



Belly Blade

Installation Instructions

New Holland TC 40 & TC 45 with Loader
Case DX 40 & DX 45 with Loader

Purchase Date

Serial Number

Model Number

Tractor Model

Dealer

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Bolt Torque Specifications

Bolt Dia. (inch)	Thread per inch	Grade 5	Grade 8	Bolt Dia. (mm)	Pitch	Grade 8.8	Grade 10.9
		Torque (ft·lbs.)	Torque (ft·lbs.)			Torque (ft·lbs.)	Torque (ft·lbs.)
1/4	20	8	12	4	0.70	2	
1/4	28	10	14	5	0.80	4	
5/16	18	17	25	5	1.00	7	11
5/16	24	19	29	7	1.00	12	
3/8	16	30	45	8	1.25	17	26
3/8	24	35	50	8	1.00	18	
7/16	14	50	70	10	1.50	35	51
7/16	20	55	80	10	1.20	37	
1/2	13	75	110	10	1.00	39	
1/2	20	90	120	12	1.75	59	88
9/16	12	110	150	12	1.50	62	
9/16	18	120	170	12	1.25	65	
5/8	11	150	220	14	2.00	94	139
5/8	18	180	240	14	1.50	101	
3/4	10	260	380	16	2.00	146	210
3/4	16	300	420	18	2.50	210	
7/8	9	430	600	20	2.50	292	
7/8	14	470	660	22	2.50	398	
1	8	640	900	44	3.00	503	
1	12	710	990				

Kit Inventory

Qty	PN	Description
1	31-34081	Swivel Nut Branch Tee JIC (6600-10-10-10)
1	31-34159	Male Connector JIC x Pipe (2404-8-6)
2	31-34100	Swivel Nut Elbow 90° JIC (6500-8-8)
1	35-10207-0270	27" x 1/2" Hydraulic Hose -8-10
1	35-10204-0270	27" x 5/8" Hydraulic Hose -10-10
1	35-10207-0600	60" x 1/2" Hydraulic Hose -8-10
1	35-10207-0720	72" x 1/2" Hydraulic Hose -8-10
1	35-10204-0470	47" x 5/8" Hydraulic Hose -10-10
1	16-20124	1/2" x 1" Hex Bolt Gr 5 NC
2	16-20218	3/4" x 2" Hex Bolt Gr 5 NC
8	16-20190	5/8" x 2-1/2" Hex Bolt Gr 5 NC
3	16-20062	3/8" x 3/4" Hex Bolt Gr 5 NC
8	57-11324	2 Hole Washer
3	57-20762	3/8" Lock Washer
1	70-20584	1/2" Hex Nut Gr 5 NC
2	70-20607	3/4" Hex Center Lock Nut Gr 5 NC
8	70-20606	5/8" Hex Center Lock Nut Gr 5 NC
1	54-10000-AL	Undercarriage Assembly
1	56-10280-B	Belly Blade Valve System
5	39-10199	Belly Blade Control Handles
1	18-11454	Valve Support Bracket
1	18-10248	2-1/2" U-bolt Clamp Assembly
10	59-34950	Zip Ties (large)
1	43-10198	100 Pin 1" x 2-1/8"
1	43-7767	Cylinder Hitch Pin Clip
1	17-11457	Valve Mount

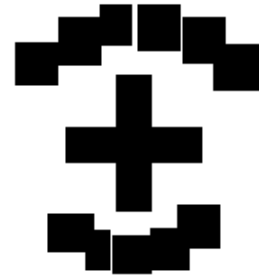
Blade Assembly - Shipment includes one of the following

Qty	PN	Description
1	15-10270-60	6 ft. Moldboard
1	15-10270-70	7 ft. Moldboard
1	15-10270-80	8 ft. Moldboard

NOTE: The 27" x 1/2" hose (PN: 35-10207-0270) is included in this kit for tractors that have a -8 fitting on the loader control valve.

General Information

Locate the Belly Blade assembly identification number and record the information on the front of this manual. This will be needed when contacting your service center or dealer.



Using Your Manual

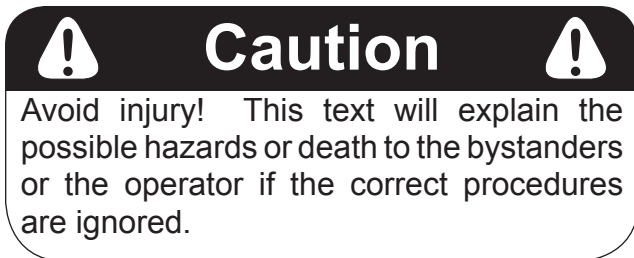
Read this manual completely prior to assembling to help you and others avoid injuries. This manual provides information on the proper way of installing the Belly Blade to prevent injuries and any machine damage.

This manual shows the Belly Blade installation process with the rear tires removed from the tractor. All references to the tractor or undercarriage are taken from the view at the tractor's seat.

Your machine may vary slightly from the machine in this manual, but the same installation procedure will be compatible.

Important Messages

This manual contains messages that will bring attention to potential safety concerns and machine damage. Read all of the information carefully and thoroughly to avoid injury and machine damage. Below is an example.



Safety Information

1. Wear protective eye wear.
2. Always block tractor safely.
3. Engage parking brake before raising the tractor.
4. Follow all tractor manufacturing safety recommendations when working on the tractor.

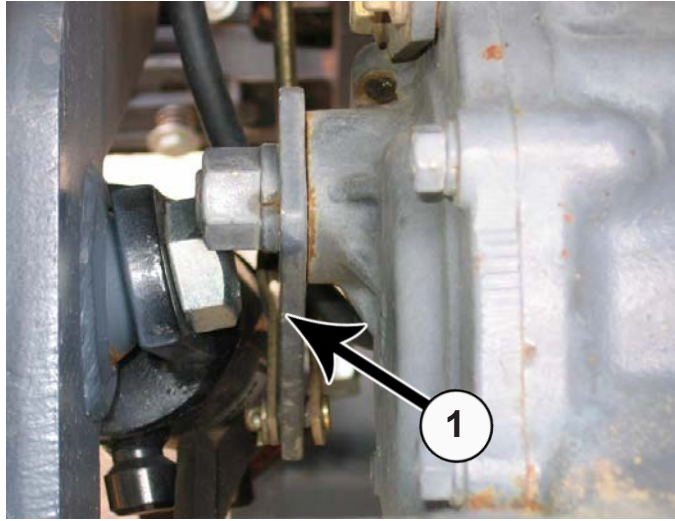
Accident Prevention

An accident prevention program can be successful when a responsible equipment operator is cooperating. An operator can prevent accidents when they accept a full measure of their responsibility. The designers, manufacturers, and engineers can help, but a single careless act by the operator can outweigh all of their efforts.

No equipment can be safer than the person running the controls. A careful, informed operator is the best safety device.

