



Belly Blade

Installation Instructions

Massey Ferguson 4707

Without Cab

Purchase Date
Serial Number
Model Number
Tractor Model
Dealer

Index

Description	Page
Bolt Torque Specifications	2
Kit Inventory	3
General Information	4
Safety Information	4
Preparing Tractor for Installation	5
Bracket Installation	5
Installing Undercarriage	5-7
Plumbing	7-9
Blade Installation	10-11
Undercarriage Diagram	12-13
Hydraulic Schematic	14
Warranty Statement	16

Bolt Torque Specifications

Bolt Dia. (inch)	Thread per inch	Grade 5	Grade 8
		Torque (ft·lbs.)	Torque (ft·lbs.)
1/4	20	8	12
1/4	28	10	14
5/16	18	17	25
5/16	24	19	29
3/8	16	30	45
3/8	24	35	50
7/16	14	50	70
7/16	20	55	80
1/2	13	75	110
1/2	20	90	120
9/16	12	110	150
9/16	18	120	170
5/8	11	150	220
5/8	18	180	240
3/4	10	260	380
3/4	16	300	420
7/8	9	430	600
7/8	14	470	660
1	8	640	900
1	12	710	990

Bolt Dia. (mm)	Pitch	Grade 8.8	Grade 10.9
		Torque (ft·lbs.)	Torque (ft·lbs.)
4	0.70	2	
5	0.80	4	
5	1.00	7	11
7	1.00	12	
8	1.25	17	26
8	1.00	18	
10	1.50	35	51
10	1.20	37	
10	1.00	39	
12	1.75	59	88
12	1.50	62	
12	1.25	65	
14	2.00	94	139
14	1.50	101	
16	2.00	146	210
18	2.50	210	
20	2.50	292	
22	2.50	398	
44	3.00	503	

Kit Inventory

Qty.	PN	Description
3	16-1620040	16mm x 2.0mm x 40mm Hex Bolt Gr 10.9
7	16-1620050	16mm x 2.0mm x 50mm Hex Bolt Gr 10.9
4	16-20219	3/4" x 2-1/4" Hex Bolt Gr 5 NC
4	16-21218	3/4" x 2" Carriage Bolt Gr 5 NC
3	16-35C612	3/8" x 3/4" Flanged Bolt
4	16-35C616	3/8" x 1" Flanged Bolt
4	16-3651	20mm x 2.5mm x 150mm Hex Bolt Gr 10.9
3	16-812520	8mm x 1.25mm x 20mm Hex Bolt Gr 10.9
1	18-43142-L	Bracket, Rear
1	18-43142-R	Bracket, Rear
2	18-43146	Bracket, Front
1	18-43149	Bracket, Valve Support
2	31-34183	Male Elbow 45° JIC x Metric (7802-8-18)
1	31-43417-10-10	-10 Male JIC to -10 ORFS Male (FS-7403-10-10)
1	31-2406-10-08	JIC Reducer Expander (2406-10-08)
1	31-34050	Straight Thread Elbow 90° JIC x O-Ring
2	31-34051	Straight Thread Elbow 90° JIC x O-Ring
1	35-43418-0720	-8 FJIC x -8 FJIC - 5/8" Hose - 72"
1	35-43418-0960	-8 FJIC x -8 FJIC - 5/8" Hose - 96"
1	35-43418-1000	-8 FJIC x -8 FJIC - 5/8" Hose - 100"
1	44-43150	Plate, Valve Mount
1	54-43145	Massey 4700 Series UC
1	56-10200-5	Belly Blade Valve System
12	57-20747	3/4" Flat Washer
4	57-20757	3/4" Flat Washer - 1-1/2" OD
4	57-20792	3/8" Fender Washer
10	57-20825	16mm Flat Washer
8	70-20607	3/4" Center Lock Hex Nut Gr 2 NC
4	70-20612	3/8" Nyloc Hex Nut Gr. 5

Blade Assembly - Shipment includes one of the following		
Qty	PN	Description
1	15-10300-60	6 ft. Moldboard
1	15-10300-70	7 ft. Moldboard
1	15-10300-80	8 ft. Moldboard
1	15-10300-90	9 ft. Moldboard
1	15-10300-100	10 ft. Moldboard

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 any service center or your 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.

These instructions show the Belly Blade installation process with the tractor on a hoist. 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.

⚠Caution⚠

Avoid Injury! This text will explain the possible hazards or death to the bystanders or the operator if the correct procedures are ignored.

