MORRIS

Operator's Manual

M-10
Press Drill

Part Number D-6029

M-10 PRESS DRILL PRE-DELIVERY CHECK SHEET
PLEASE FOLLOW CAREFULLY

PLEASE PRINT

Model _____

Serial No. _____

Dealer _____

Town _____ Prov. (State) _____

Serviced By _____

BEFORE DELIVERING MACHINE — the following pre-service check list should be completed.

Use the OPERATORS MANUAL as a guide.

Lubrication

[✓]

GREASE

_____ 1. Castor Wheel Pivot (1 Per Machine)

_____ 2. Castor Wheel Hub.

_____ 3. Transport Wheel Assembly (4 Nipples per Assembly)

_____ 4. Transport Wheel Hubs.

TIRE PRESSURE

_____ Single Castor Wheel — 9.5L x 14 6 Ply Rib Implement — 32 Lbs. (221 kPa)

_____ Dual and Transport Wheel — 7.60 x 15 6 Ply Rib Implement — 40 Lbs. (276 kPa)

OPENERS

_____ Check level and proper tensioning

_____ Check that Openers turn freely.

_____ Check scrapers for alignment.

PACKER WHEEL ASSEMBLY

_____ Check torque on nut — should be 450 ft. lbs.

[✓]

OIL

_____ Fertilizer drive box. (Check through sight glass)

_____ Seed Drive Box. (Check through sight glass)

TRANSPORT

_____ Pins should be in transport locks for depth control.

_____ Pin transport wheels. (See appropriate section in Manual for transporting.)

DRIVE CHAINS

_____ Check alignment and tension.

GENERAL

_____ Check if assembled correctly.

_____ Check wheel bolts for tightness.

_____ Check hydraulic hose connections.

_____ Check all hydraulic hose positioning.

_____ Turn feed shafts by hand to check for binding.

_____ **The Operator's Manual was delivered to the owner and he has been instructed as to its contents.**

I HAVE READ THE INSTRUCTIONS AND AGREE TO LUBRICATE AND CARE FOR THE EQUIPMENT AS REQUESTED.

OWNER
OPERATOR _____

DATE _____

WARRANTY IS AFFECTED UNLESS CHECKSHEET IS COMPLETED AND SIGNED BY DEALER REPRESENTATIVE

NOTE: DO NOT REMOVE FROM BOOK

THIS PAGE IS NOT WARRANTY APPLICATION

Take Time to Take Care

IN THE OPERATION OF TRACTORS AND IMPLEMENTS

- Keep hands and feet away from all moving parts and wear close-fitting clothing for added safety.
- Shut off tractor engine and set parking brake before hitching and adjusting or lubricating machine.
- Secure hitch pin with retaining device to prevent accidental unhitching.
- Stand clear when raising or lowering machine.
- Lower double disk openers before lubricating drill.
- Block machine securely when making repairs. Never remove hoses or hose ends with machine elevated.
- Hydraulic oil escaping under pressure from a tiny leak can penetrate skin — Seek medical attention immediately. Use cardboard or wood to detect leaks — **NEVER** use your hands.
- Double check that all is clear before activating hydraulics.
- Check behind machine when backing.
- Do not allow anyone to ride or climb on machine when working or transporting.
- When transporting be aware of length and width of machine. Make turns carefully and be aware of obstacles.
- Do not transport in poor visability.
- When transporting machine, adhere to recommended safe speeds.
- When transporting be sure transport wheels are locked in proper position.
- The Slow Moving Vehicle (SMV) Emblem and Safety Reflectors must be secured to the machine in the proper locations to promote safe transportation of this implement.
- When filling the grain box or climbing on the drill, always use the foot boards.
- When using treated grain, avoid direct contact with seed.
- When using compressed air to clean the drill, wear safety glasses.
- Misuse or modification of this machine can cause mechanical breakdown, property damage and injury or death.

TAKE SAFETY SERIOUSLY — DON'T TAKE NEEDLESS CHANCES

UNIVERSAL SAFETY

FARM ACCIDENTS can be prevented with your help.

ULTIMATE SAFETY
DEPENDS ON THE CARE OF THE OPERATOR

TABLE OF CONTENTS

***NOTE:**

OPERATING AND MAINTENANCE TIPS ARE ON RED BORDERED PAGES FOR QUICK REFERENCE!

Various Important Information is Printed in Red Type.

NOTE:

After a new machine has been in the field for several hours, all bolts should be checked and retightened.

IMPORTANT MACHINE DECALS

Familiarize yourself with their locations and read them carefully to understand the safe operation of your machine.

WARNING

DO NOT TRANSPORT WITH BOX OVER HALF FULL OR OVER 16Kmh (10Mph) SEE OPERATORS MANUAL 330750

D-5174 – ON LIFT ARM ON TRANSPORT WHEEL ASSEMBLIES

CAUTION

STAND CLEAR

D-5056 – ON LIFT ARM ON TRANSPORT WHEEL ASSEMBLIES

WARNING

LOWER OR BLOCK ELEVATED COMPONENTS BEFORE SERVICING OR WHEN LEAVING THE MACHINE

ELEVATED COMPONENTS CAN FALL AND CAUSE SERIOUS INJURY

D-4924 – NEAR DEPTH CONTROL CYLINDER ON MAIN FRAME

WARNING

DO NOT ALLOW ANYONE TO RIDE OR CLIMB ON MACHINE WHEN WORKING OR TRANSPORTING

D13705 – ON ENDS OF SEED BOX

THIS SYMBOL IDENTIFIES IMPORTANT SAFETY MESSAGES THROUGHOUT THE MANUAL

WARNING

Consult Your Operator's Manual For Proper And Safe Multiple Hitch Transport Operation

D-5830 – ON TRANSPORT ASSEMBLY PULL ARM

PREVENT DAMAGE TO CYLINDER SHAFTS BY COATING WITH GREASE WHEN LEFT EXPOSED FOR ANY PERIOD OF TIME

C-2218 – ON ALL HYDRAULIC CYLINDERS

ATTENTION

GANG SHAFT TORQUE 450 FT. LB. CHECK TORQUE AFTER FIRST 5, 15 & 50 HOURS OF OPERATION SEE OPERATORS MANUAL FOR PROPER PROCEDURE.

32117J

D-4939 – ON FRAME NEAR GANG SHAFT ON PRESS WHEELS AND ON PACKER WRENCH

IMPORTANT

TO PREVENT CORROSION, CLEAN THE GRAIN AND FERTILIZER BOXES AND METERING SYSTEMS WITH MILD SOAPY WATER AND RINSE. A LIGHT COATING OF DIESEL FUEL SHOULD BE APPLIED TO ALL METERING SYSTEM COMPONENTS BEFORE STORAGE.

AVOID LUBRICANT CONTACT WITH GRAIN AND FERTILIZER TUBES.

S12481 – ON GRAIN BOX

CAUTION

STAND CLEAR WHILE RAISING OR LOWERING WHEEL MARKERS

S-4784 – ON WHEEL MARKERS

INDEX OPERATOR'S SECTION

To The Owner

NOTE:

IMPORTANT OPERATING AND MAINTENANCE TIPS ARE MARKED WITH THIS SYMBOL ☞ Mi

This Operator's Manual has been carefully prepared to provide the necessary information regarding the operation and the adjustments, so that you may obtain maximum service and satisfaction from your new Morris M-10 Press Drill.

The purpose of this Operator's Manual is to explain maintenance and the routine adjustments which are necessary for the most efficient operation of your machine. To protect your investment, study your Manual before starting or operating in the field.

If you should find that you require information not covered in this Manual, contact your local Morris Dealer. He will be glad to answer any questions that may arise regarding the operation of your machine. Our Dealers are kept informed on the best methods of servicing and are equipped to provide prompt efficient service if needed.

Occasionally, your machine may require replacement parts. If you furnish your dealer with the part number, description and full information of the part he will be able to supply you with the necessary replacement required. If the Dealer does not have the necessary part, our Factory will supply him with it promptly.

Your machine 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 add longer life and give higher trade-in value to your machine.

KEEP THIS BOOK HANDY FOR A READY REFERENCE AT ALL TIMES

It is the policy of the Morris Rod-Weeder Co. Ltd., to improve its products whenever it is possible and practical to do so. We reserve the right to make changes or add improvements at any time without incurring any obligation to make such changes on machines sold previously.

IMPORTANT — SPRING DELIVERY

TO PREVENT CORROSION FROM HIGHWAY SALT, WASH DOWN THOROUGHLY WITH GARDEN HOSE OR PRESSURE WASHER AS SOON AS THE UNIT HAS BEEN DELIVERED.

M-10 PRESS DRILL PREPARATION BEFORE SEEDING

1. Check for grain or debris in grain and fertilizer box.
2. Turn all grain and fertilizer feed shafts by hand. If they bind remove the obstruction. This will prevent breakage of cups, metering wheels, chains and clutch shear pin.
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.
7. Inspect tires for wear and proper inflation.
8. Periodically check that rockshaft pivot clamps are tightened to 75 ft. lbs. on 1/2" bolts — 260 ft. lbs. on 3/4 " bolts.
9. Packer wheels — check gang shaft torque after 5, 15 and 50 hours of use and inspect daily before operating — torque should be 450 ft. lbs.
10. Inspect wheel bearings.
11. Remove traces of oil from metering system components to reduce dust build-up.
12. Check that disk openers are properly aligned with packers.
13. Check that metering flaps are in proper position.
14. Record Acreage Meter.

IMPORTANT:

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

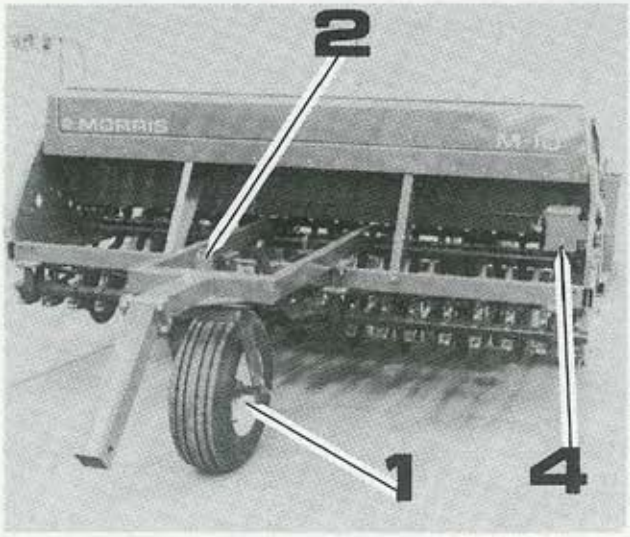
PROPER PREPARATION MAKES YOUR WORK EASIER.

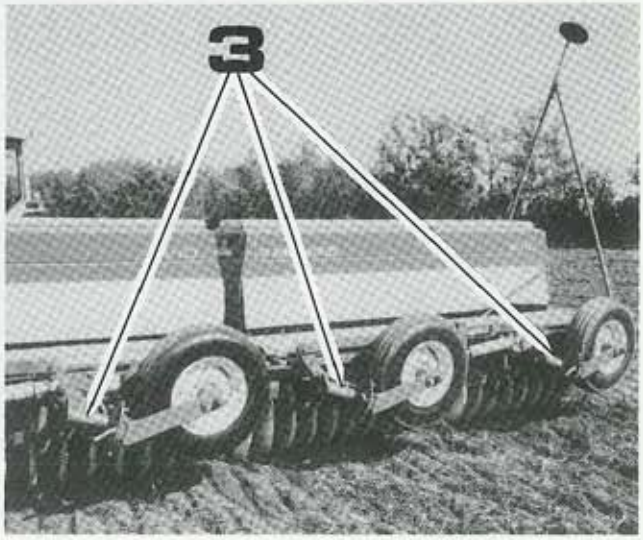
LUBRICATION

General

In order to obtain the maximum life and the most efficient operation of your Morris M-10 Press Drill it is important the complete machine be lubricated regularly, as recommended in the lubrication chart. Careful and sufficient lubrication is the best insurance against delays. It increases the life of your machine and will save you many dollars in parts. Use a high grade grease to lubricate the following fittings as specified.

MACHINE LUBRICATION





1. WHEEL BEARINGS: Repack wheel bearings once a season.
2. FRONT CASTOR PIVOT: Grease
3. TRANSPORT ASSEMBLY: 8 nipples per machine.
4. FEED METERING SYSTEM: Check that oil is up in drive box. Top with hydraulic oil 2.SE/50°

NOTE:
USE A GOOD GRADE MACHINE OIL.

Keep Dirt Out

When dirt enters a bearing it combines with the lubricant and becomes an abrasive grinding paste, more destructive, in many cases, than grit alone. Bearings that are not positively sealed against dirt and dust should be kept filled with new lubricant during operation as this will prevent dirt and dust from entering. Wheel bearings should be repacked and end play adjusted at least once a season.

Cylinder Shafts and Storage

Our cylinder shafts are coated with a maximum amount of chromium. However, when the cylinder shafts are exposed for any length of time, protect them against weathering, rust and corrosion by coating the shaft with grease.

When storing the machine, release the hydraulic pressure from the cylinders by lowering the machine so that the pressure is taken up by the transport lock.

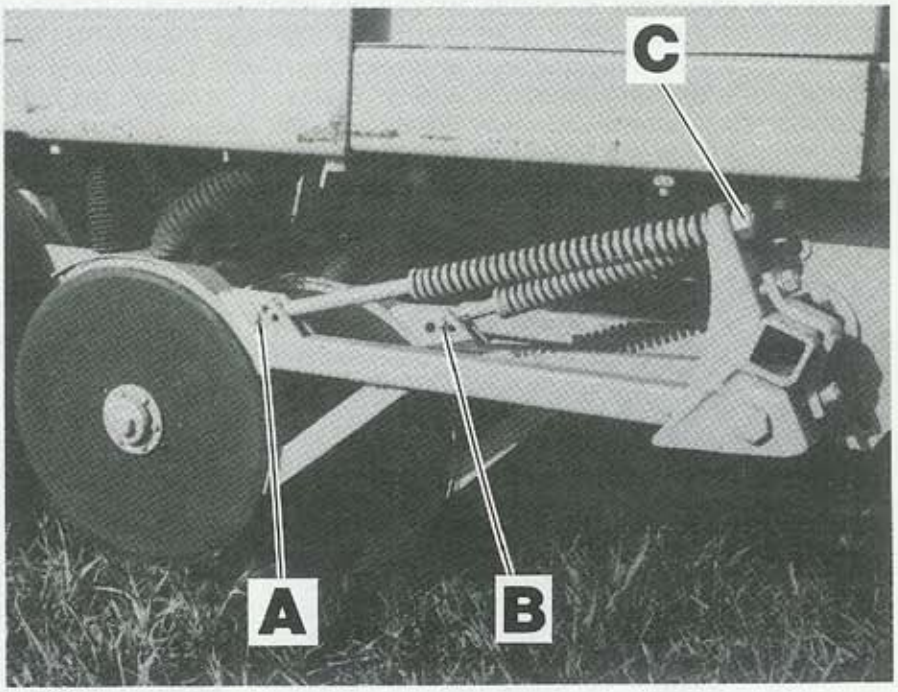
ADJUSTMENTS AND MAINTENANCE

Disc Openers

Check that Openers have been assembled as in photo.

— Long Openers — rear hole "A".

— Short Openers — centre hole "B".



To Level All Openers

— Place machine on level surface.

— Raise rear of drill slightly by pulling packer wheels up on 2" or 3" plank or similiar material.

— Lower discs

— Adjust 3/4" nut "C" until all Openers just touch surface.

— Lift discs completely.

— Lower discs again to double check.

— Check that disc openers are in line with packer wheels.