Preparing Tractor For Installation

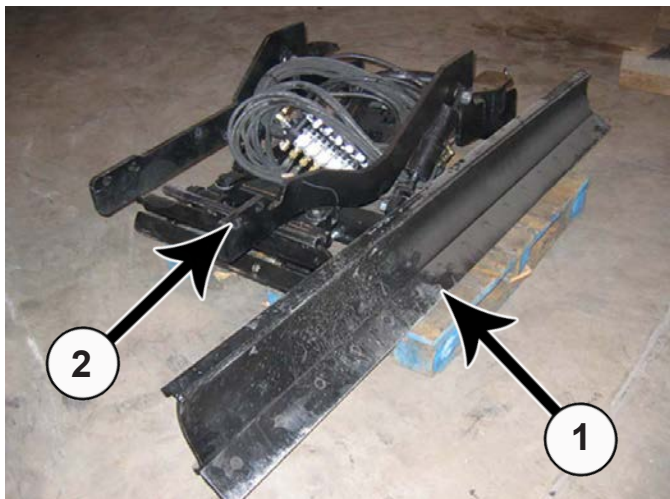
1. Remove front loader from tractor.
2. Park the tractor on a smooth, level surface.
3. Disconnect the battery.



4. Remove the brake actuator lever (1). The brake actuator lever is located near the rear axle. Bend the brake actuator lever on each size 1" towards the center to allow enough room for the undercarriage to fit. Reinstall brake actuator lever.
5. Set parking brake and block front tires to keep the tractor from rolling.
6. Remove step on right side of tractor.

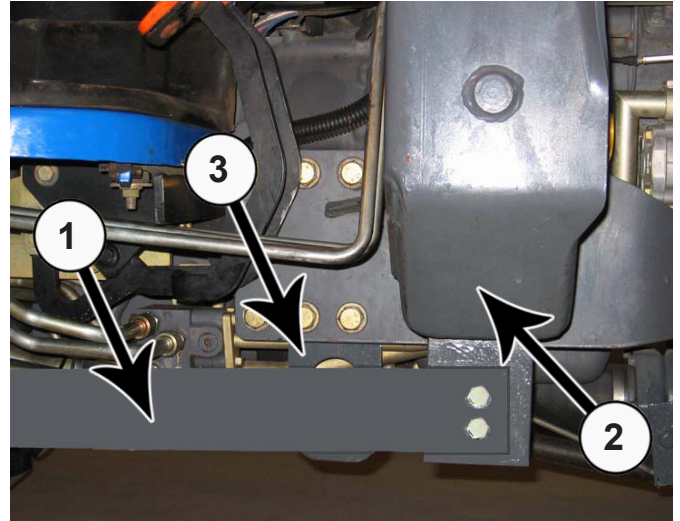
Caution

Avoid injury! If the parking brake is not set or the tires are not blocked, the tractor could roll and an injury could occur.



7. The Belly Blade will arrive on a pallet. Unwrap and set the blade (1) aside. Remove the undercarriage assembly (2) from the pallet.

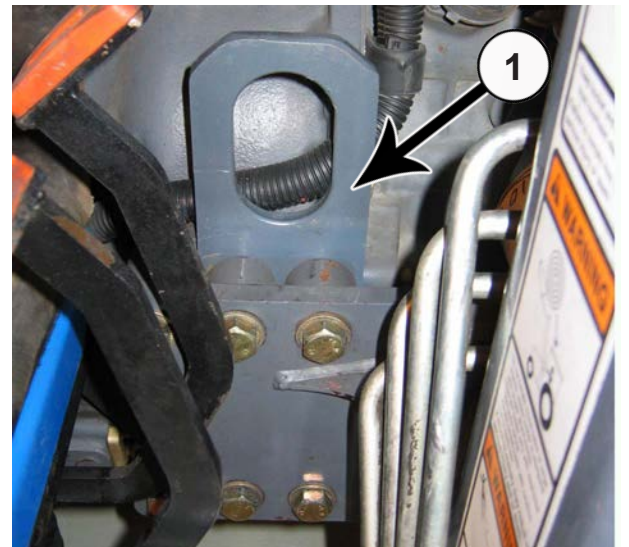
8. Check inventory and ensure that all parts are included with the Belly Blade Kit. If any parts are missing, contact your dealer.



9. Remove front loader arm brace on the right side of the tractor (1).

NOTE: If chain hook (3) is not present, skip steps 10, 11, and 12.

10. Remove the right, front loader mount (2) to gain access to the chain hook (3).



11. Rotate the chain hook 180° so that the slot is up instead of down (1). The chain hook may hit the Belly Blade assembly if not turned up.

12. Reinstall the front loader mount.

Plumbing (with Factory Loader)

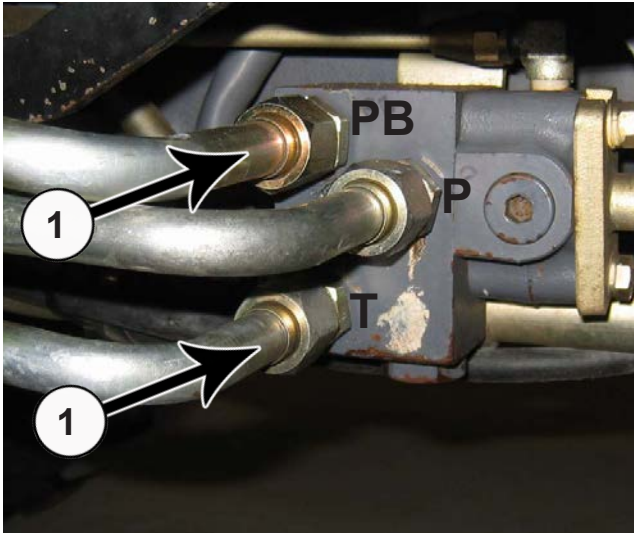
- NOTE:** 1. Have a catch pan available to collect hydraulic oil when removing hydraulic lines.
2. Release all hydraulic pressure before removing any lines.



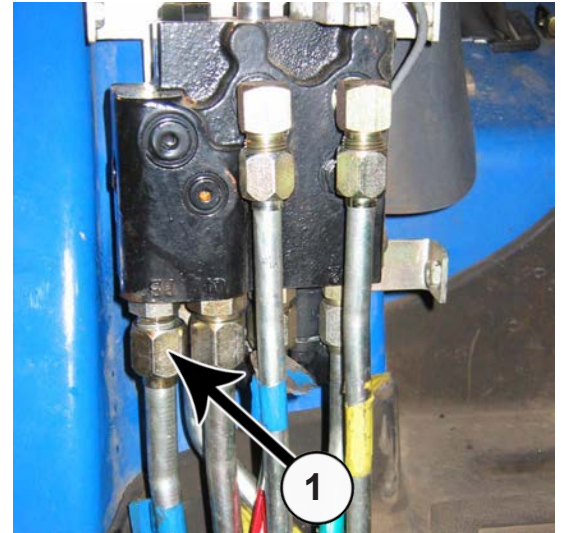
Caution



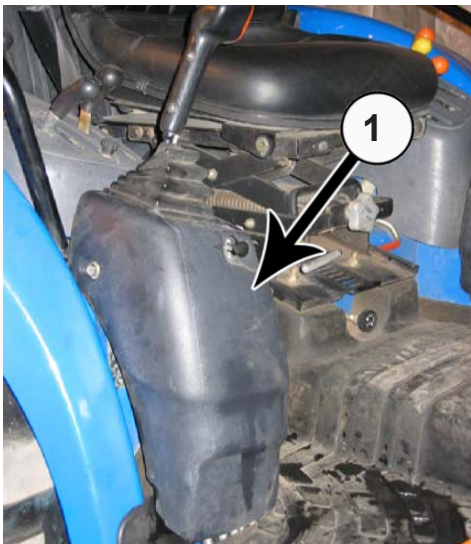
Avoid injury! Hydraulic oil that is under pressure will penetrate the skin and cause a serious injury. If this occurs, it needs to be surgically removed by a doctor familiar with this type of injury within a few hours or gangrene may result.



