



**SKID STEER LOADER SNOWPLOW
C-PLOW
MODELS 2881, 2891**

OPERATOR'S MANUAL

DO NOT USE OR OPERATE THIS EQUIPMENT UNTIL THIS MANUAL
HAS BEEN READ AND THOROUGHLY UNDERSTOOD

PART NUMBER 25011913 Rev. E

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25011913 Rev. E

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MANUALS/25011913RevE

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TO THE PURCHASER

This product is designed and manufactured to give years of dependable service when properly maintained and used for the purpose for which it is intended. Never allow anyone to operate this equipment until they fully understand the complete contents of this manual. It is the responsibility of owners who do not operate this equipment to ensure the operator is properly instructed and understands the contents of this manual. It is also the owner's responsibility to ensure that anyone operating this equipment is mentally and physically capable of so doing.

Important information is contained in this manual to help ensure safe and efficient operation.

If you have any questions about this manual, or the equipment discussed herein, contact your snowplow dealer.

 **TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.**

 **THIS SYMBOL MEANS:**
- ATTENTION!
- BECOME ALERT!
- YOUR SAFETY IS INVOLVED!

 **SAFETY SIGNAL WORDS:**

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury, or damage to components.

NOTE: Addresses safety practices not related to personal safety.

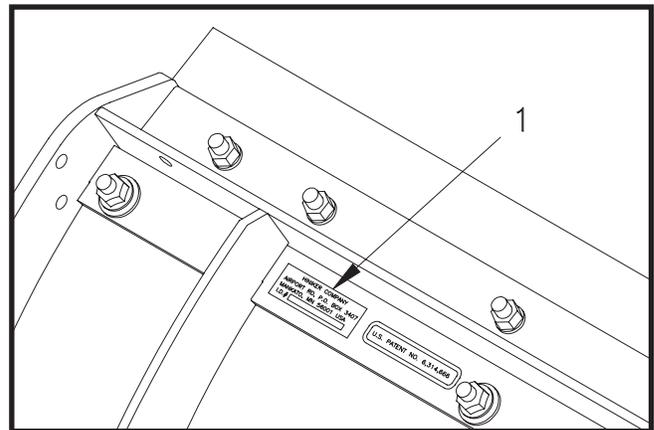
All references to Left or Right are defined as viewing the plow from the cab of the machine.

This Operator's Manual is shipped with this equipment. Contact your dealer for additional copies.

Always obtain original factory service parts. Substitute parts could adversely affect equipment performance and warranty.

Check that your dealer has forwarded the delivery report form along with the plow identification number because it helps maintain maximum service and warranty benefits. This does not put you on any mailing list, and information thereon is not available to others.

Your plow's identification number plate is at location (1) in the following illustration.



DWG NO. 5464

Record the following information for later reference when obtaining service parts:

Purchase Date _____

Purchaser's Name _____

Dealer's Name _____

Machine I.D. No. _____

SAFETY



This is a safety alert symbol. It alerts an operator to information concerning personal safety. Always observe and heed these symbols and instructions, otherwise death or serious injury can result.

Operator safety is a principle concern in equipment design and distribution. However, many accidents occur because a few seconds of thought, and a more careful approach to handling, were ignored. Accidents can be avoided by knowing and following the precautions cited in this manual.

GENERAL SAFETY

1. Read this manual thoroughly. Make sure the operator understands it and knows how to operate this equipment safely. This equipment can kill or injure an untrained or careless operator and bystanders. If you sell this equipment, ensure the new owner acknowledges receipt of this manual.
2. This manual **Does Not** instruct the operation or maintenance of the skid steer loader. Obtain training on control and function of the skid steer loader from your loader dealer.
3. This plow is intended for plowing snow only. Plowing gravel, rocks, etc., or using the plow for any purpose other than plowing snow could result in harm to the operator or bystanders or cause damage to the plow and will void the warranty.
4. Do not attempt to handle or service this equipment, or direct others to do the same, unless you know how to do it safely and have the proper tools for the job.
5. Do not service or otherwise handle a plow in the raised position unless it is securely blocked against unexpected falling.
6. Keep hands, feet, hair, and clothing away from moving parts.
7. Do not alter the equipment to the extent of compromising safety or performance.

BEFORE OPERATION

1. Discipline yourself to visually check for worn, damaged or cracked parts before starting use. Replace these with genuine factory service parts.
2. Escaping hydraulic oil under pressure can penetrate the skin, causing serious injury.

Do not use your hand to check for leaks. Use a piece of paper or cardboard to find suspected leaks. Tighten all connections before pressurizing hydraulic lines. If fluid is injected into the skin, get medical attention immediately to prevent serious infection.

3. Check all controls and operating functions of the machine in a safe area before starting to work.

DURING OPERATION

1. Always wear the seat belt and lower the seat bar, if equipped, when operating the loader.
2. Make sure all controls are in the neutral position before starting the loader.
3. Ensure everyone is clear of the machine, especially away from blind areas of the operator, before actuating hydraulics or operating this equipment.
4. Do not plow snow at excessively high speeds.
5. Avoid hitting objects that will damage your plow.
6. Set the brakes and stop the loader's engine before adjusting or servicing your plow.

AFTER OPERATION

1. Park the plow on a solid, level surface.

OPERATING PROCEDURES



IMPORTANT: To prevent damage to snowplow components, skid steer loaders with a “High Flow/Low Flow” hydraulic system must be operated in the **Low Flow** setting when the plow is attached.

ATTACHING THE PLOW

Mount the plow on the skid steer loader by driving the loader into the mount frame, then set the brakes and relieve hydraulic pressure before exiting the cab. Secure the plow frame to the loader as instructed in the loader manual. Make sure all latches are fully locked in place to prevent the plow from detaching.

