



**SKID STEER LOADER SNOWPLOW
C-PLOW
MODEL 380**

OPERATOR'S MANUAL

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

PART NUMBER 25011158 Rev. A

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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 Fox Snowplow Dealer.



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

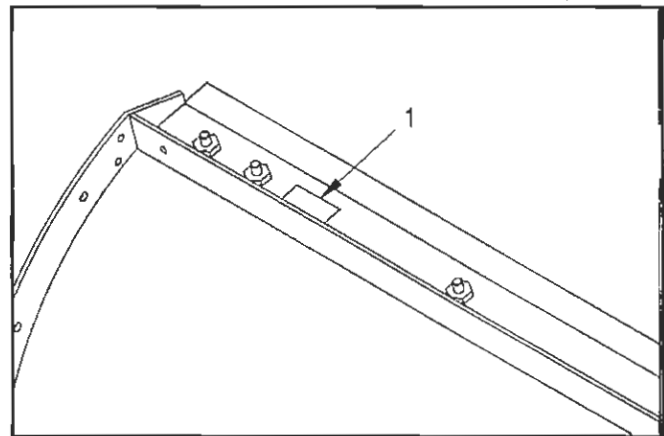
All references to Left or Right are defined as viewing the plow from the cab of the machine.

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

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

Check that your dealer has forwarded the Fox 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 decal is at location (1) in the following illustration.



DWG. NO. 4246

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.
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 Fox 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. Lower the parking stand before unhitching the plow to prevent the frame from falling forward.

OPERATING PROCEDURES

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.

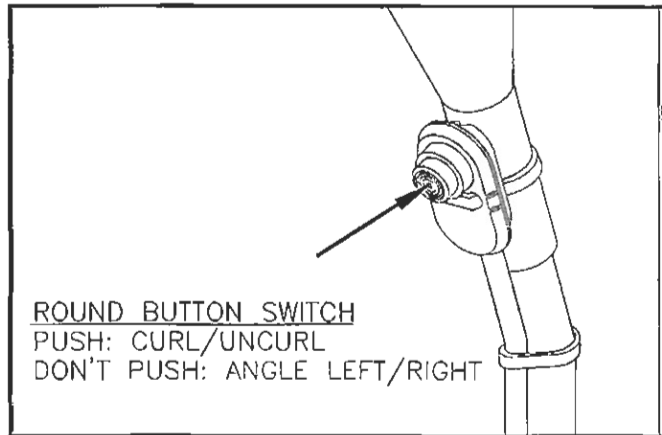
Test the angling and rollover functions in a safe area before using the plow.

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.

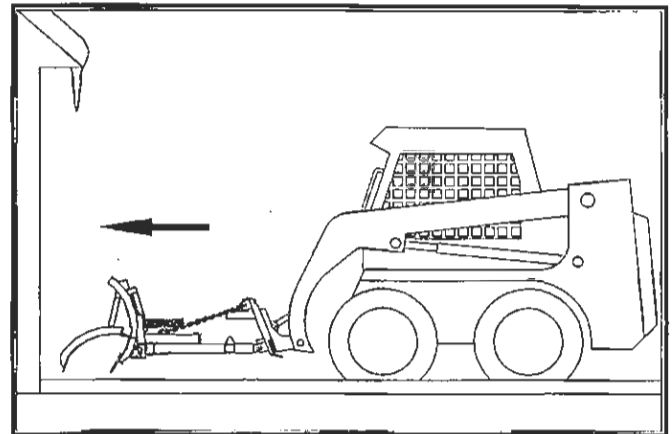
Always plow snow as it is accumulating. Wet snow may weigh about 12 pounds per cubic foot. The weight of snow being pushed by your plow may increase to several tons.

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



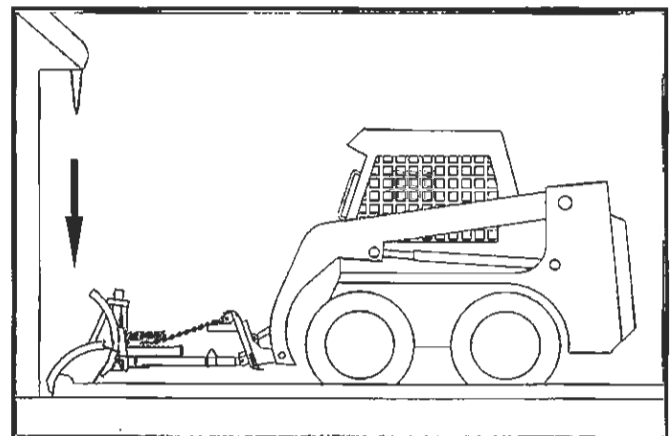
WARNING: Serious personal injury can result from plowing at excessive speeds, as well as costly damage to equipment and property, if an obstruction is encountered while plowing. Do not exceed 10 mph while plowing.

