

Black

THE WIL-RICH®

4800
CHISEL PLOW

Operator's Manual

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Plate: 2 of 2

WARRANTY

The only warranty Wil-Rich gives and the only warranty the dealer is authorized to give is as follows:

We warrant products sold by us to be in accordance with our published specifications or those specifications agreed to by us in writing at time of sale. Our obligation and liability under this warranty is expressly limited to repairing, or replacing, at our option, within 12 months after date of retail delivery, any product not meeting the specifications. *We make no other warranty, express or implied and make no warranty of merchantability or of fitness for any particular purpose.* Our obligation under the warranty shall not include any transportation charges or costs or installation or any liability for direct, indirect or consequential damage or delay. If requested by us, products or parts for which a warranty claim is made are to be returned transportation prepaid to our factory. Any improper use, operation beyond rated capacity, substitution of parts not approved by us, or any alteration or repair by others in such manner as in our judgment affects the product materially and adversely shall void this warranty. *No employee or representative is authorized to change this warranty in any way or grant any other warranty.*

Wil-Rich reserves the right to make improvement changes on any of our products without notice.

When warranty limited or not applicable: Warranty on hoses, cylinders, hubs, spindles, engines, valves, pumps or other trade accessories are limited to the warranties made by the respective manufacturers of these components. Rubber tires and tubes are warranted directly by the respective tire manufacturer only, and not by Wil-Rich.

Warranty does not apply to any machine or part which has been repaired or altered in any way so as in the our judgment to affect its reliability, or which has been subject to misuse, negligence or accident.

A Warranty Validation and Delivery Report Form must be filled out and received by Wil-Rich to initiate the warranty coverage.

WARRANTY CLAIMS PROCEDURE

1. The warranty form must be returned to Wil-Rich within fifteen (15) working days from the repair date.
2. Parts returned to Wil-Rich without authorization will be refused. The parts must be retained at the dealership for ninety (90) days after the claim has been filed. If the Service Department would like to inspect the parts, a packing slip will be mailed to the dealer. The packing slip must be returned with the parts. The parts must be returned prepaid within thirty (30) days of receiving authorization. After the parts are inspected and warranty is verified, credit for the return freight will be issued to the dealer.
3. Parts that will be scrapped at the dealership will be inspected by a Wil-Rich Sales Representative, District Sales Manager or Service Representative within the ninety (90) day retaining period.

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The user is responsible for inspecting his/her machine and for having parts repaired or replaced when continued use of this product would cause damage or excessive wear to the other parts. The word **NOTE** is used to convey information that is out of context with the manual text; special information such as specifications, techniques, reference information of supplementary nature.

When in need of parts always specify the model and serial number. Write this number in the space provided. The serial number is located on the main frame in the front left corner.

WIL-RICH
a division of TIC-UNITED CORP.

Serial Number:

This machine may be covered by one or more of the following patents:
-PAT. U.S. - 3,606,928 3,782,481 4,451,052
4,296,695 4,054,177 4,068,723 4,121,852
-PAT. CAN. - 1974 1976 1982 1985
-OTHER PATENTS PENDING

WIL-RICH [®] **NOBLE** [®]

TIC [®]

Wahpeton, ND 58074

Made in USA

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Orientation

Any reference to left (L) or right (R) sides or components is to be understood as being viewed from behind the implement and looking forward.

Serial Number Break

Every implement has a serial number located on the forward left corner of the main frame. These serial numbers are consecutively assigned to the implements as they are manufactured. To aid in part ordering, we reference the serial number at the point the change occurred to provide an accurate means of determining the proper parts.