Clean quick couplers of dirt before making hydraulic connections. Make sure quick couplers are fully engaged. If quick couplers do not fully engage, check that the couplers are the same size and type. Check also to see that hydraulic pressure has been relieved. See your loader or attachment dealer for coupler information.

Clean electrical connections then check that the pins and receptacles are aligned before plugging the connector on the plow into the connector on the loader.

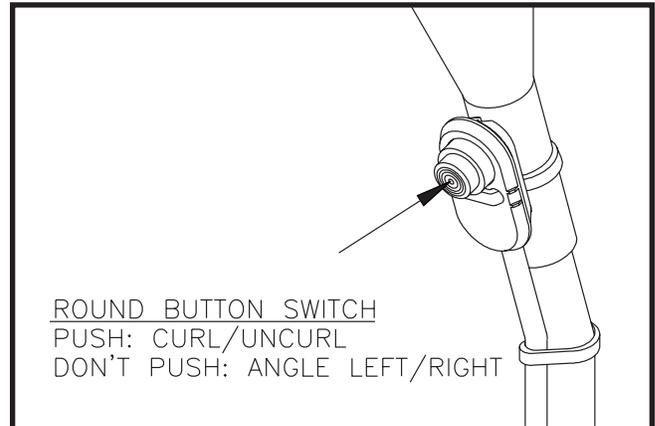
Test the angling and rollover functions in a safe area before using the plow.

CONTROLLING THE PLOW FUNCTIONS

Raise and lower the plow by operating the loader arms as you would for any other attachment. Avoid tipping the mount plate forward to apply down pressure on the plow.

Angle the plow left and right by directing oil through the auxiliary hydraulic ports on the skid steer loader. Reverse oil flow to angle the blade the opposite direction.

Release the hydraulic flow controller to hold the blade at an angle position between full left or full right. If the plow angles opposite from what is expected, switch couplers on the two feed hoses that connect to the loader.



DWG NO. 4250

Curl the plow forward by pushing and holding the round button switch while directing oil to the auxiliary hydraulic ports on the skid steer loader.

Uncurl the plow by pushing and holding the round button switch while reversing the oil flow direction to the auxiliary hydraulic ports on the loader.

To hold the blade at an intermediate position between full forward or full back, release the hydraulic flow controller, then release the round button switch

The plow blade will move more freely if the curl and uncurl functions are done with the plow in the raised position to avoid resistance from the ground.

TRANSPORTING THE PLOW

Raise the blade to a position where it does not block your view forward. Transport the plow with hydraulic flow off or in neutral to prevent accidental lowering of the plow. Never adjust the blade position while driving.

PLOWING SNOW



WARNING: Always wear the seat belt and lower the seat bar, if equipped, when plowing snow. Sudden contact with a hidden object can result in serious personal injury.

Inspect areas to be plowed before snowfall for potential hazards, and mark obstructions with stakes that will be seen when snow covers the ground. Identify any emergency equipment and utility outlets that may need to be cleared in the event of a storm. Prepare a plan beforehand for clearing snow from tight or enclosed areas and locate sites for stacking snow.

Adjust the skids at the back of the moldboard according to the surface to be plowed. The bottom of the skids should be about 1/2" below the cutting edge when plowing gravel roads or lots. Skids should be even with the cutting edge on hard surfaces such as asphalt or concrete.

Set the loader lift arms into the float mode so the plow can follow the contour of the ground and clean up low areas while plowing snow.

Always plow snow as it is accumulating. Wet snow may weigh about 12 pounds per cubic foot. The weight of snow being pushed by your plow may increase to several tons.

Allowing snow depth to grow to unmanageable levels can cause difficult removal problems and can be costly in terms of wear on equipment.

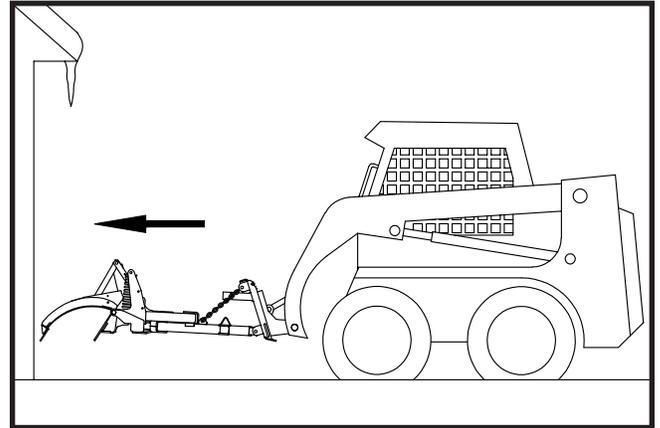


WARNING: Serious personal injury can result from plowing at excessive speeds, as well as costly damage to equipment and property, if an obstruction is encountered while plowing. Do not exceed 10 mph while plowing.



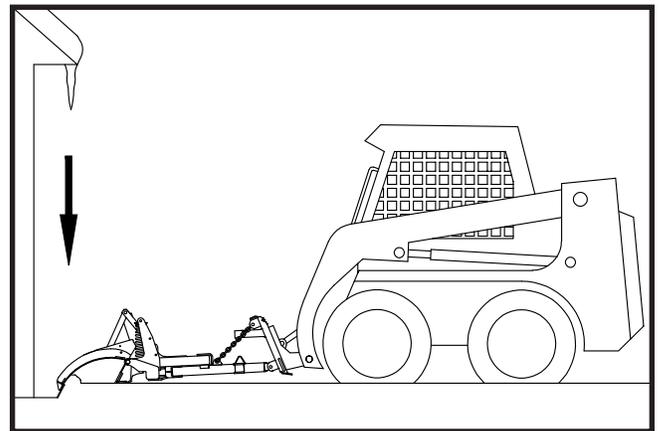
CAUTION: Serious damage to the snow plow may result if an obstruction is encountered while driving forward with the blade curled. **DO NOT** attempt to push snow when the upper plow edge is rolled forward or on the ground.