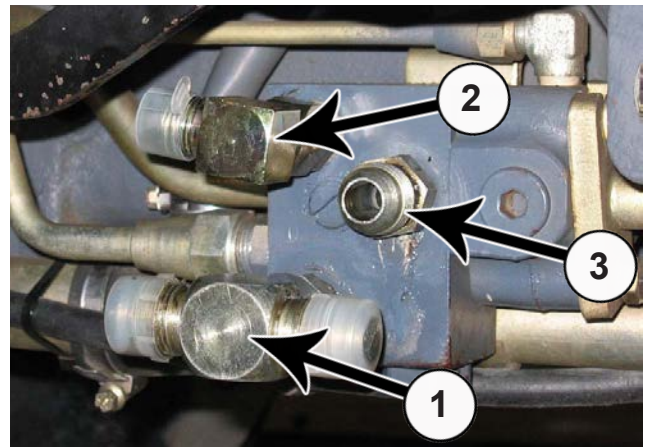
13. Locate the three hydraulic lines on the right side of the tractor under the operator's platform. Disconnect the two hydraulic lines on the left (PB & T) (1).



15. Remove the two corresponding hydraulic lines from the loader control valve (1). They were disconnected in Step #13. Set these aside. Keep them for when removing the Belly Blade.



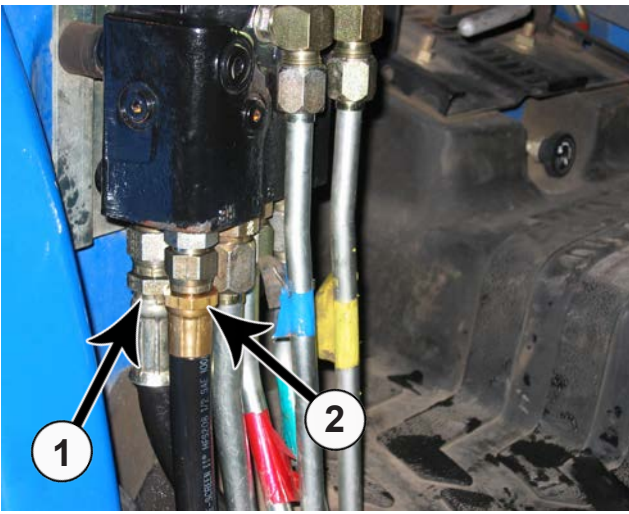
14. Take off the cover (1) of the loader control valve to gain access to the factory loader hydraulic lines.



NOTE: Use Loctite 569 Adhesive Thread Sealant or an equivalent.

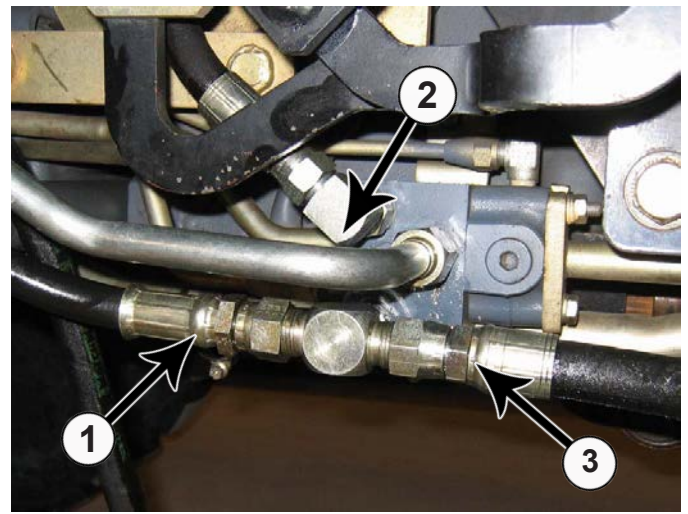
16. Install a straight fitting (PN: 31-34159) with a 90° swivel fitting (PN: 31-34100) in the top (PB) port (2). Install a T-fitting (PN: 31-34081) in the bottom (T) port (1).

17. The third hydraulic line was removed from the right (P) port for clarity, but it does **not** need to be removed for assembly (3).



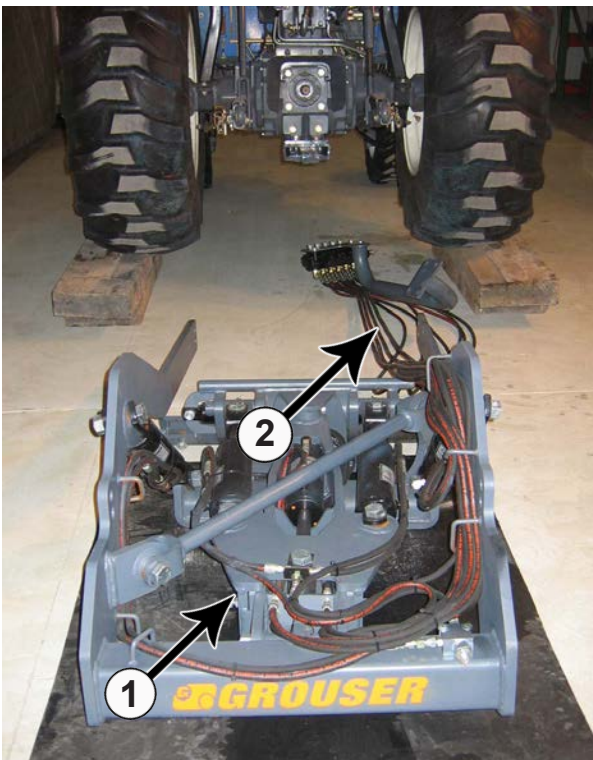
18. Attach one end of the 27" hose (1) (PN: 35-10204-0270) to the back port of the loader control valve on the tractor. The other end will be attached in Step #20.

19. Attach one end of the 60" hose (2) (35-10207-0600) to the front port, labeled PB, on the loader control valve of the tractor. The other end will be attached later in Step #38.



20. Attach the opposite end of the 27" hose to the left side of the T-fitting (1). Attach one end of the 72" hose (PN: 35-10207-0720) to the top 90° fitting (2). Attach one end of the 47" hose (PN: 35-10204-0470) to the right side of the T-fitting (3). Lay the other ends of all hoses on the operator's platform to be attached later in Step #38.

Placing Undercarriage Under Tractor



21. Align the undercarriage (1) (PN: 54-10000-AL) behind the tractor. Lay out the valve (PN: 56-10280-B) and valve stand (2) (PN: 17-11457) in front of the undercarriage.