Safety Information

1. Wear protective eye wear.
2. Always block tractor safely.
3. Engage parking break 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. Park the tractor on a smooth, level surface.
2. Set parking brake and block front tires to keep from rolling.
3. Disconnect the battery.

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

IMPORTANT: Raise the tractor high enough for the undercarriage to fit under the rear axle when installing the undercarriage.

4. The Belly Blade will arrive on a pallet. Unwrap and set the blade aside. Remove the undercarriage assembly from the pallet.
5. Check the inventory and ensure that all parts are included with the Belly Blade Kit. If any parts are missing, contact your dealer.
6. 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.
7. 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.

Bracket Installation



8. Remove front two bolts from 3-point hitch brace on right and left rear axle. Attach rear brackets with 2 - 20mm x 150mm bolts and 2 - 3/4" flat washers (A).

Note: Verify the correct orientation of the rear brackets. Refer to diagram on Page 12-13.

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.

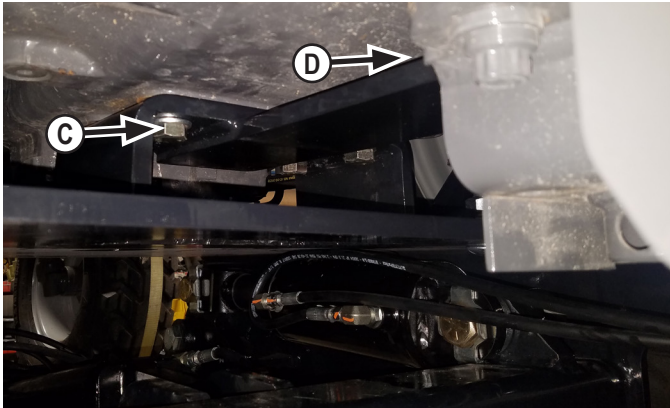


9. Align the undercarriage behind the tractor and guide the undercarriage under the tractor.
10. Raise the undercarriage up to the installed tractor brackets and the tractor frame. Line up the undercarriage to the corresponding holes on the installed brackets.

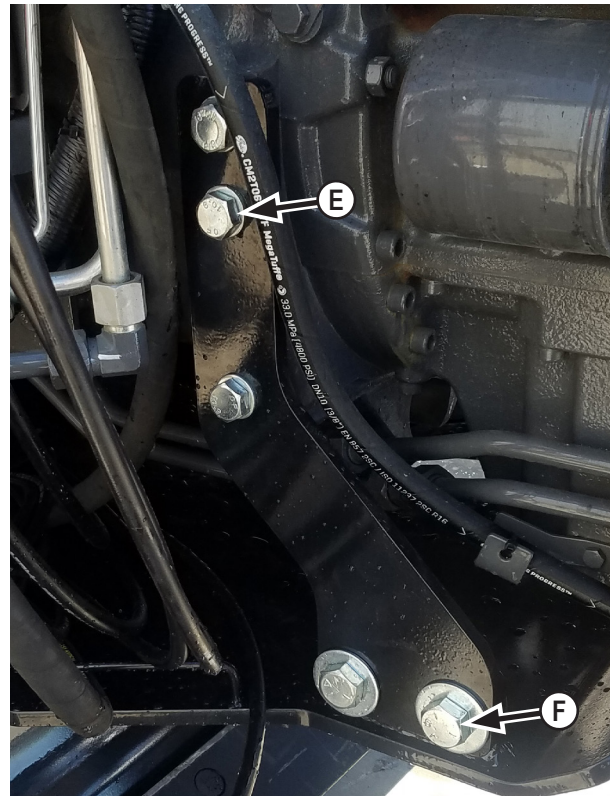
Note: Do Not tighten bolts until all mounting bolts have been installed.



11. Use 4 - 3/4" x 2" carriage bolts, 4 - 3/4" flat washers and 4 - 3/4" nuts (**B**) to attach rear brackets to undercarriage.



12. In front of drawbar bracket, attach rear of undercarriage with 4 - 16mm x 50mm bolts and 4 - 16mm washers (**C**). Push undercarriage back and verify push plate is tight against the front of the drawbar bracket (**D**).