To backdrag snow away from a building, straighten the plow across the loader then lower the blade to the ground. Curl the upper edge forward until the upper cutting edge touches the ground by pushing and holding the round button switch while activating loader auxiliary hydraulics.



DWG NO. 5465

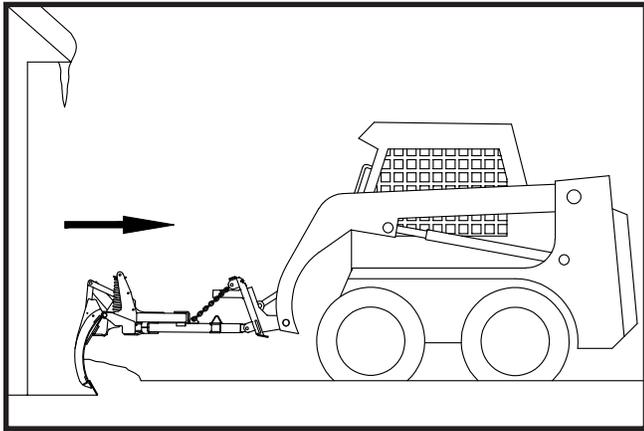
Lift the plow with the loader arms, then slowly drive to the building until the upper cutting edge nearly touches.



DWG NO. 5466

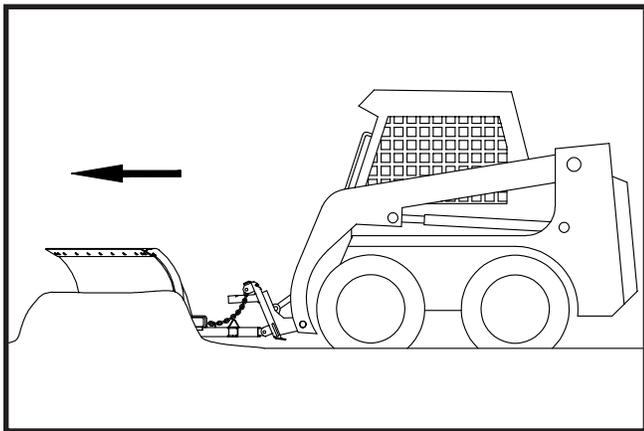
Lower the plow to the ground with the loader arms.

(Continued on Next Page)



DWG NO. 5467

Curl the plow fully forward with the round button switch and loader hydraulics. Pull snow away from the building.



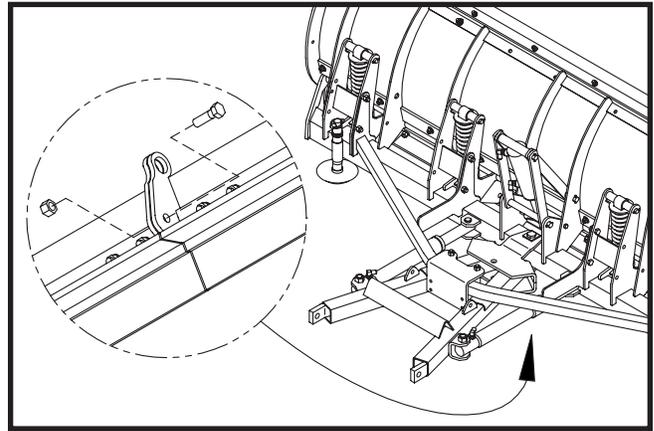
DWG NO. 5468

Uncurl the plow with the round button switch and loader hydraulics then push snow to a clear area.

Clear large lots by angling the blade and creating a single path. Push snow to outer edges of the lot by taking successive passes with the blade angled.

When plowing very deep snow, it may be necessary to raise the blade and shear off layers of snow until a working area is cleared. Work small areas in multiple passes to push snow to outer edges.

Generally, 6 inch snow can be plowed with the entire blade width; 9 inch snow with 3/4 of the blade width; 12 inch snow with 1/2 of the blade width. Local conditions will determine how much work can be done before stalling or getting stuck.



DWG NO. 5469

The two lower cutting edges may be bolted together to function as a single edge, if desired, by installing a 5/8" grade 5 bolt (not supplied) through holes in the support plates on the back of the trip edge sections. The cutting edge will trip harder when an obstruction is hit when the two sections are bolted together.

REMOVING THE PLOW

Park the plow on a solid level surface with the blade straight across the loader.

Lower the blade to the ground, relieve hydraulic pressure and set the brakes on the loader.

Uncouple the hydraulic feed lines from the loader and unplug the electrical connector by pulling straight apart. Do not twist the connector, as twisting will damage the connector pins or the wiring harness. Replace any dust caps at this time.

Unlatch the attachment mechanism at the front of the loader then slowly drive the loader back away from the plow.

MAINTENANCE



WARNING: Do not service or otherwise handle a plow in the raised position unless it is securely blocked against unexpected falling. Likewise, bolt or pin ribs on the back of the moldboard to prevent unexpected rollover of the plow due to accidental loss of hydraulic pressure or cylinder removal.

Dependable snowplow operation is the result of following good maintenance procedures. Inspect your plow frequently to ensure that all parts are working smoothly, and develop a schedule for maintenance at required intervals.

GENERAL

Wash salt and dirt off the plow before storage. Do not power wash hydraulic cylinders, as high pressure can damage seals and cause cylinder failure. Touch-up any chips or scratches in the paint and apply a light coating of grease to extended cylinder rods to prevent corrosion.

MECHANICAL COMPONENTS

Prior to the operation of a new snowplow, or one which has been stored, inspect all hardware and verify proper torque on all bolts and nuts in accordance with the recommended torque specifications.

