MORRIS

OPERATOR'S MANUAL

M1000
Press Drill

D65158-00

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Section 1: Safety

Section Contents

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.

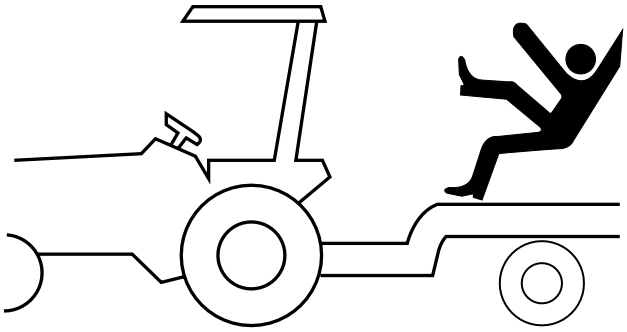
The words **Important** and **Note** are not related to personal safety but are used to give additional information and tips for operating or servicing this equipment.

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.

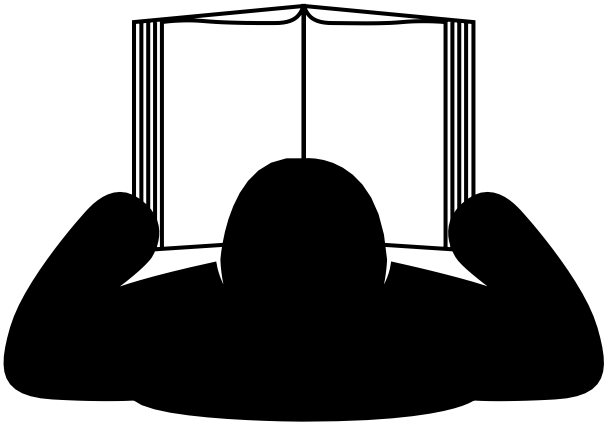
General Operation

- **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.
- **Keep all shields in place**, replace them if removed for service work.



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.



Chemicals

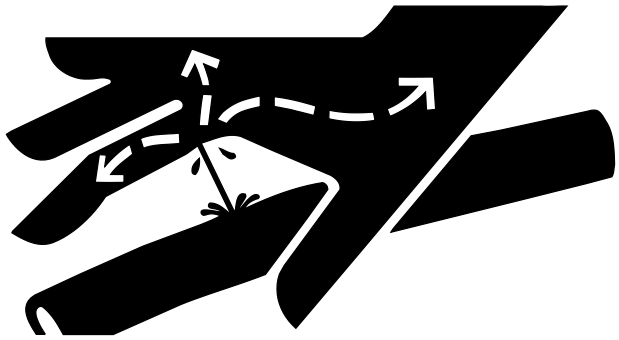
- **Use extreme care** when cleaning, filling or making adjustments.
- **Always read** granular chemical or treated seed manufacturer's warning labels carefully and remember them.
- Wear close fitting clothing and appropriate personal protective equipment for the job as specified by the chemical and/or 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.

Transporting

- **Be aware** of the height, length and width of implement. Make turns carefully and be aware of obstacles and overhead electrical lines.
- Always travel at a safe speed. Do Not Exceed 20 mph (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 hitch of the implement.
- 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.



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

⚠ 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.**

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⚠ WARNING

Keep off while machine is moving or mechanism is running.

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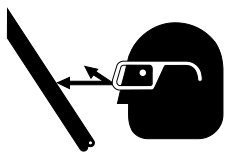

⚠ WARNING

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.**

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

Notes

Section 2: Specifications

Section Contents

Specifications

M1000 PRESS DRILL
Specifications and Options

Model		M1000
Depth		13 ft (3.962 m)
Height		5 ft 2 in (1.575 m)
Weight - Empty		4250 lbs (1928 kg)
Working Width	- One Drlll	10 ft (3.048 m)
Transport Width	- One Drlll	10 ft (3.048 m)
	- Two & Three Drills	15 ft (4.572 m)
	- Four, Five & Six Drills	17 ft (5.182 m)
End Ways Transport		Optional
Product Box Capacity	- Seed	18.4 bu (669 litres)
	- Fertlllzer	990 lbs (449 kg)
	- Total Product Capacity	31.8 bu (1157 litres)
Number of Rows		2
Number of Openers		20
Opener Spacing On Same Row		12 in (305 mm)
Opener Rank Offset		6 in (152 mm)
Opener Size		Disc. 0.95 x 13 7/8 OD (24 mm x 352 mm OD)
Opener Spacing		6 in (152 mm)
Packer Wheel	- Steel	2” x 23” Standard (50.8 mm x 584 mm)
	- Weight Steel	38 lbs (17.2 kg)
Metering System		Spiral Adjustable Flute
Metering Drive		Sprocket Drive Transmissions 3 Speed Ranges 7 standard settings per Range Up to 30 optional settings per Range
Hydraulic Depth Control Cylinder		Standard
Castor Wheel	- Single	9.5L x 15SL - 8 Ply Standard
	- Dual	9.5L x 15SL- 8 Ply Optional
Acreage Meter		Optional
Hydraulic Wheel Markers		Optional
Multiple Hitches 10’ (3.05m) to 60’ (18.30m)		Optional

Section 3: Checklist

Section Contents

Checklist

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 D65160

Checklist

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: _____

General

____Check wheel bolts for tightness.

____Check hydraulic hose connections

____Check all hydraulic hose positioning.

____Turn feed shafts by hand to check for binding.

Lubrication - Grease

____Castor Wheel Pivot (1 Per Machine)

____Castor Wheel Hub

____Transport Wheel Assembly (4 Nipples per Assembly)

____Transport Wheel Hubs

Tire Pressure

____See Tire Chart in Maintenance, Section 6.

Openers

____Check level and proper tensioning.

____Check that discs turn freely.

____Check scrapers for alignment.

Packer Wheel Assembly

____Check torque on nut (must be 450 ft. lbs.)

Drive Chains

____Check alignment and tension.

Transport

____Depth control Pins in transport position.

____Pin transport wheels.

____Pin Markers (if equipped).

Notes

Section 4: Introduction

Section Contents

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 M1000 Press Drill.

To protect your investment, study your manual before starting or operating in the field. Learn how to operate and service your M1000 Press Drill correctly, failure to do so could result in personal injury or equipment damage.

If you should find that you require information not covered in this manual, contact your local MORRIS Dealer. The Dealer will be glad to answer any questions that may arise regarding the operation of your MORRIS M1000 Press Drill.

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

Occasionally, your M1000 Press Drill may require replacement parts. Your Dealer will be able to supply you with the necessary replacement parts required. If the Dealer does not have the necessary part, the MORRIS Factory will supply the Dealer with it promptly.

Your MORRIS M1000 Press Drill is designed to give satisfaction even under difficult conditions. A small amount of time and effort spent in protecting it against rust, wear and replacing worn parts will increase the life and trade-in value.

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

Section 5: Operation

Section Contents

CAUTION

BE ALERT

SAFETY FIRST

REFER TO SECTION 1 AND REVIEW ALL SAFETY RECOMMENDATIONS.

Application

The Morris M1000 is a double disc press drill seeder preferred by farmers who seed into pre-worked, harrowed seedbeds.

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.