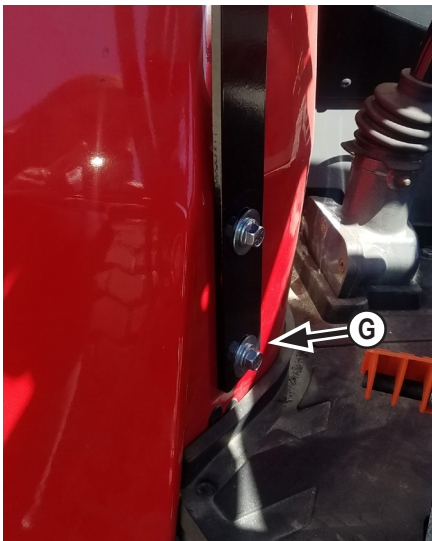


13. Attach front plate to tractor on the right side with 3 - 16mm x 50mm bolts and 3 - 16mm washers (**E**). Use 3 - 16mm x 40mm bolts and 3 - 16mm washers on the left side to attach front plate to the tractor.

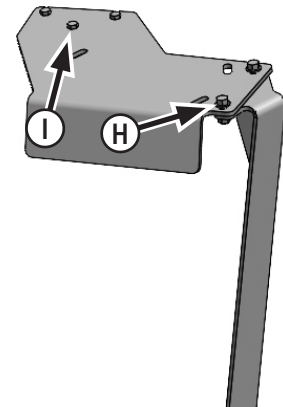
14. Attach front plates to undercarriage with 4 - 3/4" x 2-1/4" bolts, 8 - 3/4" flat washers, and 4 - 3/4" nuts (**F**).

15. Torque all fasteners to the correct specifications listed on Page 2 after all bolts and nuts have been installed.

Control Valve and Stand Installation

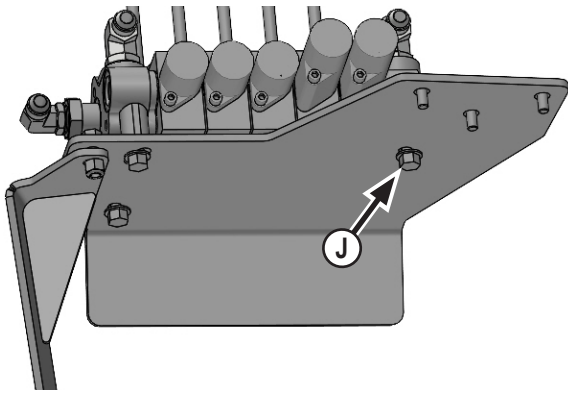


16. Attach the valve support plate to the front of the right fender with 2 - 3/8" x 1" flange bolts, 4 - 3/8" fender washers and 2 - 3/8" nyloc nuts (**G**).

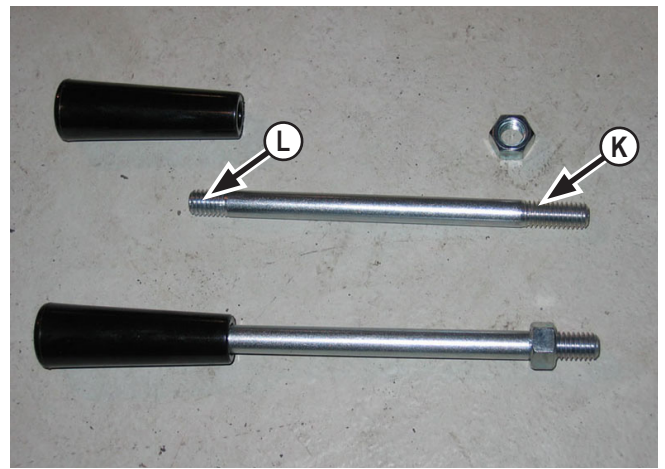


17. Attach valve mount plate to top of valve support plate with 2 - 3/8" x 1" flange bolts and 2 - 3/8" nyloc nuts (**H**).

18. Attach valve mount plate to top of right handrail with 3 - 8mm x 20mm bolts (**I**).



19. Attach valve to top of valve mount plate with 3 - 3/8" x 3/4" flange bolts (J).



20. Assemble control valve handles. Put nut on side of bolt that has longer threads (K). Put black handle on end that has shorter threads (L).