GRADE 5 TYPE B & F LOCK NUT TORQUES

Size	Ft-lbs.	N-m
5/16"	13-18	17-25
3/8"	23-33	31-44
1/2"	58-82	79-112
5/8"	117-165	158-223

GRADE 5 BOLT TORQUES*

Size	Ft-lbs.	N-m
1/4"	8-12	11-16
3/8"	29-41	39-56
1/2"	73-103	99-140
5/8"	146-206	198-279

*applications without lock nuts.

Loose bolts can cause hole elongation and part failure resulting in dangerous operating conditions and equipment breakdown.

Check all hardware periodically during operation and keep tightened to specified torques. Replace worn bolts and lock nuts with grade 5 bolts and equivalent type B or type F lock nuts. Type B lock nuts are plain hex; type F lock nuts are flanged hex.

Inspect wear of cutting edges before every plowing season and frequently throughout the season. Replace cutting edges before wear reaches the main plow blade.

ELECTRICAL MAINTENANCE

Periodically check all electrical connections for proper fit and remove any contamination, that may be present.

To prevent contamination, always place dust caps on connectors when not in use. This is particularly important when the plow is being stored. The use of dielectric grease is recommended to reduce corrosion of the contacts and to make connecting and disconnecting easier.

Before each season check loader battery and electrical system for proper operation. A weak battery, dirty terminals, or faulty charging system may cause improper operation.

TROUBLE SHOOTING

GENERAL

- | | |
|--|--|
| <p>1. Check to see that the plow and loader are wired correctly with clean, tight connections at the battery. Check for proper voltage.</p> <p>2. Check that hydraulic quick couplers are fully engaged and electrical connection is tight at the front of the loader.</p> | <p>3. Check the hydraulic oil level in the skid steer loader.</p> <p>4. Check for external leakage at cylinders, hoses and the valve manifold.</p> |
|--|--|

PROBLEM	POSSIBLE CAUSE	REMEDY
1. Hydraulic cylinder does not function or functions slowly when hydraulics are activated.	A. Weak or defective loader battery. B. Oil level low. C. Hydraulic connection leak. D. Solenoid valve not opening properly.	A. Charge or replace battery. B. Add oil (do not overfill). C. Tighten or redo connection. D. Replace valve.
2. Plow angles opposite expected direction.	A. Feed hoses reversed.	A. Switch quick couplers on feed hoses.
3. Oil leaks from cylinder(s).	A. Loose packing. B. Defective cylinder.	A. Tighten packing 1/8 turn. B. Repack or replace cylinder.
4. Angling cylinders relieve too easily or too difficultly while plowing.	A. Relief pressure set too low or too high.	A. Have relief pressure adjusted by snowplow dealer.
5. Plow does not clean-up snow from low areas.	A. Loader arms not in float mode.	A. Loader arms should be in the float mode.
6. Battery goes dead with power on the loader.	A. Short in wiring.	A. Locate and repair.
7. Hydraulic quick couplers don't connect.	A. Wrong size or type of couplers. B. Oil pressure in loader lines.	A. Verify matching couplers. B. Relieve hydraulic pressure in loader.

C-PLOW ASSEMBLY

GENERAL INFORMATION

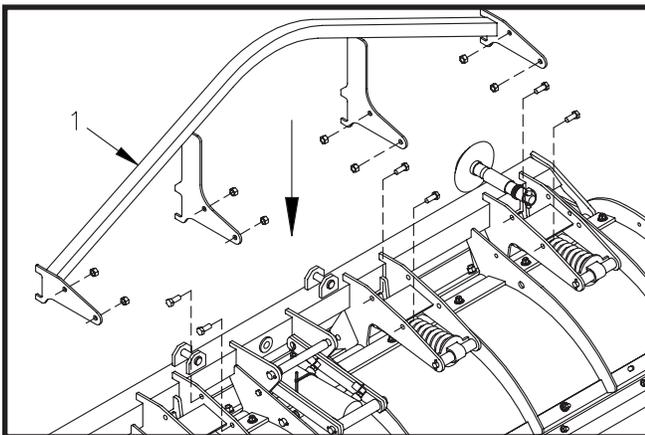


WARNING: To prevent personal injury or death, be certain to keep clear of any parts that may drop when removing bundling straps, wires or brackets. Support heavy sections with hoist or blocks before removing wires or straps.

Be certain that hydraulic hoses and electrical wires are safely routed and allow full motion of moving parts. Secure loose hoses and wires with plastic tie straps.

PLOW ASSEMBLY

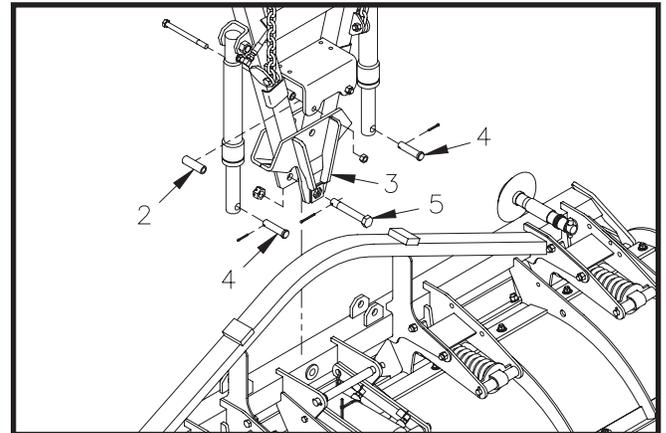
1. Place moldboard face down on cardboard or other padding that will prevent scratches in the paint.