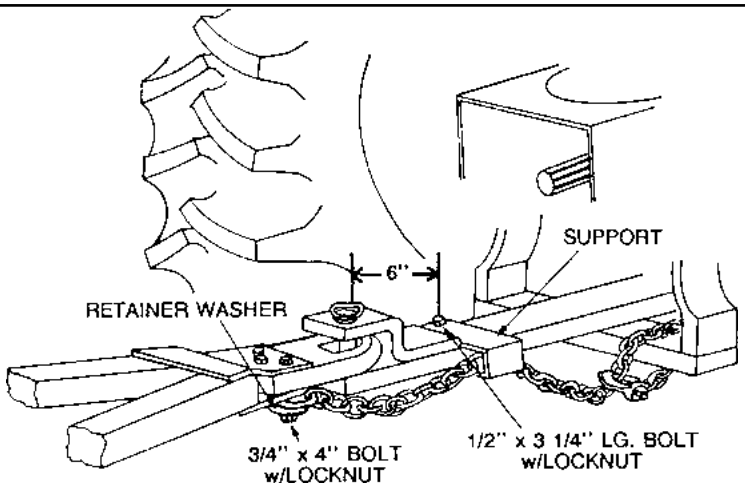
Warning

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

Caution

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



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

Hitching to Tractor

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

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

Caution

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

Unhitching from Tractor

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

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.
- Use lockup pins when transporting or storing drills.

Note: Depth control lockup pin must be removed from working position and used in transport position.

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

IMPORTANT:

Drills should not be transported with boxes more than 1/2 full or over 10 mph. (16 km/h).

Drill Preparation Before Seeding

1. Check for grain or debris from grain and fertilizer box.
2. Turn all feed shafts by hand. If they bind remove the obstruction.
3. Check all seed tubes for wear and obstructions.
4. Check drive chains and sprockets for wear. Replace worn parts.
5. Check chains and sprockets for proper alignment.
6. Properly lubricate drill. See Maintenance Section.
7. Check furrow openers to see if they turn freely. (M1000)
8. Inspect all disc scrapers for proper alignment. (M1000)
9. Inspect tires for wear and proper inflation.
10. Periodically check rockshaft pivot clamps are tightened to 75 ft.lbs. on 1/2" bolts- 260 ft.lbs. on 3/4" bolts.
11. Packer wheels - check gang shaft torque after 5 and 15 hours of use and periodically afterwards torque should be 450ft. lbs. See Maintenance Section for correct procedure.
12. Inspect wheel bearings.
13. Remove traces of oil on metering system components to reduce dust build up.
14. Check tire pressures.

Seed Treatment

CAUTION: When using seed that has been treated with any substance such as Copper Carbonate, Blue Stone (Copper Sulphate), Red Copper Oxide, etc., precaution should be taken to keep feeds clean and free in operation.

Important: Before each new seeding day, or after moving the drill a considerable distance, turn the feed shaft by hand. Check to see that all parts move freely and that the feed wheels are not binding.

Note: Seed treatment may create enough friction to retard the flow, reduce the quantity and require more power. Adding fine graphite ("Dixon's Microfine" or equivalent, one-half as much graphite as treating material) will counteract this friction.

Spraying treated seed with water at time of filling drill box (about 5 tablespoons per bushel) will also counteract friction, however, the use of graphite is preferred. Never spray with water until ready to sow, as it may swell the seed and cause greater difficulty.

Important: When stopping the drill for over an hour during sowing of treated seed, it is advisable before resuming operations to rotate the grain feed shaft to free any jammed seeds.

Clean the hopper and tubes thoroughly after seeding is finished, as many of these substances may cause corrosion of the metal, especially if moisture is present.

Rate Chart

M1000 RATE CHART					
RANGE #1 - 12T (LB/ACRE)					
RATE SPKT	**WHEAT**	**CANOLA**	**PEAS**	**46-0-0**	**11-52-0**
12T	135.1	21.2	482.6	337.8	386.1
15T	108.2	17.0	386.4	270.4	309.1
18T	90.2	14.2	322.0	225.4	257.6
24T	67.7	10.6	241.7	169.2	193.3
30T	54.1	8.5	193.2	135.2	154.5
36T	45.0	7.1	160.6	112.4	128.5
42T	38.7	6.1	138.2	96.7	110.6
45T	36.1	5.7	128.8	90.1	103.0

RANGE #2 - 24T (LB/ACRE)					
RATE SPKT	**WHEAT**	**CANOLA**	**PEAS**	**46-0-0**	**11-52-0**
12T	67.7	10.6	241.7	169.2	193.3
15T	54.1	8.5	193.2	135.2	154.5
18T	45.0	7.1	160.6	112.4	128.5
24T	33.8	5.3	120.8	84.6	96.7
30T	26.9	4.2	96.2	67.4	77.0
36T	22.5	3.5	80.3	56.2	64.2
42T	19.3	3.0	68.7	48.1	55.0
45T	18.0	2.8	64.4	45.1	51.5

RANGE #3 - 36T (LB/ACRE)					
RATE SPKT	**WHEAT**	**CANOLA**	**PEAS**	**46-0-0**	**11-52-0**
12T	45.0	7.1	160.9	112.4	128.5
15T	36.1	5.7	128.8	90.1	103.0
18T	30.0	4.7	107.3	75.0	85.7
24T	22.5	3.5	80.6	56.2	64.2
30T	18.0	2.8	64.4	45.1	51.5
36T	15.0	2.4	53.5	37.5	42.8
42T	12.8	2.0	46.1	31.9	36.5
45T	11.9	1.8	42.9	29.9	34.1

SETTING	WHEAT	CANOLA	PEAS	46-0-0	11-52-0
FLAP	5	2	7	2	4
SLIDER	3	3	3	3	3
WHEEL	COARSE	FINE	COARSE	COARSE	COARSE

Metering System

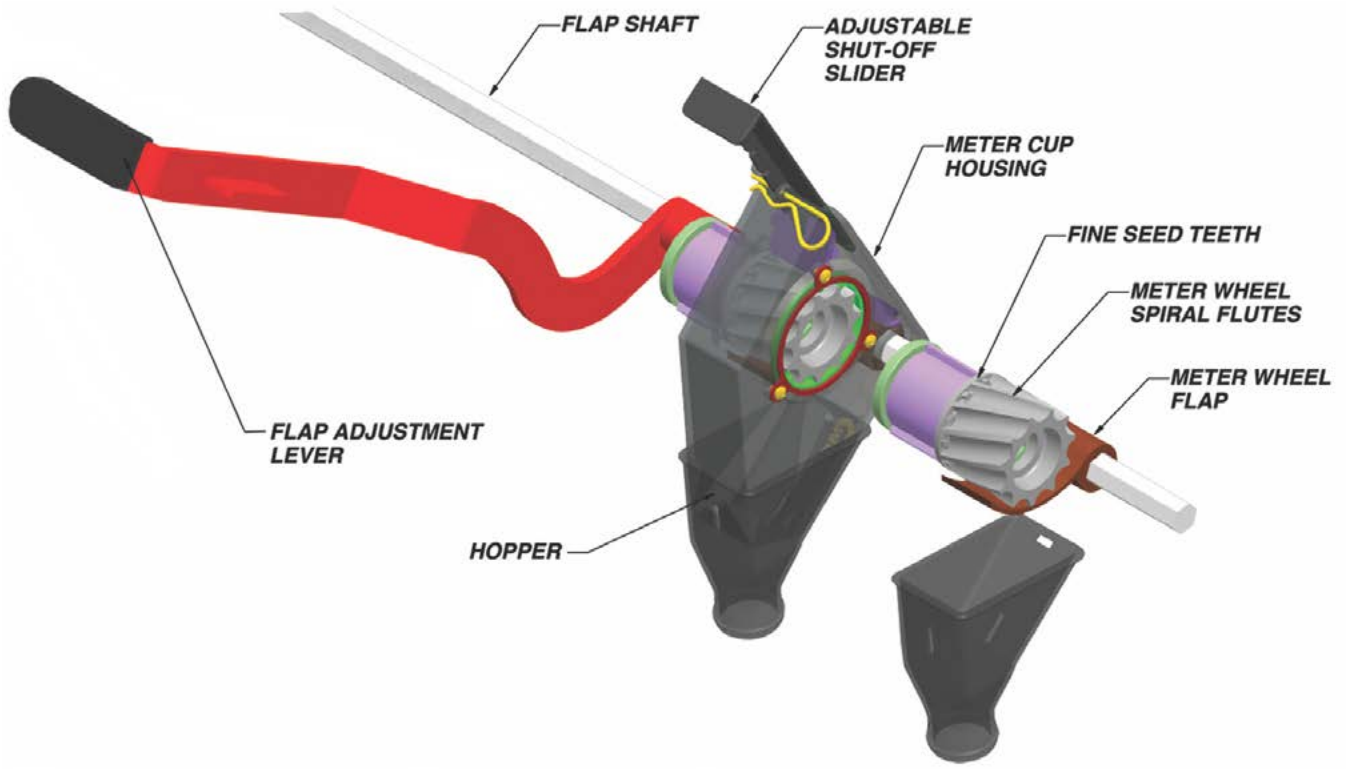
With Morris's Metering System, there is a corrosion - resistant, nylon feed cup for each run, and each cup features a two stage metering wheel. The small pegged portion of the wheel is for fine seeds, while the spiral fluted portion is for coarse grains and large seeds. The spiral fluted wheel ensures a steady flow of seed that eliminates pulsing at lower seeding rates.