21. Insert assembled handles into belly blade control valve. Tighten the nut on each.

Plumbing

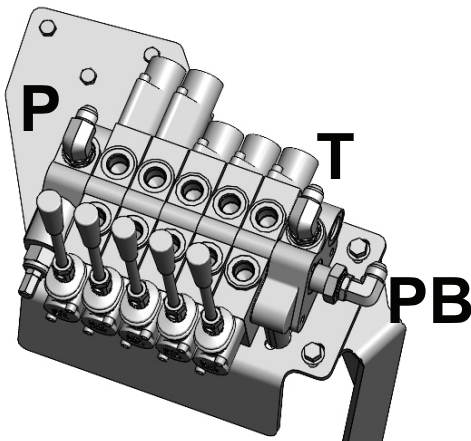
- Note:** 1. Have a catch pan available to collect hydraulic oil when removing hydraulic lines.
2. Before removing any hydraulic lines, release all hydraulic pressure with the engine off.



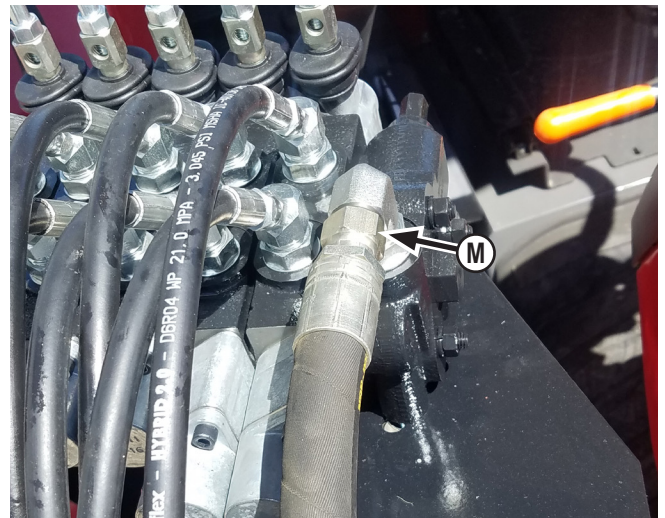
Caution



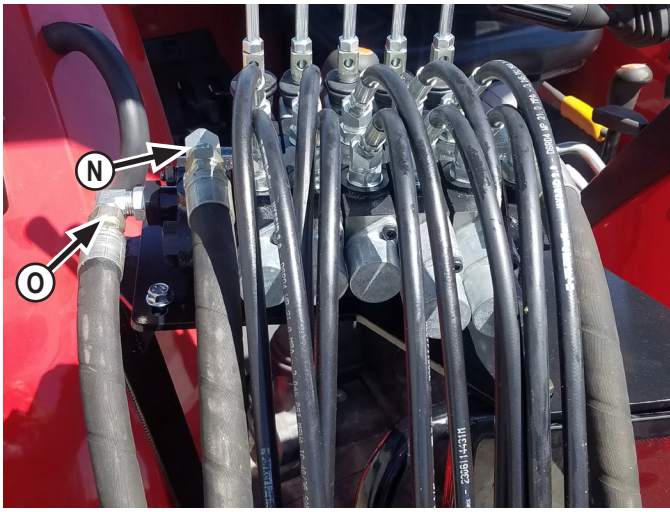
Avoid injury! Hydraulic oil that is under pressure will penetrate the skin and cause a serious injury. If this occurs, it needs to be surgically removed by a doctor familiar with this type of injury within a few hours or gangrene may result.



22. Install 90° fitting into Tank Port on valve (T).
23. Install a 90° fitting into Pressure In Port on valve (P).
24. Install a 90° fitting into Power Beyond Port on valve (PB).