Modifications

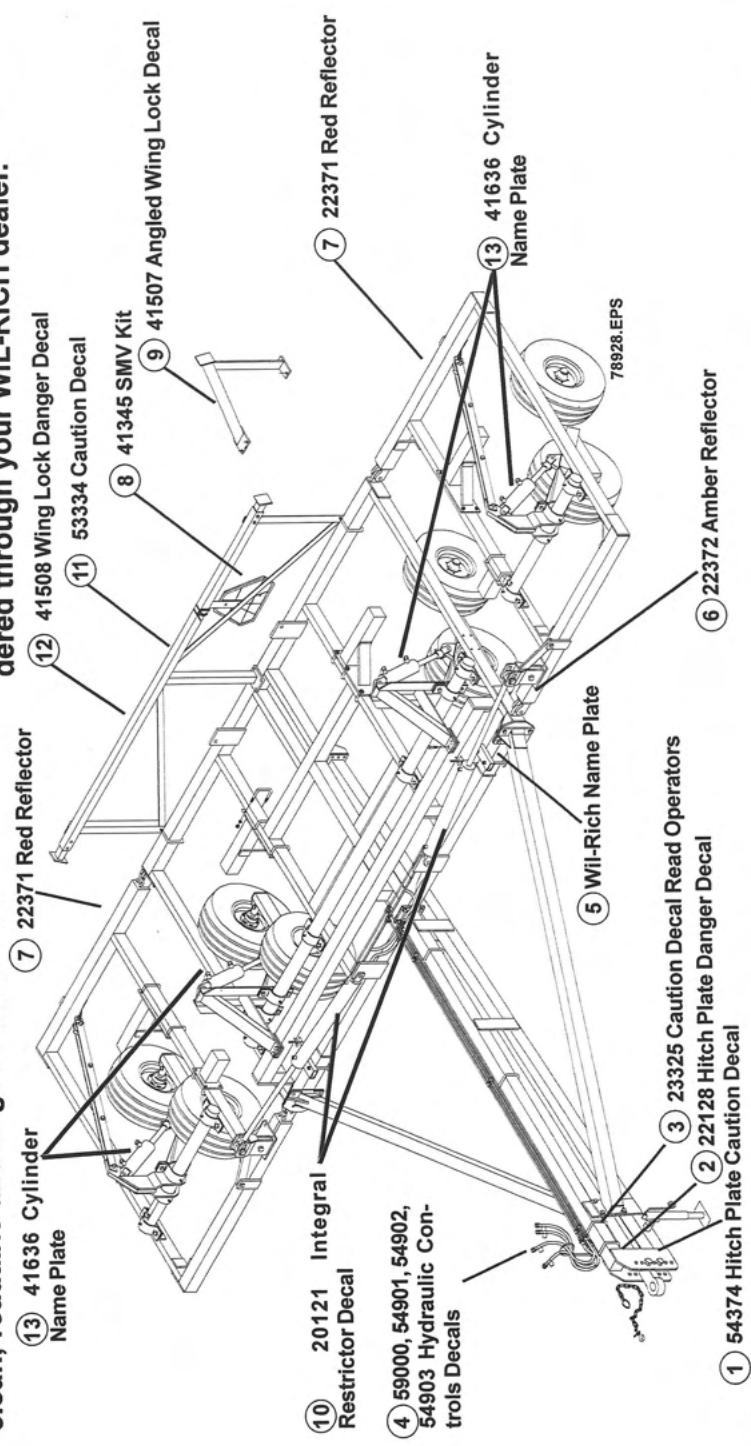
It is the policy of **WIL-RICH** Operations to improve its products whenever possible and practical to do so. We reserve the right to make changes, improvements, and modifications at any time without incurring the obligation to make such changes, improvements and modifications on any equipment sold previously.



Safety Decal Placement

Caution: Keep all safety decals and reflectors clean, readable and in good condition.

If decals or reflectors cannot be easily read or seen for any reason, or has been painted over, replace it immediately. Decals and reflectors may be ordered through your WIL-RICH dealer.



BEFORE OPERATING

Use extreme care when making adjustments.

When working under or around the machine always lower the Chisel Plow to the ground.

After servicing , **be sure all guards are in place** and all tools, parts, or servicing equipment is removed from the machine.

Make sure that there is no one near the machine just before and during operation. Serious injury can result from improper use.

Reduce speed when cornering on field ends and when operating on rough ground.

Do not attempt to remove any obstruction while machine is in motion.

Use extreme care when operating close to ditches, fences, or on hillsides.

No one other than operator should ride on the tractor.

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**WARNING**



HIGH PRESSURE FLUID HAZARD
To prevent serious injury or death:

- Relieve pressure on system before repairing or adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

SW700

Hydraulic fluid escaping under pressure can have enough force to penetrate the skin. Hydraulic fluid may also infect a minor cut or opening in the skin.

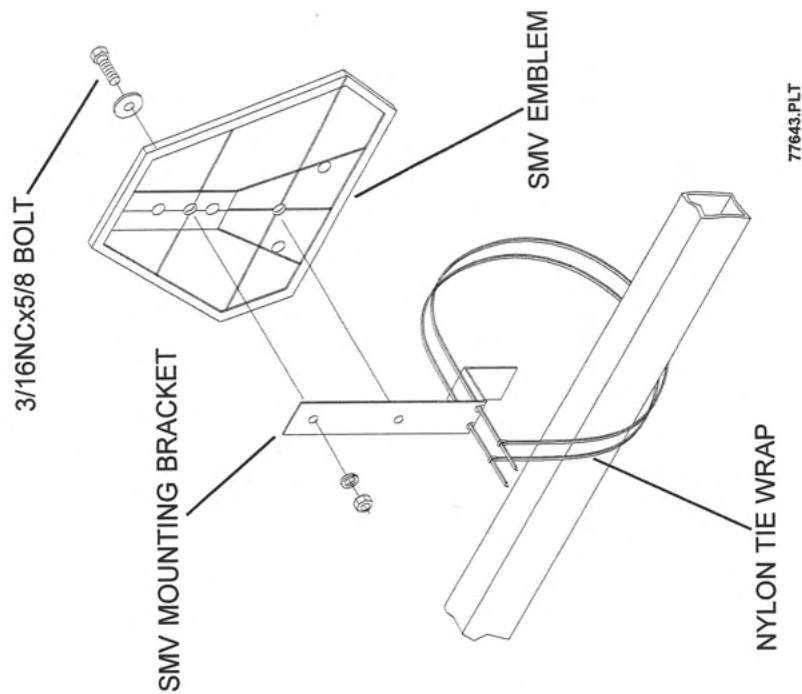
SMV

The bracket provided is designed to mount to numerous frame sizes and can be orientated in numerous positions to avoid interference with implement components

The SMV emblem is to be secured as near to the rear and centered, or as near to the left of center of the implement as possible.

Emblem is to be 2 to 6 feet above the ground measured from the bottom edge of the emblem.