Changing from coarse to fine is simply done by turning the metering shaft adjustment bolt to the desired setting. The single bolt adjustment moves all the metering wheels on the shaft at once.

Each seed and fertilizer cup features a shut-off to allow for varied row spacing and a collector cup that is easily removed for inspection or cleaning.

A wrap spring clutch drives the metering system and is protected by a sheer pin in the clutch.

NOTE: DO NOT leave fertilizer in box for an extended period of time (ie: overnight). Fertilizer may solidify and damage to the metering system could occur.



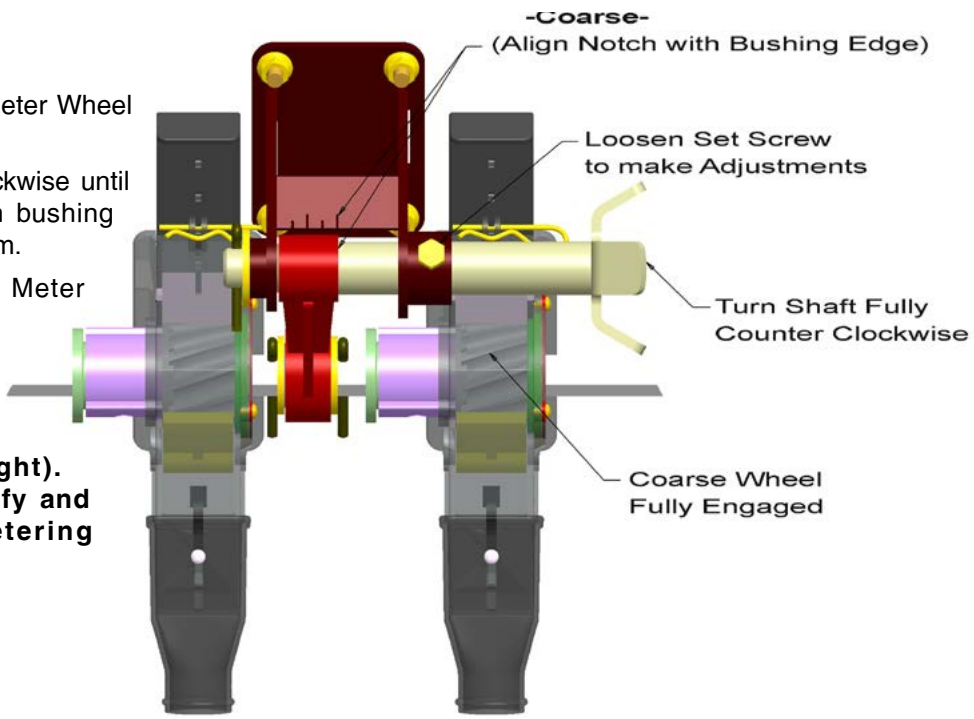
Metering System - Continued

Meter Wheel Position

Coarse Wheel Setting

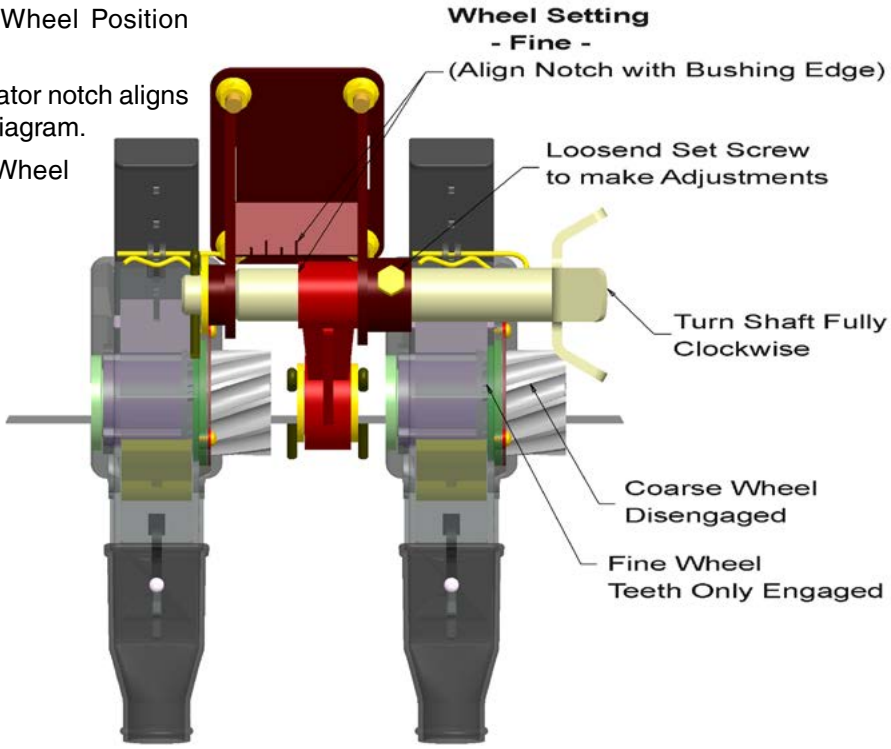
- Loosen set screw on the Meter Wheel Position Indicator.
- Turn shaft fully counter clockwise until indicator notch aligns with bushing edge as illustrated in diagram.
- Tighten set screw on the Meter Wheel Position Indicator.

Note: DO NOT leave fertilizer in box for an extended period of time (ie: overnight). Fertilizer may solidify and damage to the metering system could occur.