DWG NO. 5470

Unbolt the frame weldment, item 1 in drawing 5470, from the back of the moldboard assembly by removing eight hex bolts and lock nuts. Rotate the frame to its working position and line up the eight holes in the frame with holes in the moldboard. Reassemble the frame to the moldboard with the hex bolts and lock nuts previously removed.

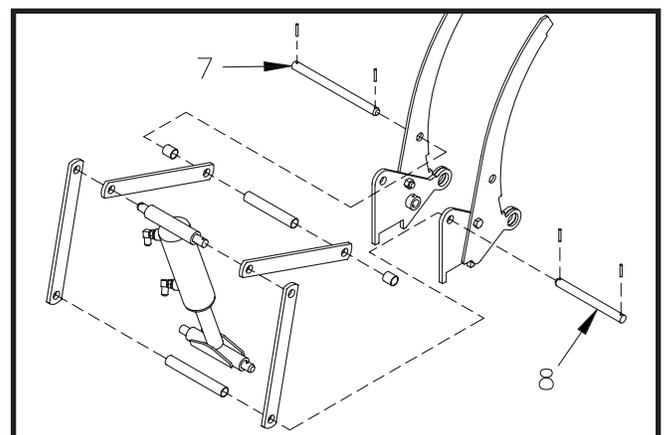
2. Unbolt the two bushings, item 2 in drawing 5471A, from the push frame assembly, item 3 and set aside for reinstallation. Likewise, remove clevis pins, item 4, from the two angling cylinders and unbolt the pivot bolt, item 5.



DWG NO. 5471A

Use a hoist or forklift to gently lower the push frame onto the moldboard, then reassemble the pivot bolt and clevis pins to attach the push frame to the moldboard. Reinstall the two bushings previously removed, using the original hardware.

3. Gently tip the plow assembly to its working position with a hoist or forklift. Snip the three plastic tie straps holding the rollover cylinder and links to the back of the moldboard assembly.



DWG NO. 5472

Drive the spring pin from the chamfered end of pin # 7 in drawing 5472, then remove the pin and three spacers.

(Continued on Next Page)

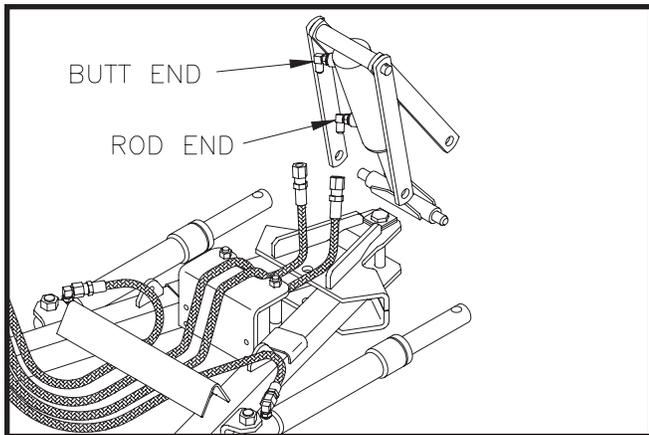
Extend the rollover cylinder until holes in the two inner links can be assembled to holes in the moldboard ribs.

Pin the inner set of links between the ribs, with the long spacer between the two links and a short spacer between each link and rib. Reinstall the spring pin to secure the assembly.

Drive the spring pin from the chamfered end of pin # 8, then remove the pin and spacer.

Assemble the outer set of links between the two frame plates, with the spacer installed between the two links. Reinstall the spring pin to secure the assembly.

4. Route the two hydraulic hoses for the rollover cylinder under the rear cross member on the push frame, then over the formed angle brace to prevent hoses from getting pinched.

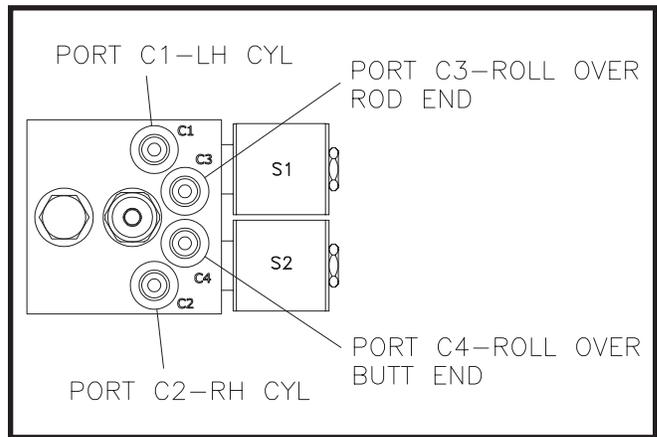


DWG NO. 5473

Assemble the hose ends to the cylinder, as follows:

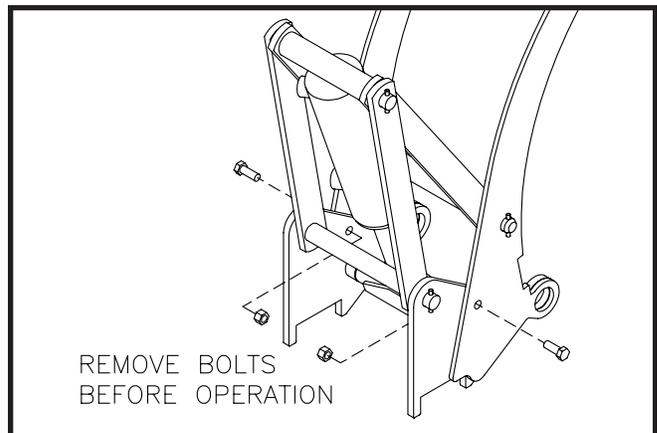
- Port C3 to rollover cylinder rod end.
- Port C4 to rollover cylinder butt end.

Refer to labels on hose ends to ensure hoses are connected correctly.