Keep safety decals clean. Replace any safety decals that are damaged, destroyed, missing, painted over or can no longer be read. Replacement safety decals are available through your dealer.



PREPARATION

Before using the **WIL-RICH** Chisel Plow a careful inspection must become routine. A check must be made to insure that all hardware is securely tightened and moving parts properly lubricated.

Tighten all loose nuts and bolts and replace any bent or broken parts.

When tightening bolts, they must be torqued to the proper number of foot-pounds as indicated in the table unless specified. It is important that all bolts be kept tight.

On new machines, all nuts and bolts must be rechecked after a few hours of operation.

When replacing a bolt, use only the same grade or higher.

Bolts with no markings are grade 2.

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Grade 5 bolts furnished with the machine are identified by three radial lines on the head.

Grade 8 bolts furnished with the machine are identified by six radial lines on the head.

All U-bolts are grade 5.

GRADE 2	GRADE 5	GRADE 8				
						
TORQUE IN FOOT POUNDS						
BOLT DIA	3/8	1/2	5/8	3/4	7/8	1
HEX HEAD	9/16	3/4	15/16	1-1/8	1-5/16	1-1/2
UNC GR2	18	45	89	160	252	320
UNC GR5	30	68	140	240	360	544
UNC GR8	40	100	196	340	528	792
UNF GR2	21	51	102	178	272	368
UNF GR5	32	70	168	284	392	572
UNF GR8	48	112	216	368	792	840

WIL-RICH 4800 CP OPERATOR'S MANUAL 74198 6/96



General Tractor Requirements

The **WIL-RICH** Chisel Plow requires approximately 6 to 10 horsepower per foot. Two remote cylinder outlets and controls are required.

Wheels and Tires

Dual tractor rear wheels are recommended for use with the chisel plow. See your tractor's manual for tire inflation and instructions for wheel ballast where required.

Metering Valves

The metering valve may be set to provide varying amounts of hydraulic oil flow to the cylinders. (See your tractor's manual.)

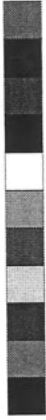
It is recommended the wing lift cylinders run as slow as possible to prevent damage to the implement, persons and property. Turn wing lift hydraulics metering valves to slow position.

Front Ballast

Tractor front end stability is necessary for safe and efficient operation. Therefore, it is important that the proper amount of weight be installed on the front of the tractor as recommended in your tractor operator's manual.



Note: Ballast recommendations provide for adequate transport stability at recommended speeds. Additional front ballast may be required for satisfactory field operation due to sudden or extreme forces on the chisel plow. These forces may occur when removing the chisel plow from the ground and turning at rows end, or during field transport over very rough ground



SIGN-OFF FORM

WIL-RICH follows the general standard specified by the American Society of Agricultural Engineers (ASAE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining the Chisel Plow must read and understand ALL Safety, Operation, and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information is reviewed. Annually review this information before the season starts up.

Make periodic reviews of SAFETY and OPERATION a standard practice for all your equipment. We feel that an untrained operator is unqualified to operate this machine.

A sign-off sheet is provided for all personnel who will be working with equipment have read and understood the information in the operators Manual and have been instructed in the operation of the equipment.

DATE	EMPLOYEE'S SIGNATURE	EMPLOYER'S SIGNATURE

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WIL-RICH 4800 CP OPERATOR'S MANUAL 74198 6/96

WING LIFT OPERATION

Wil-Rich Chisel Plows equipped with folding wings have hydraulic wing lift cylinders to fold the machine for road transport.

Wing lift cylinders are equipped with an integral restrictor on the rod end cylinder port. (See Fig. 1.) This allows the wings to lower at a slower rate and prevents the wings from falling too fast should there be some type of hydraulic failure.

CAUTION

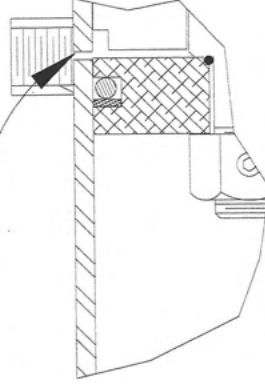
TO AVOID INJURY AND/OR EQUIPMENT DAMAGE:

- This cylinder has an integral restricting orifice and must be replaced with an identical cylinder.

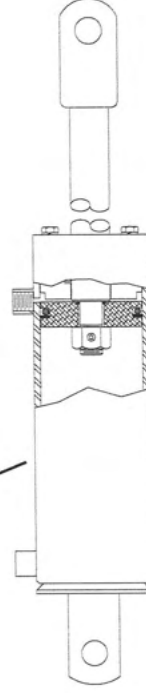
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1/16" DIA HOLE RESTRICTS THE FLOW OF OIL



WING LIFT CYLINDER



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FIG. 1. WING LIFT CYLINDER

WIL-RICH 4800 CP OPERATOR'S MANUAL 74198 6/96

6/14/96, 8:46 AM

Reduce speed when cornering and when traveling over rough and/or uneven round. Drive at a reasonable speed to maintain complete control of the machine at all times.

Comply with your state a local laws governing highway safety when moving machinery on a highway



Note: Assemble so decal is read from the rear of the machine.

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Note: Before and during operation be sure no one is on or around the implement. Serious injury can result from improper use.