Fine Wheel Setting

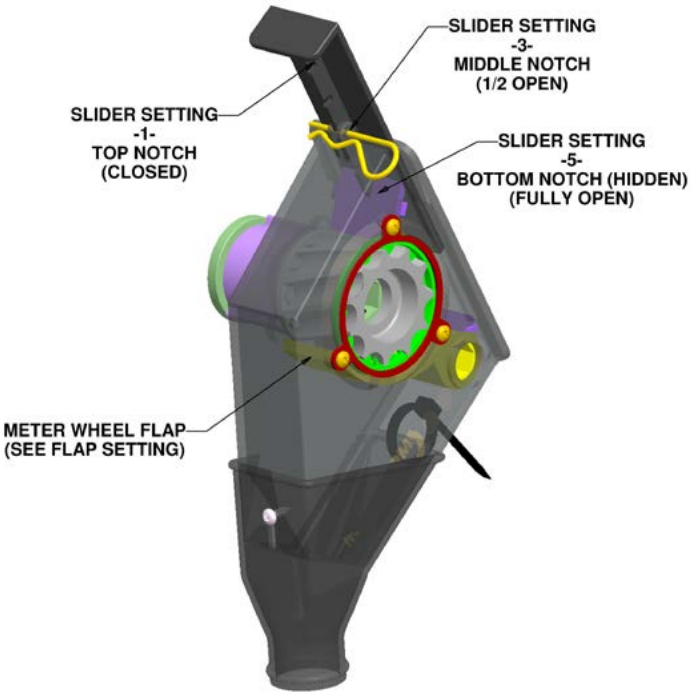
- Loosen set screw on the Meter Wheel Position Indicator.
- Turn shaft fully clockwise until indicator notch aligns with bushing edge as illustrated in diagram.
- Tighten set screw on the Meter Wheel Position Indicator.



Metering System - Continued

Shut-off Slide Setting

- Shut-off slides are set as indicated by Rate Chart.
- Slide can also be fully closed, completely shutting off all seed flow to metering wheels. By shutting off appropriate cups, Morris's M1000 can be used for row crop seeding.

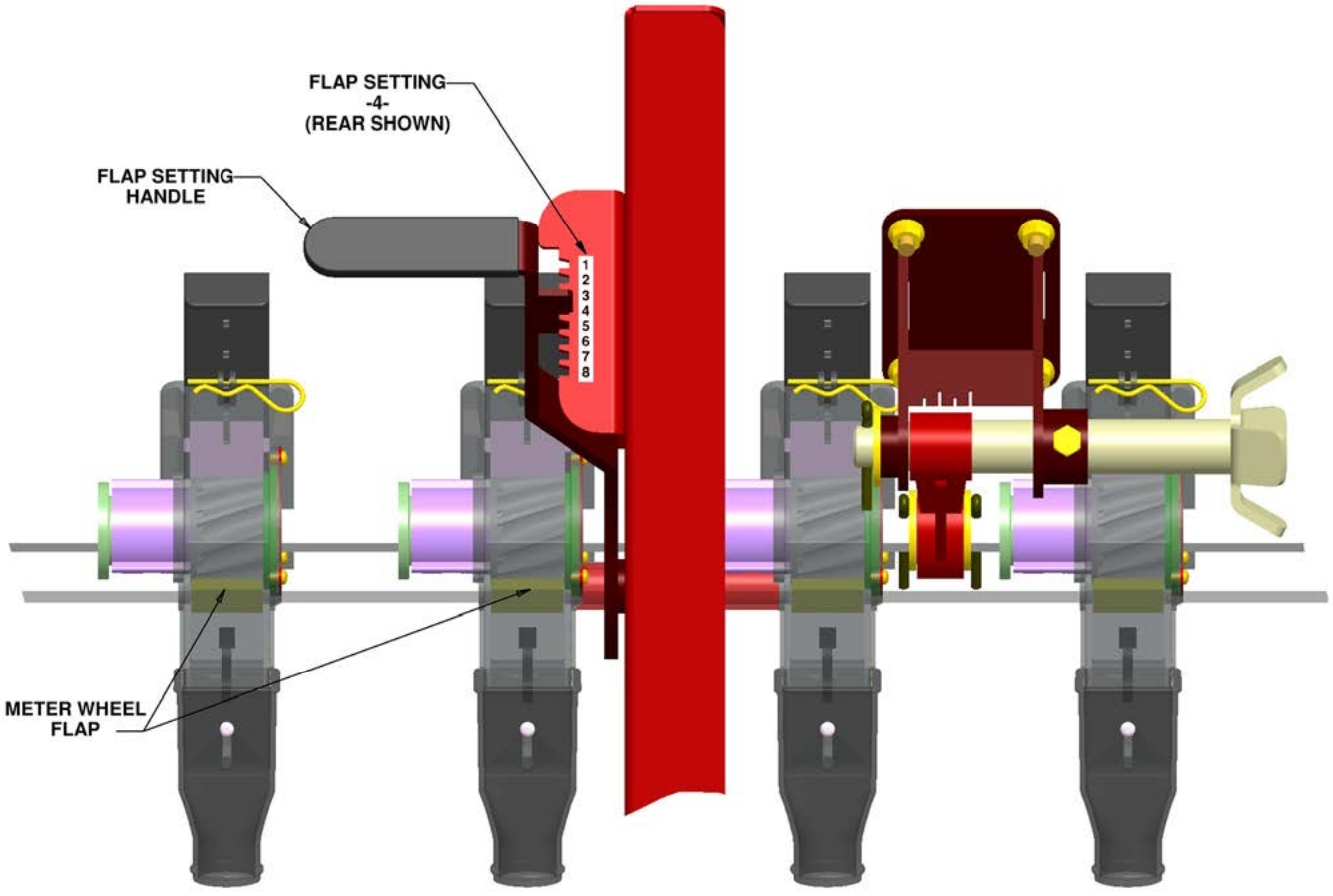


Flap Setting

A single adjustment lever controls an output flap located in each cup. These flaps ensure consistent seed flow and are adjusted to suit the size of seed and fertilizer being metered. Opening the flaps fully gives a quick, easy and convenient box clean out.

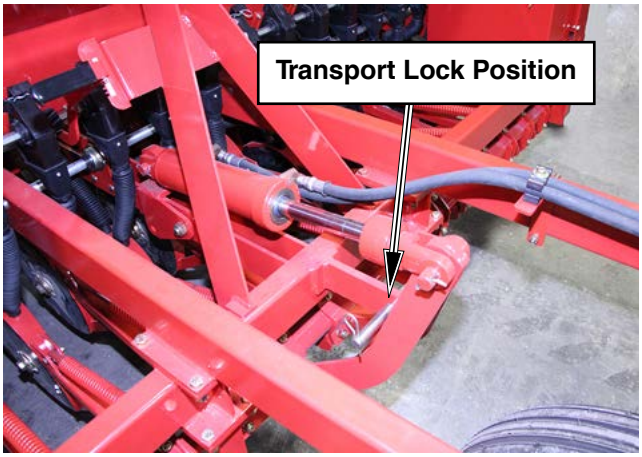
- The flap is set with a Lever as indicated by the Rate Chart for different sized material.
- To clean the drill, move adjusting lever till flap is fully open, allowing seed to run out freely.

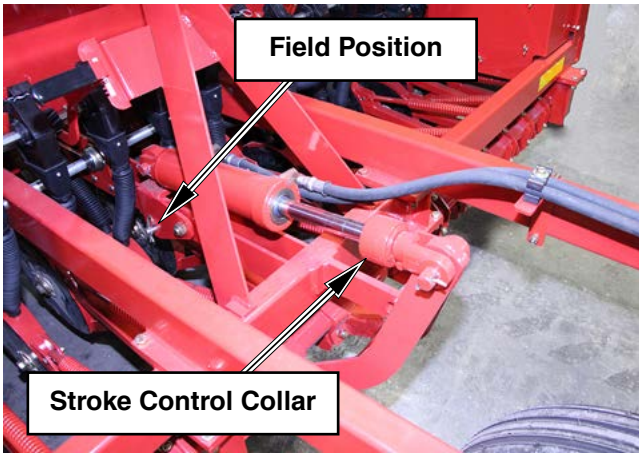
NOTE: Make sure flap lever is in correct position before filling box.