Caution



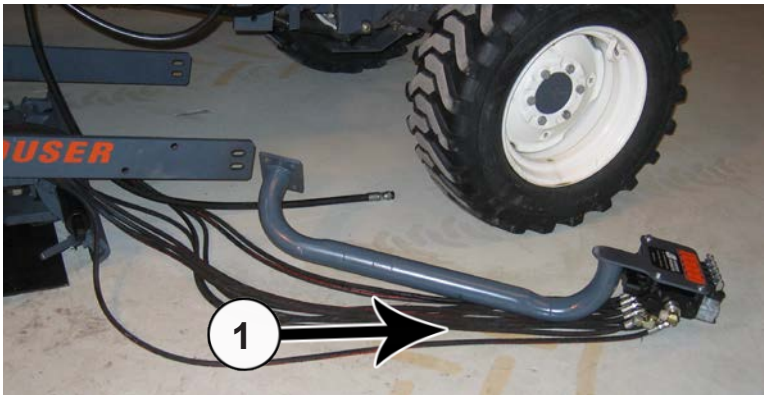
Avoid injury! Follow standard shop procedures for proper lifting and supporting of the tractor.

IMPORTANT: Raise the undercarriage an appropriate distance to have enough clearance under the rear axle for installation.

NOTE: To ease assembly, remove rear tires and support the tractor safely.

22. If the rear tires are not removed, raise the back of tractor, and place blocks safely underneath the tractor tires or use an appropriate hoist. Keep enough distance between the blocks, so the undercarriage will fit.

23. If the rear tires are removed, raise the back of the tractor and use jack stands that are recommended for your tractor to support the tractor safely. Keep enough distance between the jack stands, so the undercarriage will fit.

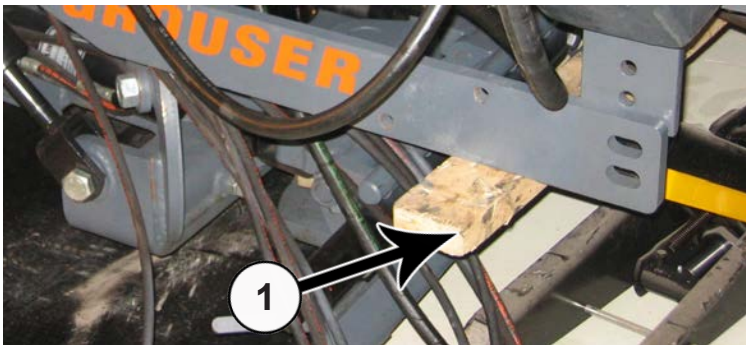


24. Guide the undercarriage and the valve stand under the tractor. Make sure the valve and valve stand exit the right side of the tractor (1).

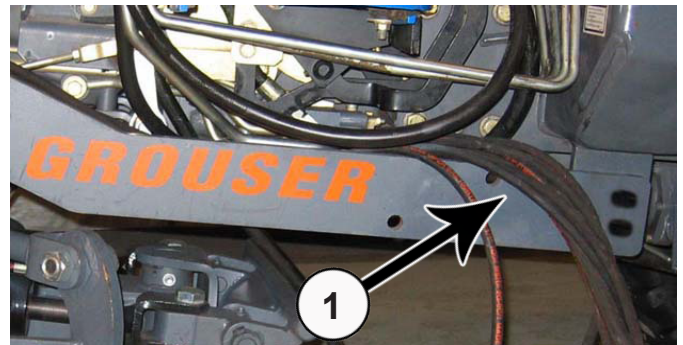
Installing Undercarriage

NOTE: When jacking up the undercarriage, make sure to not jack too high or you may hit other parts of the tractor.

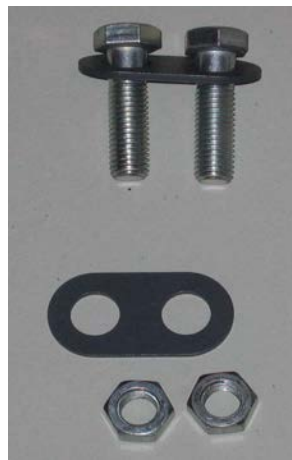
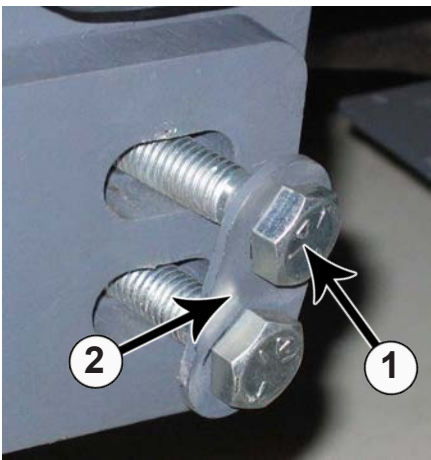
NOTE: When raising the undercarriage, properly guide the hoses to avoid pinching them between the tractor frame and the undercarriage.



25. Place jacks under the undercarriage in the front and in the back. The use of a block in front will ensure that both arms are raised at the same time (1). Lift until the undercarriage holes line up with the holes on the tractor bracket.



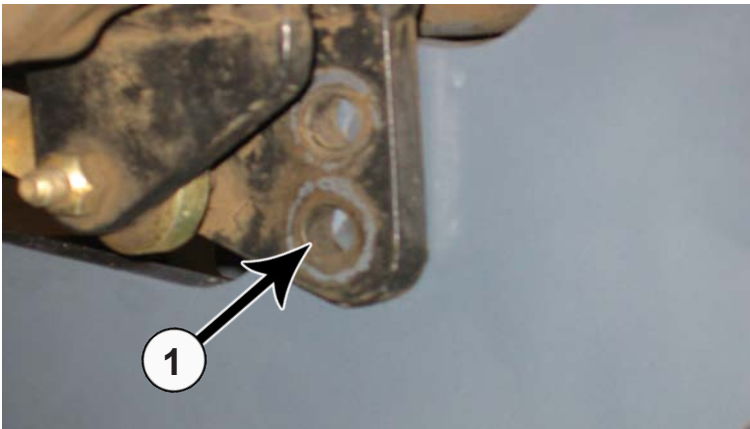
26. Verify that the control valve hoses are positioned over the top of the undercarriage arm (1).



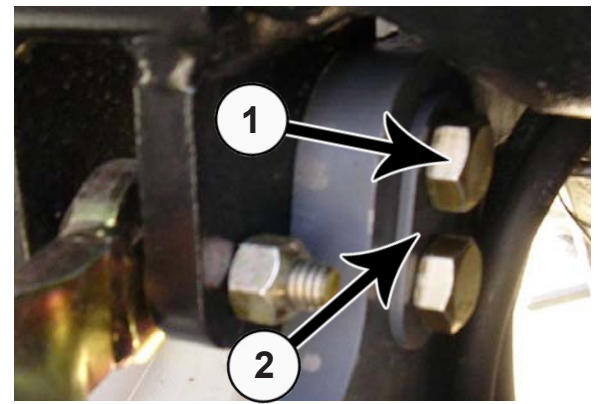
27. Once the front holes are aligned, insert two 5/8" x 2-1/2" bolts (1) (PN: 16-20190) with a 2 hole washer (2) (PN: 57-11324) into the left and right undercarriage arms. The washer is installed on the outside of the undercarriage arms.