Do not fold or unfold the main wings while the unit is moving. Stop the unit on a level part of the field when folding and unfolding any wings.

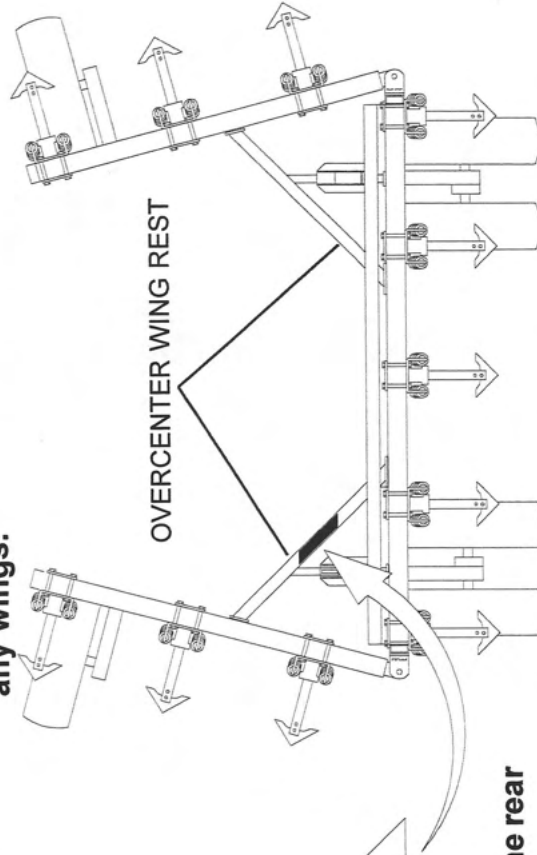


Fig. 3. Angled Wing Rest

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For chisel plows that use a parallel hydraulic system as shown in Fig's 4. & 5. Pressure flows to all cylinders at once through a common line from the tractor. The cylinder or pair of cylinders with the least amount of weight to lift will actuate first. This type of hydraulic systems properly sequences the folding and unfolding of the chisel plow wings. Check that your hydraulic system is properly connected before operating.

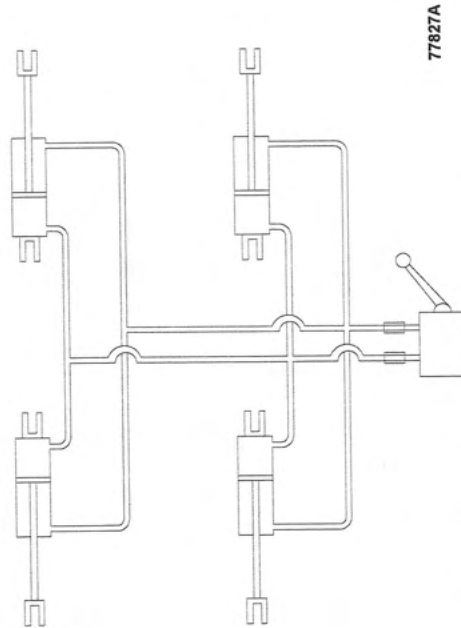


Fig. 5. Four Cylinder Wing Lift Circuit

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When lowering the wings, hold the tractor control lever until all cylinders are completely extended. Fully extending the cylinders allows the wings to flex properly in the field.



Note: Use extreme caution when working around overhead power transmission lines.

Note: Before operating hydraulics for the first time it is imperative that the cylinders be cycled to remove any trapped air that may be in the system.

To do this remove the rod end cylinder pins and fully extend and retract wing lift cylinders. Repeat this operation until all air in the system has been expelled.

When raising the wings be sure the wing rest is properly positioned to allow the wings to fold. Fold the main wings until they contact the wing rest.

DEPTH CONTROL CIRCUITRY

The depth control cylinders are hooked in series. Each cylinder is a top bypass cylinder and when fully extended will pass oil by the piston into the next cylinder charging the system.

Top bypass cylinders will bypass oil when the cylinder is fully extended. This bypass condition will exist when the implement is raised to maximum ground clearance. At this time oil will pass through the 1/16" dia bypass hole and go on to the next cylinder (See Fig 7).

Note: This system requires periodic synchronizing. The tractor valve is held in the raised position until the entire implement is raised and any air or contaminants that may be in the lines has been expelled..