Depth Adjustment

- Lock pin must be removed from Transport Lock Position and inserted into the bottom hole of the Cylinder Safety lug, locking the butt end of the Cylinder to the Centre Frame 2 x 4 in order to activate the Rocker Shafts.
- The depth of seeding is controlled by a stroke control collar on the hydraulic cylinder.
- Turning the control collar clockwise reduces seeding depth while counterclockwise increases depth.
- For very shallow seeding, a depth control spacer S12317 may be required.





Acreage Meter

- Morris uses a tamperproofmeter which cannot be reset to zero.
- Record numbers on meter before you start on a particular field to determine acres seeded.
- Multiply reading by number of machines to get actual acreage.
- The acreage meter can be located on any drill of a multiple unit.

Transmission Settings

Two sprocket drive transmissions for seed and fertilizer are conveniently located on the front corners for easy access.

The simple quick change sprocket drives allows for 8 standard settings in each of the three speed ranges with an additional 23 optional settings available for each range.

Metering Rate Adjustment

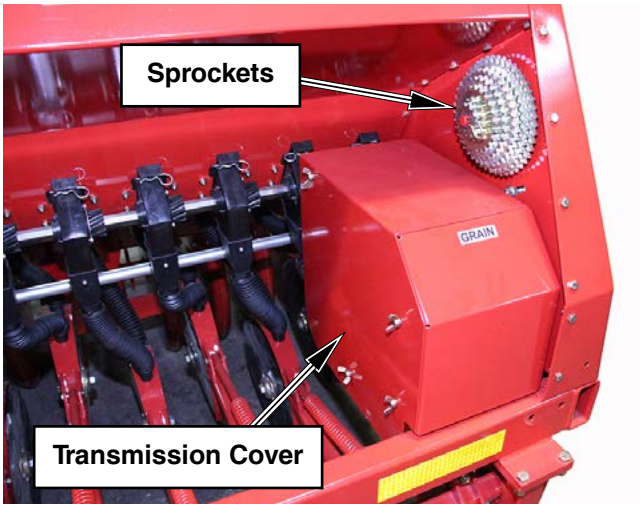
The metering rate adjustment for both boxes is done in the same manner. The rate varies with the speed of the metering wheels. A new rate is achieved by changing a sprocket on the Transmission.

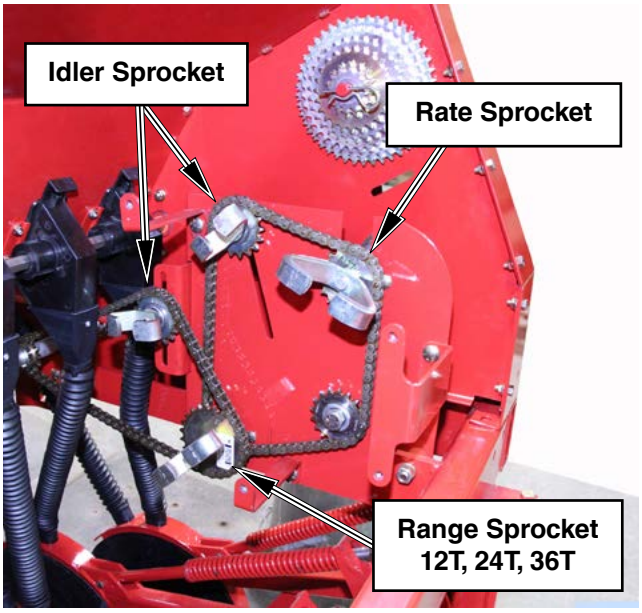
Refer to the rate charts for desired application rate and sprocket selection.

- Remove transmission cover.
- Loosen chain on transmission, by loosening the idler.
- Spin off wing nut and remove rate change sprocket.
- Install desired rate change sprocket and tighten wing nut.
- Tighten chain by adjusting idler.

Note: Do not over tighten chain, just take slack out of chain.

- Secure transmission cover in place.





Rate Calibration (Seed or Fertilizer)

Metering rate may vary from the Rate Chart due to variations in seed size, density and seed treatment, if used. To determine exact application rate with various weight of material and sizes of seed, use the following procedure:

1. Raise disc openers.
2. Remove a hose or collector.
3. Place a container under the cup with the hose removed.
4. Remove metering chain from transmission not being tested.
5. Close off all other shut-off slides.
6. Use Feed Rate Chart to make all proper settings (rate sprocket, bottom flap, shut-off slide) on machine.
7. Carefully insert special crank (Part No. D-5080) - tum crank a few turns in clockwise direction until seed flows uniformly from all cups.
8. Empty container.

Collect a new sample using the following method:

9.a Turn crank 27 times in clockwise direction or drive 215.2 feet for 6" spacing. (M1000)

9.b Turn crank 13 1/2 times in clockwise direction or drive 107.58 feet for 12" spacing. (M1000).

10. Check the rate using the MORRIS Rate Meter supplied with the unit.

11. Adjust Drive Box setting as required and repeat above steps.

When a Rate Meter is not available the following procedure may be used to determine the exact metering rate.

1. Raise disc openers.
2. Remove hoses or collectors from half the machine.
3. Place a container under the cups with the hoses removed.
4. Repeat steps 4, 5, 6, 7 and 8 above.
5. Turn crank 56 times in a clockwise direction. This equals 1/10 of an acre.
6. Weigh sample and double weight to arrive at weight for whole machine. Multiply by 10 to arrive at lbs. per acre.
7. Adjust Drive Box setting as required and repeat above steps until desired rate is achieved.

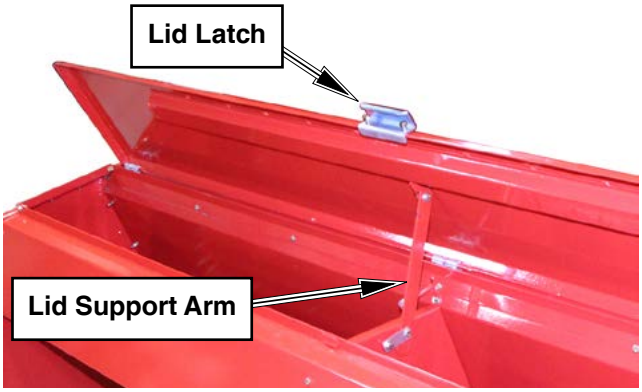
Metric Calibration (use same procedure to arrive at Kg per Hectare)

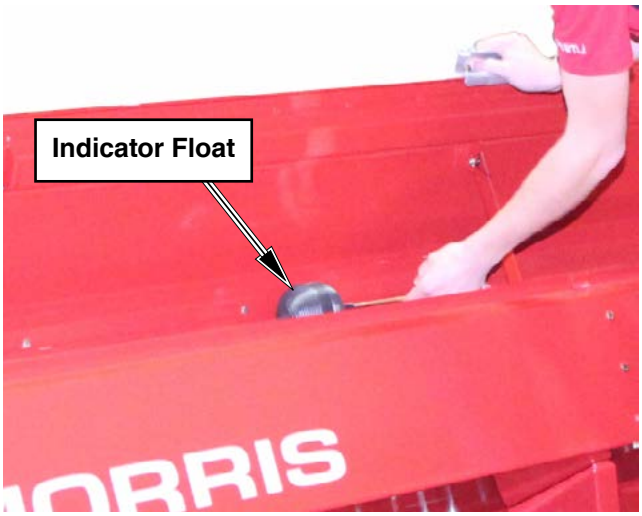
- 136.3 revolutions of crank equals 1/10 hectares - 1 Kilogram (Kg) equals 2.2 lbs.
- 1 lb equals .45 Kg