28. Install a 2 hole washer and two 5/8" center lock nuts (PN: 70-20606) on the bolts.

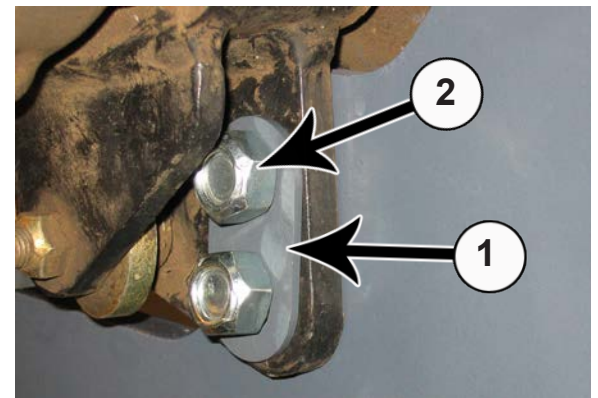
NOTE: Do not tighten until all mounting bolts have been installed.



29. Continue lifting the rear of undercarriage until the holes on the undercarriage line up with the holes on the tractor bracket (1).



30. For the left and right side, insert two 5/8" x 2-1/2" bolts (1) (PN: 16-20190) with a 2 hole washer (2) (PN: 57-11324). The washer is to be on the outside of the undercarriage. Insert the bolts so the head is facing the inside of the tractor.

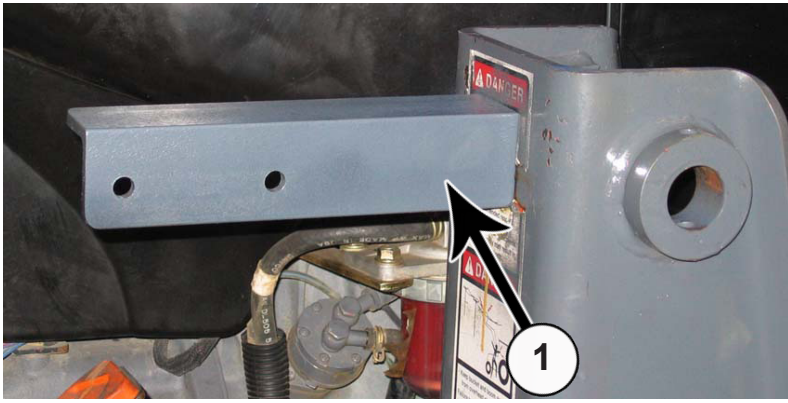


31. Put a 2 hole washer (1) (PN: 57-11324) and a 5/8" center lock nut (2) (PN: 70-20606) on the bolts. These will be on the outside of the tractor as shown in the pictures.

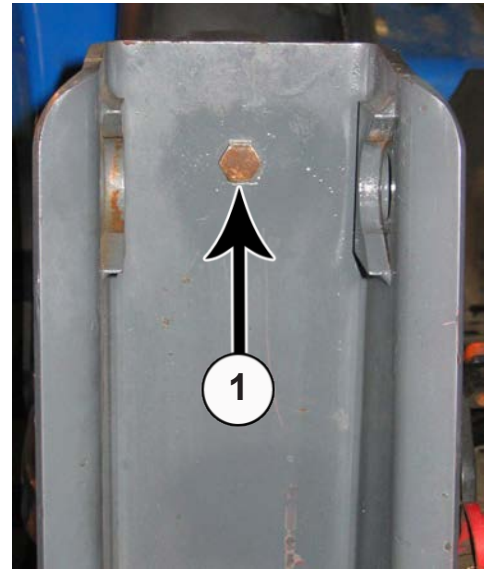
32. Torque all fasteners to the correct specifications after all 8 bolts and nuts have been installed.

33. Remove jacks.

Installing Valve Bracket Supports

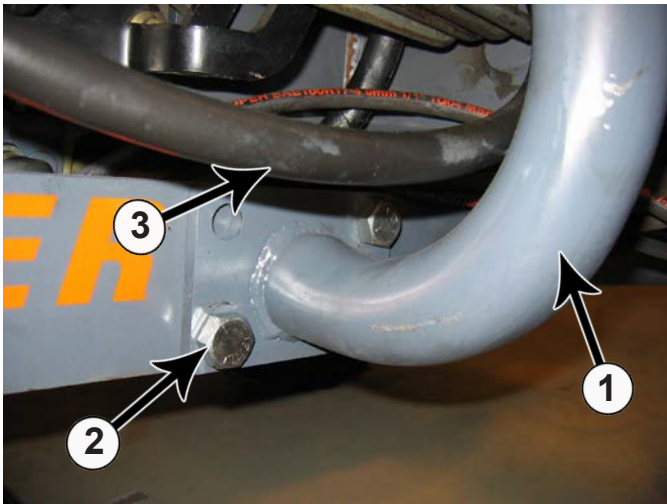


34. Attach valve support bracket (1) (PN: 18-11454) onto back side of loader bracket on the right side of the tractor with a 1/2" x 1" bolt (16-20124) and a 1/2" nut (PN: 70-20584). Install bolt from inside the loader bracket and the nut on the valve support side.

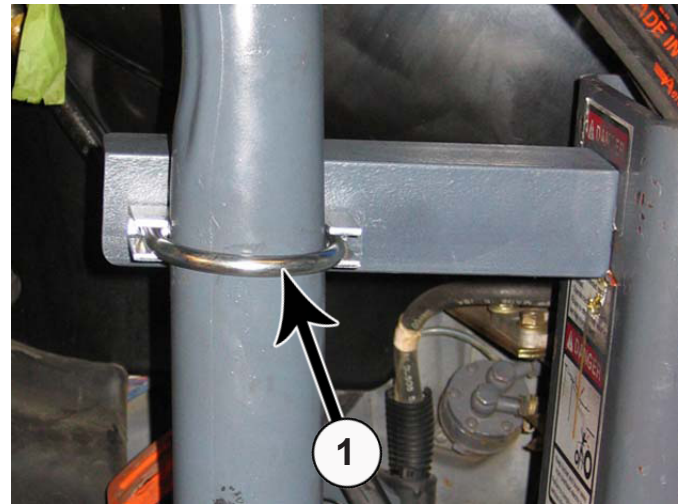


NOTE: View of Bolt Head (1)

Control Valve and Stand Installation



35. Align the valve stand (1) (PN: 17-11457) with the undercarriage. Use two 3/4" x 2" bolts (2) (PN: 16-20218) with two 3/4" center lock nuts (PN: 70-20607) to securely attach the stand to the undercarriage. Keep all hydraulic hoses above the valve stand (3).



36. Attach the valve stand to the valve mount bracket with a U-bolt (1) (PN: 18-10248).

37. Attach the control valve (PN: 56-10280-B) to the valve stand with three 3/8" x 3/4" bolts (PN: 16-20062) and three lock washers (PN: 57-20762).