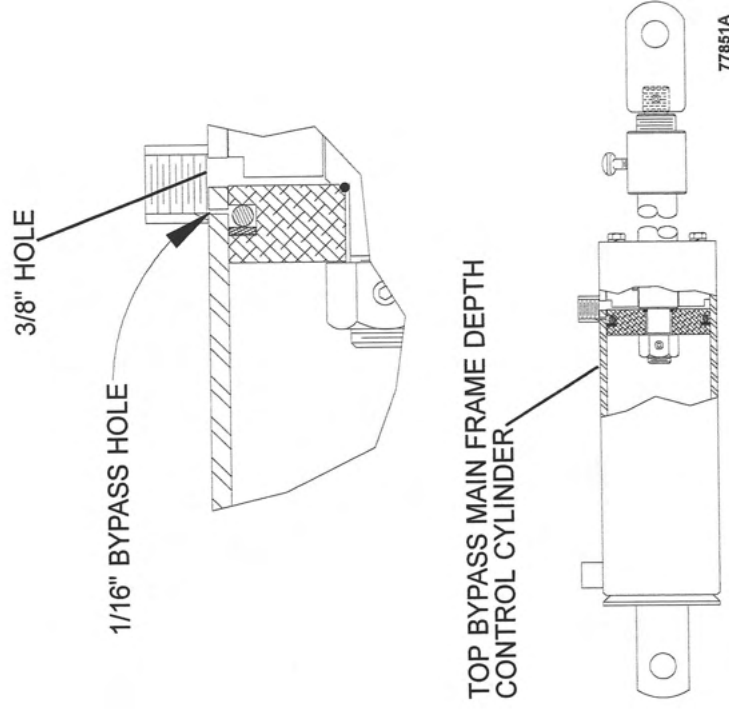


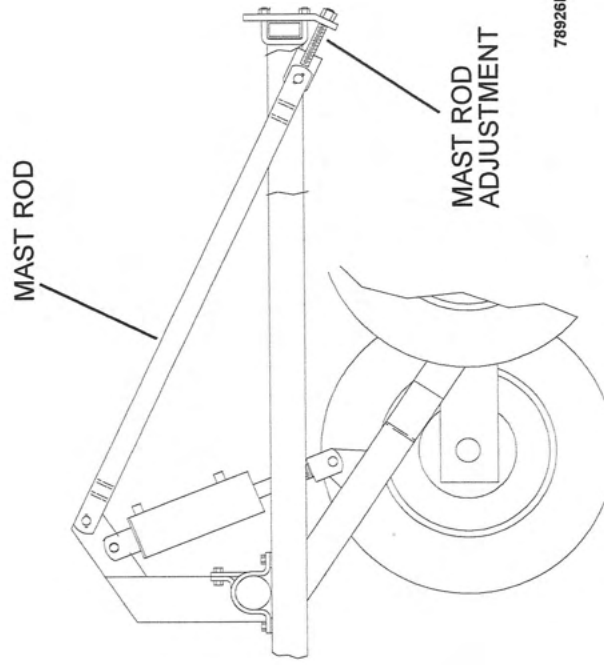
Fig. 7. Top Bypass Cylinder

WING DEPTH ADJUSTMENT

The operational depth of the wing is set by use of a slave cylinder located above the wing axle. These cylinders are connected in series with the main frame top bypass cylinders.

Note: Stop collars are used to set total machine depth. Adjustments required to level the wings relative to the main frame are made with mast adjustment rod at the wing mast adjustment point.

To set the wing axle, the mast adjustment rod is made shorter or longer. Lengthening the mast rod will lower the wing relative to the main frame. By adjusting the mast rod to a shorter dimension the wing will be raised (See Fig. 9).



78926B

Fig. 9. Wing Mast Adjustment

Wing

To set the depth of the wing relative to the main frame adjust the wing mast rod, not the wing axle cylinders. (See wing depth adjustments page 28)

Before trying to level the wings to the main frame, the cylinders should be synchronized. To do this hold the tractor control lever to the raised position for several seconds after the cylinders have been fully extended. This allows oil to bypass from one cylinder to the next and remove any air in the system. (See depth control circuitry.)

Again, completely retract the cylinders, go to the main frame and measure down to the center pivot of the walker. Then, go to the wing and measure the wing to the center of the walker. If the measurement is less on the wing shorten the wing mast rod. If the measurement is larger on the wing, then lengthen the wing mast rod.

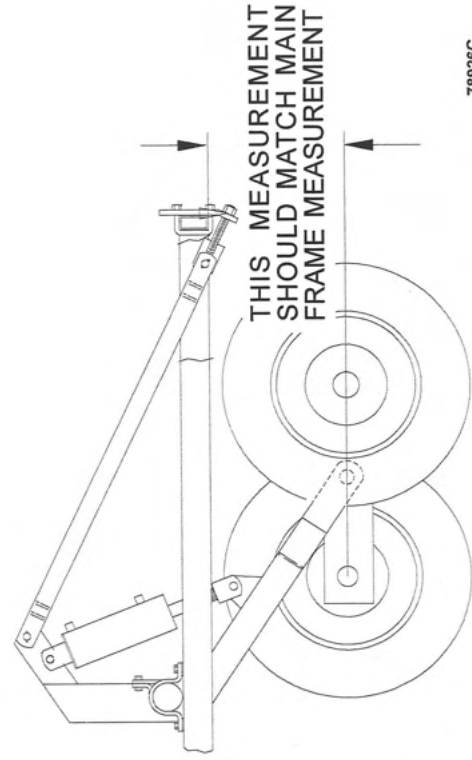


Fig. 11. Frame Height at Pole

Leveling front to rear

Go to the front of the main frame and measure from the ground to top of the frame. (See Fig 13) Then measure from the ground to the top of the pole up by the tractor (See Fig 14). Adjust the hitch up or down to make these two measurements equal. The pole jack may be used to aid in the process.

A shallow tillage kit is available from your dealer which provides extra holes to the bottom of the pole.

Note: On machines equipped with a dual cast hitch, flipping the hitch over will provide a finer adjustment than moving it to the next set of holes. (An adjustment of 1" is obtained instead of 2")

Note: When mounting the dual cast hitch, separate, where possible, the 2 hitch bolts to provide maximum support (See Fig 14).