(Note: 1 Acre = .404 hectares 1 Hectare = 2.47 acres)

Filling Hopper Box

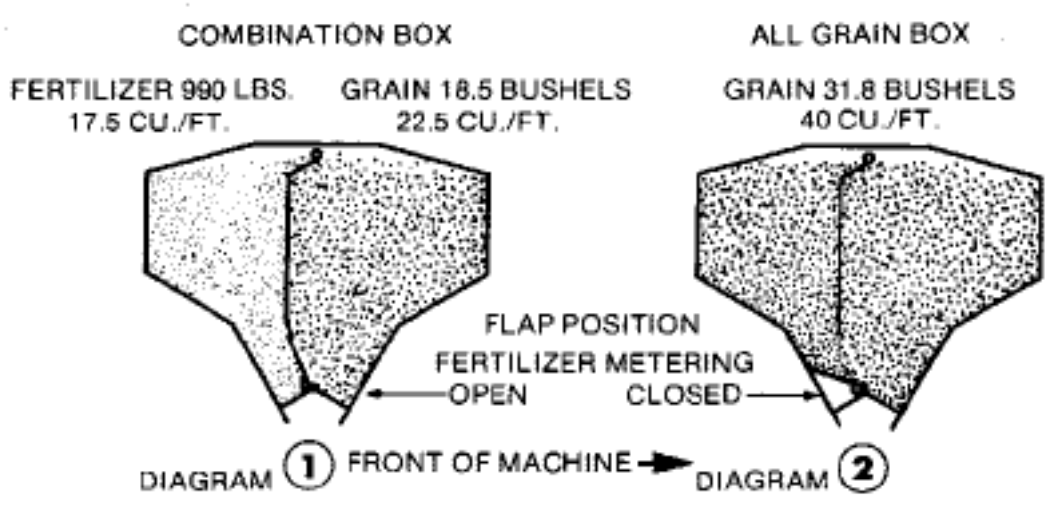
- Raise lid by latch and lock lid support arm.
- Lift level indicator float before filling box.
- After filling tank lower lid by unlocking lid support arm.
- Make sure lid latch is secure.





All Grain Conversion

- To change from Grain-Fertilizer Combination to All Grain use, flap can be let down as shown in the following diagrams.



Notes

Section 6: Maintenance

Section Contents

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
9.5L x 15SL	6 ply rating	32 P.S.I.
9.5L x 15FI	D	60 P.S.I.

⚠ Caution

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

Wheel Bolt Torque

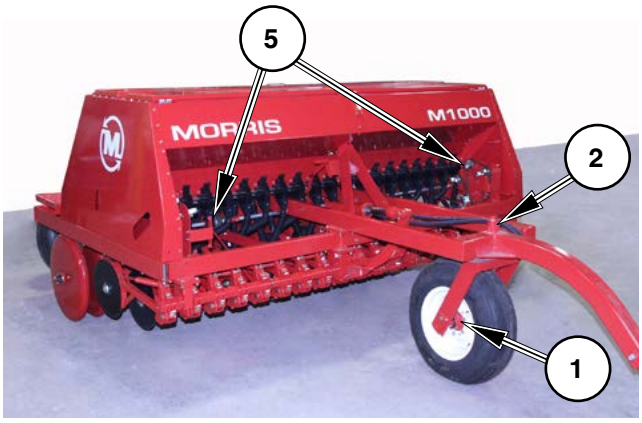
SIZE	Torque
9/16	110 lb. ft. (149 Nm)

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. Wheel Hubs

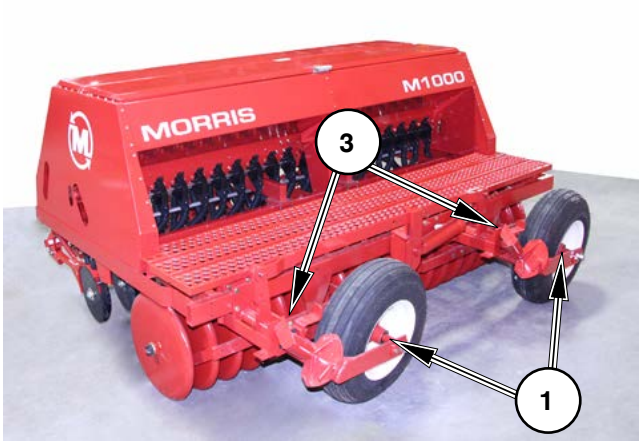
- Grease every 500 hours or seasonally, whichever occurs first.

2. Front Castor Pivot

- Grease every 50 hours. (Weekly)

3. Transport Assembly

- Grease every 50 hours. (Weekly)
- 8 nipples per machine



4. Packer Bearings

- Grease every 50 hours. (Weekly)
- Two bearings per packer gang.

5. Chains

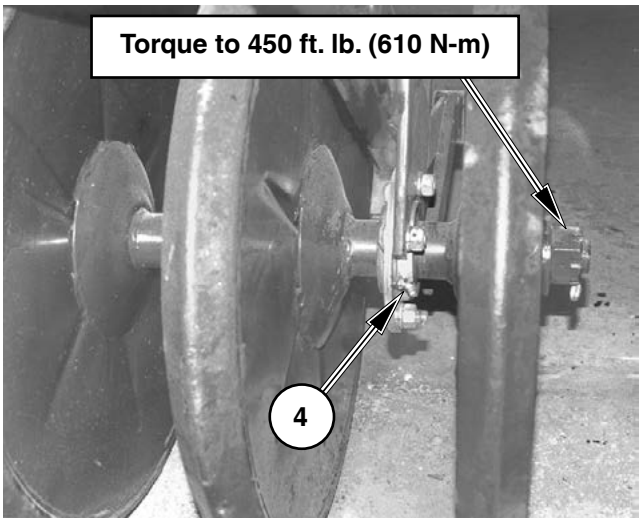
- Oil before seeding with SAE 30 oil.

6. Stroke Control Collars

- Clean and Grease threads at end of season.

Press Wheels

- Press wheels assembly is torqued to 450 ft. lbs. (610 N-m) at the factory.
- Check at 5 and 15 hours and periodically afterwards.
- Packer Torque Wrench is located on the front side of the main frame packer assembly.



Drive Chains

- Adjust idlers to keep chains tight.
- Chains should be removed and oiled for storage.
- Keep chain guards in place.

Important: Do not overtighten as premature wear will result, both to idler and chain.