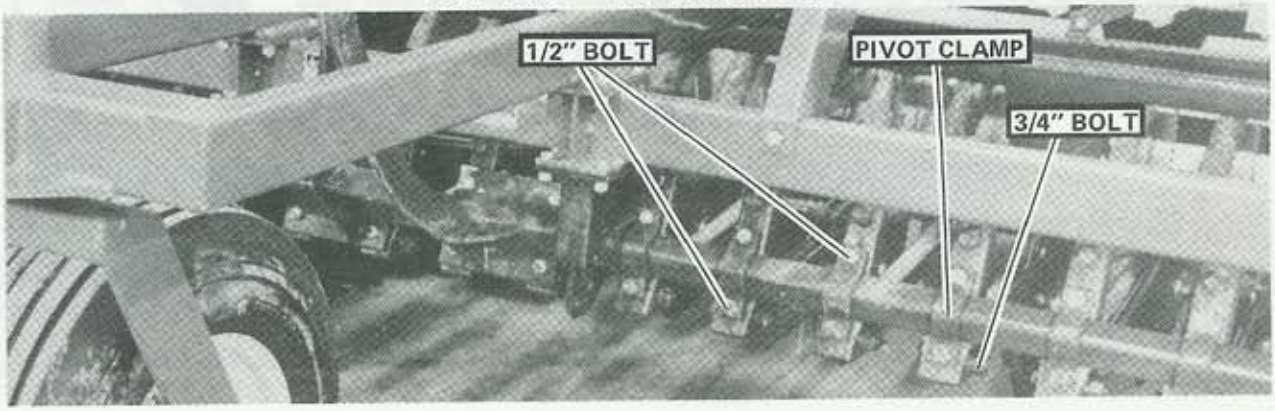
NOTE:

Openers in tractor tracks can be set deeper by moving the spring rod to a forward hole.

Rockshaft Pivot Clamps

— Check periodically and keep tight.

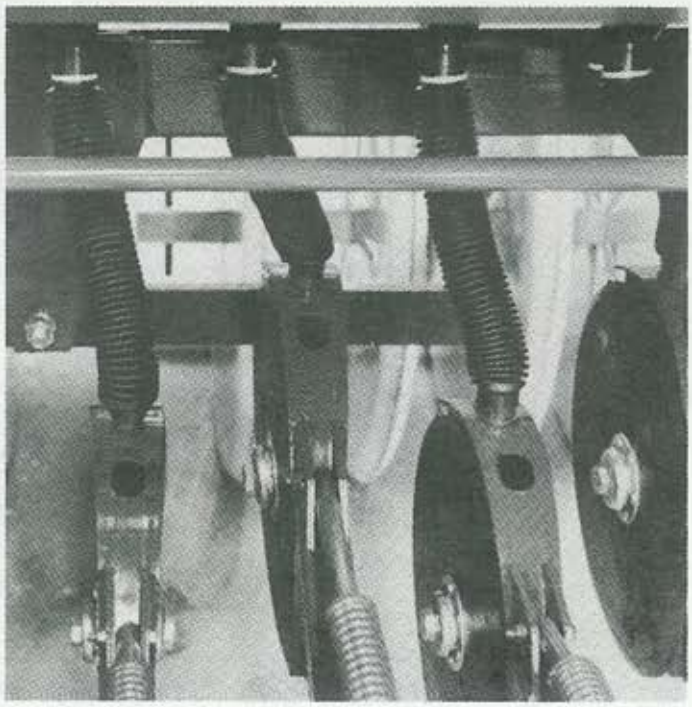
1/2" bolts — 75 ft. lbs. torque
3/4" bolts — 260 ft. lbs. torque

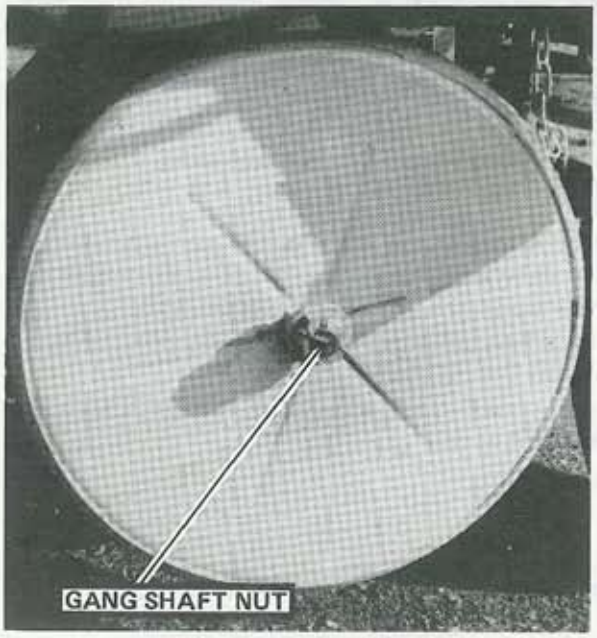


ADJUSTMENTS AND MAINTENANCE

Flexible Feed Hoses

— Check that Grain and Fertilizer Hoses are firmly attached, drawn tight end to end and free of obstructions. It may be necessary to shorten some hoses to avoid sagging which can restrict grain or fertilizer flow. Be sure hoses are not rubbing on main drive shaft.



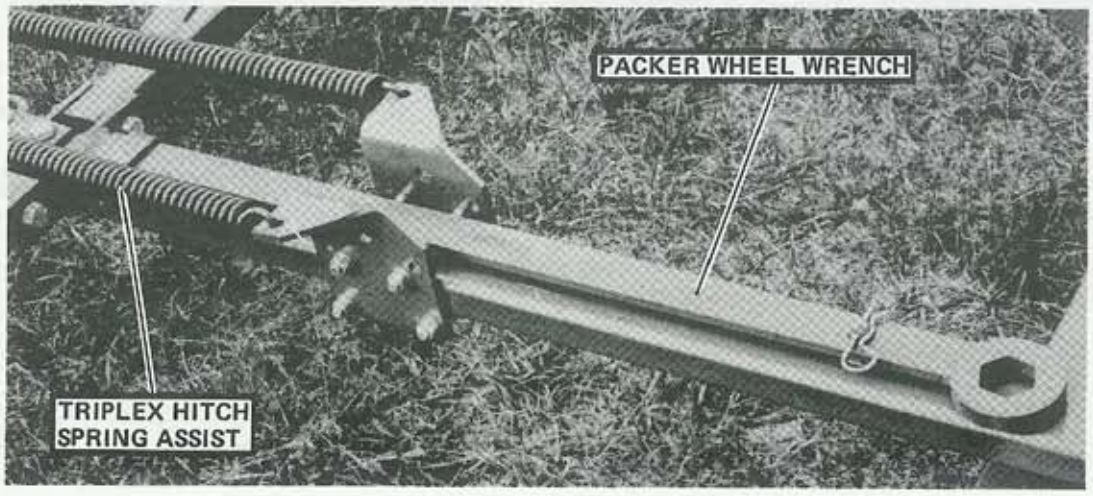


Packer Wheels

— M-10 Packer Wheel Gangs independently follow ground contours, packing soil to retain ground moisture for better germination.
— Nut on gangshaft should be torqued at 450 ft. lbs., use packer wheel wrench supplied with machine.
— Check at 5, 15 and 50 hours and daily inspection before operating (do not overtighten).

Packer Wheel Wrench

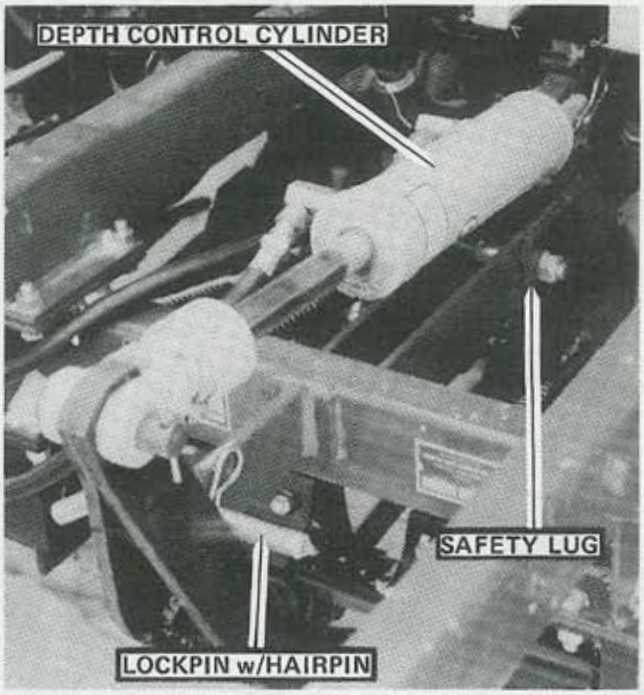
— Store Wrench on hitch when not in use.



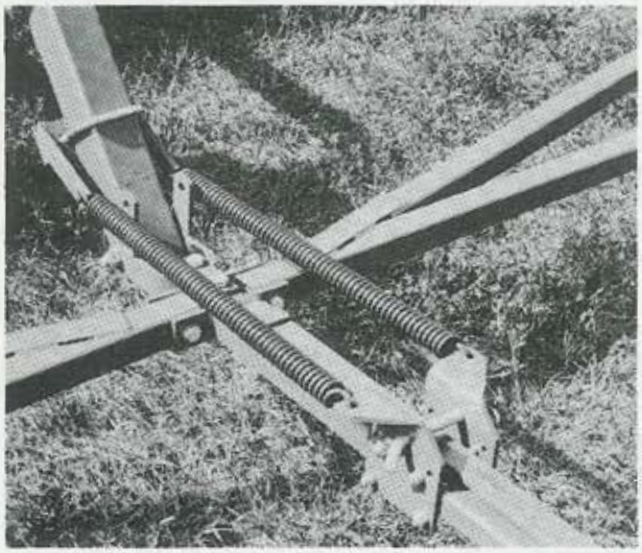
ADJUSTMENTS AND MAINTENANCE

Depth Adjustments

- Lock Pin must be removed from Transport Lock Position (shown) 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. (Not Shown)

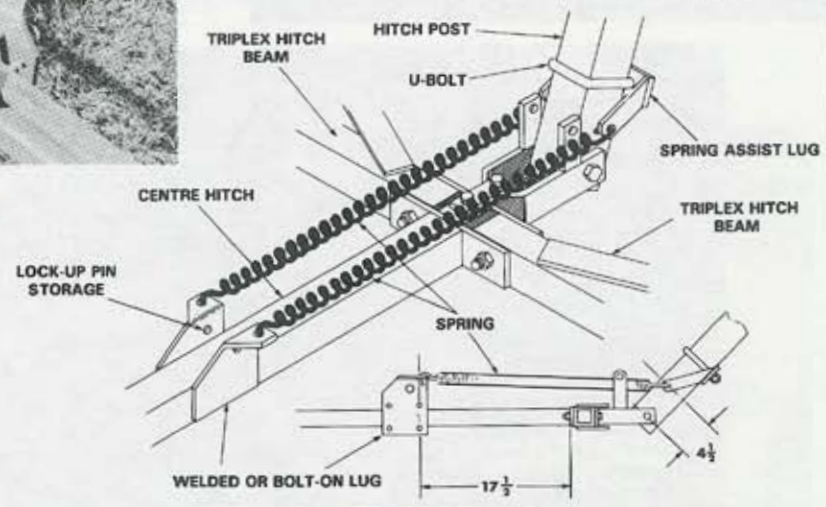


Spring Assist on Triplex Hitch



- Check that spring assist is assembled properly for easy lifting of hitch.
- The measurements indicated in the diagrams **MUST** be adhered to for efficient and safe use of the spring assist.
- Store hitch in raised position to relieve spring tension.

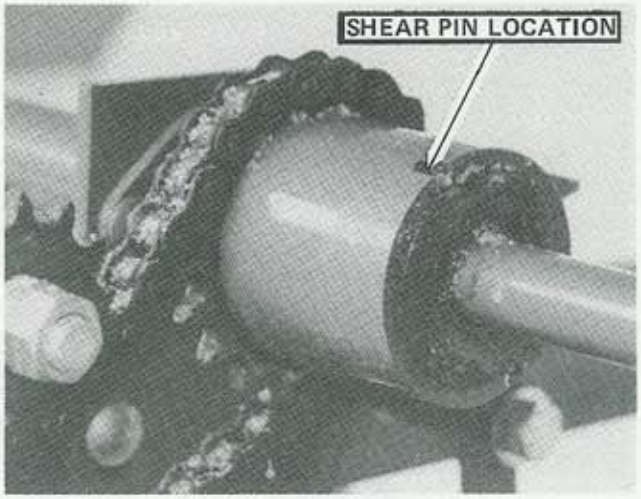
TRIPLEX HITCH SPRING ASSIST ASSEMBLY



THESE MEASUREMENTS MUST BE FOLLOWED FOR SAFE AND EFFICIENT USE OF SPRING ASSIST

ADJUSTMENTS AND MAINTENANCE

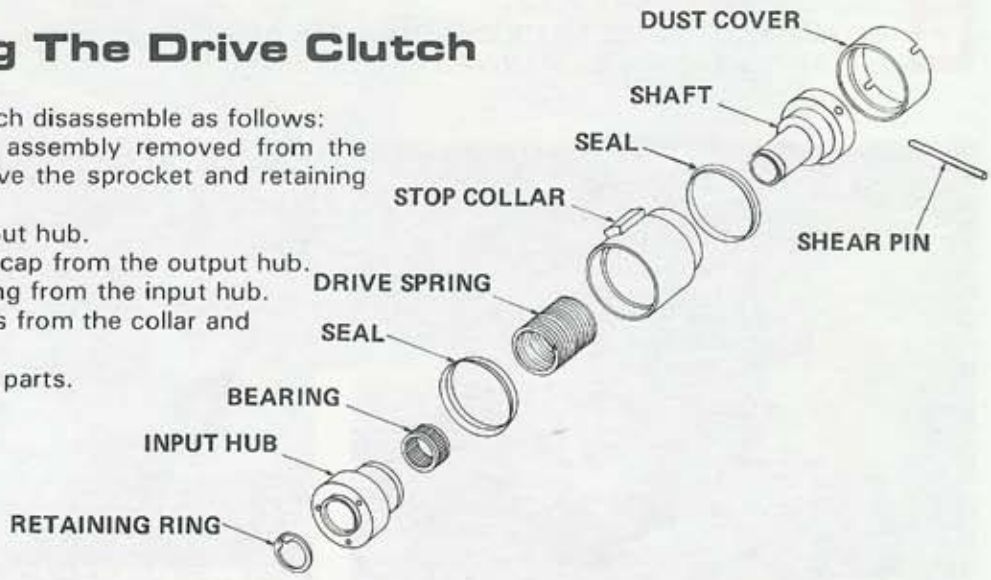
Drive Clutch



– The drive system is protected with a shear pin which secures the clutch to the jackshaft. If the pin shears:
  (a) Determine the cause.
  (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.

Servicing The Drive Clutch

– For cleaning the clutch disassemble as follows:
  (a) With the clutch assembly removed from the driveshaft, remove the sprocket and retaining ring.
  (b) Remove the output hub.
  (c) Remove the dustcap from the output hub.
  (d) Remove the spring from the input hub.
  (e) Remove the seals from the collar and input hub.
  (f) Clean all internal parts.