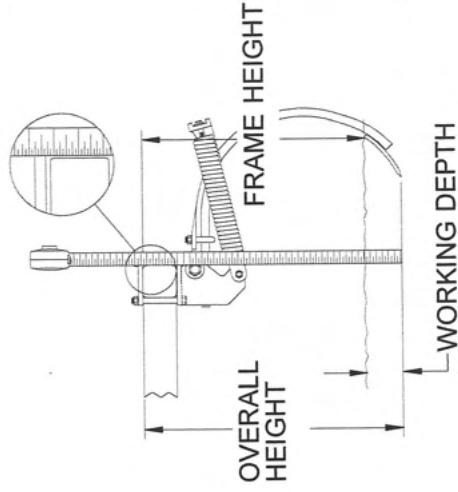


Fig. 13. Frame Height

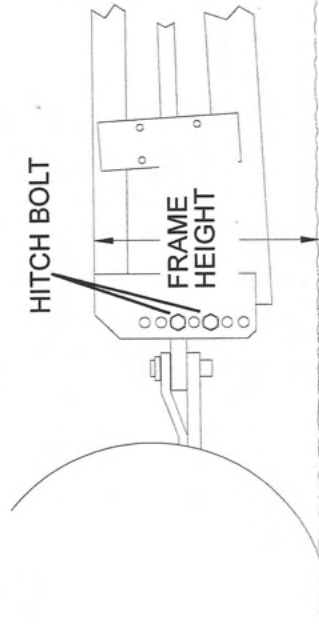


Fig. 14. Frame Height at Pole

Adjusting the height of Stabilizer Wheel

Series 4800 chisel plows have an optional casting stabilizer gauge wheel (Fig. 16.) or a rigid stabilizer gauge wheel (Fig. 17.). This feature gives added stability to the machine during the tillage operation.

The gauge wheel, should be set to control forward "dipping" of the wing, it is not used for depth control. Set the wheel 1/2" to 1" above the ground level, with the chisel plow at working depth.

Stabilizer wheels are available for all wing style chisel plows and are standard on all 9 and 12ft wing models. See optional equipment, for available styles.

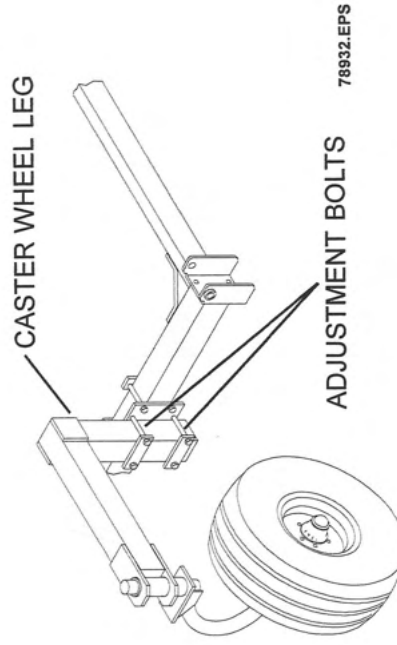


Fig. 16. Casting Gauge Wheel

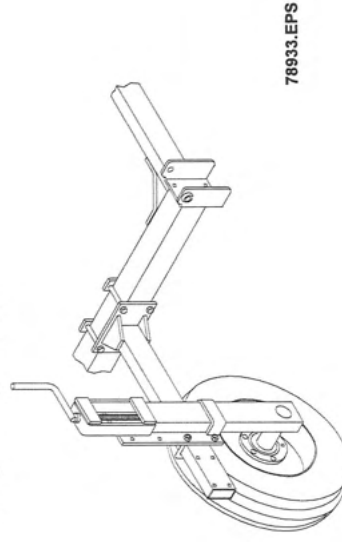


Fig. 17. Rigid Gauge Wheel

Final Leveling

The aforementioned procedures may have to be repeated several times, adjusting one item may have an affect on another. For example; Setting the main frame deeper may require the hitch to be moved up to maintain the machine level front to rear.

Synchronizing the Cylinders

With the master, slave cylinder system used on this implement it is required that the system be synchronized periodically. To do this, raise the unit completely and hold the tractor valve for several seconds after the cylinders are fully extended. This allows oil to bypass from one cylinder to the next and eliminates any air bubbles. This also gets all cylinders in phase with each other.

SHANK ADJUSTMENT

Each shank comes fully assembled from the factory. Install the shank in their proper location (see assembly manual for shank placements) and securely tighten nuts.

The spring adjustment bolt is tightened to 3/4" dimension (Fig. 19.) at the factory. Minor adjustment may be made to accommodate individual needs. If shanks are tripping excessively, springs can be tightened fully.