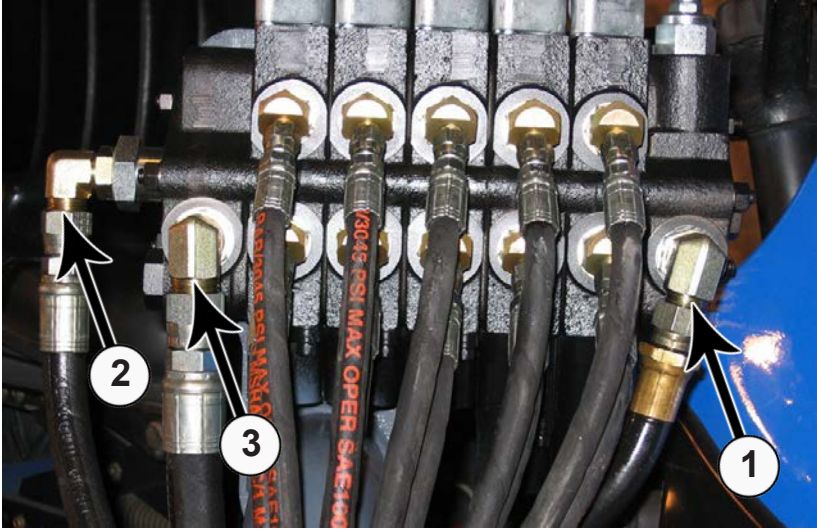
NOTE: If the tractor has 4 wheel drive, a cable is under the engine located by the drive shaft. Attach this cable to the tractor with zip ties to prevent it from catching on the Belly Blade.



Caution



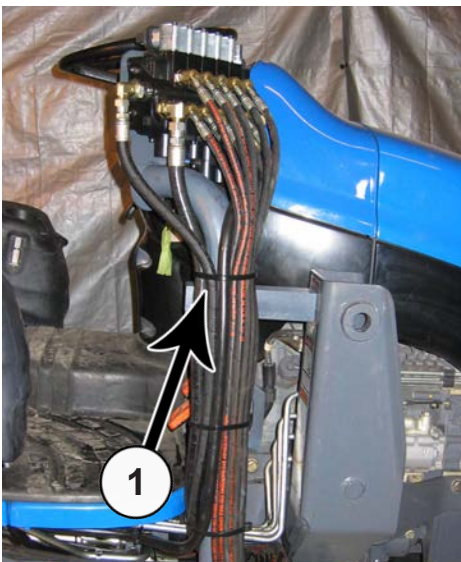
Avoid injury! Hydraulic oil that is under pressure will penetrate the skin and cause a serious injury. If this occurs, it needs to be surgically removed by a doctor familiar with this type of injury within a few hours or gangrene may result.



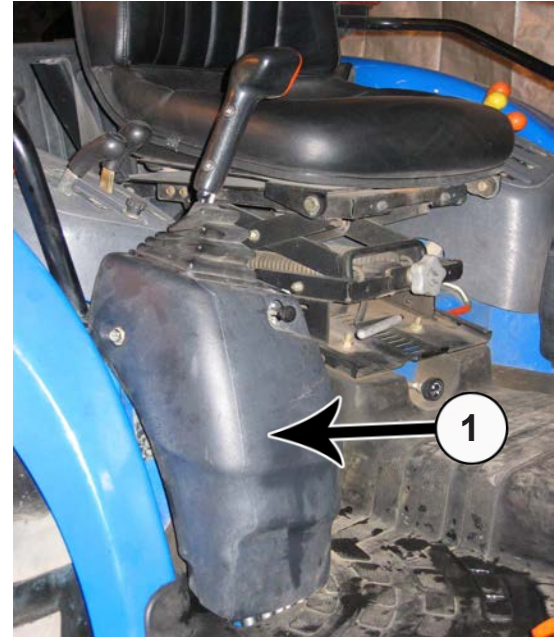
38. Attach the end of the 60" hose (PN: 35-10207-0600) to the IN port (1) on the Belly Blade control valve. Attach the end of the 72" hose (PN: 35-10207-0720) to the OUT port (2) on the Belly Blade control valve. Attach the 47" hose (PN: 35-10204-0470) to the TANK port (3) on the Belly Blade control valve.

39. Make sure all hoses underneath tractor are clear of any moving parts on the undercarriage. Ensure that all hoses are above either of the arm rails. Group hoses with zip ties if needed to keep from moving.

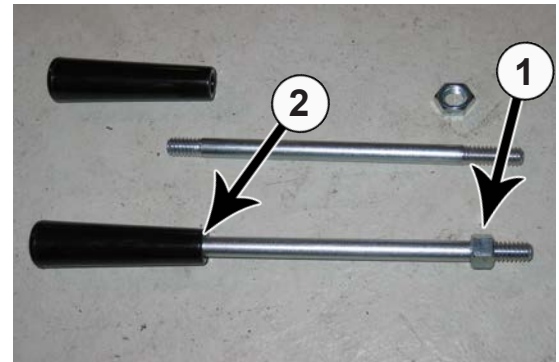
NOTE: DO NOT secure hoses to the undercarriage arm rails.



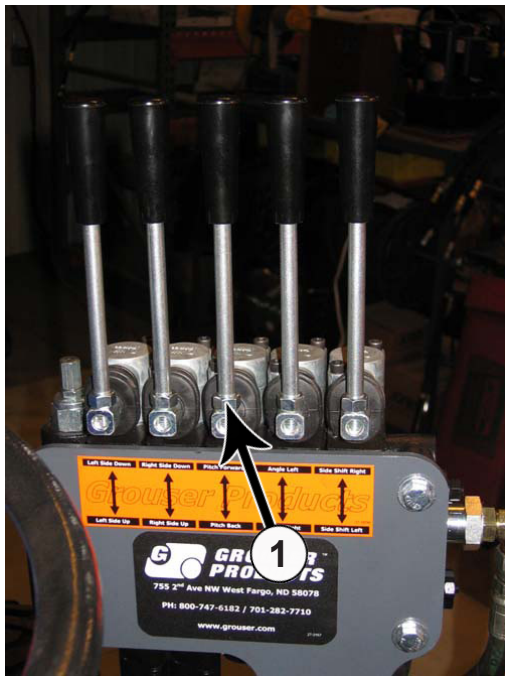
40. After all hoses are in place, group hoses together and secure hoses to the valve stand with zip ties (1) (PN: 59-34950).



41. Reinstall cover (1) over loader control valve.



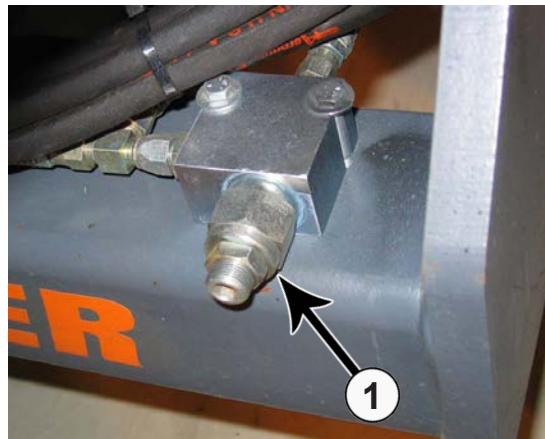
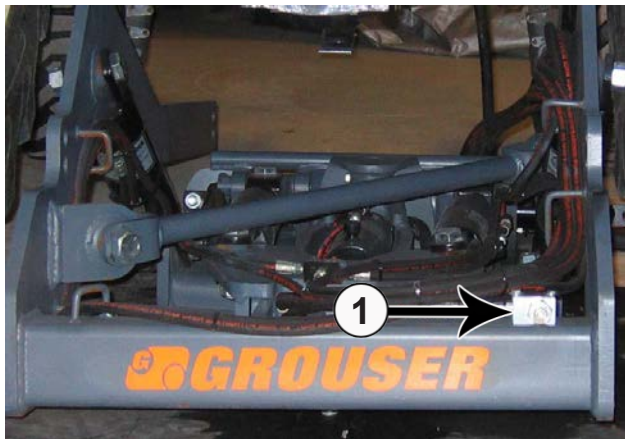
42. Assemble control valve handles (PN: 39-10199). Put the nut on the side of the bolt that has longer threads (1). Put the black handle on the other end that has shorter threads (2).