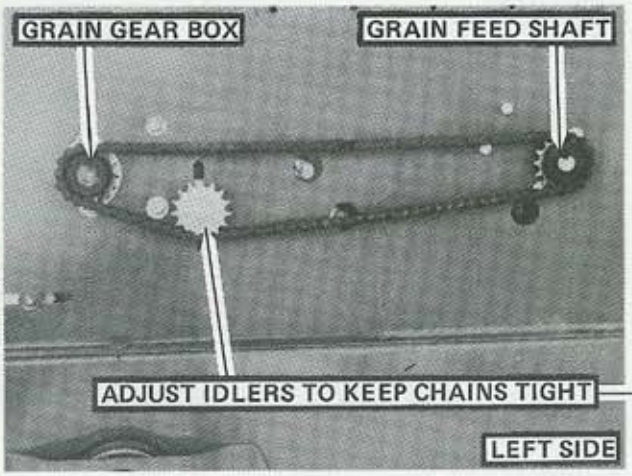
NOTE:

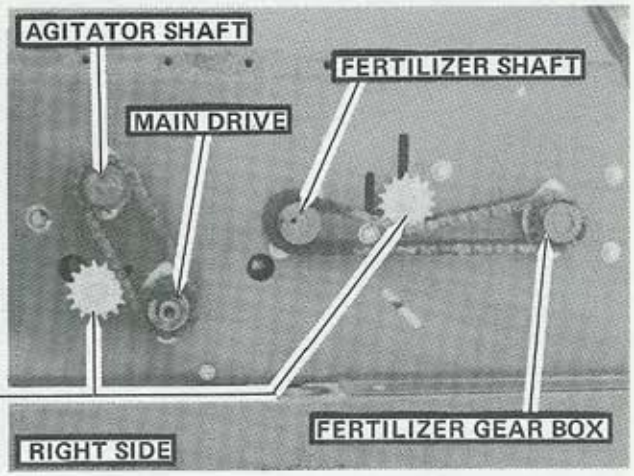
When reassembling the clutch, rotate the parts in the direction as to unwind the spring. This expands the spring allowing the parts to slide into place easier.

  (a) Slide the spring (ear first) into the input hub.
  (b) Place the input and spring assembly inside the collar and rotate until the ear on the spring sets in the slot in the collar.
  (c) Holding the collar and input hub firmly together, slide the output hub into the collar assembly.
  (d) Place one seal on the input hub end of the clutch with the flanged edge of the seal toward the outer end of the clutch using a slender object, press the seal into the clutch assembly until the inner edge is against the inside of the collar.
  (e) Place the other seal on the output hub end of the clutch again, the flanged edge of the seal must be toward outer end of the clutch. Slide the seal onto the clutch assembly until the inner edge is up against the collar.
  (f) Slide the dust cap onto the output hub and rotate until the shear pin holes are properly aligned.
  (g) Rotate the input hub, it should spin freely in one direction and drive in the opposite direction.
  (h) Place the retaining ring around the end of the output hub and attach the clutch sprocket.

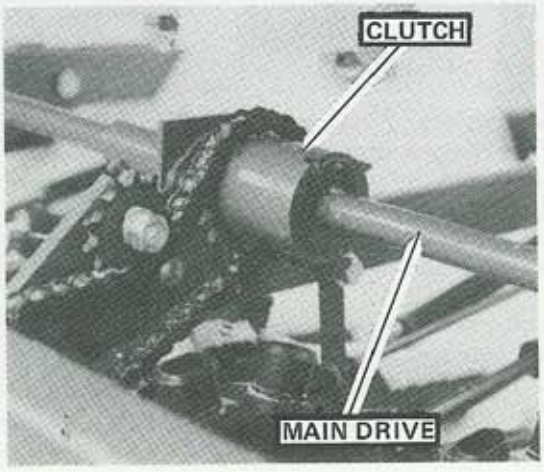
ADJUSTMENTS AND MAINTENANCE

Drive Chains





IMPORTANT:
- ALWAYS REPLACE CHAIN GUARDS AFTER ADJUSTING IDLERS.
- CHAINS SHOULD BE REMOVED AND OILED FOR STORAGE.



IMPORTANT — CHAIN TENSION

Chains should be adjusted to be snug but not overly tight. Too much tension can cause undue sprocket wear. Not enough tension can cause chain to skip or whip causing chain and sprocket damage.

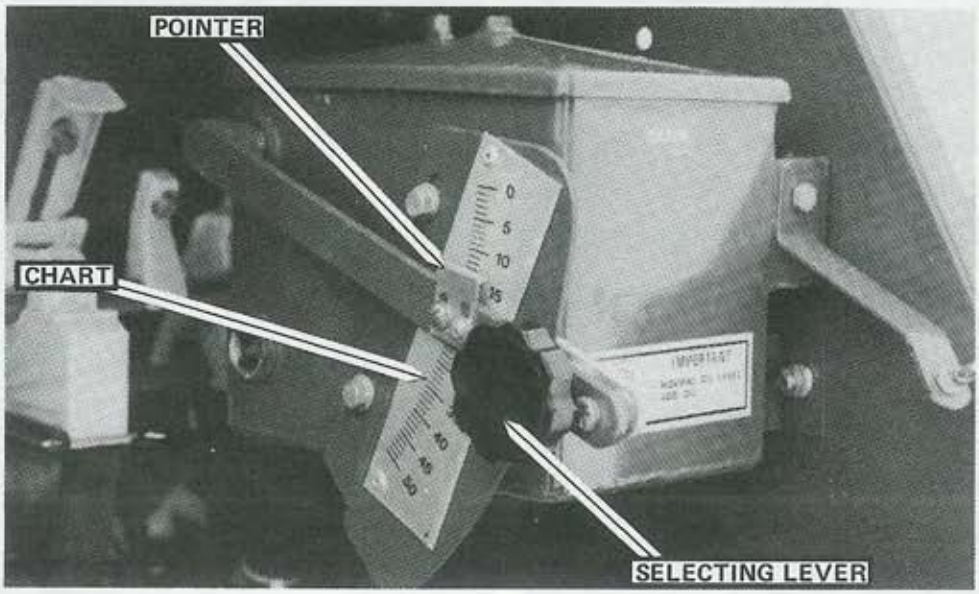
Idler on main drive may be tightened by pivoting the bracket which attaches the spring to the main frame. Overtightening may damage spring.

ADJUSTMENTS AND MAINTENANCE

Drive Box — Timing

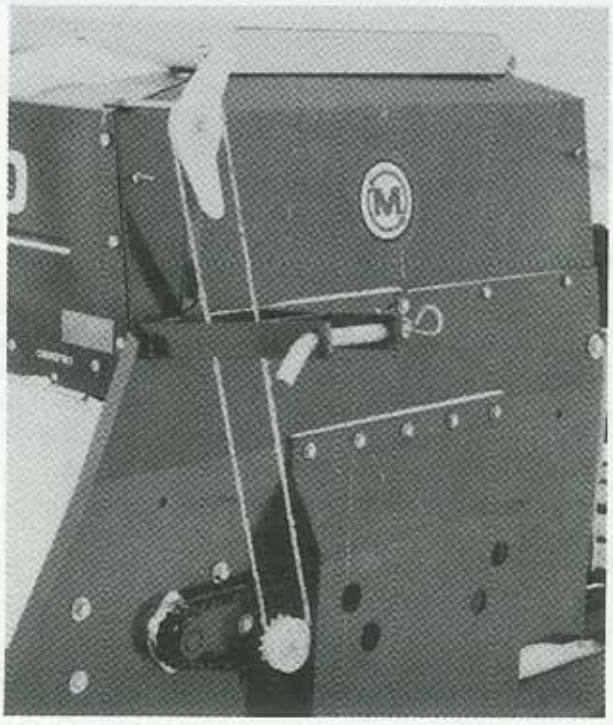
Drive box is timed at the Factory, and should require no further adjustments unless components are replaced. Then the following procedure should be followed:

- Remove Acre Meter and insert special crank. (Part No. D-5080)
- Have someone rotate crank to turn drive box input.
- While rotating crank, move speed selecting lever till there is no motion on the output sprocket on drive box. To do this - hold output sprocket by hand while moving selecting lever.
- Ensure that knocking action of cams has stopped, then secure the selecting lever.
- Indicator should now be pointing to zero. If not, loosen screws on pointer or chart and adjust.



Motion Indicator

- Check that motion indicator is working to determine if grain metering wheels are rotating. All motion indicators should be rotating at the same rate for even seeding.
- Motion Indicator Belt can be tightened by pulling apart at splice, shortening and rejoining.



ADJUSTMENTS

METERING SYSTEM

Seed Metering Wheel Settings

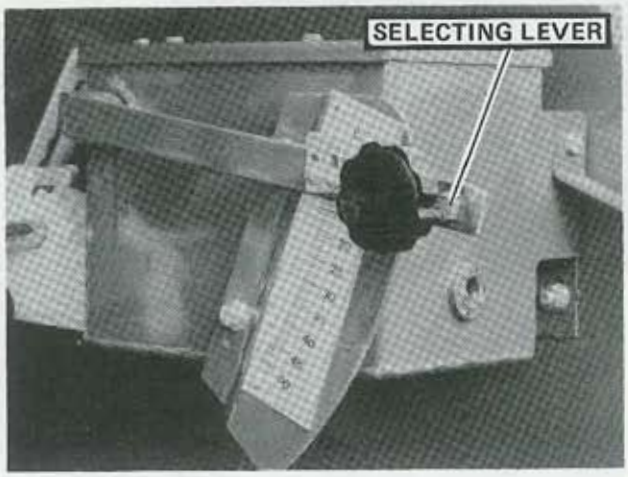
- Fine metering wheel rotates constantly.
- Large metering wheel is coupled to fine wheel by a pin.

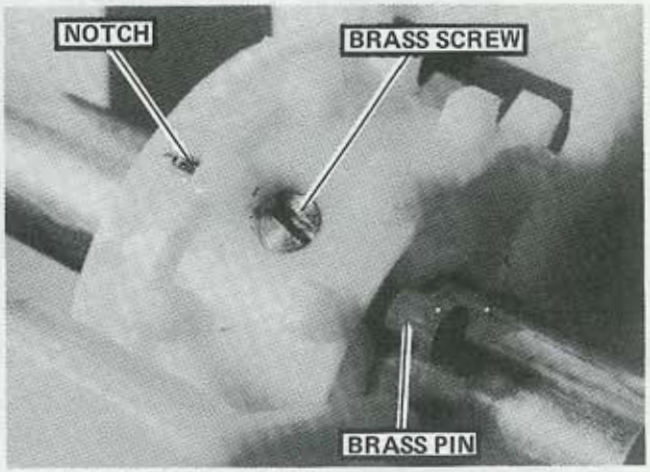
Small Seed Setting (Fine Wheel Turns)

- Push lock pin out from fine wheel side till it protrudes through large wheel, and large wheel is free. (Use D-5223 Engaging Hook supplied or small pin.)

Standard Seed Setting (Both Wheels Turn)

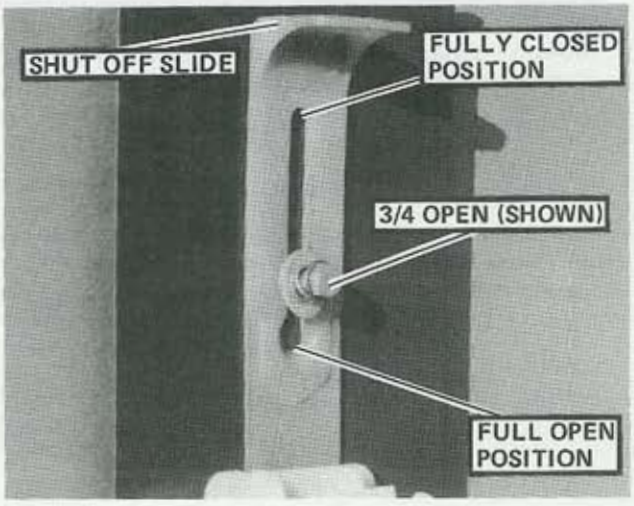
- Move selecting lever at drive box up and down, which will rotate feed shaft, till notch in fine wheel is visible.
- Turn large metering wheel by hand until its brass screw lines up with notch on small wheel.
- Push Pin through, locking both wheels together at each cup.





Shut Off Slide Setting

- Shut Off Slides are set at either fully open or 3/4 open, as indicated by Seed Chart. Slide can also be fully closed, completely shutting off all seed flow to metering wheels. M-10 may be used for row crop seeding by shutting off appropriate cups.



Fertilizer Metering

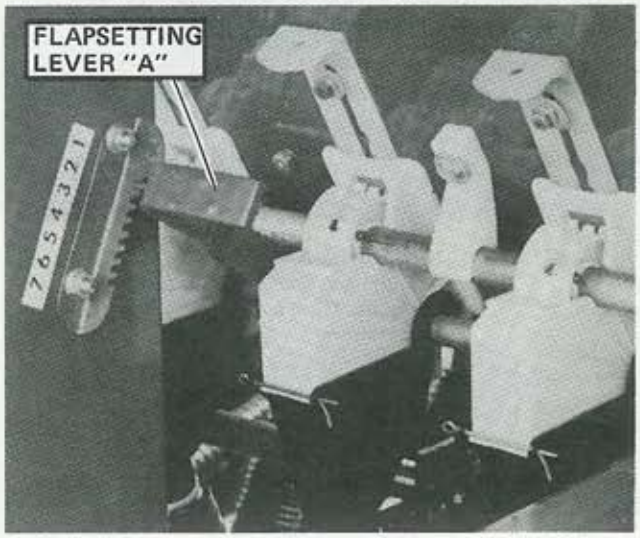
- The Fertilizer Metering Cup is identical to the Seed Cup except for the feed wheels.

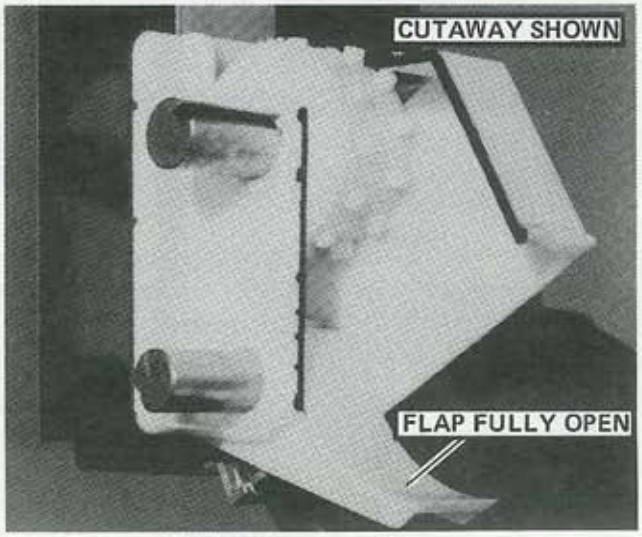
ADJUSTMENTS

METERING SYSTEM

Bottom Flap Setting

- The spring loaded flap is set with Lever "A" as indicated by Rate Chart for different size material.
- Because it is spring loaded, foreign material can pass without damage to cup.
- To clean drill move adjusting lever till flap is fully open, allowing seed to run out freely.





Bottom Flap Adjustment

- Set Screw "A" is adjusted at factory and should not be changed.
- To check bottom flap clearance set flap lever at O, use a .002 inch feeler gauge between flap and feed wheel.
- If clearance is incorrect adjust set screw "A" till clearance is .002.
- Check that all Allan screws are tight.
- Make certain all flaps are adjusted identically.

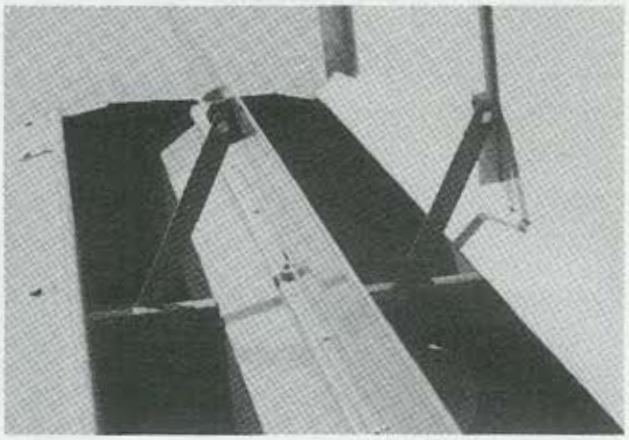
Acreage Meter

- Because the meter cannot be reset to zero, and records total acres drill has sowed, you must record numbers on meter before you start on a particular field. Acreage meter is based on a 10' section. Multiply reading by number of machines to get actual acreage.
- Be sure that sufficient clearance is allowed between acreage meter and its protective shield to ensure accurate readings and avoid damage to meter.