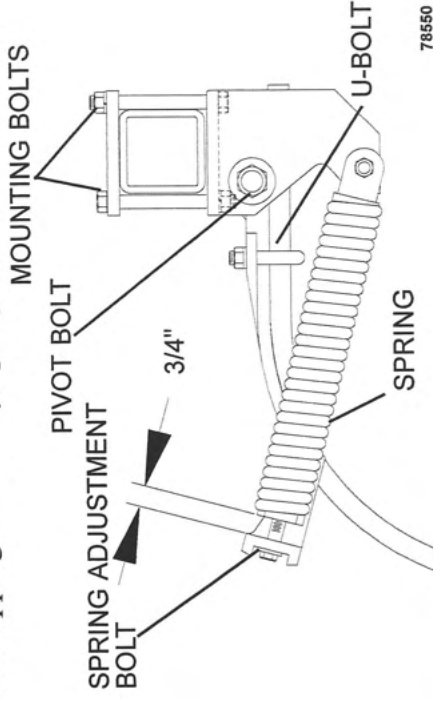


Fig. 19. Shank Assembly

Cylinder Shafts

If during the season the cylinder shafts are left exposed for an extended period of time, they should be coated with grease to protect them from rust and corrosion.

Axle Caps

All axle caps must be greased once a day with a good quality grease. Lower machine onto the shovel points to relieve pressure on caps to make greasing easier.

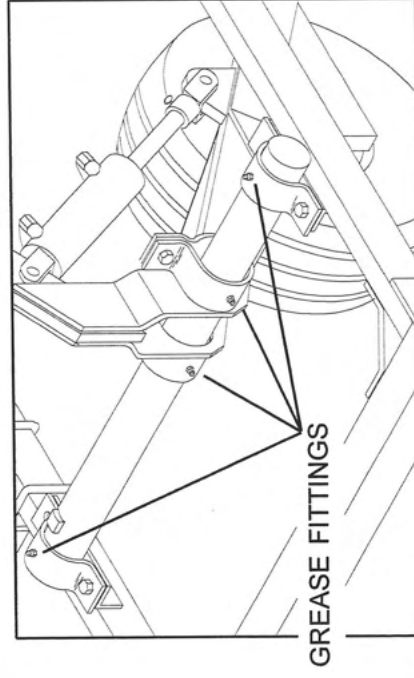


Fig. 20. Grease Fittings

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Hub and Spindle Assemblies

Each hub and spindle assembly comes with a grease fitting installed in the hub. These should be greased once a week during steady usage. Caution - do not over grease.

Clean and repack hub and spindle bearings once each season.

Tighten spindle nut until the drag on the tire stops the rotation. Locate the cotter pin hole in the spindle and loosen the spindle nut just enough to allow insertion of the cotter pin.

Replace cotter pin and grease cap.

Walking Tandem Assemblies

Periodically check each walking tandem assembly for looseness and tighten spindle nut if the bearings show any evidence of side play.

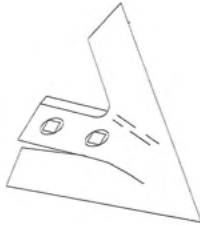
Clean and repack walking tandem assemblies once each season.



OPTIONAL EQUIPMENT

Shovels

Shovels should be used for general tillage, seedbed preparation and weed eradication. 50 degree shovels are currently standard.



77905

12", 14", 16" and 18" plain shovels



Spikes

Spikes are recommended for deep penetration, hard soil conditions, killing of quack grass and other grassy weeds.



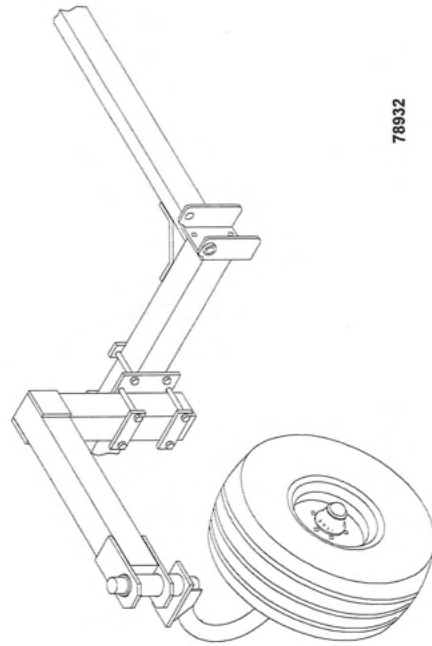
77905A

2" reversible spike
3" (right and left) plain twisted spike
4" (R & L) moldboard spike



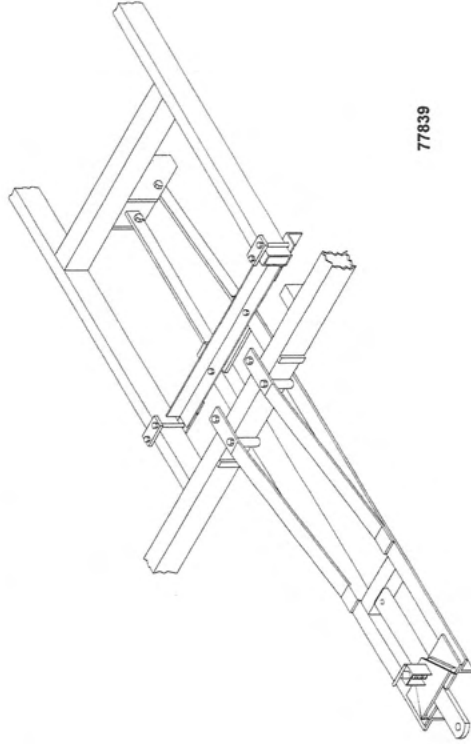


Castering Stabilizer Wheel



78932

Auxiliary Hitch



77839



Locating Leaking Cylinders

With wings unfolded, check all hoses, hydraulic fittings and cylinder rod seals for external leaks.