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.



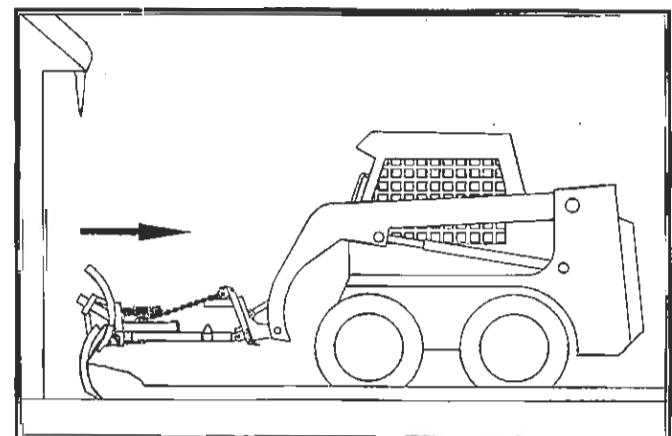
DWG. NO. 4241

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



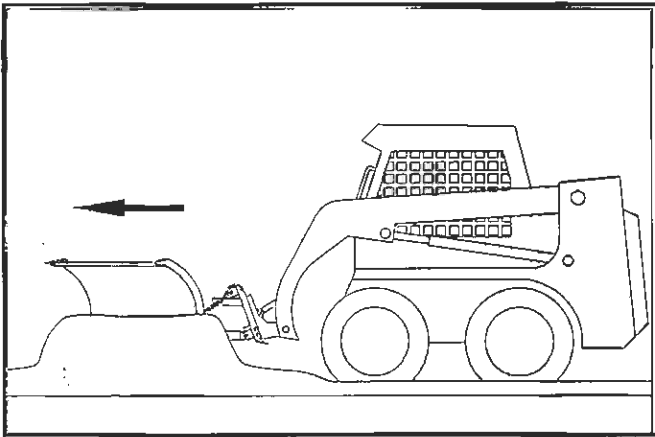
DWG. NO. 4242

Lower the plow to the ground with the loader arms.



DWG. NO. 4243

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



DWG. NO. 4244

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 $\frac{3}{4}$ of the blade width; 12 inch snow with $\frac{1}{2}$ of the blade width. Local conditions will determine how much work can be done before stalling or getting stuck.

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. 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 BOLTS 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.

Once a year before using the plow, check that the moldboard will trip freely about its three hinge pins. With the snowplow mounted on the loader, the cutting edge on the ground, and the upper and lower moldboard sections pinned together, remove the compression springs from the back of the moldboard by loosening the 3/4" lock nuts behind the springs and pull the top of the moldboard fully forward. If the moldboard doesn't pivot freely, remove the three hinge pins one at a time by driving a spring pin out from one end of the hinge pin, and coat each pin with a commercially available anti-seize lubricant. Damage to the snowplow may result if the moldboard hits an obstruction during use and doesn't trip.

Reassemble the compression springs, washers and lock nuts onto the threaded pullrods, and tighten the lock nuts until the springs measure 13 inches long. Do not overtighten compression springs.

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 connection and disconnecting of connectors 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


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

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 Fox 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.

 **IMPORTANT:** To prevent damage to snowplow components, skid steer loaders that drive this plow must be equipped with a relief valve in the auxiliary hydraulics system set a 2100 psi.

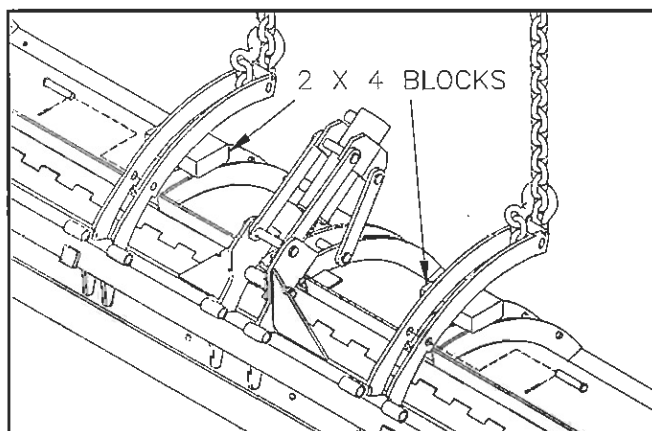
Be certain that hydraulic hoses and electrical wires are safely routed and allow full motion of moving parts. Secure loose hoses and wires with plastic tie straps.