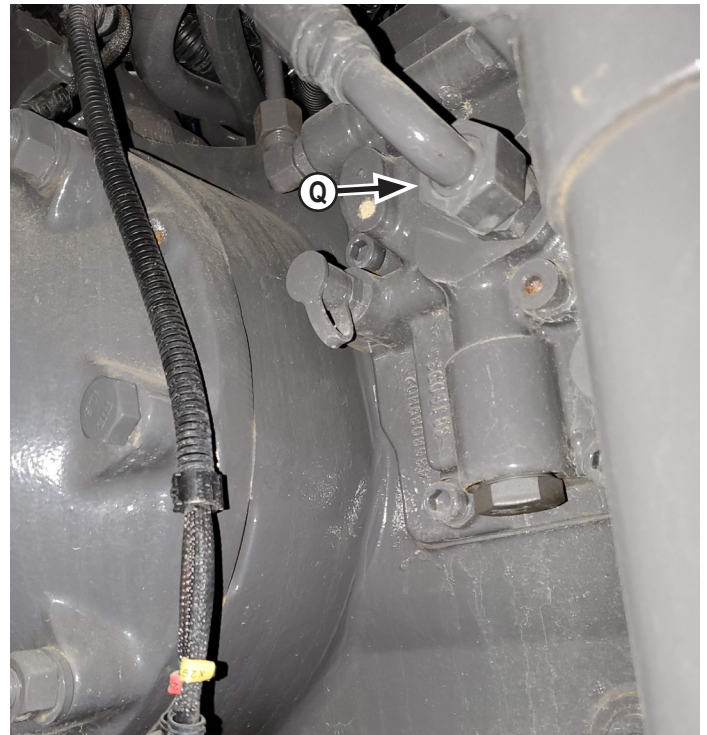


25. Install a 96" hose on the fitting in Pressure In Port on valve (M).

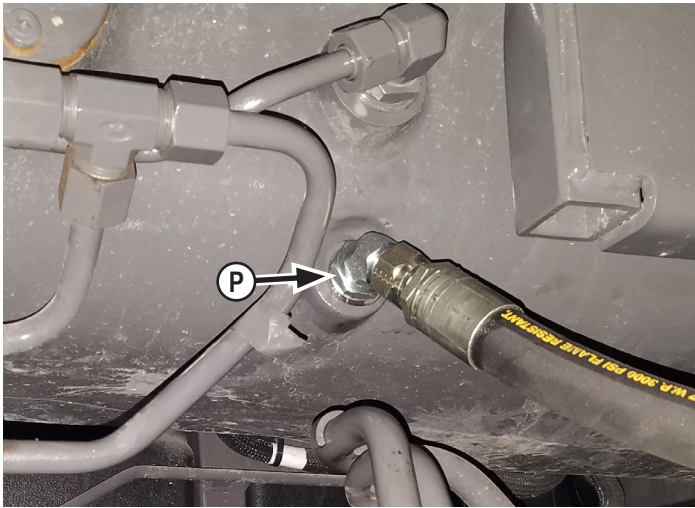


26. Install a 72" hose on the fitting in Tank Port on valve (**N**).

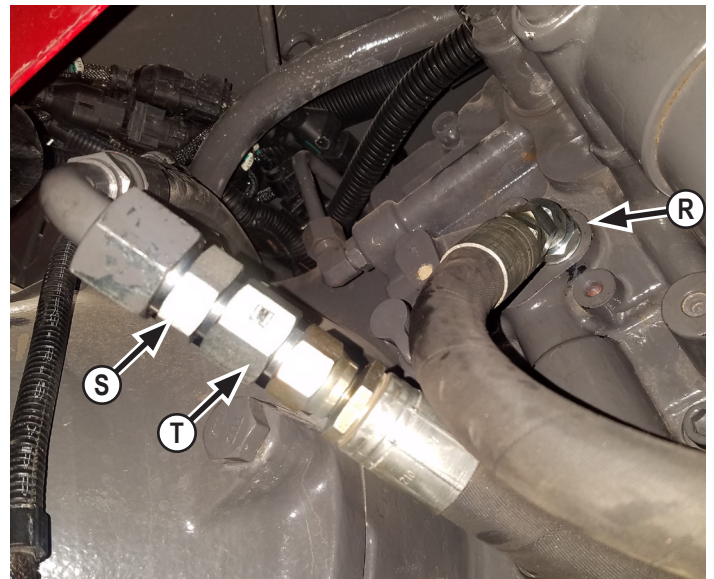
27. Install a 100" hose on the fitting in Power Beyond Port on valve (**O**).



29. Disconnect steel line and remove straight fitting from between the rear axle the oil filter (**Q**).



28. Remove plug from tank below the operator station. Install a 45° fitting and attach opposite end of 72" hose from Tank port on Belly Control Valve from Step #26 (**P**).



30. Install a new 45° fitting into the tractor where the steel line was removed. Attach the opposite end of 96" hose from Pressure In port on Belly Control Valve from Step #25 (**R**).

31. Install a new male face seal by male JIC fitting (**S**) and a female JIC x male JIC fitting (**T**) into steel line. Attach the opposite end of 100" hose from Power Beyond port on Belly Control Valve from Step #27 (**T**).