ADJUSTMENTS AND MAINTENANCE

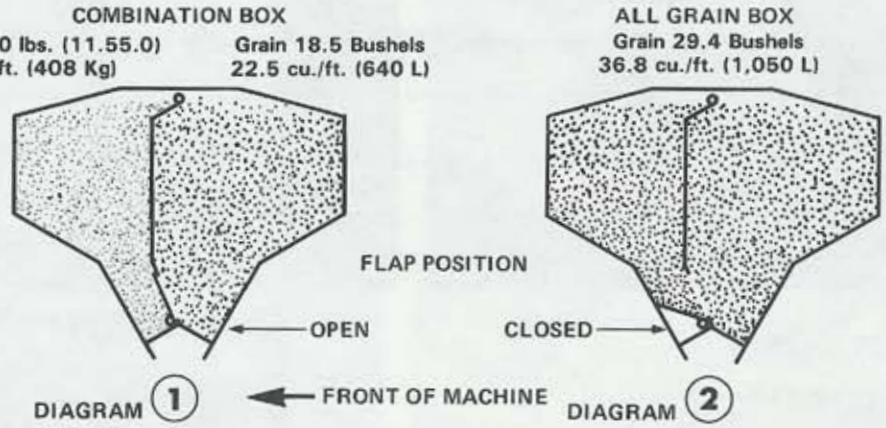
Filling M-10 Hopper Box

– Before filling machine make sure flap levers are in correct position.



M-10 Box Capacity

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



FEED RATE CHART M-10

METER SETTING		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	lbs per bushel	kg per cu. m	Flap Position	Shut off Slide Open Position	Meter wheel Normal or Fine	Spacing
Wheat	lbs/A	20	25.6	31.2	36.8	42.4	48	54	60	66	72	78	84	90	96	102	108	114	120	126	134						60		2	3/4	N	6"
	kg/Ha	22.4	28.7	34.9	41.3	47.5	53.8	60.5	67.3	74	80.7	87.4	94.2	101	107.6	114.3	121.1	127.8	134.5	141.2	150.2							769				
Oats	lbs/A	12	15	18	21	24	27	30.8	34.2	37.8	41.4	45	50	55	60	65	70	75	80	85	90						34		2	Full	N	6"
	kg/Ha	13.5	16.8	20.2	23.5	26.9	30.3	34.3	38.3	42.3	46.4	50.4	56	61.7	67.3	72.9	78.5	84.0	89.7	95.3	101							436				
Barley	lbs/A	18	22.6	27.2	31.8	36.4	41	46.6	52.2	57.8	63.4	69	75.6	82.2	88.8	95.4	102	108	116	123	130						48		2	3/4	N	6"
	kg/Ha	20.2	25.3	30.49	35.6	40.8	46.0	52.2	58.5	64.8	71.1	77.3	84.7	92.1	99.5	106.9	114.3	122	130	137.9	146							515				
Corn - 12"	lbs/A	14	18	22	26	30	34	38.8	43.6	48.4	53.2	58	63	68	73												60		3	Full	N	12"
	kg/Ha	15.7	20.2	24.7	29.1	33.6	38.1	43.5	48.9	54.3	59.6	65	70.6	76.2	81.8													769				
Sunflower	lbs/A	5.5	6.9	8.3	9.7	11.1	12.5	14.3	16.1	17.9	19.7	21.5															32		3	Full	N	12"
	kg/Ha	6.2	7.7	9.3	10.9	12.4	14	16	18	20	22.1	24.1																410				
Rape	lbs/A	1.3	1.7	2.0	2.3	2.7	3.0	3.3	3.7	4.0	4.4	4.8	5.3	5.7	6.1	6.6	7.0	7.5	8.0	8.6							50		1	3/4	F	6"
	kg/Ha	1.5	1.9	2.2	2.6	3.0	3.4	3.7	4.1	4.5	4.9	5.4	5.9	6.4	6.8	7.4	7.8	8.4	9.0	9.5								641				
Mustard	lbs/A	1.5	1.9	2.3	2.7	3.1	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.1	7.7	8.2	8.75	9.4	10.0	10.8							50		1	3/4	F	6"
	kg/Ha	1.7	2.1	2.6	3.0	3.5	3.9	4.5	5.0	5.6	6.2	6.7	7.3	8.0	8.6	9.2	9.8	10.5	11.2	12.1								641				
Alfalfa	lbs/A	1.1	1.4	1.7	2.0	2.3	2.6	3.0	3.4	3.8	4.2	4.6	5.0	5.4	5.8	6.3	6.8	7.3	7.8	8.3							60		1	3/4	F	6"
	kg/Ha	1.2	1.6	1.9	2.2	2.57	2.9	3.36	3.8	4.25	4.7	5.1	5.6	6.0	6.5	7.0	7.6	8.2	8.7	9.3								769				
Flax	lbs/A	13.6	16.9	20.2	23.5	26.8	30.6	34.0	38.0	42.0	46.1	50.0															60		1	3/4	N	6"
	kg/Ha	15.2	18.9	22.6	26.3	30.0	34.3	38.1	42.6	47.0	51.6	56.0																769				
Corn - 30"	lbs/A						11.2	13.1	15.4	16.8	17.9	19.6	21.8	23	23.8	25.2	26.8										56		3	Full	N	30"
	kg/Ha						12.5	14.6	17.2	18.8	20	22	24.4	25.7	26.6	28.2	30.2											718				
Soybean	lbs/A	8.5	8.0	9.25	10.4	12.1	13.5	15.1	17	17.8	19.8	22	24.3	25.7	28	30.3	31.8										60		5	3/4	N	30"
	kg/Ha	7.3	9.0	10.3	11.6	13.5	15.1	16.9	19	19.9	22.2	24.6	27.2	28.8	31.3	33.9	35.7											769				

NOTE: Lbs/Acre TO Kg/Acre MULTIPLY POUNDS BY .4536 EXAMPLE: WHEAT 20 Lbs/A x .4536 = 9.07 Kg/A

Fertilizer 34-0-0	lbs/A	25	29.6	34.2	38.8	43.4	48	53.5	59	64.5	70	75.5	83	90.5	98	105.5	113	121.8	130.6	139.4	148.2	157	167.8	178.2	188.8	199.4			2	3/4	N	6"
	kg/Ha	28	33.2	38.3	43.5	48.7	54	60	66	72	78	85	93	101	110	118	127	137	146	156	166	176	188	200	212	224						
Fertilizer 11-51-0	lbs/A	14.5	19.9	25.3	30.7	36.1	41.5	48.2	54.9	61.6	68.3	75	83.8	92.6	101.4	110.2	119	127.6	136.2	144.8	153.4	162	171.8	181.6	191.4	201.2			2	3/4	N	6"
	kg/Ha	16.3	22.3	28.4	34.4	40.5	47	54	62	69	77	84	94	104	114	124	133	143	153	162	172	182	193	204	215	226						
Oats Nurse Crop	lbs/A	5	8.2	11.4	14.6	17.8	21	24.4	27.8	31.2	34.6	38																	2	3/4	N	6"
	kg/Ha	5.6	9.2	12.8	16.4	20	24	27	31	35	39	43																				

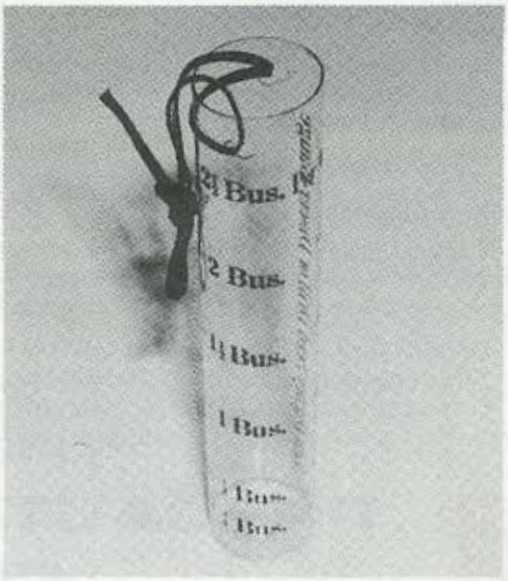
NOTE: THE FEED RATE CHART SHOULD ONLY BE TAKEN AS A GUIDE FOR FINDING THE APPROXIMATE SEED BOX SETTING NO. FOR EXACT DETERMINATION OF THE SOWING QUANTITY SELF CALIBRATION AS DESCRIBED IN MANUAL IS ALWAYS RECOMMENDED. LISTED RATES CALIBRATED WILL VARY WITH DRILLING ANALYSIS AND CLIMATIC CONDITIONS.

PART NO. D5674

ADJUSTMENTS

Sowing Rate Calibration [Seed or Fertilizer]

A Len Digney Gauge (Part No. S-3252) has been supplied with your Drill for quick and easy assistance in the calibration of the machine. Remove a Feed Hose and attach the gauge to a seed metering cup which has been filled with two or three handfuls of seed. If grain box is full of seed close all remaining Shut-off Slides. Then either remove Acreage Meter and rotate feed shaft with special crank (Part No. D-5080) clockwise 19 revolutions or drive machine exactly 150 feet allowing seed to meter through the cup into the gauge. Remove the gauge and take a reading of bushels per acre being seeded. Refer to Feed Rate Chart and make adjustments accordingly.



For an approximate field check on fertilizer rates using the Len Digney Gauge, collect a sample as you would for grain. Multiply the bushel measure collected by the approximate fertilizer density. This will give you the pounds per acre that you are fertilizing at.

Lb./bushel weight of several fertilizer blends (density)

11-55-0	75 lb/bus	27-27-0	69 lb/bus
11-48-0	75 lb/bus	21-0-0	82 lb/bus
11-51-0	75 lb/bus	46-0-0	60 lb/bus
16-20-0	75 lb/bus	34-0-0	72 lb/bus
22-24-0	72 lb/bus	0-0-60	84 lb/bus (granular)

Example: Sample collected — 1 bushel/acre
11-55-0 at 75 lb/bus
1 bus/acre x 75 lb/bus = 75 lb/acre.

When a Len Digney Gauge is not available the following procedure may be used to determine exact sowing quantity.

- Raise Discs.
- Remove hoses or collectors from half the machine and close off slides on remaining half.
- Place container under cups.
- Set Drive Box not being tested at zero.
- Use Feed Rate Chart to make all proper settings (rate, bottom flap, shutoff slide) on machine.
- Remove Acre Meter and carefully insert special crank (Part No. D-5080) - turn crank a few turns in clockwise direction until seed flows uniformly from all cups.
- Empty container.

Collect a new sample using the following method:

- Turn crank 56 times in clockwise direction. This equals 1/10 acre.
- Weigh sample and double weight to arrive at weight for complete machine.
- Adjust Drive Box Setting till you arrive at the desired setting for the particular application.
- Multiply by 10 to get Lbs. per Acre.

NOTE:
When calibrating small seed it may be necessary to equal rotations of crank to 1/2 acre or hectare to get a large enough sample to weigh.

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

- 138.3 revolutions of crank equals 1/10 hectare. — 1 Kilogram (Kg) = 2.2 lbs. 1 Lb. = .45 Kg

(NOTE: 1 Acre = .404 hectares
1 Hectare = 2.47 Acres)

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.

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 tablespoonfuls 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 feeds.

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.

PRECAUTIONS WHEN USING CHEMICALS

Agricultural chemicals can be dangerous. These chemicals include fertilizers, fungicides, herbicides, and pesticides or insecticides. These may be in liquid, dust, or granular form. Rubber gloves, chemical respirator, goggles, and/or other protective clothing may be required for certain chemicals.

Improper selection or use can injure people, animals, plants, and soils. Care must be exercised to avoid damage to other people's property.

Chemicals can be used in one or more of the following ways:

- Treated seeds
- Added to seed in seed hopper
- Added to liquid and dry fertilizers
- Applied from the grass box (herbicides and pesticides)
- Applied with liquid metering equipment
- Applied with dusting or spraying equipment

Always read the label and follow the instructions of the manufacturer before opening containers of chemicals. For each use, read the instructions and warnings carefully, even if you feel you know them.

When adjusting, servicing, cleaning, and storing machines that have chemical materials associated with them, use the same degree of care that is required for the initial handling of these chemicals.

When chemicals have been used in a machine, it is of utmost importance to inform all employees, service personnel, and others of any potential chemical hazard and required safety precautions before they come in contact with the machine, its contents, or the applied material.

Promptly store or dispose of all unused chemicals or chemically treated materials in the manner specified by the chemical manufacturer.

In case of fire involving chemicals, chemical containers, or equipment containing chemicals, remain upwind and avoid exposure to smoke from the fire.

CAUTION:

Be Safe: Select the right chemical for the job. Know what chemical you are using.

SEEDING

General

- When making sharp turns while seeding, lift openers to avoid unnecessary side force.
- When 2 or more drills are hooked together, and boxes are loaded, do not back up.
- When backing drill, make sure openers are raised to prevent plugging them.
- When using bulk fertilizer, pass fertilizer through a screen while filling hopper to prevent lumps from plugging metering system and causing possible damage.
- At the end of each days seeding, the fertilizer box should be empty. Fertilizer collects moisture and will cake, resulting in uneven seeding or damage to metering components.

TRANSPORT

General

Turning In Transport — With Multiple Hitches

- Don't swing out too wide when making turns.
- To make sharper turns, pin wheels on drill closest to centre of transport hook up.
- In order to back up any distance with units in transport, all transport wheels must be pinned, due to limited castor of transport wheels.
- Approximate Transport Width
  - Duplex and Triplex — 15 ft.
  - 4 Plex, 5 Plex and 6 Plex — 17 ft.

Transport Speed

IMPORTANT: Drills should not be transported with boxes more than 1/2 full or over 10 M.P.H. (16 km/h).

SLOW MOVING VEHICLE EMBLEM IS TO BE IN PLACE AT ALL TIMES.

TIRE PRESSURE:

CAUTION:
DO NOT EXCEED RECOMMENDED TIRE PRESSURES.

9.5L x 14 6 Ply Rib Implement — 32 Lbs. (221 kPa)
7.60 x 15 6 Ply Rib Implement — 40 Lbs. (276 kPa)

Under inflation causes buckling of tire side walls, fabric breaks and uneven tire wear, while over inflation reduces floatation by permitting the tire to cut into the soil and result in excessive wear.

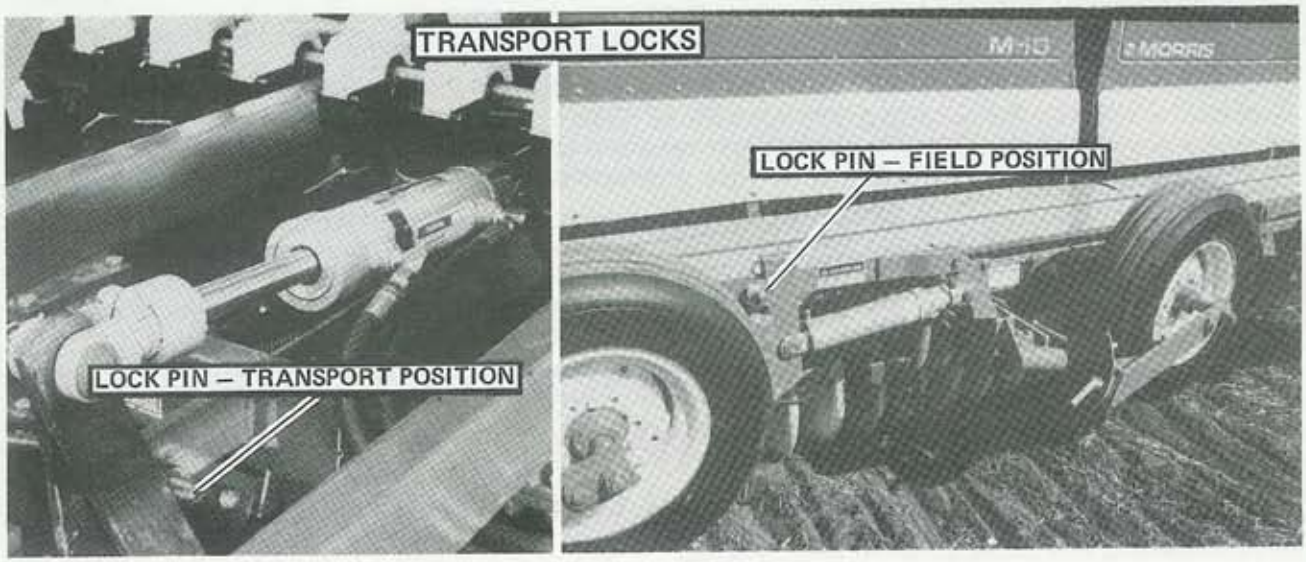
Transport Locks

— Use lock up pins when transporting or storing drills. **NOTE:** Depth control lock up pin must be removed from working position and used in transport position.

