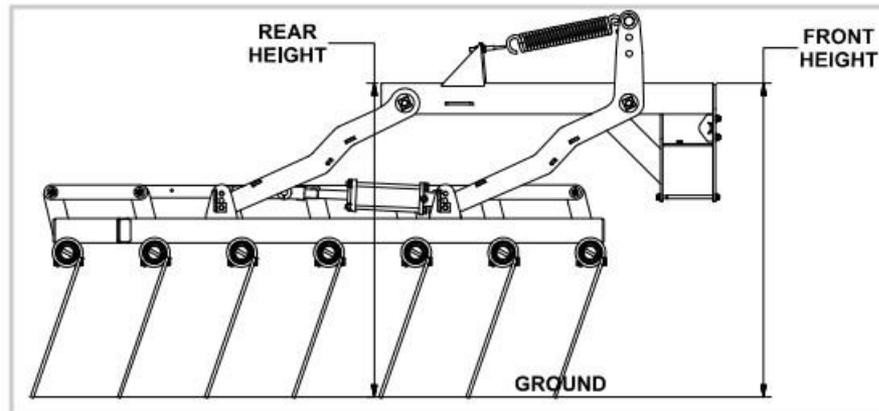


FIGURE 11

Tine Section Adjustment

- The Tine sections are fully adjustable based on your preferences and tine wear.

Levelling:

- Before leveling the sections ensure the lift arms are properly leveled (Page 19)
- To level the section relocate the tine section pins in holes 1-3 (fig 12).
- To bring the rear down, use rear #1 and front #3.
- To bring the front down, use rear #3 and front #1.
- The #2 setting can be used for less aggressive adjustments.

Down Pressure:

- Adjust the down pressure by moving the spring position on the top of the lift arm, in holes A-C and D (fig 9).
- For minimum downpressure, move the spring to hole A.
- For maximum downpressure, move the spring to hole C.
- Adjust D to tension the spring so that a piece of paper can slide between the coils.

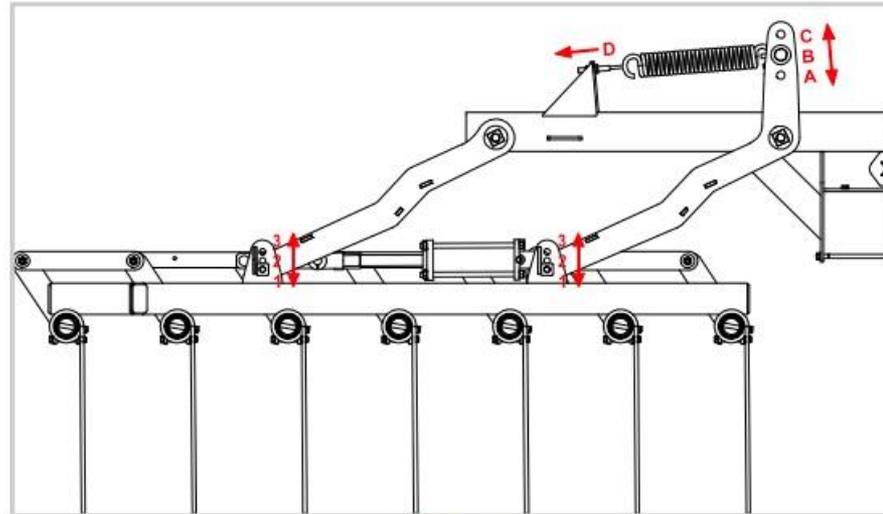


FIGURE 12

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.

General

- Repack the wheel hubs after the first 500 kilometres of travel ; then yearly thereafter.
- Visually inspect the wheel bolts for tightness each day. Torque to 110 ft lbs. (149 Nm) after the first few hours of operation and frequently thereafter.
- Ensure the tires are inflated to the correct pressure:
12.5L x 15 (Wings): 90 psi
16.5 x 16.1 (Center Frame): 35 psi

Refer to the Grease Location diagrams for grease fitting locations.