PLOW ASSEMBLY

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

Remove the three hinge pins from the back of the moldboard by driving out one spring pin, and save for reinstallation.

Remove the two 3/8 inch x 5 inch hex bolts from the upper and lower pairs of ribs on the back of the moldboard.

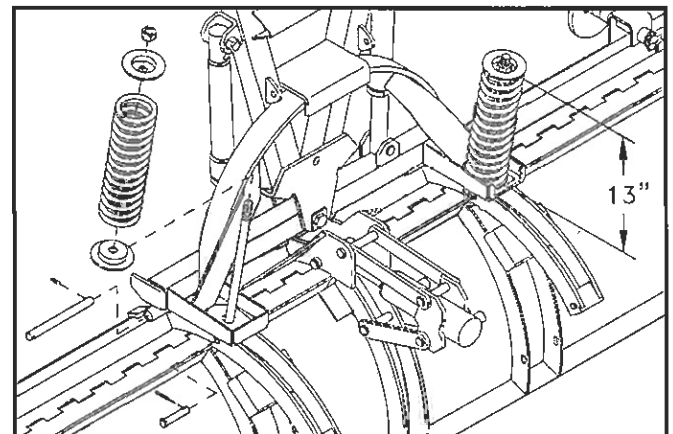


DWG. NO. 5237

Lift up on the inner sets of ribs with hoist chains until the two 5/8 inch x 3 inch clevis pins can be easily removed. Place 2 x 4 wooden blocks between the two sets of ribs to hold the moldboard at this position before lowering the chains.

2. Carefully lift the frame assembly with a hoist or forklift and move it to the moldboard assembly.

Attach the frame assembly to the moldboard by lining up the three bushings on the frame with the three sets of bushings on the moldboard.



DWG. NO. 5239

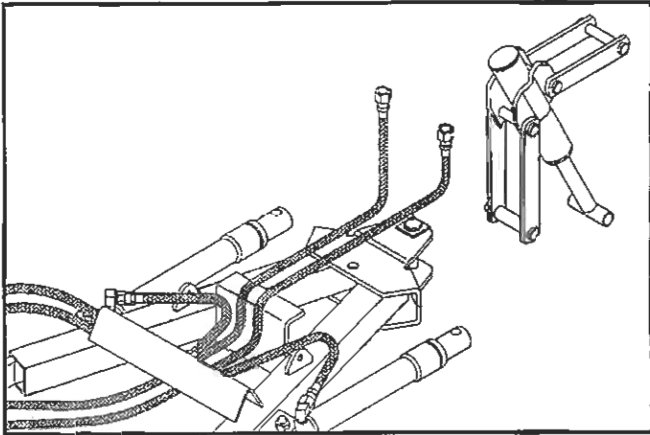
Apply a commercially available anti-seize lubricant (not supplied) to the hinge pins to prevent future corrosion, and reinstall the hinge pins through the bushings. Secure the hinge pins with spring pins.

Remove 3/4" lock nuts from the back of each compression spring. Align each pullrod bushing with the holes in the moldboard ribs and reinstall 5/8 inch clevis pins and cotter pins.

Assemble 3/4" lock nuts back onto pullrods and tighten until compression springs measure 13" long. Do not overtighten springs.

- Gently tip the plow assembly to its working position with a hoist or forklift.