43. Insert assembled handles into Belly Blade control valve. Tighten the nuts (1).

44. Reinstall tires on the tractor and lower the tractor. The undercarriage installation is complete.

45. Reconnect the battery.



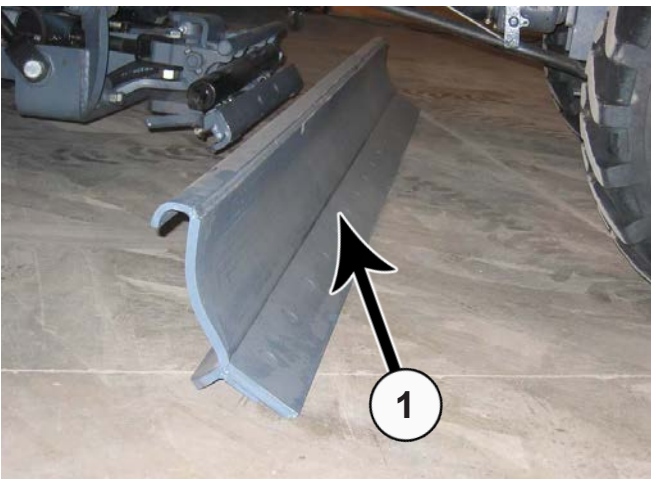
46. Start tractor and run controls on the lift, side shift, and pitch controls to bleed the air, check for leaks and repair as necessary.

47. To bleed the air from the angle system, loosen the locking nut on the valve (1) located at the back of the undercarriage. Turn the allen head out two turns and run the controls until the hydraulic cylinders are extending and contracting fully.

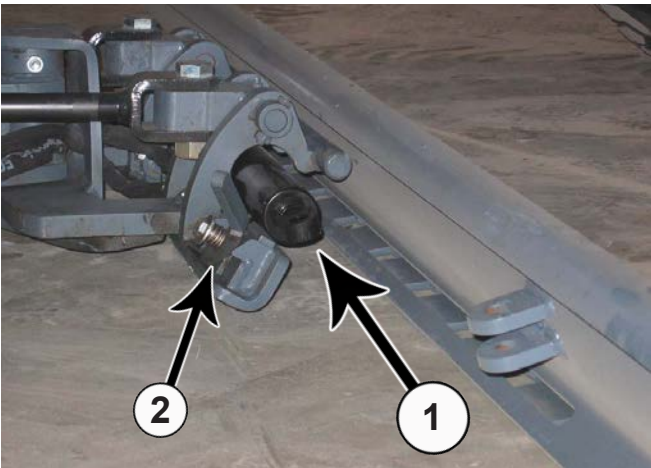
48. After all air has been bled and the system is operating correctly, extend the angle until the left side of quick attach is as far forward as possible. Turn the allen head in two turns and tighten the locking nut.

49. Check the hydraulic fluid level in the tractor. Refer to the tractor owner's manual for the correct fluid level. Add oil as recommended.

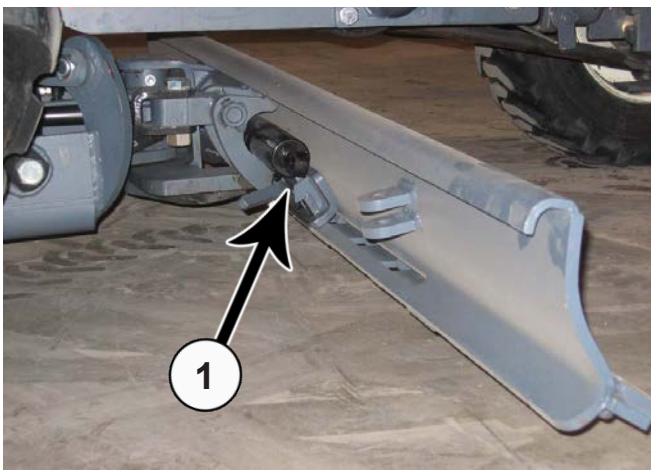
Blade Installation



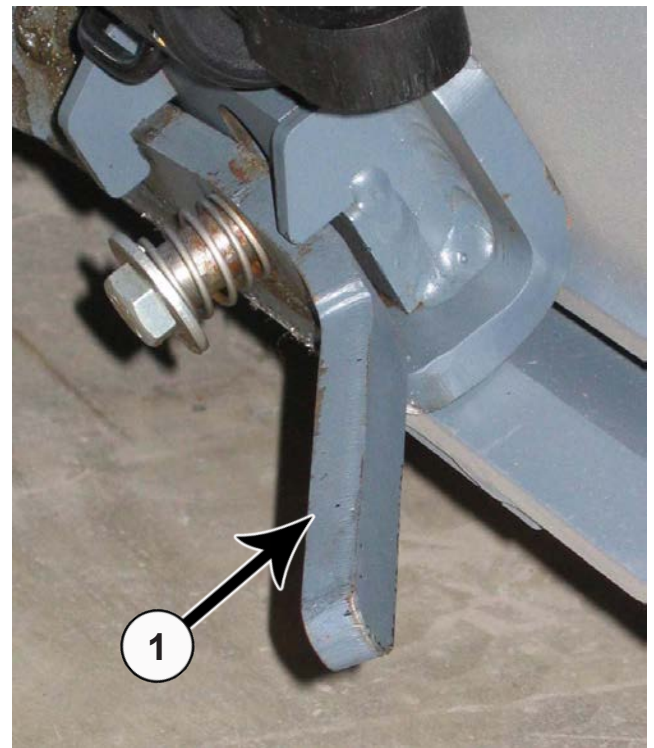
50. Drive over blade or slide blade under tractor until the quick attach is approximately in the center of the blade (PN: 15-10270-XX) (1).



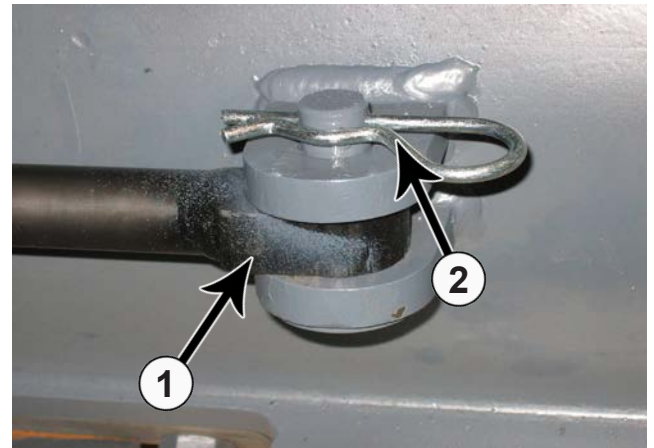
51. Pitch the male quick attach forward, and position the blade so that the top round bar hooks under the lip at the top of the blade (1). Make sure the locking levers are still up (2).