Drive Clutch

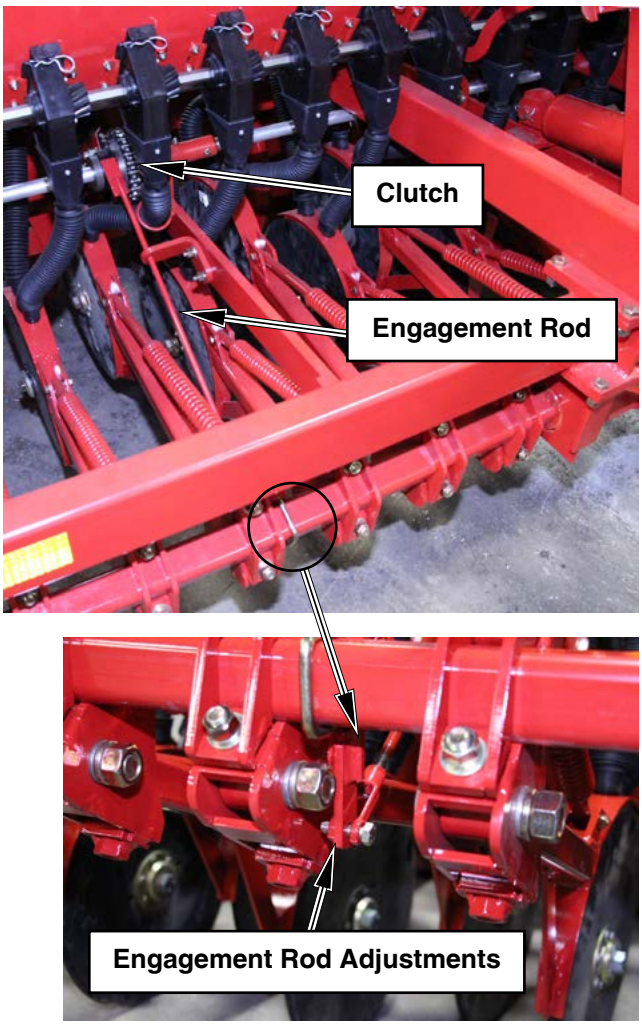
The drive system is protected with a shear pin which secures the clutch to the jackshaft. If the pin shears:

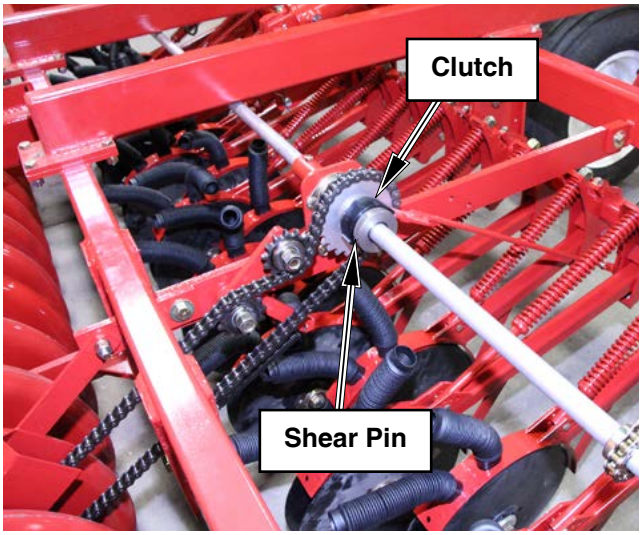
(a) Determine the cause and correct.

(b) Remove the remaining portion of the pin with a punch.

(c) Line up hole in the clutch with the dimple etched on the drive shaft to easily locate the shear pin hole in the shaft and replace the pin using only the correct Morris Part No. D-5055.

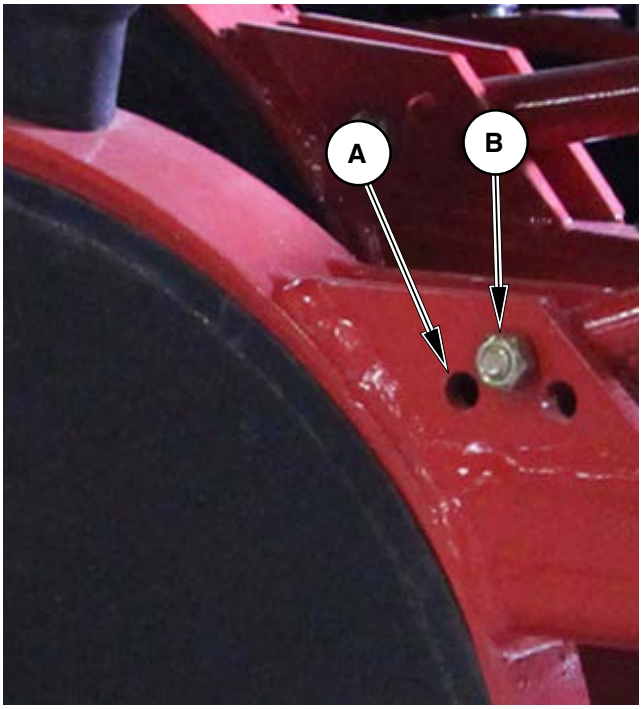
(d) The replaced pin should be driven flush with outside surface of the clutch.





Disc Openers

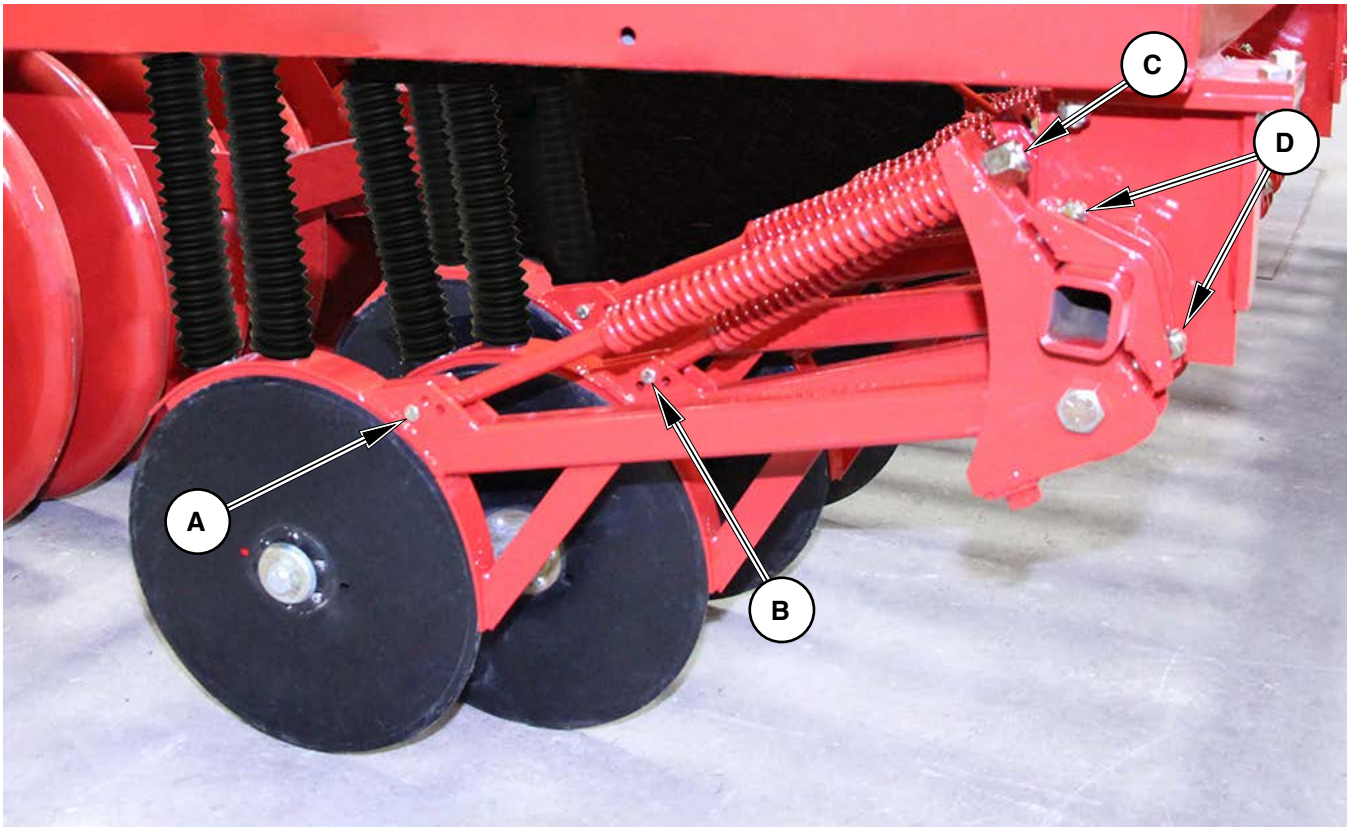
- Check that openers have been assembled as in photo. Fig 20
  - **LONG OPENERS** -rear hole "A"
  - **SHORT OPENERS** - center hole "B"
- Check all disc scrapers for wear and replace as necessary.