32. After all hoses are in place, group hoses together and secure hoses with zip ties.

33. Reconnect the battery.

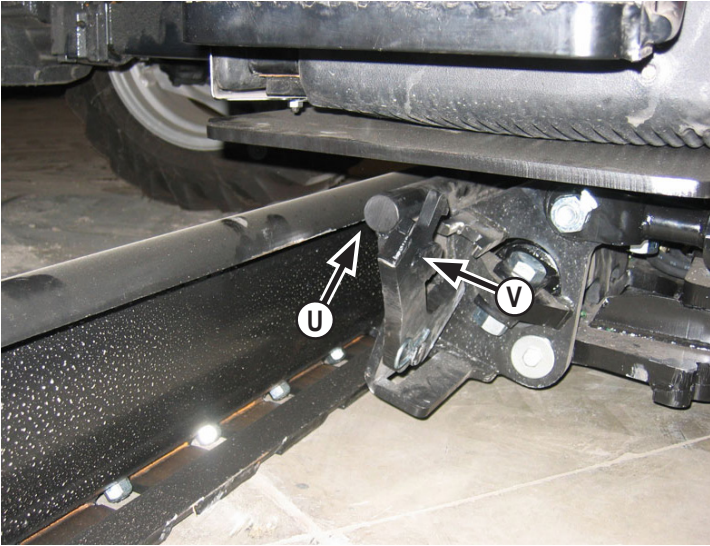
34. Reinstall tires on the tractor, lower the tractor and remove the jacks.

35. Start the tractor and run the controls to check for any leaks.

Note: Watch the blade carefully for any collisions when running the controls.

36. Check hydraulic oil level after all cylinders have been cycled. Add hydraulic oil if necessary.

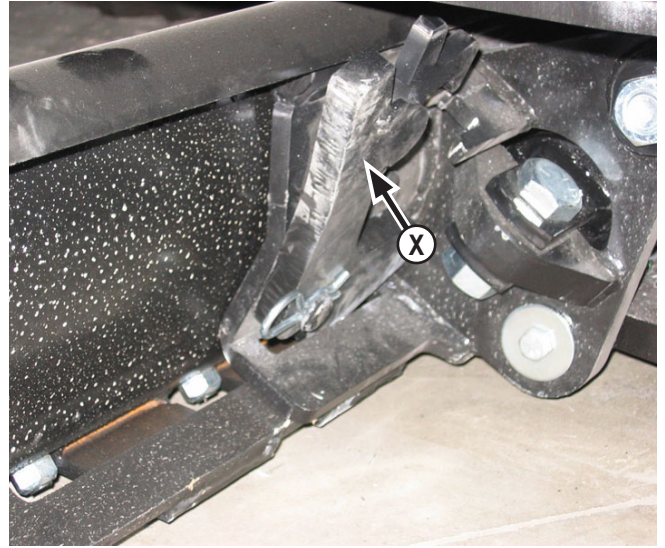
Blade Installation



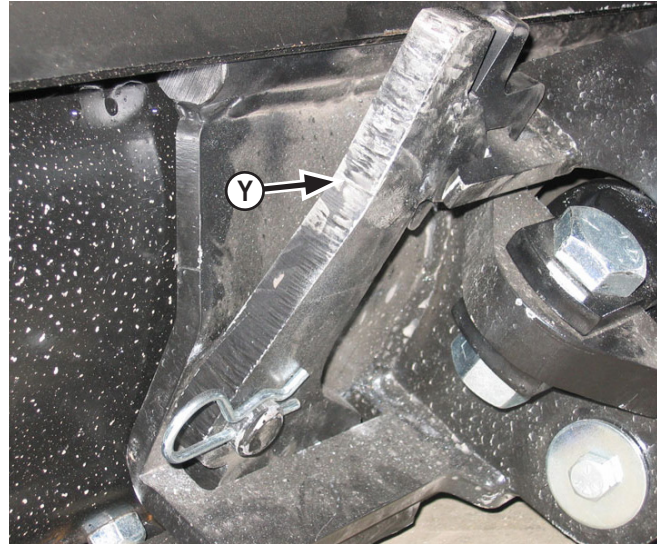
37. Slide blade under tractor until the quick attach is in line with the center of the blade (**U**). Make sure that the quick attach locking levers are still up (**V**).