52. Pitch the male quick attach (1) back to lift the blade off the ground.

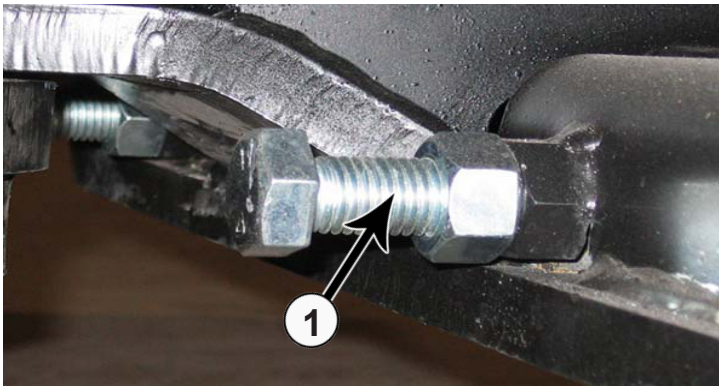


53. Engage the quick attach locking lever on each side (1). Verify that the latch engaged the slot at the bottom of the blade.



54. Extend the side shift cylinder (1) to insert pin. Insert a 1" X 2-1/8" pin (PN: 43-10198) from the bottom, and insert clip pin (PN: 43-7767) on top (2).

55. After mounting the blade, apply up and down pressure to verify proper blade installation.



56. Adjust angle stops so the blade does not interfere with the tires during angle of blade. Use a wrench to loosen nut and to turn the bolt either in or out (1). If the blade is hitting the tires, turn the bolt out. After adjustment, tighten the nut.

57. Cycle through blade and steering functions to check for interferences.

Tractor and blade are ready for use. Refer to the Belly Blade operator's manual for safety, operation, and maintenance information.

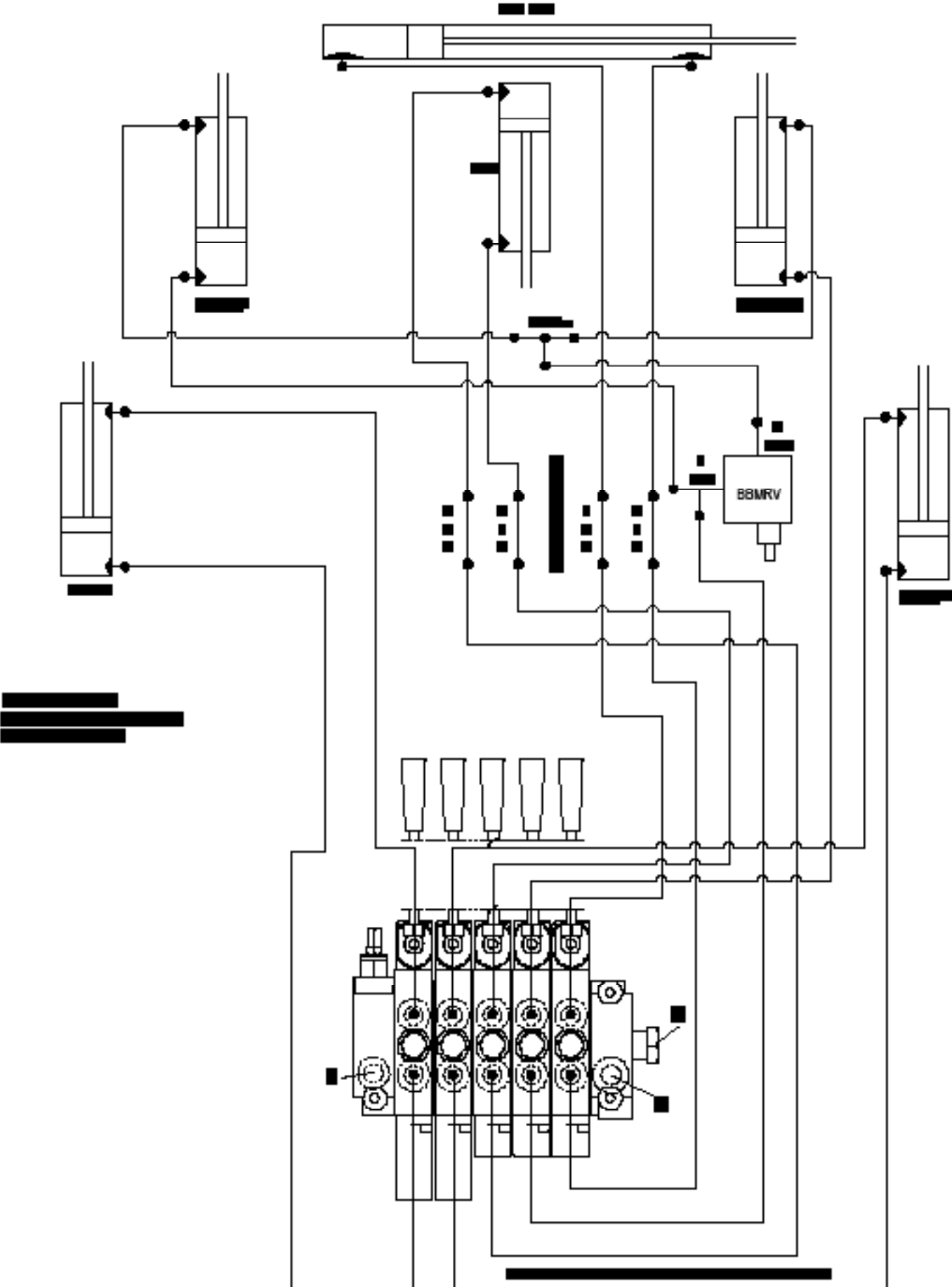


Side view of tractor with blade.



Angle view of tractor with blade.

Hydraulic Schematic



Warranty Statement

Grouser Products warrants to the original purchaser of each item that the product be free from defects in material and workmanship under normal use and service for a period of one year. If such equipment is found to be defective within one year, it is the obligation of Grouser Products under this warranty to repair or replace (exclusive of the cost of labor and transportation), any equipment or parts, in the judgment of Grouser Products to be defective in material or workmanship.

All equipment or parts claimed to be defective in material or workmanship must be made available for inspection at the place of business of a dealer authorized to handle the equipment covered by this warranty, or, upon request by Grouser Products, shipped to the Grouser Products factory in West Fargo, North Dakota. Grouser Products shall have no obligation to bear the cost of labor or transportation in connection with replacement or repair of any such defective parts. Grouser Products will pay \$35 / hr. on the modification or repair of defective parts in the setup procedure.

This warranty covers only defects in material and workmanship. It does not cover depreciation or damage caused by normal wear, accident, improper assembly, improper adjustments, improper maintenance including lack of proper lubrication, or improper use. Therefore, Grouser Products liability under this warranty shall not be effective or actionable unless the equipment is assembled, maintained and operated in accordance with the operating instructions accompanying the equipment. Grouser Products shall have no liability if the equipment has been altered or reworked without the written authorization of Grouser Products.

Grouser Products' parts, which are furnished under this warranty and properly installed, shall be warranted to the same extent as the original parts under this warranty if, and only if, such parts are found to be defective within the original warranty period covering the original equipment

Contact Information

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