Every 8 Hours (Daily)

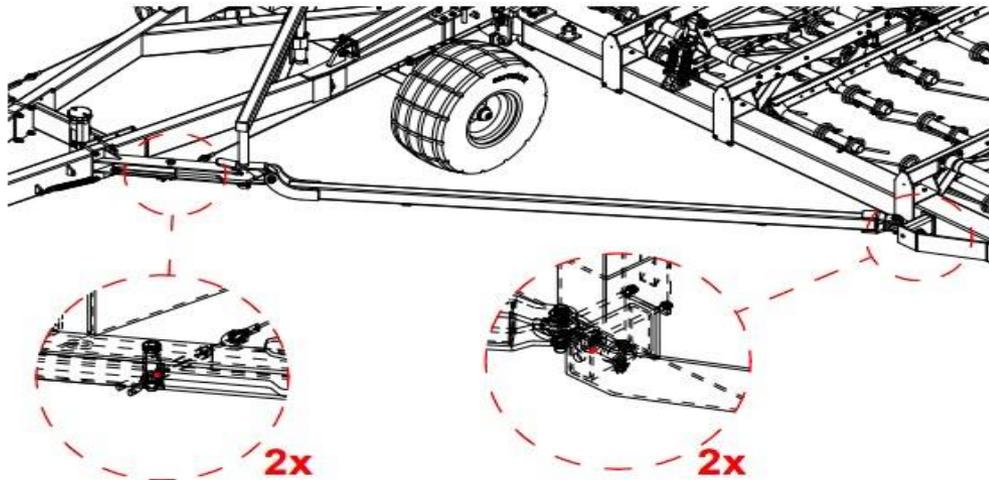
- Grease all pins and knuckles. (See decals locations)

Every 100 Hours (Monthly)

- Visually inspect hydraulic hoses & fittings for leaks or damage.

Annually

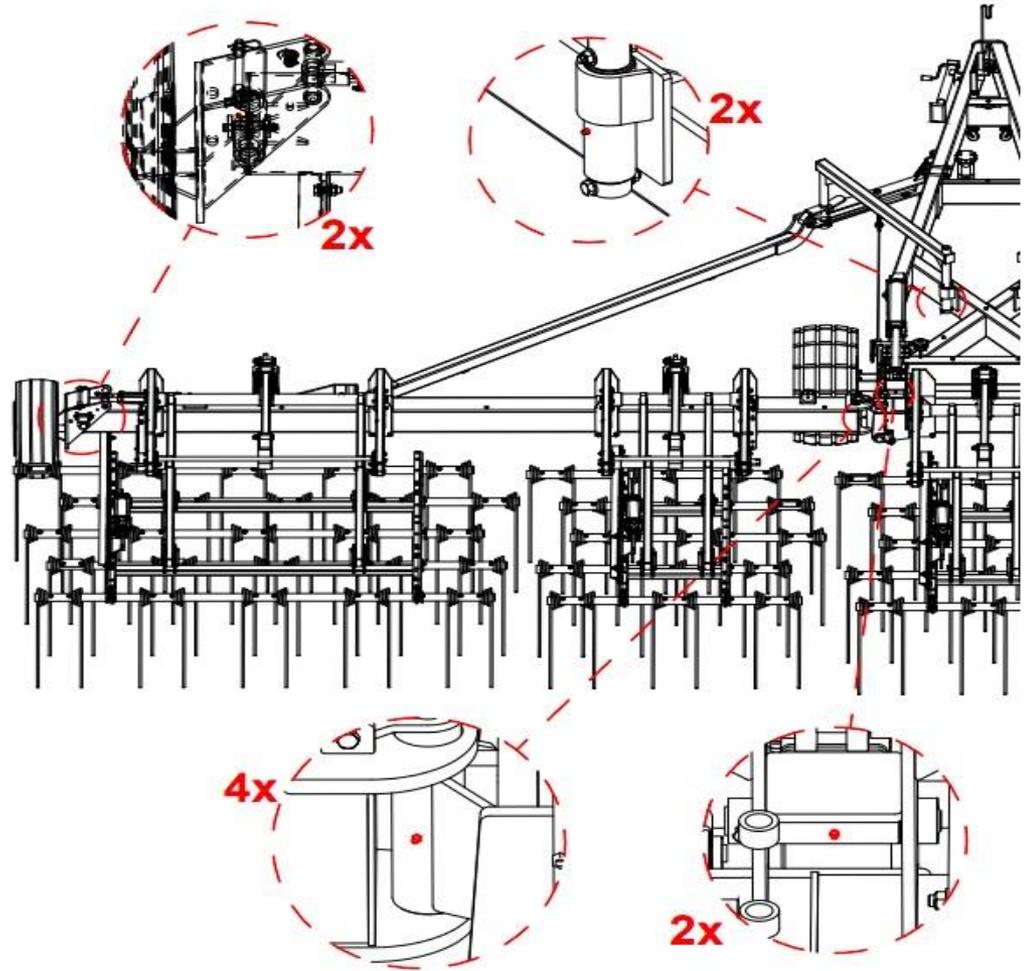
- Inspect wheel bearings / hubs for tightness and grease.
- Check wheel bolts for tightness and re-torque.
- Visually inspect unit for loose, worn or damaged components.