Levelling Disc Openers

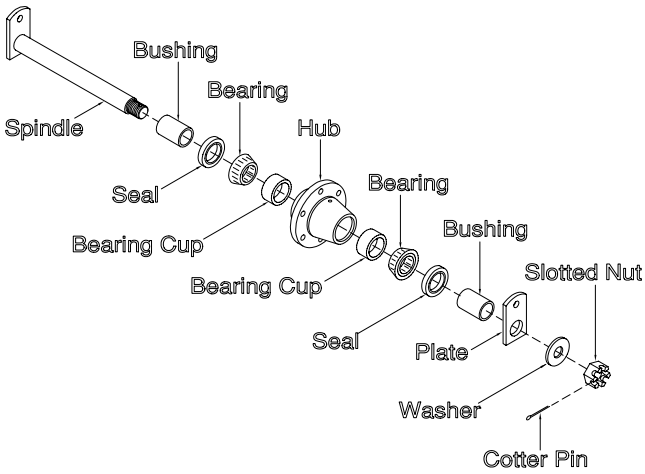
- Make sure rocker shaft clamps "D" are tight before proceeding. Torque 1 1/2” bolts to 75 ft/lbs.
- Place machine on level surface.
- Raise rear of drill slightly by pulling packer wheel up on 2” or 3” plank or similar material.
- Lower discs.
- Adjust 3/4” nut "C" until all openers just touch surface.
- Lift discs completely.
- Lower discs again to double check.
- Periodically tighten 3/4” nut to 260 ft/lbs.

NOTE: Openers in TRACTOR TRACKS can be set deeper by moving the spring rod to a forward hole.



Wheel Bearings

- Lower the Press Drill and raise the transport wheels enough to clear the surface.
- Shut tractor off and remove key.
- Block wheels on tractor.
- Securely block implement frame.
- Remove wheel and hub assembly from castor fork.
- Remove wheel from hub.
- Remove the cotter pin, slotted nut, washer, plate, and bushing.
- Be careful when pulling the hub off so as not to drop the outer bearing.
- Clean spindle and bearing components with solvent.
- Inspect for wear on bearings, spindle and cups, replace if required.
- Do not reuse old seals. Use only new seals when reassembling.
- 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, bushing, plate, 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. Then bend up around nut.



Important

Check wheel bearings for play every 5,000 acres (2,000 hectares) or yearly, which ever occurs first. Tighten as required.

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 Teflon Tape 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.

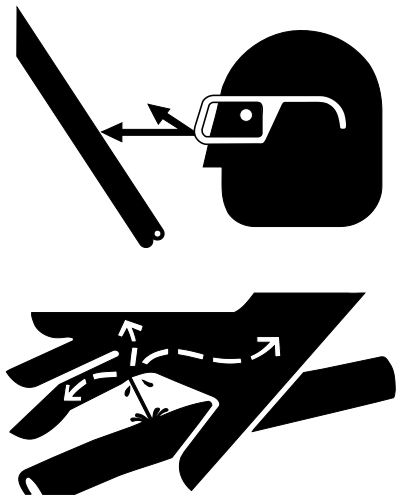
MORRIS Industries Ltd.

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.**

Notes

Section 7: Storage

Section Contents

Preparing for Storage

- To insure longer life and satisfactory operation, store the M1000 Press Drill 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 Maintenance Section).
- Tighten all bolts to proper specifications (Refer to Maintenance Section).
- Raise main frame, block up and relieve weight from the tires.
- Relieve pressure from hydraulic system.
- Cover tires with canvas to protect them from the elements when stored outside.
- Coat exposed cylinder shafts **(Refer to Cylinder Shaft Protection).**
- Paint any surfaces that have become worn.
- To prevent corrosion and damage by rodents, clean the grain and fertilizer boxes and metering systems thoroughly and wash with a mild soapy water solution. Rinse with water hose and dry thoroughly.
- Avoid lubricant contact with grain and fertilizer tubes.
- Coat discs with grease or spray with heavy oil.

Note: DO NOT oil or grease metering cups.

⚠ Warning

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

MORRIS PAINT	
Part Number	**Description**
W-4647	Red MORRIS Spray Can
N31087	White MORRIS Spray Can
Z-10	Red MORRIS Paint/Litre Can

Cylinder Shaft Protection

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

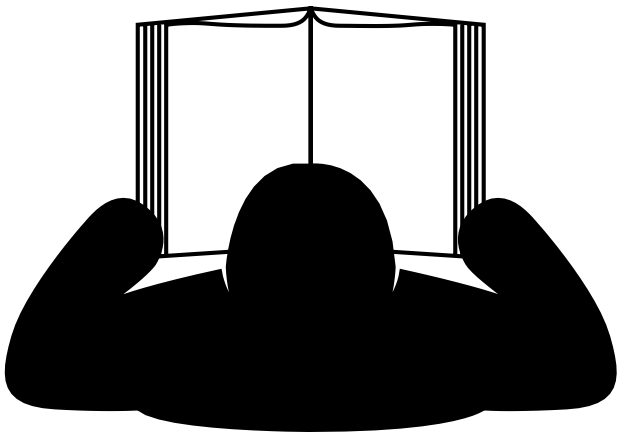
- Position the equipment as it will be stored, and identify all the exposed portions of the chrome plated shafts.
- Clean dirt and dust from the exposed portions of the shafting using a dry cloth or a cloth which has been dampened with an appropriate solvent.
- Prepare a mixture of 60% oil-based rust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

⚠ Caution

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

Removing From Storage

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



Notes

Section 8: Troubleshooting

Section Contents

Troubleshooting

Problem	Cause	Correction
Machine stops seeding	Broken chain	Check chains and repair
	Clutch Shear Pin	Replace Shear Pin if broken
	Clutch not engaged	Adjust clutch rod so clutch engages properly.
Uneven seeding through cups	Flap setting	See operation for setting clearences.
	Flap spring	Replace if rusted or broken.
	Broken Flap	Replace.
Calibration chart in-correct	Drive Box Timing	Check drive box timing.
	Seed Density.	Self calibration may be necessary due to specific weight, size of seed, moisture content.
Excessive tire wobble on transport castors.	Lock Pins	Pin castor wheel.
	Tire Pressure	Check tire pressure.
	Excessive Speed	Adhere to recommended safe speed.
Grain box Emptying	Flap setting.	Be sure flap levers are secure and in proper position.
	Clutch not engaged.	Adjust clutch rod so clutch engages properly.
Hydraulics will not lower.	Transport pins.	Remove transport pins
Will not raise	Tractor hydraulic	Check for adequate hydraulic pressure.
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.

www.morris-industries.com

Corporate Head Office
and Training Centre:

2131 Airport Drive
Saskatoon, Saskatchewan
S7L 7E1 Canada
Phone: 306-933-8585
Fax: 306-933-8626

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