DWG NO. 6694

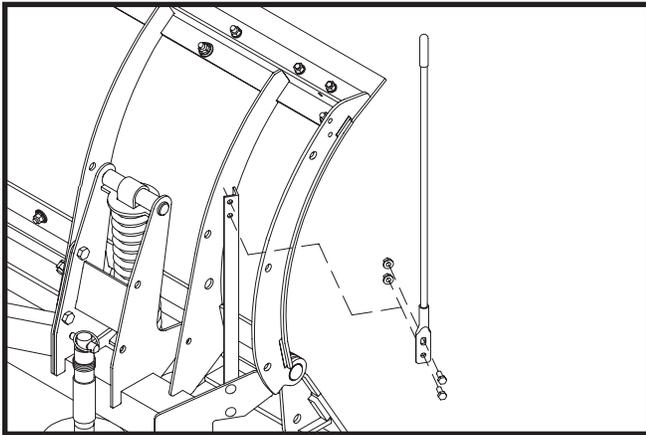
Before operating the plow for the first time, be sure to remove the two bolts on the back of the plow that prevent the moldboard from curling.



DWG NO. 5474

Use plastic tie straps to secure hoses to the frame later, after operating the plow and determining lengths required to allow full motion of the plow functions

5. Assemble side markers onto marker extensions with 5/16 inch x 3/4 inch hex bolts and lock nuts.



DWG NO. 5410

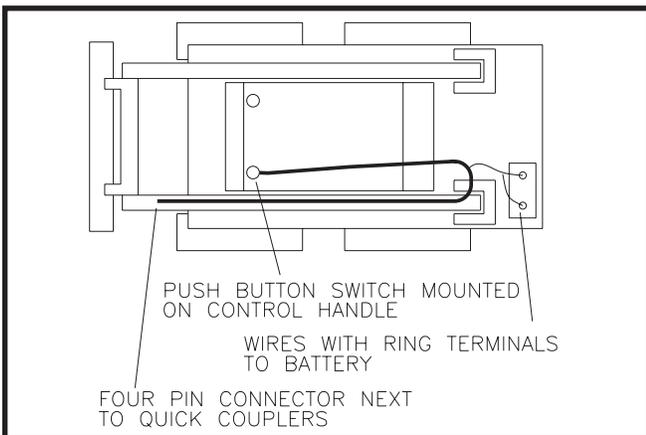
QUICK COUPLERS

Select and install hydraulic quick couplers and adapter fittings on the C-plow feed lines according to the size and type (i.e. flat face or poppet style) of couplers on the skid steer loader.

Hoses supplied on the C-plow lines have 9/16-18 JIC female swivel ends for 9/16-18 JIC male adapters.

ELECTRICAL WIRING

Locate the electrical control cable supplied with the snowplow. It has a square 4-pin weather pack connector on the first end, two ring terminals on the second end, and a single push button switch on the third end.



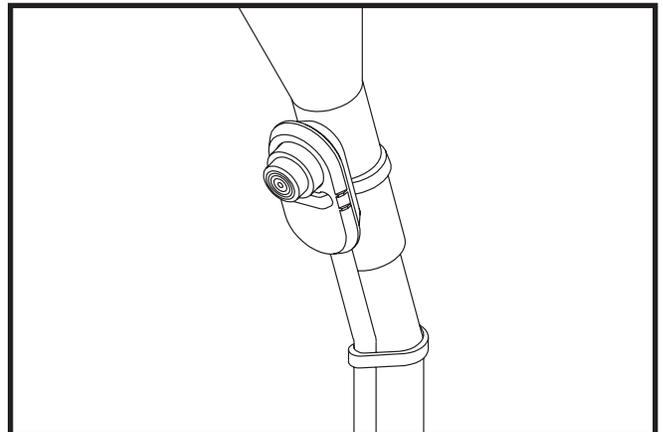
DWG NO. 4285



IMPORTANT: Damage to the wiring harness will occur if adequate cable length is not provided to allow for full motion of the loader arms. Use plastic tie straps to secure the wiring harness to the loader arm immediately adjacent to the loader arm pivot point.

Refer to drawing number 4285. Locate the square connector next to the hydraulic quick couplers. Route the square connector's cable along the skid-steer arm to the pivot point of the arm and fasten with the supplied plastic tie straps. It is especially important to leave adequate cable at the pivot point to allow for arm movement.

Next, the switch cable needs to be routed into the cab. Attach the switch to the control arm using a plastic tie strap as shown in drawing #4284.



DWG NO. 4284

The third length of the cable must be routed to the battery. Connect the red fused wire ring terminal to the positive post of the battery and the black wire ring terminal to the negative post of the battery.

Route all wires away from hot or moving parts, securing with plastic ties to prevent damage.