Lubrication - Continued

Grease Locations

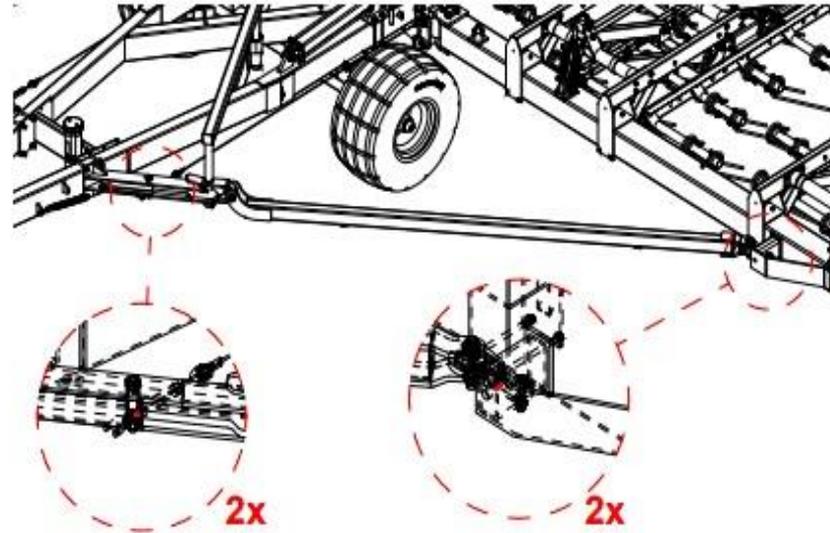
Grease should be applied to both sides of the machine.



Maintenance

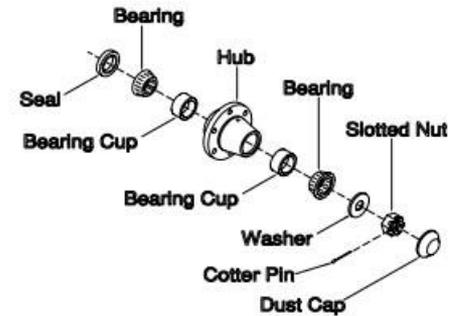
Grease Locations - Continued

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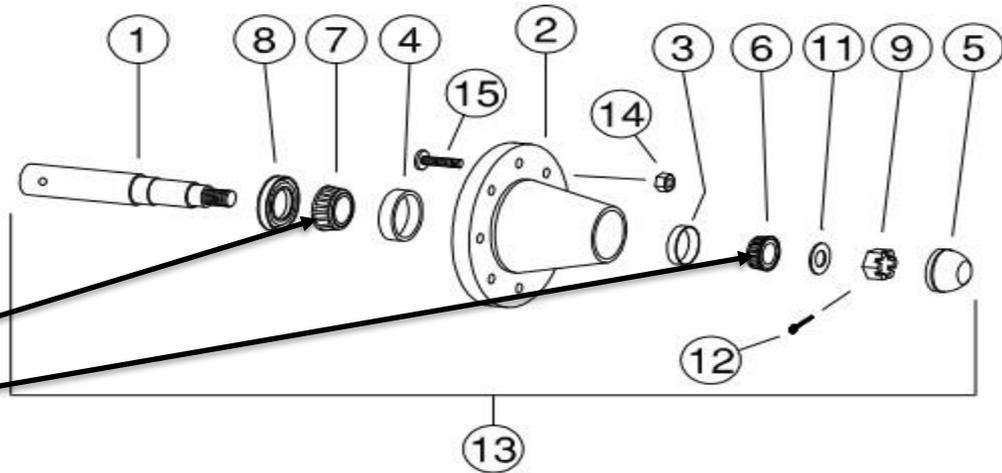


Wheel Bearings

- Lower the Heavy Harrow fully.
- Shut tractor off and remove key.
- Block wheel on tractor.
- Raise the Heavy Harrow wheels enough to clear the 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.