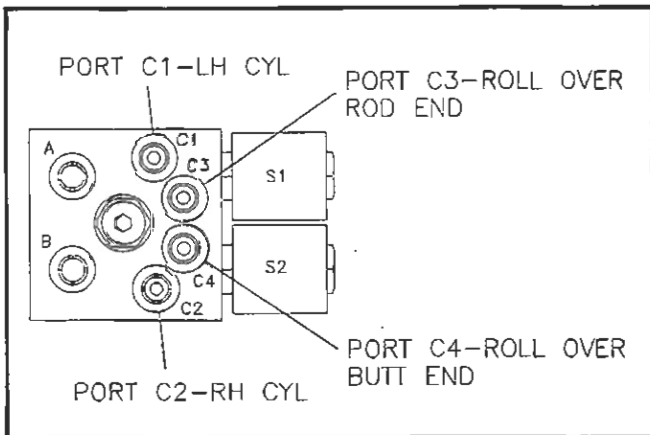
Route the two hydraulic hoses for the rollover cylinder under the rear crossmember on the pushframe, then over top the formed angle to prevent hoses from getting pinched.



DWG. NO. 5235

Assemble the hose ends to the cylinder, as follows:

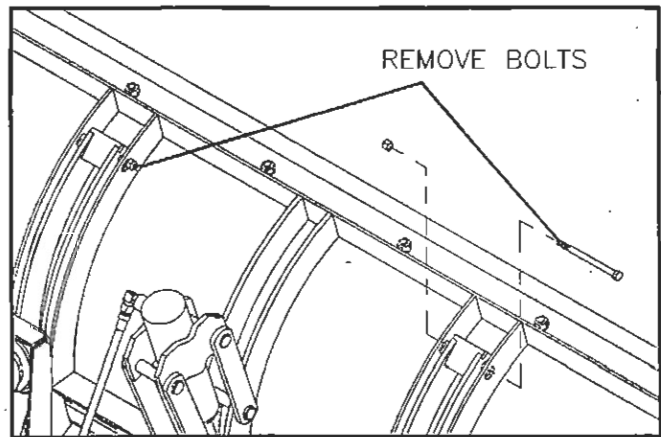
Port C3 to rollover cylinder rod end
Port C4 to rollover cylinder butt end



DWG. NO. 5236

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

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.



DWG. NO. 5238

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.

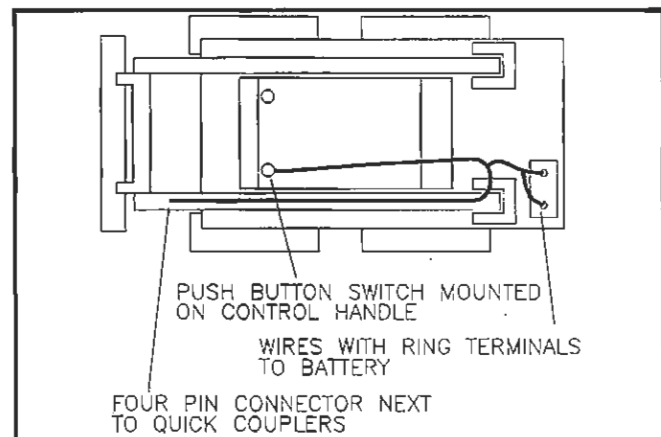
QUICK COUPLERS

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 1st end, two ring terminals on the 2nd end, and a single push button switch on the 3rd end.



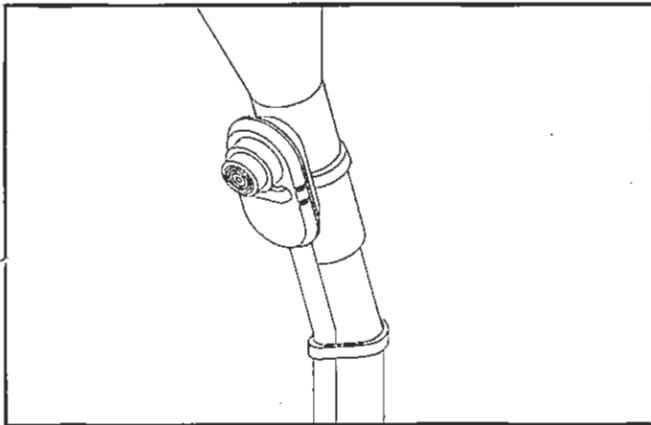
DWG. NO. 4285



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 connectors 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