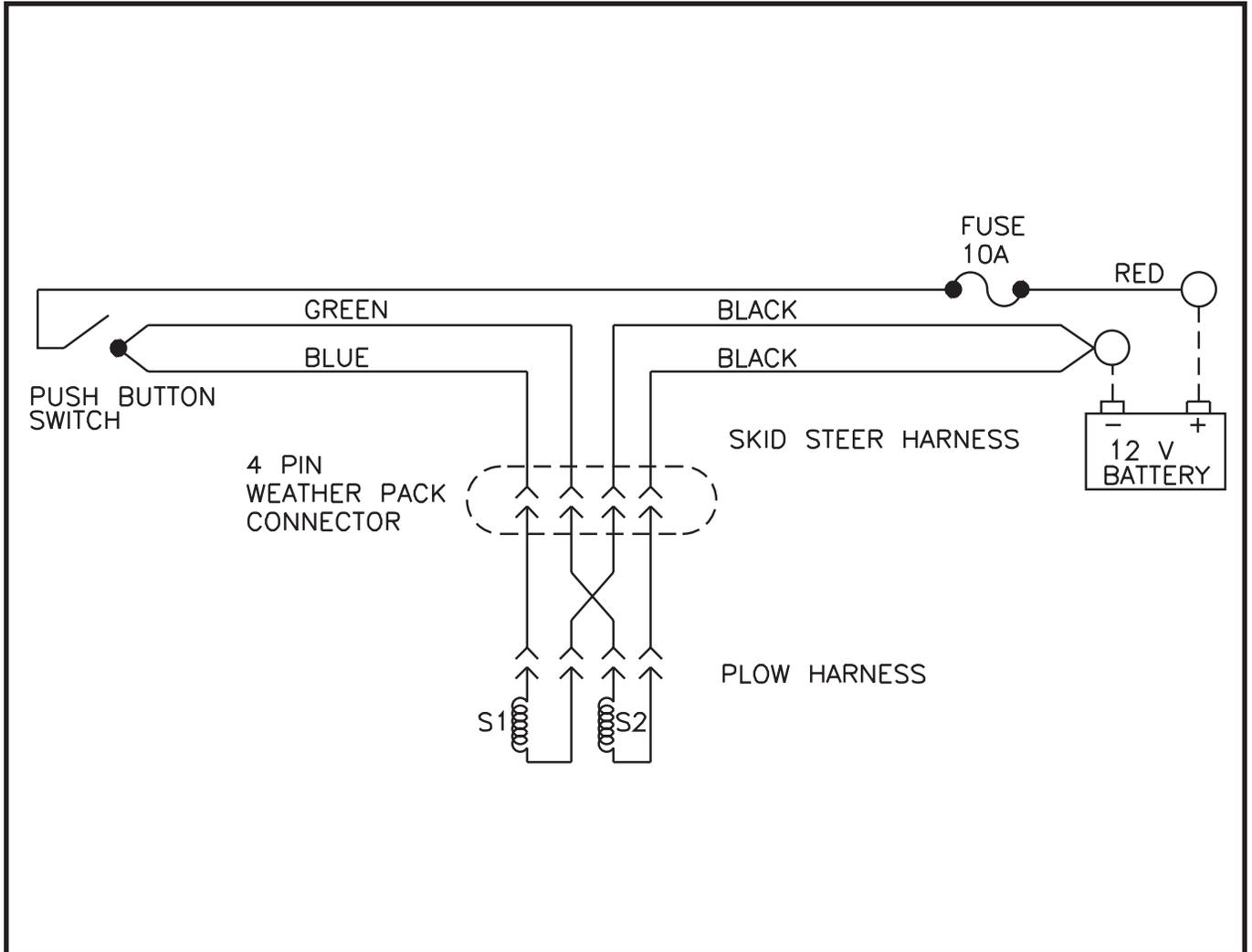
The wiring on the plow comes preinstalled. The connectors to the solenoids should be firmly seated. The connectors are interchangeable, as both solenoids are activated at the same time when the push button switch is pressed.

Refer to Operating Procedures section for attaching and operating the plow. Test that all functions are working properly and that cabling is not being stretched or pinched.

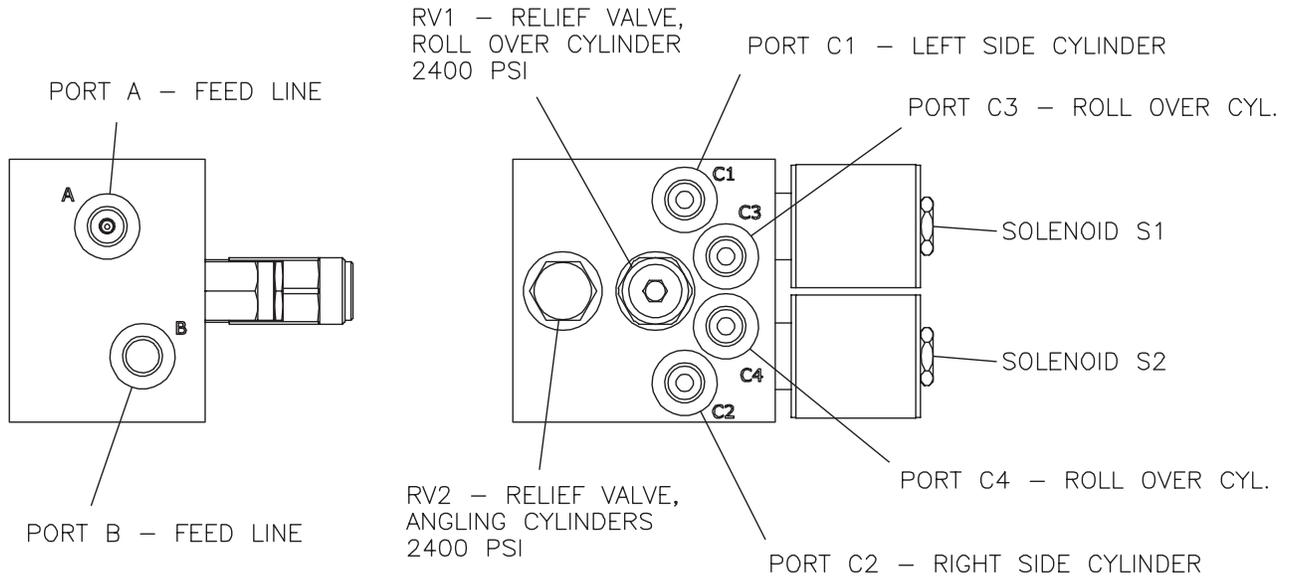
SPECIFICATIONS

Blade Width	8'	9'
Plow Width Angled 31°	6'10"	7'8"
Blade Height	28"	28"
Weight	773 lbs.	808 lbs.
Lower Cutting Edge	3/8" x 6" 1084 steel	
Upper Cutting Edge	1/4" x 4" 1044 Steel	
Feed Hose Ends	9/16-18 JIC Female Swivel	
Wiring Harness Fuse	10 AMP	