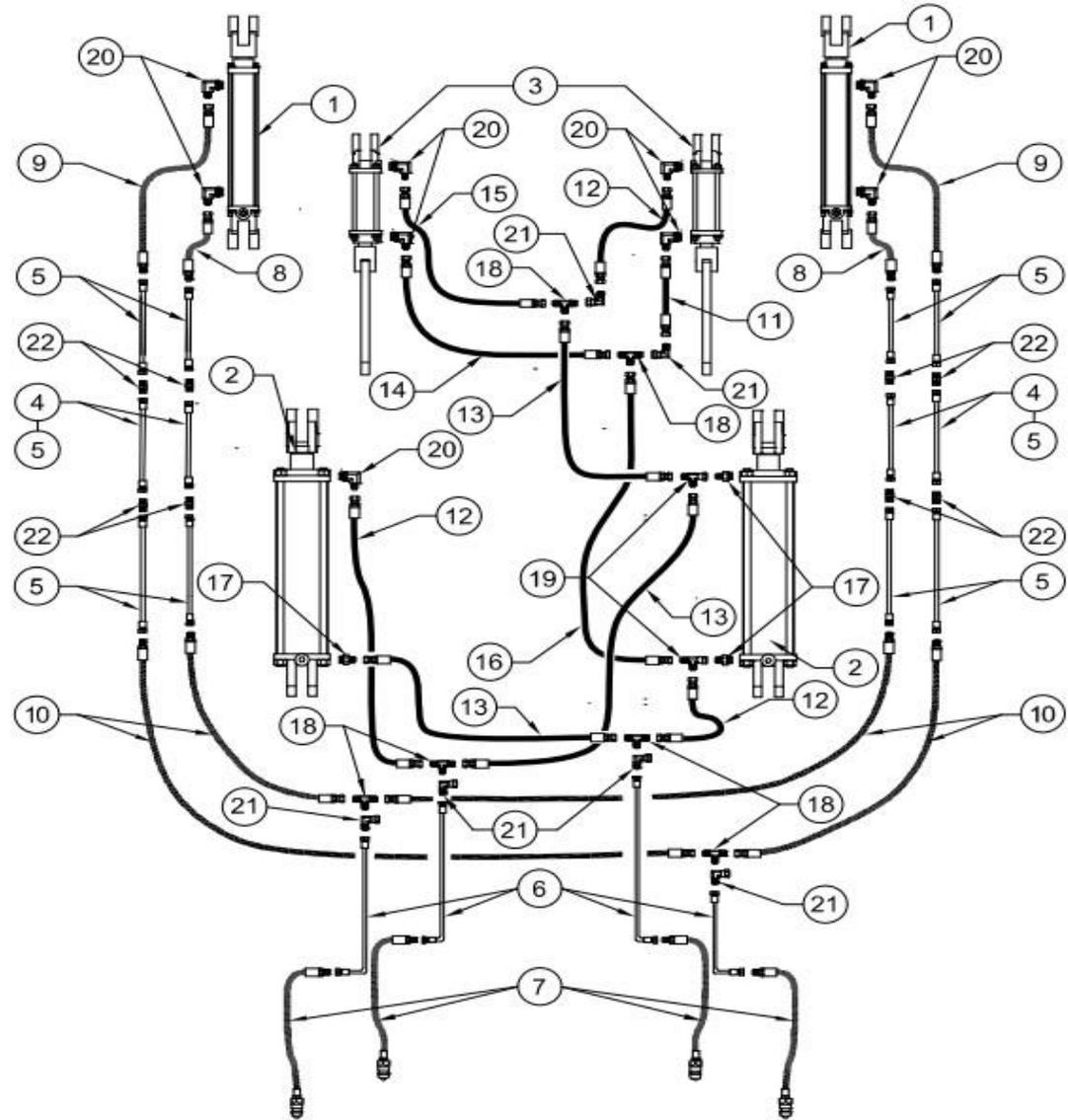


Hub and Spindle



Pack bearing with
GREASE when replacing
a bearing

Item	Part No.	Description
1	203-6044	812 Spindle, Dia 2-1/2" x 11-3/4" Long
2	200-6011	812 Hub (Complete)
3	201-6016	Outer Cup LM2720
4	201-6017	Inner Cup 3720
5	202-6013	DC 17 Dust Cap
6	290-6013	Outer Bearing, 2790
7	290-6014	Inner Bearing, 3780
8	295-6016	SE 17 Seal
9	534-7816	1" Castle Nut, NF, Gr.5, Black
11	554-5303	1" Spindle Washer, Black
12	556-0614	3/16" x 1-3/4" Cotter Pin, Pltd.
13	120-1246	812 Hub & Spindle Assembly
14	543-5563	9/16" Wheel Nut, UNF
15	543-5564	9/16" Wheel Stud



Recommended Hydraulic Connections:
Red - Remote 1 - Tine angle adjust
Yellow - Remote 2 - Wing lift/lower
Green - Remote 3 - Wing wheel pivot