Replace leaking components before continuing procedure.

Remove or retract stops on mechanical depth stop to perform check.

Cycle machine up and down 3 times, holding the unit up for 15-20 seconds at the top of each stroke.

Lower the machine until shovels or spikes are 4-8 inches above the ground.

Shut off tractor engine.

Locate and disconnect the pressure line from the tractor outlet. This line goes to the base end of the main frame cylinders. Leave return line (wing frame to tractor) as is.

Return to the tractor cab. Move hydraulic lever fully forward to the "float" position.

Measure and record the length (A Fig 21) of all depth control cylinder rods. (Fig. 22 page 46.)

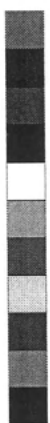
Note: The main frame cylinders will have more rod exposed than the wing frame cylinders.

Let the machine stand for one hour. After an hour, measure and record the rod length for each cylinder as done in previous step. **Record if the cylinder(s) extended or retracted.**

If any of the depth control cylinders have extended or retracted more than 3/8", match the results to the table on page 46-47, to identify the leaking cylinder(s).



Keep people away from machine when placing tractor control lever in "float" position because unexpected movement of the machine could injure someone.



HYDRAULIC CYLINDER TROUBLE SHOOTING

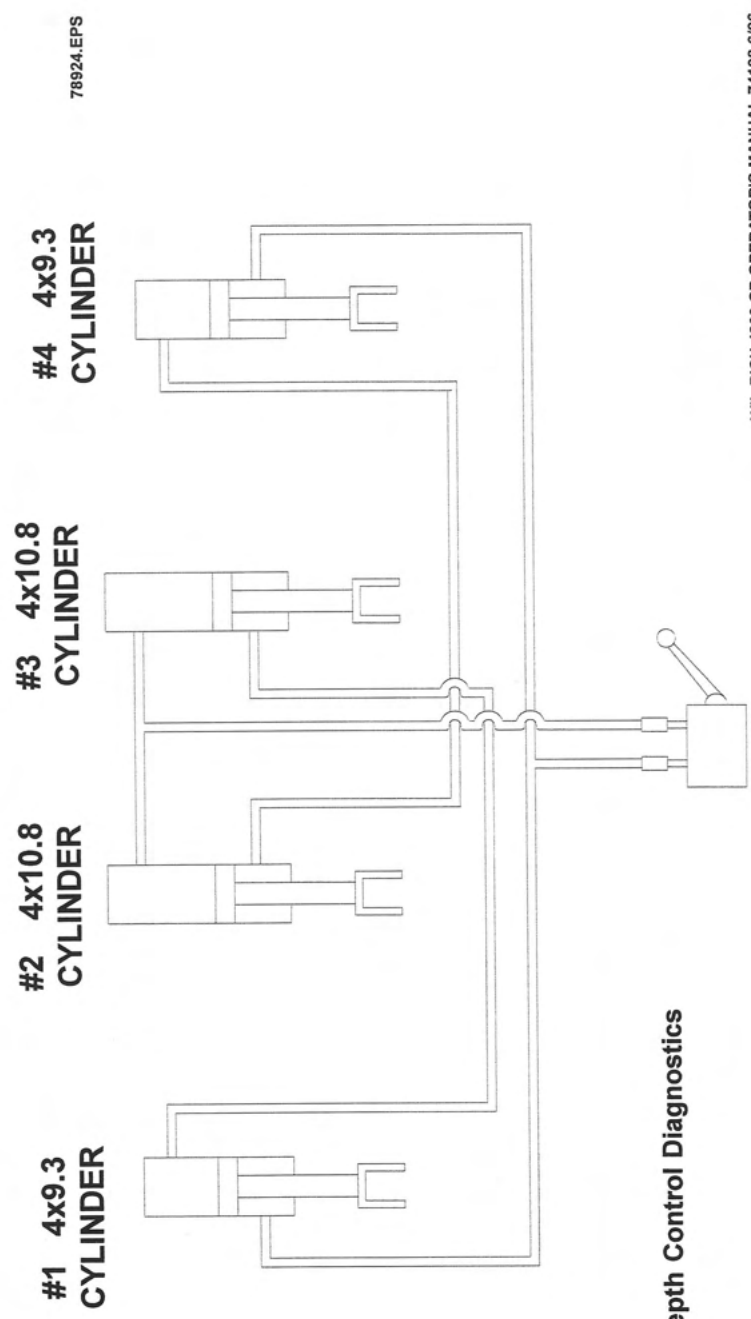


Fig. 22. Depth Control Diagnostics

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TRUBLE SHOOTING		
PROBLEM	POSSIBLE CAUSE	SOLUTION
Machine will not pull straight (skewing or dog tracking).	Chisel Plow not level.	See leveling, page.
	Incorrect shank placement.	Check shanks for proper location, see Assembly manual.
	Tires not equally inflated.	See tire inflation.
Settling of entire implement from raised position.	Leaking cylinder.	Replace cylinder seals. (See locating leaking cylinders)
	Leaking tractor hydraulic control valve.	See tractor manual.
Wings lowering to rapidly.	Incorrect cylinder installed, should have 1/16" dia. integral restrictor cylinder.	See wing lift circuitry page 4 and install correct cylinder.