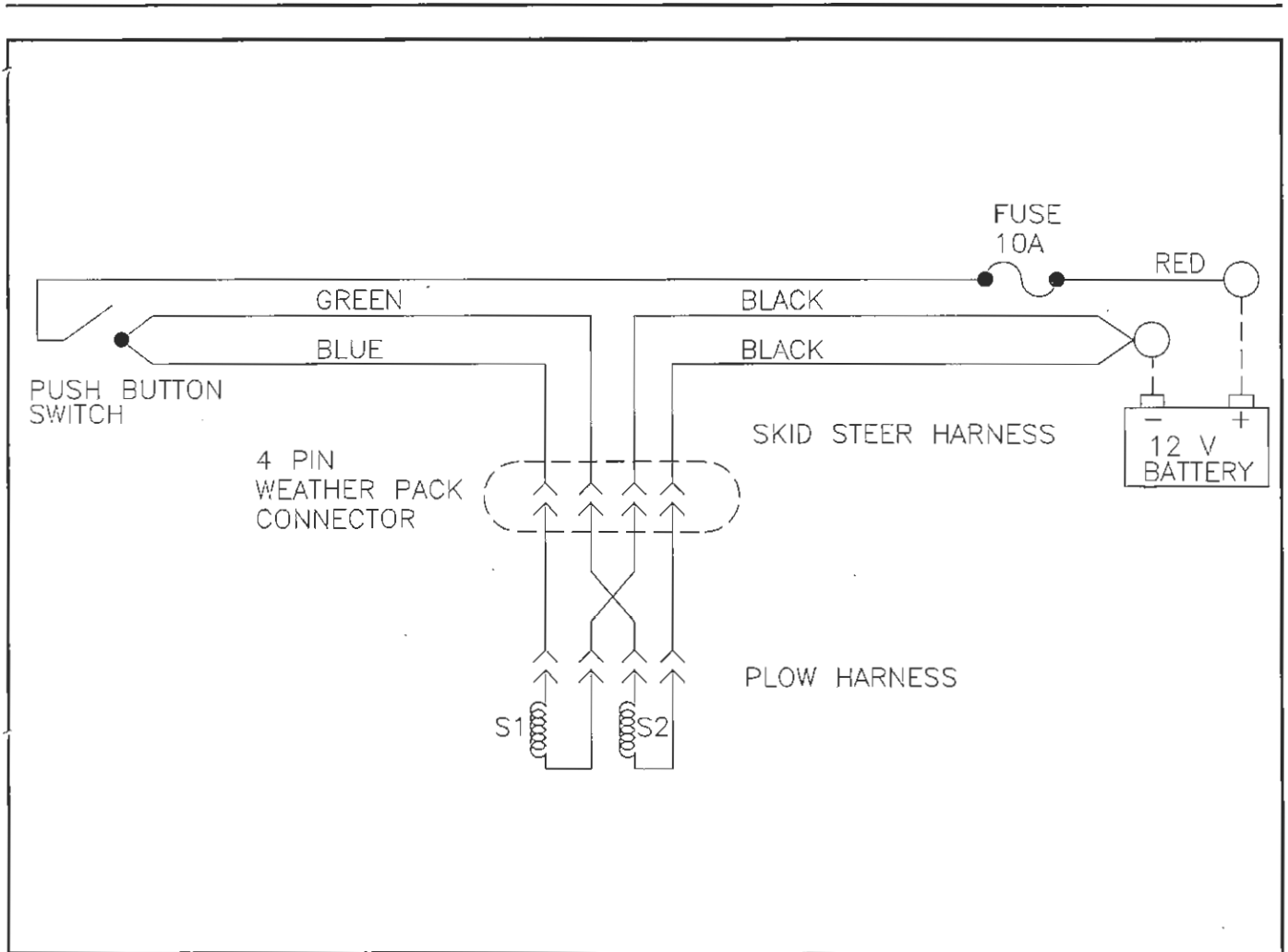
The 3rd length of the cable must be routed to the battery. Connect the red fused wire with a ring terminal to the positive post of the battery and the black wire with a ring terminal to the negative post of the battery.