NOTE:

In all cases with multiple hitches, some wheels must be pinned to prevent drills from moving sideways in transport.

(See Multiple Hitch Section in Manual for detailed instructions.)



Wheel Stop

IMPORTANT — To prevent accidents —

- Transport Wheel Stop must be installed as shown to prevent rear transport wheels from turning when lifted to seeding position.
- This helps protect the operator from slipping when mounting or dismounting from foot boards.

STORAGE

CHAINS — Should be removed, cleaned in fuel oil and oiled for storage.

METERING — CLEAN OUT ALL MATERIAL —

IMPORTANT:

To prevent corrosion and damage by rodents, clean the grain and fertilizer boxes and metering systems thoroughly and wash with mild soapy water solution. Rinse with water hose and dry thoroughly.

Avoid lubricant contact with metering cups and grain and fertilizer tubes.

The machine should be stored in a building or at least under cover.

If machine is stored on a dirt or moist floor, boards should be placed under the tires. Tires should be inflated to proper air pressure.

Bearings and all lubrication fittings should have enough lubricant forced into them to seal them from dirt and moisture.

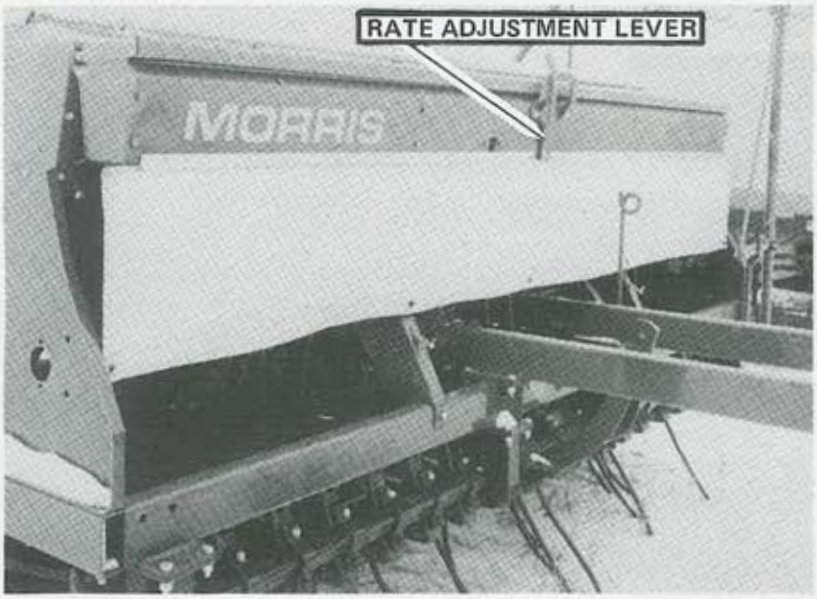
Coat discs with grease or oil to prevent rusting.

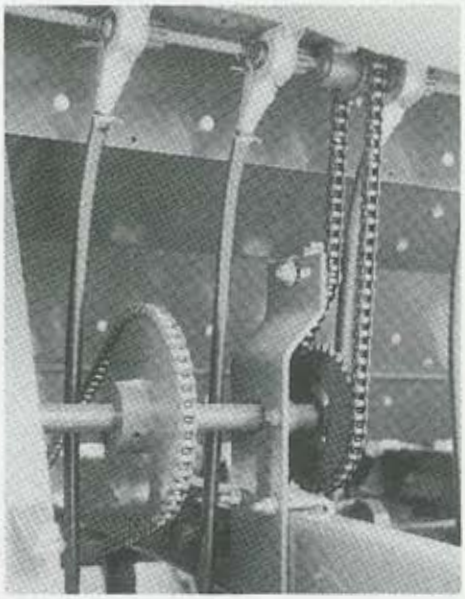
Lower hydraulics to prevent grain tubes from holding water when sagging and so that pressure can be taken up by the transport lock.

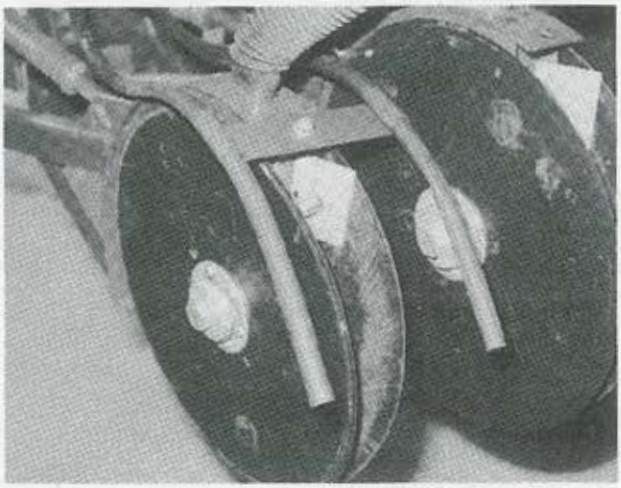
Hydraulic Cylinders — when cylinder shafts are exposed for any length of time, protect them against weathering, rust and corrosion, by coating the shafts with grease.

For longer life and better trade-in value, store unit inside and touch up paint scratches — worn or broken parts should also be looked after before storing unit to prevent seeding time delays.

Optional Grass Seed Attachment







An optional front mounted Grass Seed Attachment is available for the M-10 Press Drill. This Grass Seed Box may also be used to apply pesticides and herbicides.

- Do not over-tighten the feed drive chain.
- When the seed rate adjustment lever is set at zero the fluted feed rolls should be flush with the fluted washers.
- Seed tubes can be mounted to broadcast grass seed in front of openers (above) or mounted to disk opener (right).

Optional Hydraulic Wheel Markers

Triplex Marker Illustrated (Duplex Available)

SPECIFICATIONS

M-10 Drill Specifications

Drill Weight

3,400 lbs. (1542 Kg)

Working Widths Available:

(Basic Unit Working Width — 10') (3.06m). One Unit — 10' (3.06m), Two Units — 20' (6.096m), Three Units — 30' (9.440m), Four Units — 40' (12.192m), — Five Units — 50' (15.24m), Six Units — 60' (18.288m).

Transport Width

Single Unit — 10 ft. (3.06m). Combination units with optional drill transports — duplex and triplex - 15 ft. (4.57m), fourplex, fiveplex and sixplex -17 ft. (5.18m).

Box Capacity

Seed/Fertilizer Combination

Grain 18.5 bushels (.67m³)
Fertilizer 900 lbs. (408 kg)

All Seed

29.4 bushels (1.07m³)

Openers

TYPE: Double Disc. (.095 x 13-7/8" O.D.) with sealed Jaf bearing retained within a 12 gauge riveted housing.
NO. OF OPENERS: 20 openers per 10 ft. (3.06m) unit width based on uniform 6 inch (152mm) spacing pattern.

Packer Wheels

TYPE: 12 gauge steel - 25 inch (635mm) diameter.
WIDTH: 1-3/4 inches (48mm)
WEIGHT: (Per Packer): 43 lbs. (19.6 kg) Optional 2 inch (48mm) wide rubber edged wheel available with individual weight of 34 lbs. (15kg)

Wheel Markers

Optional hydraulic wheel markers are available for duplex and triplex units.

Packer Shaft

1-1/4 inch square (31.7 mm)

Tires

Front Caster Wheel

TIRE: 9.5L x 14 inch — 6 Ply Tubeless.

WHEEL: 14 inch x 8 inch — 6 hole wheel.

Dual Caster Option

TIRES: Two — 7.60 x 15 inch — 6 Ply tubeless.

WHEELS: Two — 15 inch x 6 inch — 6 hole wheels.

Feed Metering System

TYPE: Amazone Feeding Mechanism — Triple cam and ratchet bearings running in an oil bath. Positive drive action off the press wheels to a 1 inch diameter main drive shaft. Twin metering wheel combines normal seed and fine seed metering mechanisms.

Feed Cups

TYPE: Constructed of molded high-impact durable nylon. Anti-static material will not draw moisture. Each cup has a moveable spring loaded flap that opens for cleaning. Cups may be shut off individually for row cropping.

M-10 Frame

Constructed of 2 inch x 4 inch (48mm x 102mm) x 3/16 inch wall structural steel tubing.

Acreage Meter

An optional non tamperable acreage meter is available.

Transport

Optional hydraulic end transport kits are available for multiple units.

DUPLEX HITCH OPERATION

IMPORTANT:

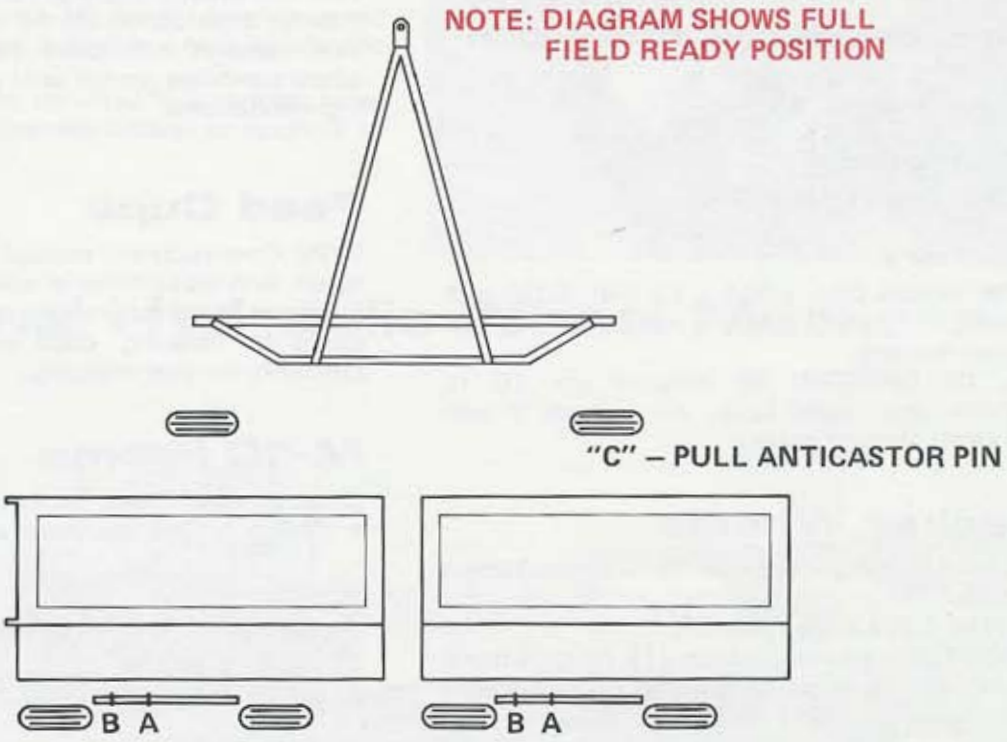
To prevent damage to components make sure the proper Lock Pins are removed for each operation of the hydraulic, and that components are moving in the right direction — Tractor should be idled down until it is determined that movement of components is correct.

CAUTION:

Do not make any ajdustments with tractor hydraulic activated and block components before any adjustments are made.

To Go To Field Position From Transport (Refer to Drawing)

- Pull lockdown pins (Position "A") on transport wheels. **NOTE: Do not reinsert at this point.**
- Raise transport wheels.
- Secure transport assembly with lockup pins (Positions "B").
- Unhook tractor from transport hitch and disconnect hydraulic hoses.
- Secure transport hitch in "up" position and slide jackstand out of way.
- Lower field hitch and connect hydraulic hoses.
- Pull anti-castor lock pin "C" from front castor wheel on rear drill.
- Take out lockup pins from depth cylinders.



CAUTION:

Make sure no one is near any component being hydraulically activated. Double check that all is clear before activating tractor hydraulics.

DUPLEX HITCH OPERATION

IMPORTANT:

To prevent damage to components make sure the proper Lock Pins are removed for each operation of the hydraulic, and that components are moving in the right direction — Tractor should be idled down until it is determined that movement of components is correct.

CAUTION:

Do not make any ajdustments with tractor hydraulic activated and block components before any adjustments are made.

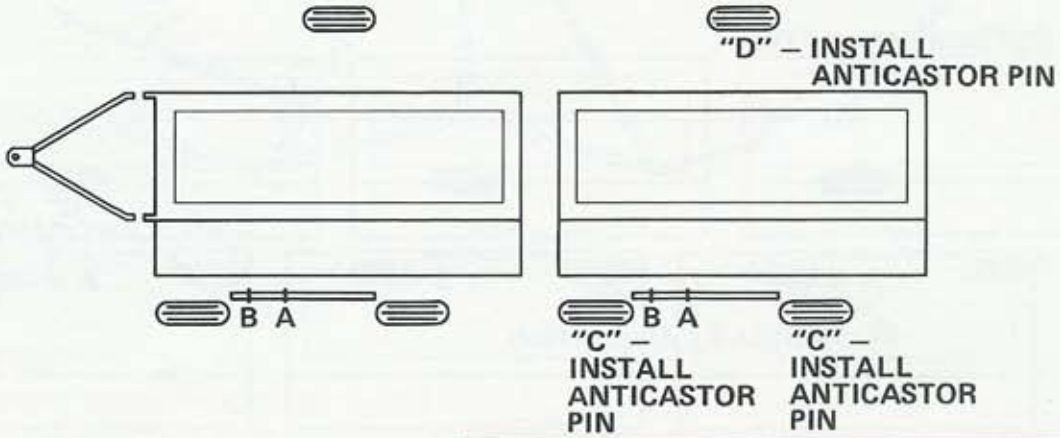
To Go To Transport Position (Refer to Drawing)

- Raise machine and lock up depth cylinders.
- Raise field hitch and secure.
- Lower transport hitch and hook up tractor.
- Couple hydraulic hoses to tractor.
- Remove lock up pins (Positions "B") from transport wheels. **(Do not reinsert at this point)**
- Lower transport wheels and secure with lock pin (Position "A").
- Anticastor pins should be installed in both of the rear drills transport axles "C". (This prevents drills from moving sideways in transport).
- Pull ahead and install anticastor pin "D" in the rear drills castor fork on the front of machine.

NOTE:

TRANSPORT SPEED SHOULD NOT EXCEED 10 M.P.H. (16 Km/h).

NOTE: DIAGRAM SHOWS FULL TRANSPORT READY POSITION



CAUTION:

Make sure no one is near any component being hydraulically activated. Double check that all is clear before activating tractor hydraulics.

NOTE:

FOR BETTER CONTROL WHEN TRANSPORTING OVER LONG DISTANCES, MORE WHEELS MAY BE PINNED IF ROADWAY DOES NOT HAVE SHARP TURNS.

PIN BACK FROM CENTER.

WATCH WHEELS FOR SHIMMYING. REDUCE TRANSPORT SPEED, TO STOP SHIMMY.