OPERATOR'S MANUAL

**Always go to your Morris Equipment
Operator's Manual for operation and
maintenance information.
Part Manual at the back of the
Operators Manual!**

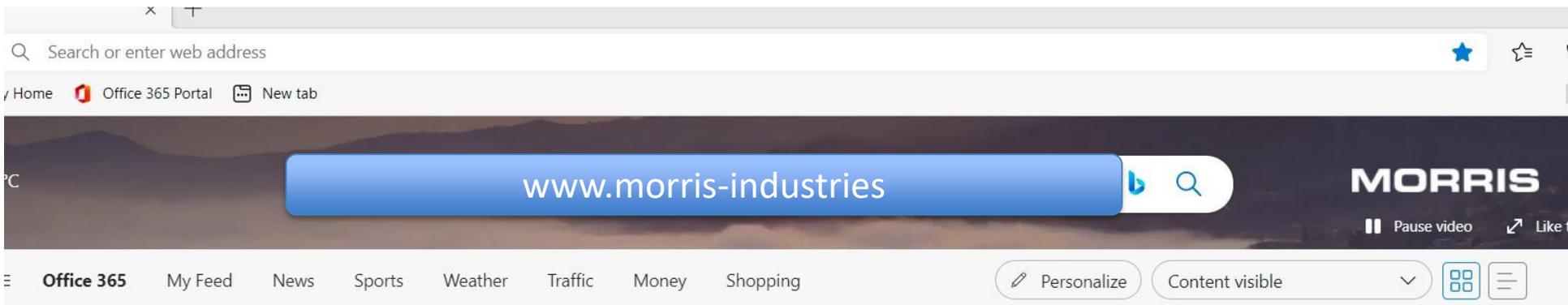
www.morris-industries.com
All Manuals operator's and parts are
on the Morris Equipment Web Site

**RUSTLER
Heavy Harrow**

H72503-00

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Service Support

When you have an emergency during seeding you need help right away. Your Morris dealer is recognized as being the local Morris expert and can help you with the technical expertise to solve your problems or parts to get you back running in the field.

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- Packer/Harrow Bars
- Other Products

Air Carts

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AGRONOMIC PERFORMANCE

The Rustler delivers superior field finish and uniform crop residue dispersal based on three key design elements. (1) The Rustler follows the contour of the land with a parallel linkage design featuring 14 inches of travel. Each harrow section moves independently of the harrow frame and down force is applied uniformly at the 4 linkage points of each harrow section. (2) Consistent harrow - ground contact occurs by transferring the weight of the over-built wing booms and main frame to the harrow tines via the hydraulic tine angle adjustment. (3) Uniform crop residue spreading is achieved by the outstanding 'harrow action' of the 9/16" diameter x 28" long harrow tines that bust-up and uniformly spread crop residues.

MORRIS Heavy Harrow

EASE OF USE

- 1. AUTO FOLD**
The auto-fold system, featuring Hydraulic rear pivoting wheels, makes folding in and out of transport position easy from the tractor cab.
- 2. AUTO LOCK**
Auto-lock draft arms. This cable-free harrow design with auto-lock feature is safe and secure in field position.
- 3. HYDRAULIC TINE**
Hydraulic tine angle adjustment can be adjusted on-the-go from the tractor cab (40 - 85° range). This feature allows the operator to optimize harrow performance across a wide range of field conditions.



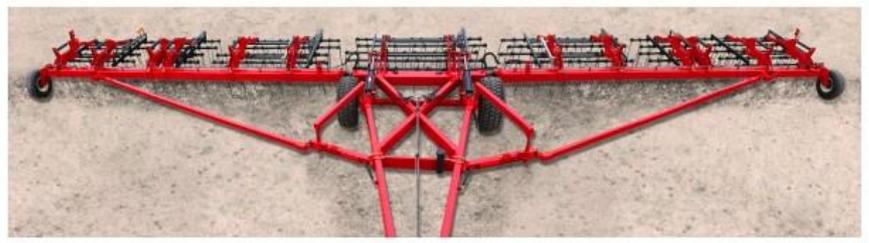
DESIGNED FOR DURABILITY



HARROW TINES
The 4" chromium carbide tablets on the bottom of each harrow tine is a standard feature of the Rustler harrow.



FLEXIBLE KNUCKLE
Provides a strong, ground contouring connection between the main frame and wings.



HEAVY HARROW FRAME
The Rustler harrow has an over-built frame featuring 8" x 8" HSS, 3/8" wall wing booms and an unique X-brace main frame.