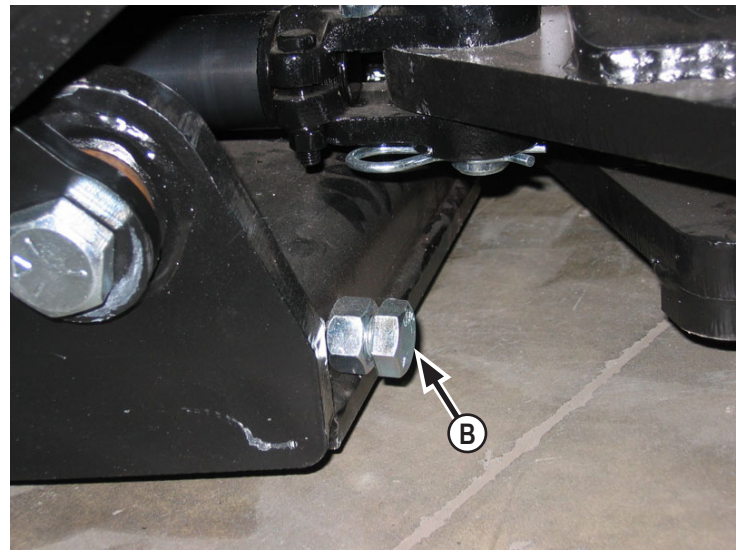
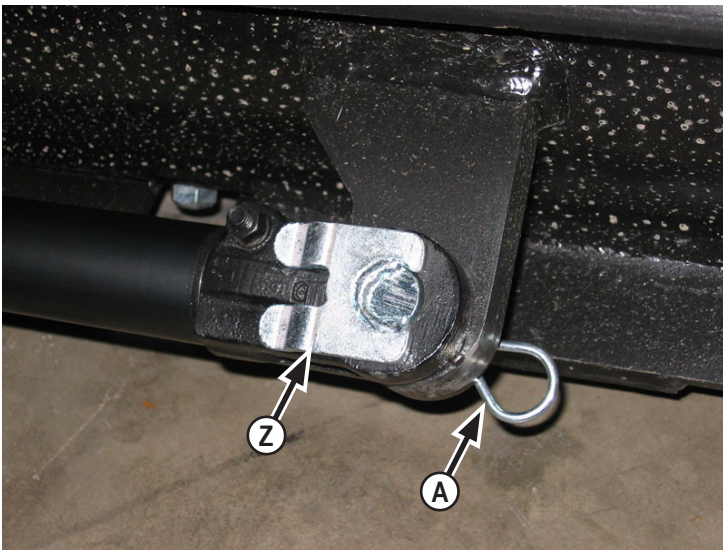
38. Pitch the male quick attach forward. Position the blade so the top round bar will hook under blade lip (**W**).