TRIPLEX HITCH OPERATION

IMPORTANT:

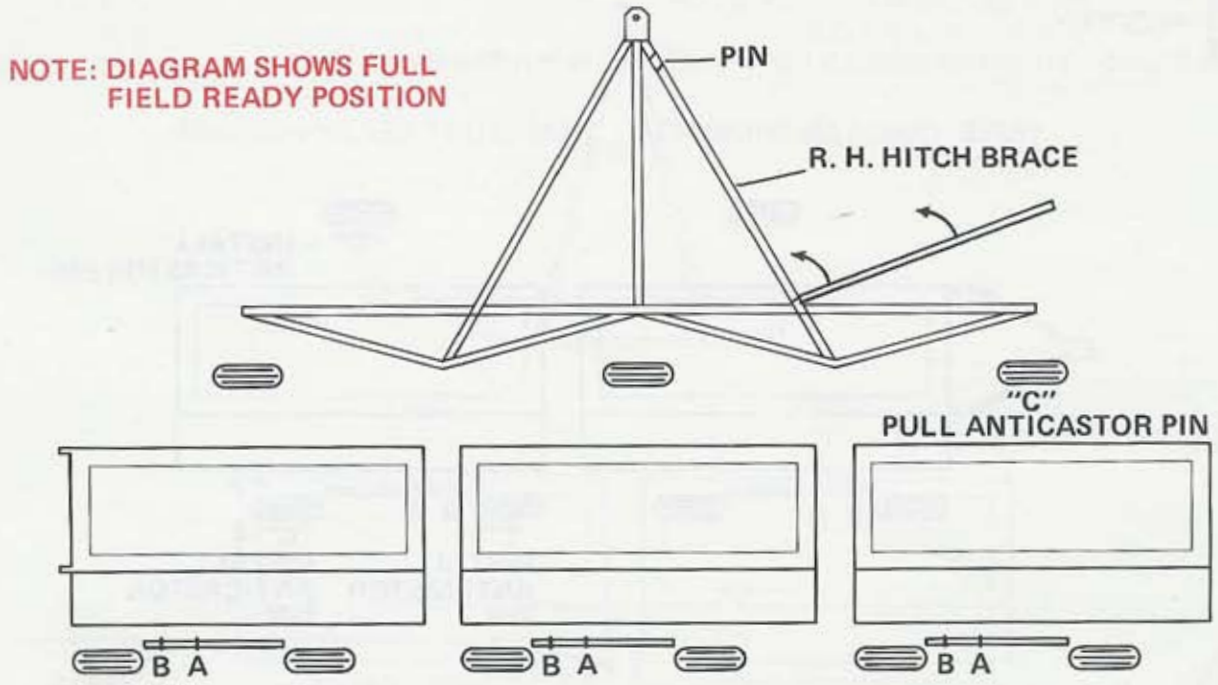
To prevent damage to components make sure the proper Lock Pins are removed for each operation of the hydraulic, and that components are moving in the right direction — Tractor should be idled down until it is determined that movement of components is correct.

CAUTION:

Do not make any ajdustments with tractor hydraulic activated and block components before any adjustments are made.

To Go To Field Position From Transport [Refer to Drawing]

- Pull lockdown pins (Position "A") on transport wheels. **(Do not reinsert at this point)**
- Raise transport wheels.
- Secure transport assembly with lockup pins (Position "B").
- Unhook tractor and disconnect hydraulic hoses.
- Secure transport hitch in "up" position and slide jackstand out of way.
- Lower field hitch swing in and secure R.H. hitch brace and connect hydraulic hoses.
- Pull anti-castor lock pin "C" from front castor wheel on rear drill.
- Take out lockup pins from depth cylinders.



CAUTION:

Make sure no one is near any component being hydraulically activated. Double check that all is clear before activating tractor hydraulics.

TRIPLEX HITCH OPERATION

IMPORTANT:

To prevent damage to components make sure the proper Lock Pins are removed for each operation of the hydraulic, and that components are moving in the right direction — Tractor should be idled down until it is determined that movement of components is correct.

CAUTION:

Do not make any ajdustments with tractor hydraulic activated and block components before any adjustments are made.

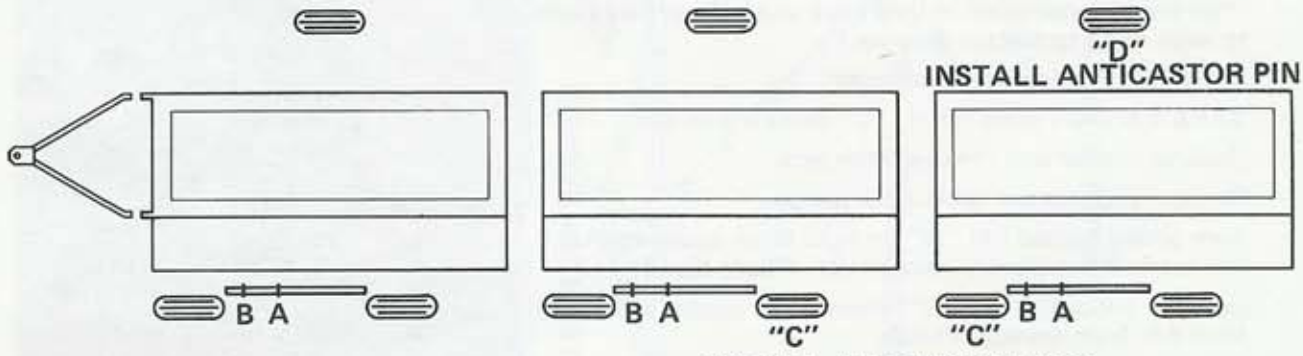
To Go To Transport Position (Refer To Drawing)

- Raise machine and lock up depth cylinders.
- Pull front pin on R.H. hitch brace and pivot brace back or down to allow flexible transport.
- Raise field hitch and secure.
- Lower transport hitch and hook up tractor.
- Couple hydraulic hoses to tractor.
- Remove Lock up pins (Position "B") from transport wheels. **(Do not reinsert at this point)**
- Lower transport wheels and secure with lock pin (Position "A").
- Anticastor pins "C" should be installed in fourth and fifth wheel drill transport axles. (Counting from transport hitch)

(IMPORTANT — **Locking wheels keeps drills from moving sideways in transport.)**

- Pull ahead and install anticastor pin "D" in the rear drill front castor fork. If sharp turns are to be made pin only the centre drill.

NOTE: DIAGRAM SHOWS FULL TRANSPORT READY POSITION



NOTE:

TRANSPORT SPEED SHOULD NOT EXCEED 10 M.P.H. (16 Km/h).

CAUTION:

Make sure no one is near any component being hydraulically activated. Double check that all is clear before activating tractor hydraulics.

NOTE:

FOR BETTER CONTROL WHEN TRANSPORTING OVER LONG DISTANCES, MORE WHEELS MAY BE PINNED IF ROADWAY DOES NOT HAVE SHARP TURNS.

PIN BACK FROM CENTER.

WATCH WHEELS FOR SHIMMYING. REDUCE TRANSPORT SPEED, TO STOP SHIMMY.

FOURPLEX HITCH OPERATION

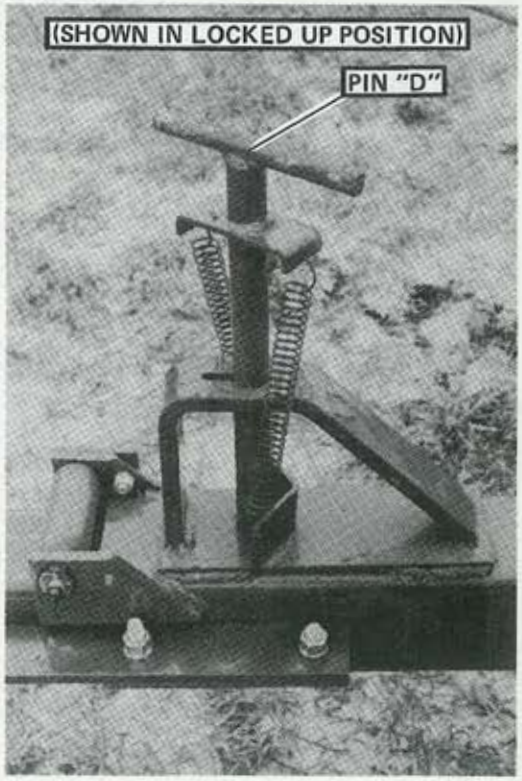
IMPORTANT:
To prevent damage to components make sure the proper Lock Pins are removed for each operation of the hydraulic, and that components are moving in the right direction — Tractor should be idled down until it is determined that movement of components is correct.

CAUTION:
Do not make any ajdustments with tractor hydraulic activated and block components before any adjustments are made.

To Go To Field Position From Transport [Refer to Drawing]

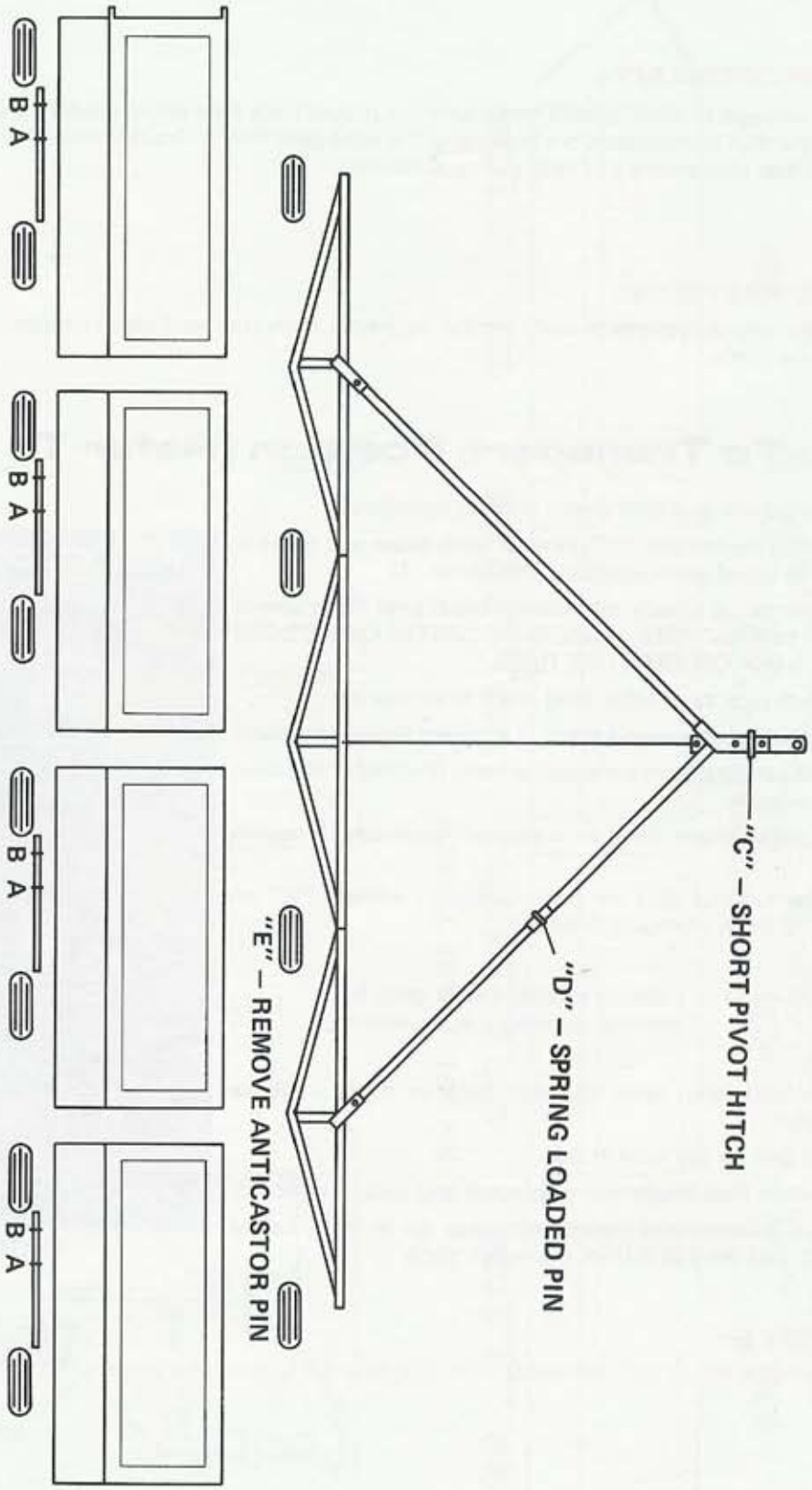
*With Transport Hydraulic Hoses At Transport Hitch.

- Stop Drills on fairly level ground.
- Pull lockdown pins on transport wheels (Position "A") and raise wheels.
- Secure transport wheels with lock up pins. (Position "B")
- Unhook tractor and hydraulic hoses — raise and secure transport hitch.
- With tractor positioned at field hitch use jack on field hitch to raise hitch to tractor drawbar.
- Unhook field hitch transport chain.
- Swing out short pivot hitch, "C" secure with pin.
- Hook to tractor and remove hitch jack.
- Release hitch centre cable from hanger.
- Turn spring loaded pin "D" on right hitch beam so that it will move downward automatically. (Photo No. 1)
- Remove anticastor pin "E" from front castor wheel on third drill from transport hitch.
- Drive forward slowly till spring loaded pin automatically locks telescoped hitch brace.



CAUTION:
Make sure no one is near any component being hydraulically activated. Double check that all is clear before activating tractor hydraulics.

NOTE: DIAGRAM SHOWS FULL FIELD READY POSITION



FOURPLEX HITCH OPERATION

IMPORTANT:

To prevent damage to components make sure the proper Lock Pins are removed for each operation of the hydraulic, and that components are moving in the right direction — Tractor should be idled down until it is determined that movement of components is correct.

CAUTION:

Do not make any ajdustments with tractor hydraulic activated and block components before any adjustments are made.

To Go To Transport Position [Refer To Drawing]

- Raise machine and lock depth control cylinders.
- Pull spring loaded pin "D" on right hitch beam and twist to lock it in Up of Hold position. (Photo No. 1)
- Back tractor up slowly telescoping hitch until hitch beams parallel to drills. **NOTE:** MAKE SURE CENTRE CABLE DOES NOT CATCH ON TRACTOR TIRES.
- Use hitch jack to unhook field hitch from tractor.
- Hook tractor to transport hitch — connect transport hoses.
- Pull lock up pins from transport wheels (Position "B") then lower wheels.
- Install lock down pins in transport assembly (Position "A").
- Install anticastor pins on both transport wheels "F" on third drill from transport hitch.

(IMPORTANT — Locking wheels keeps drills from moving sideways in transport.)

- Secure field hitch with transport hold up chain — Raise hitch jack.
- Hang cable on lug on 4th drill.
- Pivot short field hitch "C" sideways and secure with pin.
- Pull drill forward and install anticastor pin in front castor fork "E" of third drill from transport hitch.