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

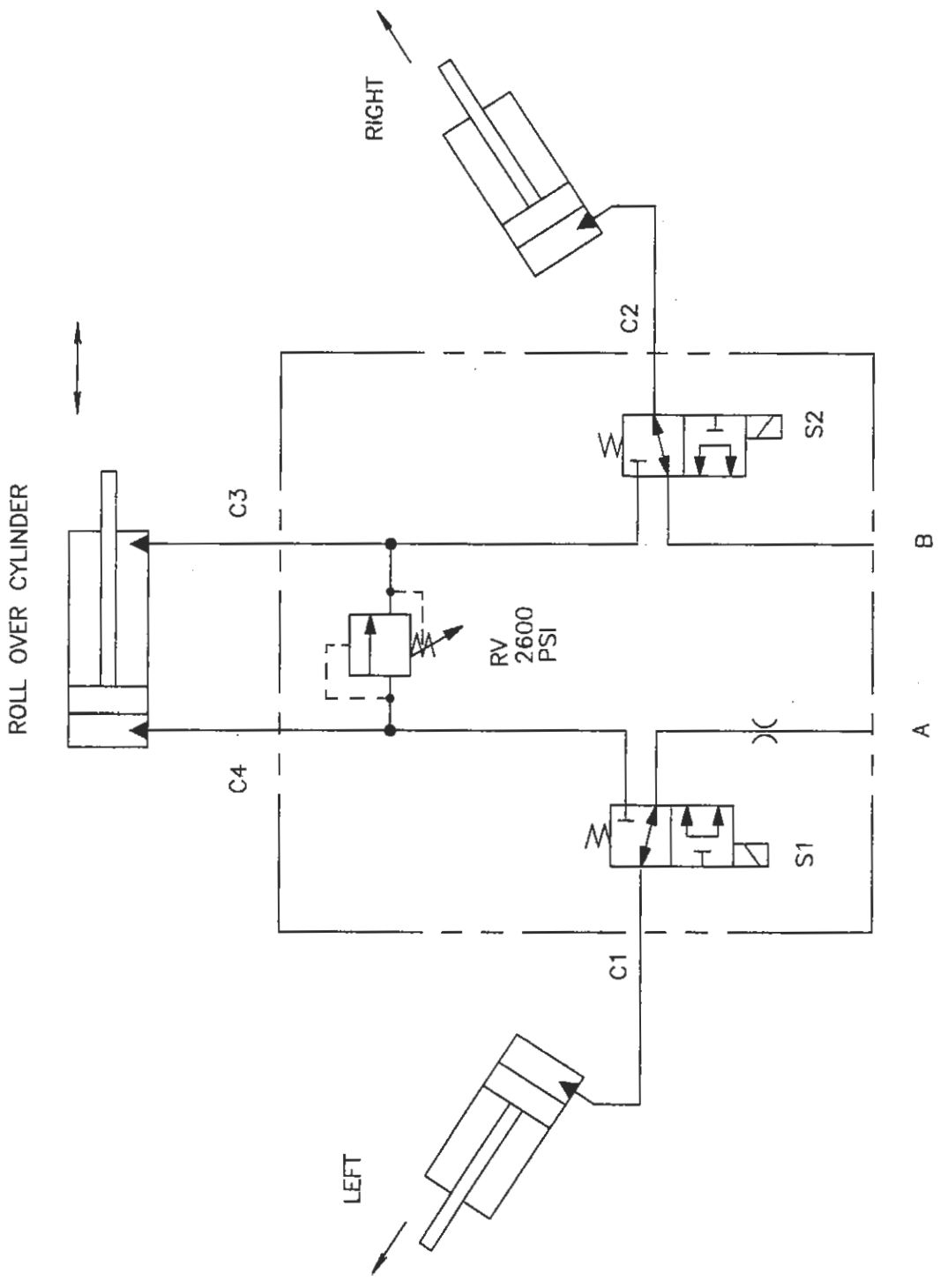
The wiring on the plow comes preinstalled. The connectors to the solenoids should be firmly seated. The connectors are interchangeable as both solenoids are activated at the same time when the push button switch is pressed.

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.

WIRING DIAGRAM



VALVE MANIFOLD HYDRAULIC CIRCUIT DIAGRAM



FOX SNOWPLOW WARRANTY

The only warranty Hiniker Company (Hiniker) gives and the only warranty the dealer is authorized to give is as follows:

We warranty products sold by Hiniker or authorized Fox Snowplow dealers 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 one year after date of retail delivery, to the original purchaser, any product not meeting the specification. **WE MAKE NO OTHER WARRANTY, EXPRESS OR IMPLIED AND MAKE NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE.** Our obligation under this warranty shall not include any transportation charges or costs or any liability for direct, indirect or consequential damage or delay. If requested by Hiniker Company, 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 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.**

HINIKER reserves the right to make improvement changes on any of our products without notice.

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 damaged caused by normal wear, lack of reasonable and proper maintenance, failure to follow Operator 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, any ground engaging components.

A DELIVERY REPORT FORM must be filled out and received by **HINIKER COMPANY** to initiate the warranty coverage.

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