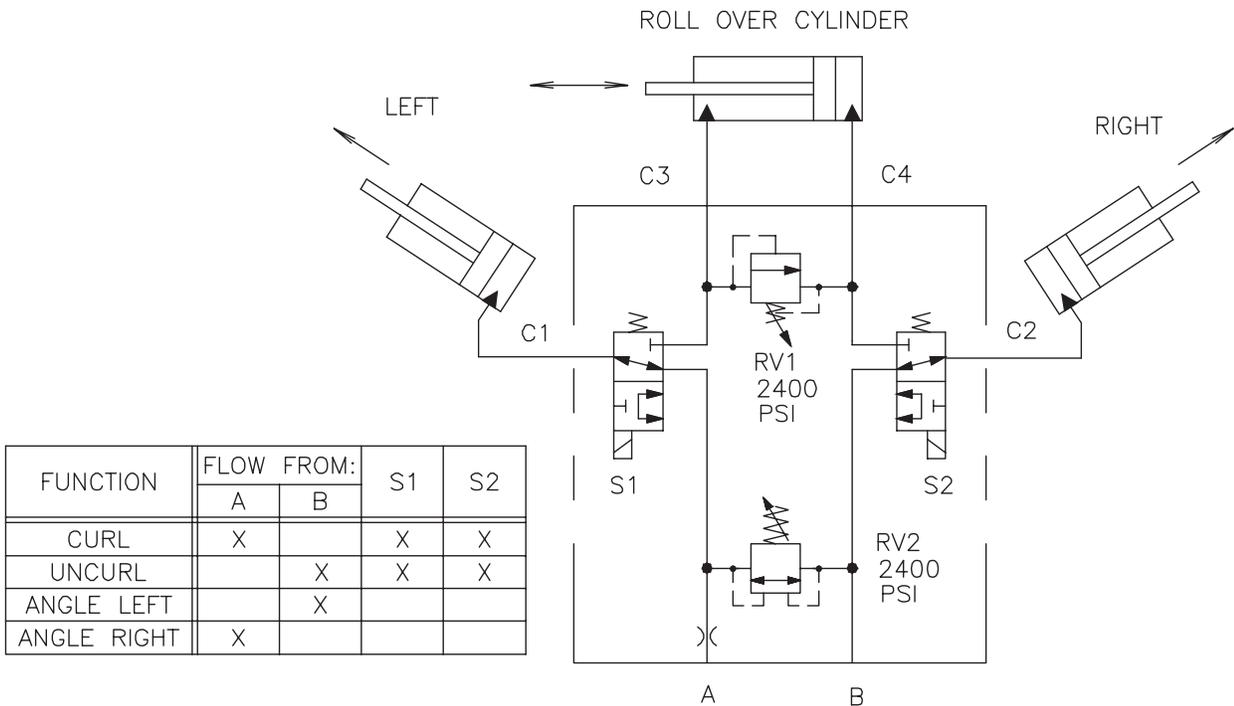
WIRING DIAGRAM



C-PLOW VALVE MANIFOLD



VALVE MANIFOLD HYDRAULIC CIRCUIT DIAGRAM



WARRANTY

SKID STEER SNOWPLOW LIMITED WARRANTY

The only warranty Hiniker Company (Hiniker) gives and the only warranty that any Hiniker dealer is authorized to give on behalf of Hiniker is as follows: **(NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY.)**

Hiniker warrants to the original purchaser of a Hiniker snowplow that Hiniker will repair or replace any defects in material and workmanship that occur within one year from date of retail delivery.

Hiniker's obligation and liability under this warranty is expressly limited to repairing or replacing, at Hiniker's option, at an authorized Hiniker dealer location, the defective parts at no charge to the original purchase. **HINIKER MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED AND MAKES NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE.**

HINIKER'S OBLIGATION UNDER THIS WARRANTY SHALL NOT INCLUDE ANY TRANSPORTATION CHARGES TO OR FROM THE AUTHORIZED HINIKER DEALER LOCATION OR ANY LIABILITY FOR INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGE OR DAMAGES OF ANY KIND FOR LOST PROFITS OR DELAY. If requested by Hiniker, products or parts for which a warranty claim is made are to be returned freight prepaid to our factory. Any improper use, operation beyond rated capacity, substitution of parts not approved by Hiniker Company, or any alteration or repair in such manner as in our judgment affects the product materially and adversely shall void this warranty.

Hiniker reserves the right to make improvements or changes to any of its products without notice. Such improvements or changes shall not trigger any obligation by Hiniker to update, modify or change any products previously sold by Hiniker.

HINIKER does not warrant the following:

1. Used products.
2. Any product that has been repaired, modified or altered in a way not approved by Hiniker Company.
3. Depreciation or damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow Operators Manual Instructions, misuse, lack of proper protection during storage, or accident.
4. Parts replacement and service necessitated by normal wear or maintenance including, but not limited to, cutting edges, hoses, snowplow skid shoes, and hardware.
5. Paint finish damage caused by normal wear.

Hiniker does not assume any liability for any damage to a skid steer unit resulting from the attachment or use of a Hiniker snowplow. Attachment of a Hiniker snowplow to skid steer unit is at the risk of the purchaser.

It is the responsibility of the original snowplow purchaser to verify the original date of purchase.

A DELIVERY REPORT FORM must be filled out and received by Hiniker with 30 days of retail delivery at the address below to initiate the warranty coverage.

HINIKER COMPANY
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P.O. Box 3407
MANKATO, MN 56002-3407
PHONE (507) 625-6621 -- FAX (507) 625-5883
www.hiniker.com