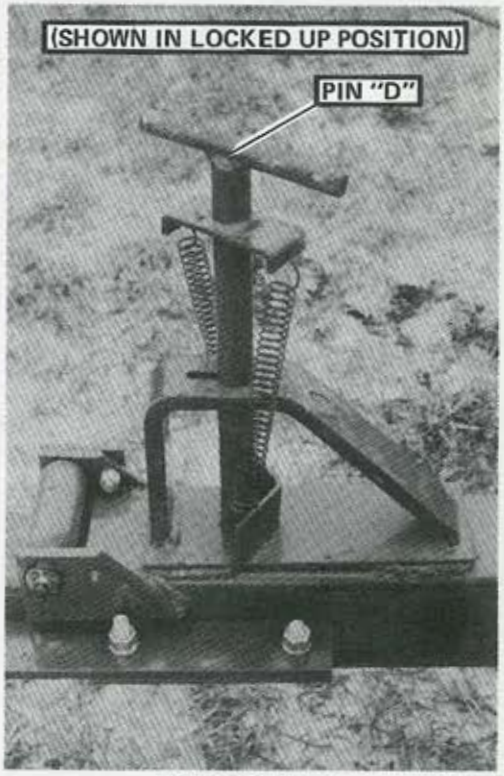


PHOTO No. 1

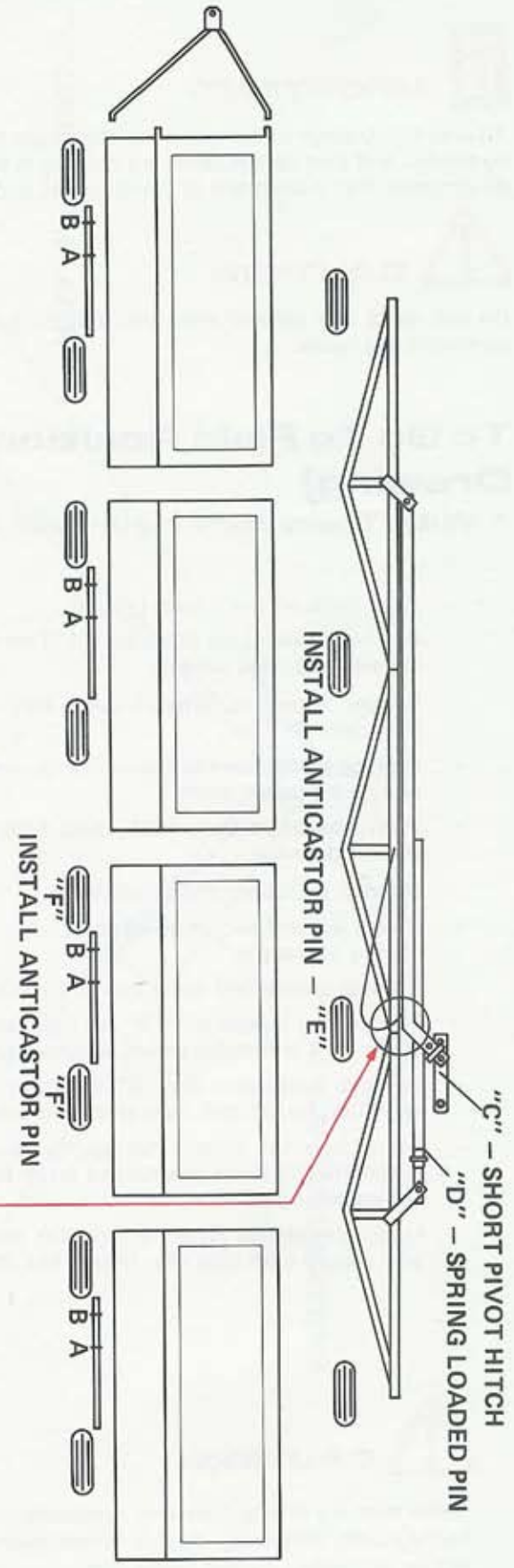
NOTE:

TRANSPORT SPEED SHOULD NOT EXCEED 10 M.P.H. (16 Km/h).

CAUTION:

Make sure no one is near any component being hydraulically activated. Double check that all is clear before activating tractor hydraulics.

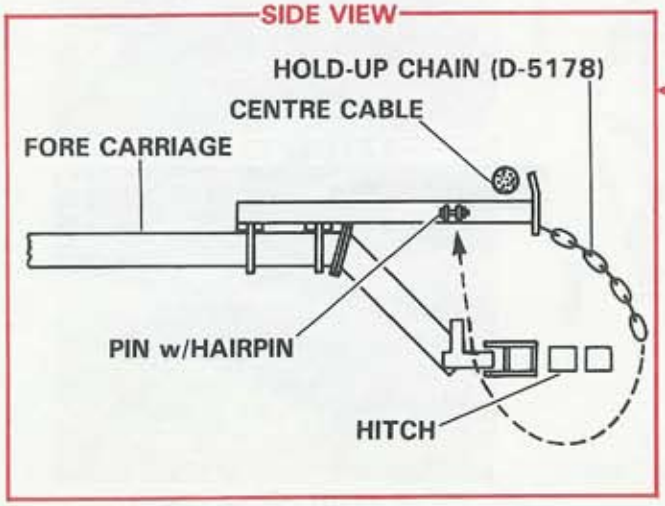
NOTE: DIAGRAM SHOWS FULL TRANSPORT READY POSITION



NOTE:
FOR BETTER CONTROL WHEN TRANSPORTING OVER LONG DISTANCES, MORE WHEELS MAY BE PINNED IF ROADWAY DOES NOT HAVE SHARP TURNS.
PIN BACK FROM CENTER.
WATCH WHEELS FOR SHIMMYING. REDUCE TRANSPORT SPEED, TO STOP SHIMMY.

DETAIL:
CENTRE CABLE LOOPS OVER HOOK MOUNTED ON THIRD DRILL HITCH (D-5137) FOR TRANSPORT.

SIDE VIEW



FIVEPLEX HITCH OPERATION

IMPORTANT:

To prevent damage to components make sure the proper Lock Pins are removed for each operation of the hydraulic, and that components are moving in the right direction — Tractor should be idled down until it is determined that movement of components is correct.

CAUTION:

Do not make any ajdustments with tractor hydraulic activated and block components before any adjustments are made.

To Go To Field Position From Transport (Refer To Drawing)

* With Transport Hydraulic Hoses At Transport Hitch

- Stop drills on fairly level ground.
- Pull lock down pins (Position "A") on transport wheels and raise wheels.
- Secure transport wheels with lock up pins (Position "B")
- Unhook tractor and hydraulic hoses — raise and secure transport hitch.
- With tractor at field hitch, raise field hitch to tractor drawbar.
- Unhook transport chain field hitch.
- Swing out and secure short pivot hitch "C" and couple to tractor.
- Release centre and outer cables from hangers.
- Turn spring loaded pin "D" on right hand hitch beam so it will move down automatically.
- Remove anticastor pin "E" from front castor wheel on fourth drill from transport hitch.
- Drive forward slowly till spring loaded pin automatically locks telescoped hitch brace and cables are tight.
- Lock over-centre latch "F" on left hand cable and secure with lock pin. (Photo No. 3)

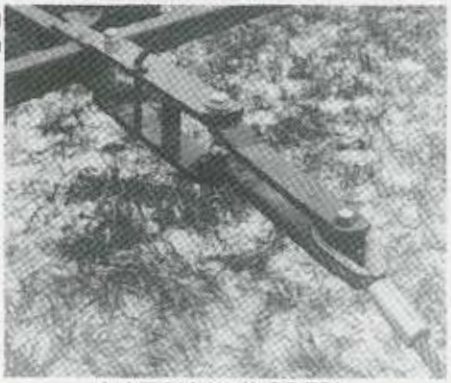
CAUTION:

Make sure no one is near any component being hydraulically activated. Double check that all is clear before activating tractor hydraulics.

1

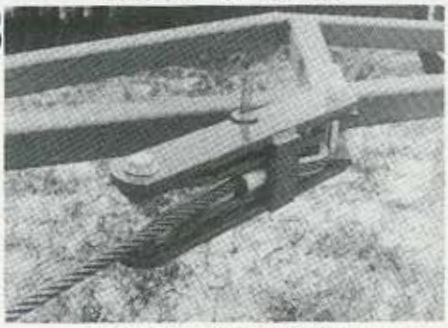
(SHOWN IN LOCKED UP POSITION)
SPRING LOADED PIN

2



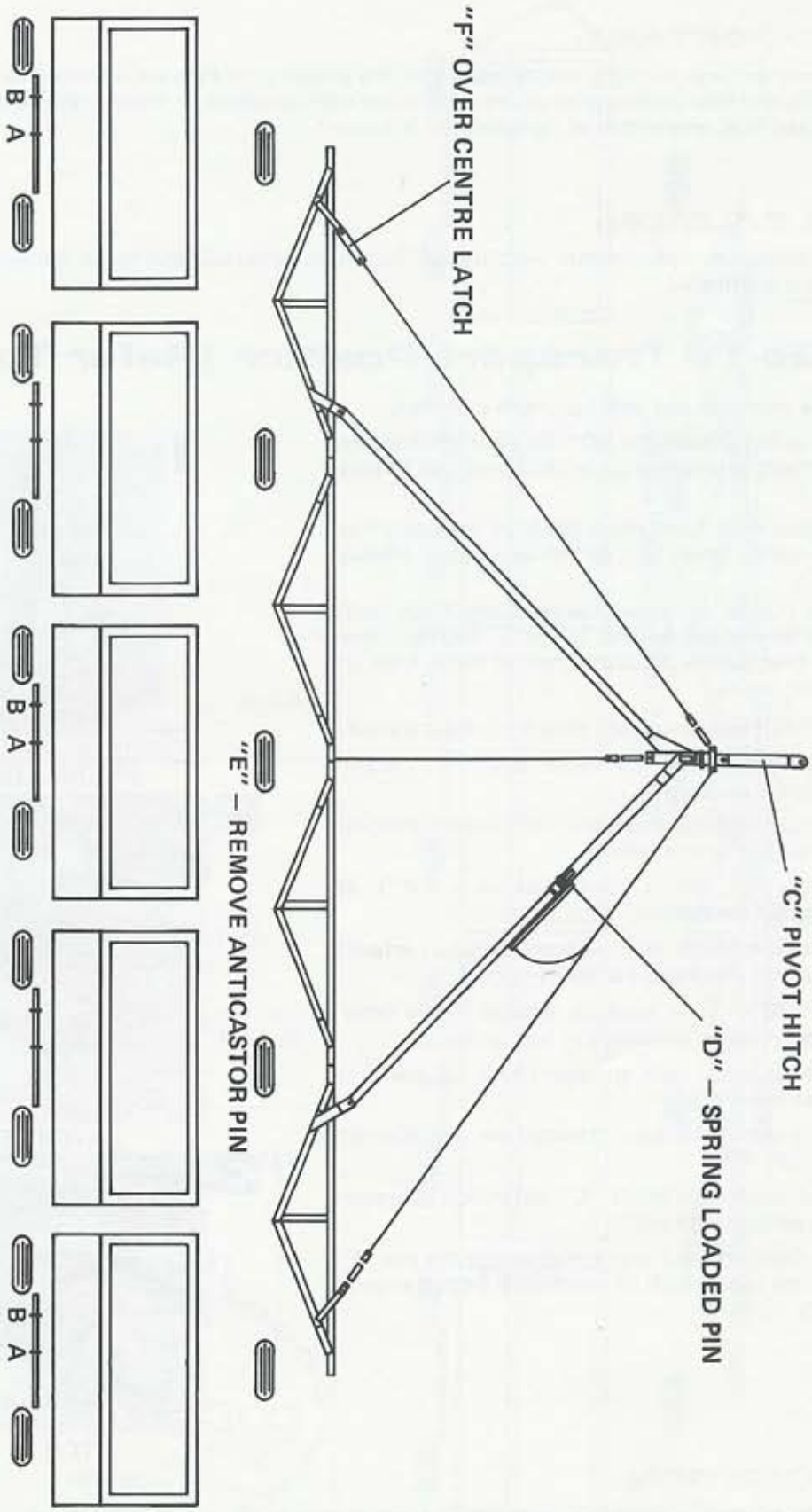
LATCH "F" OPEN

3



LATCH "F" CLOSED

NOTE: DIAGRAM SHOWS FULL FIELD READY POSITION



FIVEPLEX HITCH OPERATION

IMPORTANT:

To prevent damage to components make sure the proper Lock Pins are removed for each operation of the hydraulic, and that components are moving in the right direction — Tractor should be idled down until it is determined that movement of components is correct.

CAUTION:

Do not make any ajdustments with tractor hydraulic activated and block components before any adjustments are made.

To Go To Transport Position [Refer To Drawing]

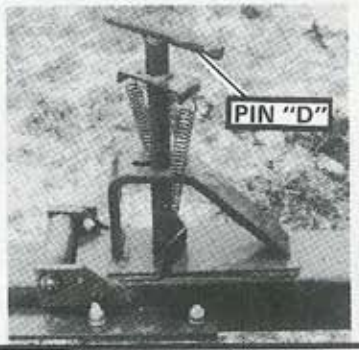
- Raise machine and lock up depth cylinders.
- Pull spring loaded pin "D" on right hitch beam and twist to lock it in Up or Hold position. (Photo No. 1)
- Slacken right hand hitch cable by releasing the over-centre latch "F" on left and cable. (Photo No. 2)
- Back tractor up slowly telescoping hitch until hitch beams are parallel to drillls. (**NOTE:** Take care that cables do not go under hitch tube or tractor tires.)
- Use hitch jack to unhook field hitch from tractor.
- Hook tractor to transport hitch — Couple transport hoses.
- Pull lock up pins (Positions "B") from transport wheels and lower wheels.
- Install lock down pins (Positions "A") in transport assembly.
- Install anticastor pins on both transport wheels on fourth drill from transport hitch.

(IMPORTANT — Locking wheels keeps drills from moving sideways in transport)

Secure field hitch with transport hold up chain — Raise hitch jack.

- Hang cables on lugs provided on 3rd (Center) and 5th drill.
- Pivot short field hitch "C" extension sideways and secure with pin.
- Pull drills forward and install anticastor pin "E" in front castor fork of fourth drill from transport hitch.

1



(SHOWN IN LOCKED UP POSITION)
SPRING LOADED PIN

2

LATCH "F" OPEN

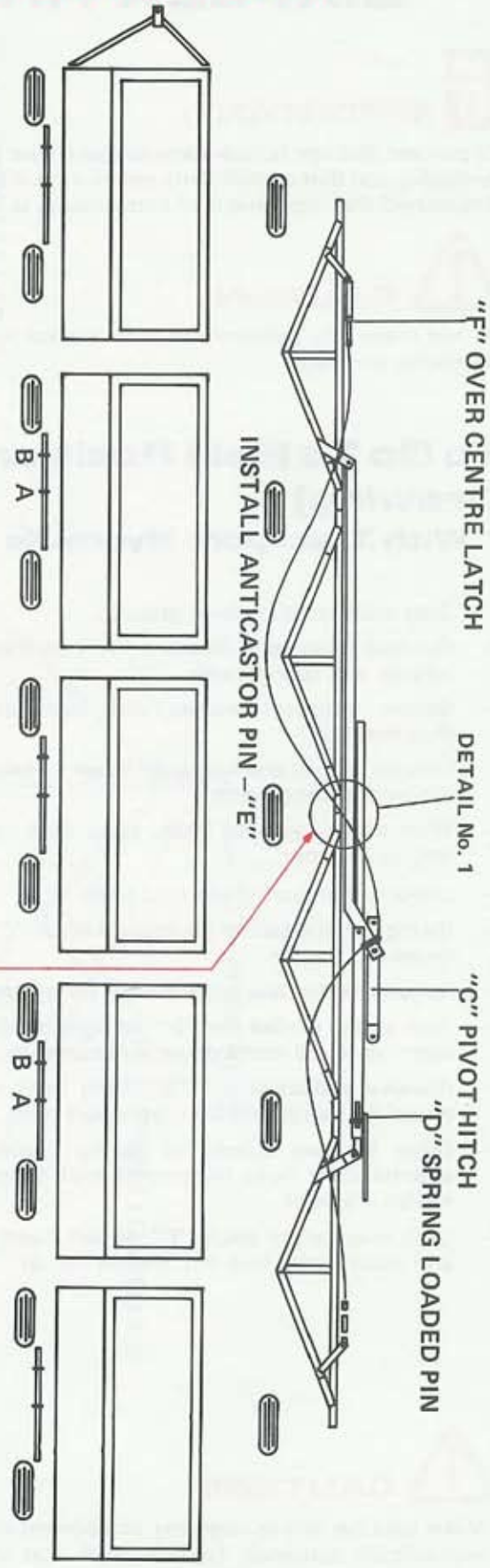
3

LATCH "F" CLOSED

CAUTION:

Make sure no one is near any component being hydraulically activated. Double check that all is clear before activating tractor hydraulics.

NOTE: DIAGRAM SHOWS FULL TRANSPORT READY POSITION



NOTE:

FOR BETTER CONTROL WHEN TRANSPORTING OVER LONG DISTANCES, MORE WHEELS MAY BE PINNED IF ROADWAY DOES NOT HAVE SHARP TURNS.

PIN BACK FROM CENTER.

WATCH WHEELS FOR SHIMMYING. REDUCE TRANSPORT SPEED, TO STOP SHIMMY.

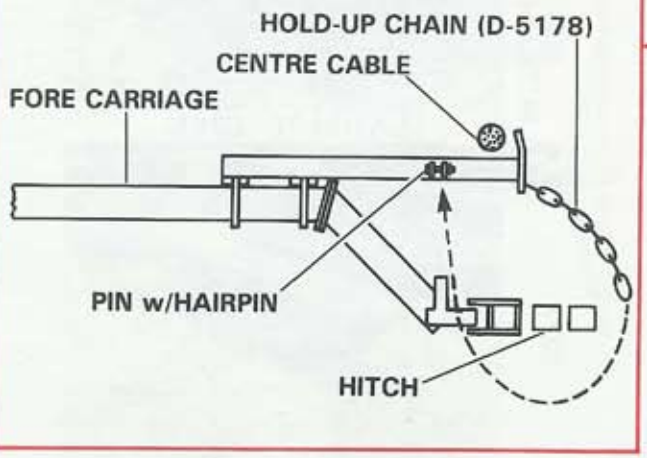
PIN ONLY CASTOR ON THIRD DRILL FOR SHARP TURNS.

DETAIL No. 1:

CENTRE CABLE LOOPS OVER HOOK MOUNTED ON THIRD DRILL HITCH (D-5137) FOR TRANSPORT.

RIGHT HAND CABLE LOOPS OVER (D-5181) HOOK ON MOUNTED ON FIFTH DRILL FORE CARRIAGE FOR TRANSPORT.

SIDE VIEW



SIXPLEX HITCH OPERATION

IMPORTANT:

To prevent damage to components make sure the proper Lock Pins are removed for each operation of the hydraulic, and that components are moving in the right direction — Tractor should be idled down until it is determined that movement of components is correct.

CAUTION:

Do not make any ajdustments with tractor hydraulic activated and block components before any adjustments are made.

To Go To Field Position From Transport [Refer To Drawing]

* With Transport Hydraulic Hoses At Transport Hitch

- Stop drills on fairly level ground.
- Pull lock down pins (Position "A") on transport wheels and raise wheels.
- Secure transport wheels with lock up pins (Position "B")
- Unhook tractor and hydraulic hoses — raise and secure transport hitch.
- With tractor at field hitch, raise field hitch to tractor drawbar.
- Unhook transport chain field hitch.
- Swing out and secure short pivot hitch "C" and couple to tractor.
- Release centre and outer cables from hangers.
- Turn spring loaded pin "D" on right hand hitch beam so it will move down automatically.
- Remove anticastor pin "E" from front castor wheel on fourth drill from transport hitch.
- Drive forward slowly till spring loaded pin automatically locks telescoped hitch brace and cables are tight.
- Lock over-centre latch "F" on left hand cable and secure with lock pin. (Photo No. 3)

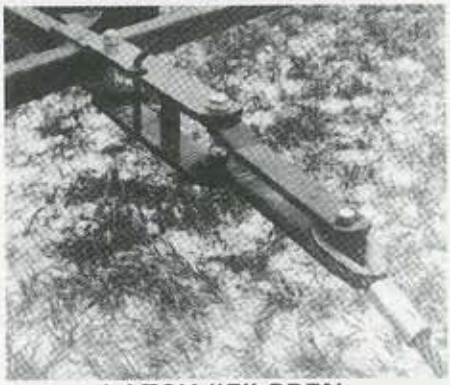
CAUTION:

Make sure no one is near any component being hydraulically activated. Double check that all is clear before activating tractor hydraulics.

1

(SHOWN IN LOCKED UP POSITION)
SPRING LOADED PIN

2

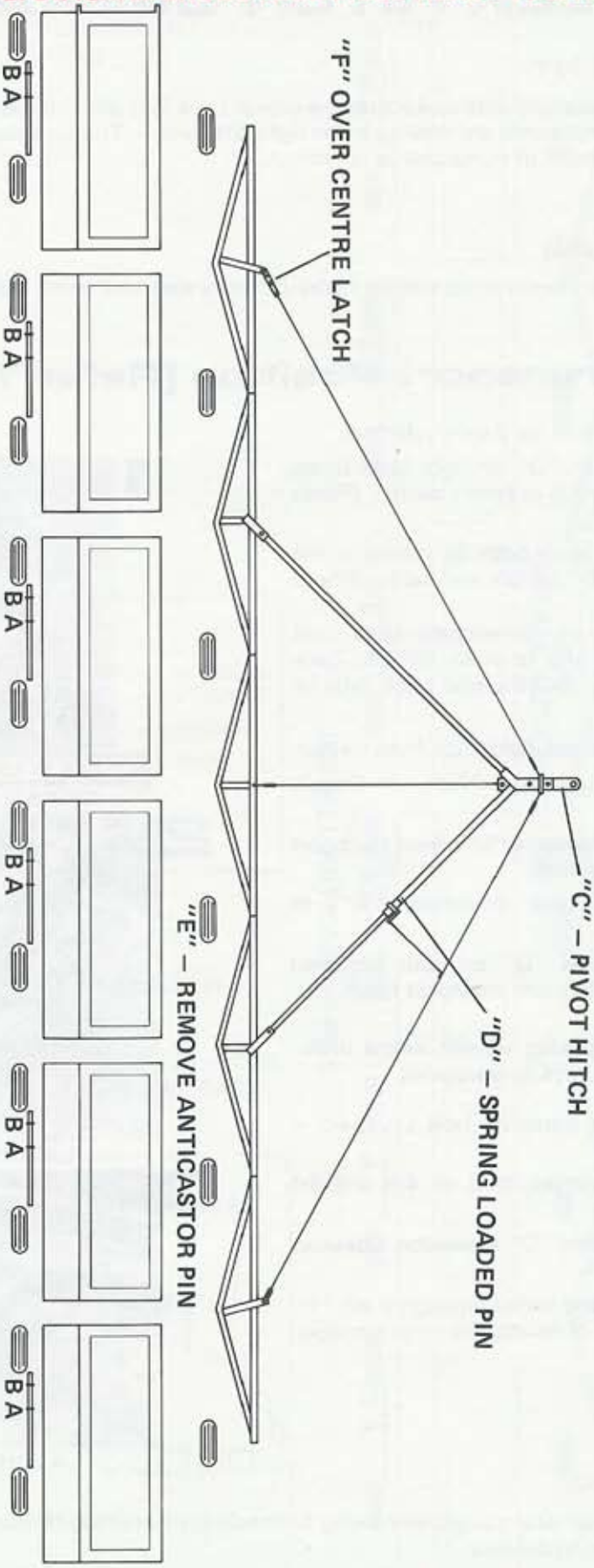


LATCH "F" OPEN

3

LATCH "F" CLOSED

NOTE: DIAGRAM SHOWS FULL FIELD READY POSITION



SIXPLEX HITCH OPERATION

IMPORTANT:

To prevent damage to components make sure the proper Lock Pins are removed for each operation of the hydraulic, and that components are moving in the right direction — Tractor should be idled down until it is determined that movement of components is correct.

CAUTION:

Do not make any ajdustments with tractor hydraulic activated and block components before any adjustments are made.

To Go To Transport Position [Refer To Drawing]

- Raise machine and lock up depth cylinders.
- Pull spring loaded pin "D" on right hitch beam and twist to lock it in Up or Hold position. (Photo No. 1)
- Slacken right hand hitch cable by releasing the over-centre latch "F" on left and cable. (Photo No. 2)
- Back tractor up slowly telescoping hitch until hitch beams are parallel to drillls. (**NOTE:** Take care that cables do not go under hitch tube or tractor tires.)
- Use hitch jack to unhook field hitch from tractor.
- Hook tractor to transport hitch — Couple transport hoses.
- Pull lock up pins (Positions "B") from transport wheels and lower wheels.
- Install lock down pins (Positions "A") in transport assembly.
- Install anticastor pins "G" on both transport wheels on fourth drill from transport hitch.

(IMPORTANT — Locking wheels keeps drills from moving sideways in transport)

Secure field hitch with transport hold up chain — Raise hitch jack.

- Hang cables on lugs provided on 4th and 5th drill.
- Pivot short field hitch "C" extension sideways and secure with pin.
- Pull drills forward and install anticastor pin "E" in front castor fork of fourth drill from transport hitch.

1

(SHOWN IN LOCKED UP POSITION)
SPRING LOADED PIN

2

LATCH "F" OPEN

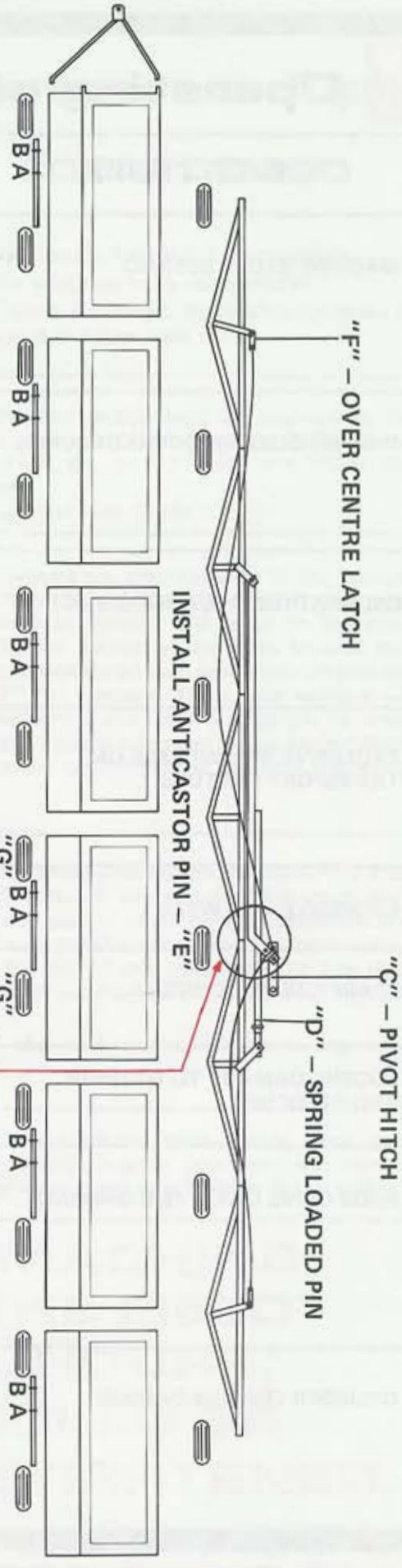
3

LATCH "F" CLOSED

CAUTION:

Make sure no one is near any component being hydraulically activated. Double check that all is clear before activating tractor hydraulics.

NOTE: DIAGRAM SHOWS FULL TRANSPORT READY POSITION



NOTE:

FOR BETTER CONTROL WHEN TRANSPORTING OVER LONG DISTANCES, MORE WHEELS MAY BE PINNED IF ROADWAY DOES NOT HAVE SHARP TURNS.

PIN BACK FROM CENTER.

WATCH WHEELS FOR SHIMMYING. REDUCE TRANSPORT SPEED, TO STOP SHIMMY.

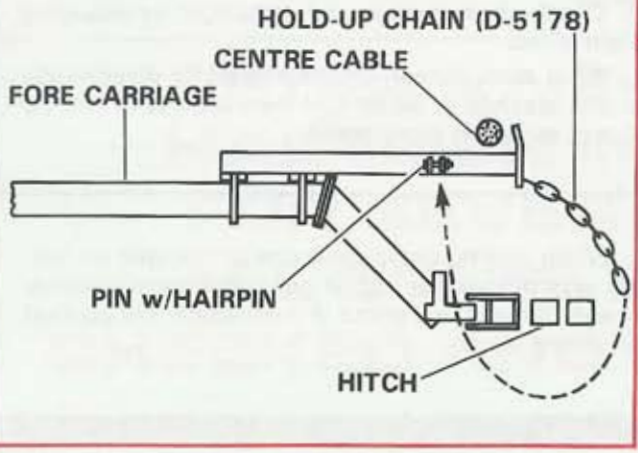
PIN ONLY CASTOR ON FOURTH DRILL FOR SHARP TURNS.

DETAIL:

CENTRE CABLE LOOPS OVER HOOK MOUNTED ON THIRD DRILL HITCH (D-5137) FOR TRANSPORT.

RIGHT HAND CABLE LOOPS OVER (D-5181) HOOK ON MOUNTED ON FIFTH DRILL FORE CARRIAGE FOR TRANSPORT.

SIDE VIEW



Operating and Maintenance Tips

CONDITION	CORRECTION
MACHINE STOPS SEEDING	1. Check chains. 2. Check clutch to determine whether shear pin has broke. 3. Check clutch rod. Insure it is engaging properly. 4. Adjust clutch linkage.
UNEVEN SEEDING THROUGH CUPS	1. Check flap spring. Replace if rusted or broken. 2. Check flap adjustments. All flap settings should be identical.
CALIBRATION CHART INCORRECT	1. Make sure drive box timing is correct. (Page 5) 2. Self calibration may be necessary due to specific weight, size of seed, moisture content.
EXCESSIVE TIRE WOBBLE ON TRANSPORT CASTORS.	1. Pin castor wheels. 2. Check tire pressure. 3. Adhere to recommended safe speed.
EXCESSIVE TIRE WEAR	1. Check and correct tire pressure.
GRAIN BOX EMPTYING	1. Be sure flap levers are secure and in proper position.
RODENT DAMAGE TO FITTINGS AND SEEDCUPS	1. When storing machine be sure all grain is cleaned out of cups and boxes.
POOR DRIVE CHAIN PERFORMANCE	1. Check chain tension and keep tight by adjusting chain idlers. 2. After each season chains should be disassembled and washed in diesel fuel then oiled with No. 30 oil and stored in a dry place.
CYLINDER LINKAGE DAMAGE	1. When locking up openers use pin located on bottom side of cylinder lug. If pin is not used cylinder linkage damage will occur if hydraulics are pushed the wrong way.

Operating and Maintenance Tips

CONDITION	CORRECTION
PERSISTENT EXTERNAL LEAKS — HOSE CONNECTIONS	1. Use thread sealant on N.P.T. connections. 2. Carefully retighten hose connections. 3. Check hoses for cracks. Be careful, hydraulic oil under pressure can penetrate skin.
ROCKSHAFT CLAMPS LOOSENING	1. Keep the clamps that hold the castings to the rockshaft tight at all times. Check periodically and tighten to 75 ft. lbs. on 1/2" bolts and 260 ft. lbs. on 3/4" bolts. 2. Make sure bolts are Grade 5.
POOR PACKER WHEEL OPERATION	1. Packer wheels are preassembled at the factory. The nut is torqued to 450 ft. lbs. This torque must be maintained or damage will result to the components. Special spring washers are located between outside packers on each assembly compressed by two 1/2" flat washers. The spring washers will help maintain torque and will be completely flattened at 450 ft. lbs. If space is noticed torque immediately. Turn nut to line up with cotter pin hole and install cotter pin.
WHEEL END PLAY	1. Check the wheel bearings on the castor fork after the first 50 acres of use and at the start of each season. If end play is found remove cotter pin and tighten the nut until the wheel does not rotate freely. Then back the nut off one slot. Check for free rotation and repeat until wheel rotates freely. Replace cotter pin. 2. Grease the hub several times during each season.
CLUTCH SEIZING	Check for dirt build-up inside clutch, clean with S.A.E. 80 w 90 Bearing Lubricant and replace damaged or worn parts which allow dirt to enter.

AFTER A NEW MACHINE HAS BEEN IN THE FIELD FOR SEVERAL HOURS, ALL BOLTS SHOULD BE CHECKED AND RETIGHTENED.

MEMO

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.

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