39. Pitch the male quick attach back to lift the blade off the ground (**X**).

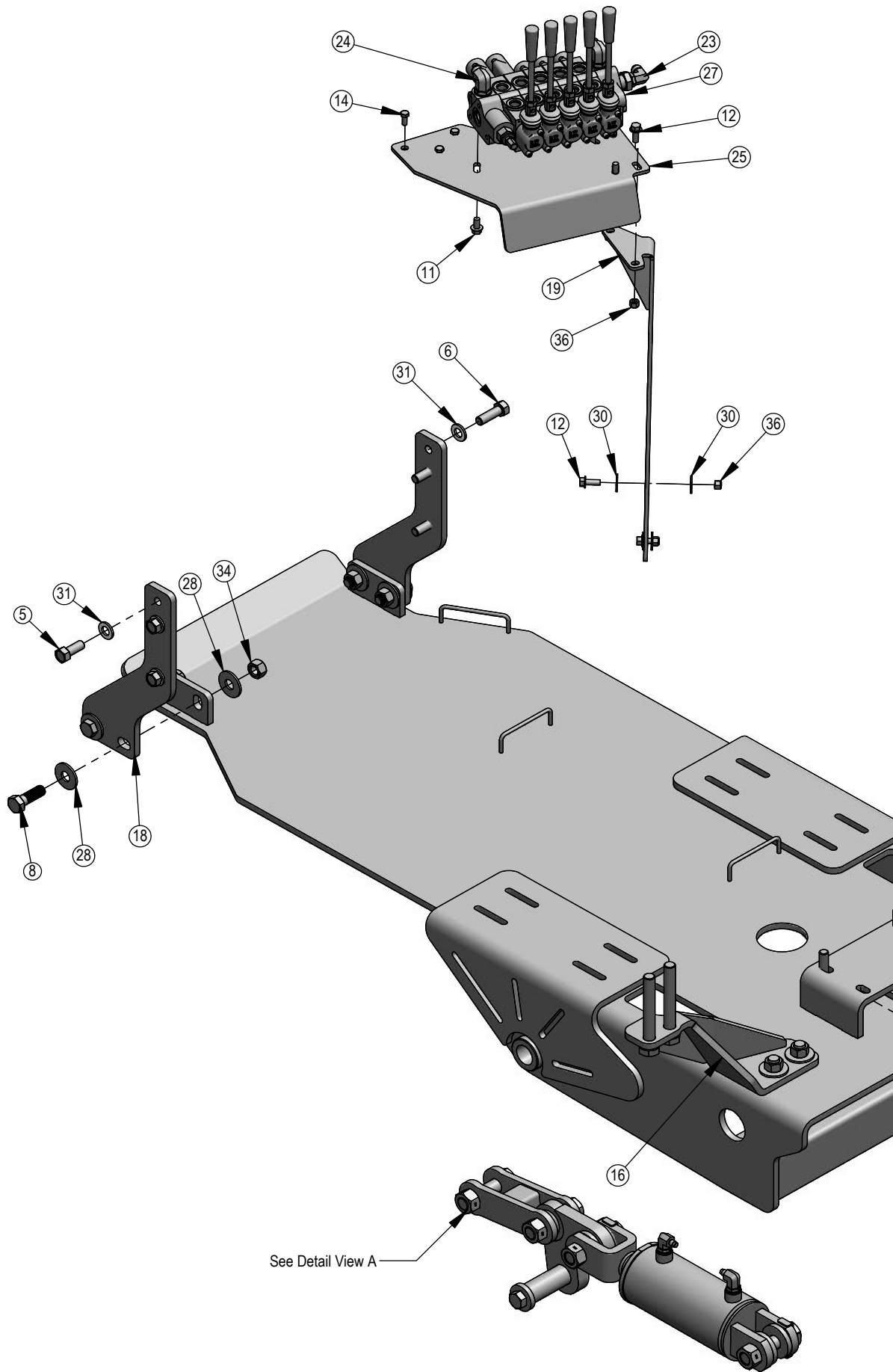


40. Lock the quick attach lever on each side (**Y**). Verify that the lever engaged the corresponding slot on the bottom of the blade.

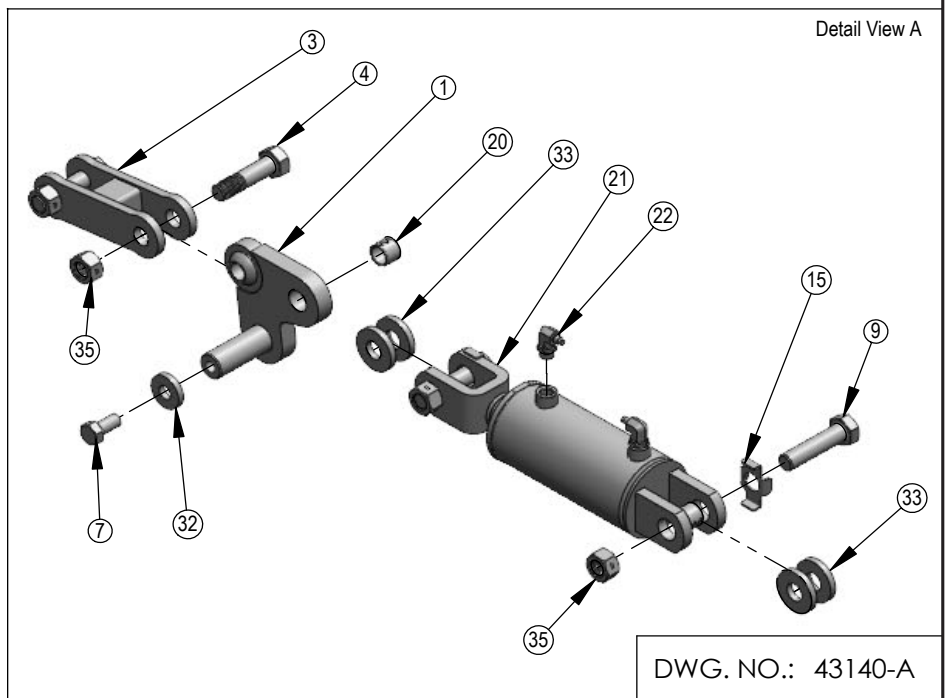
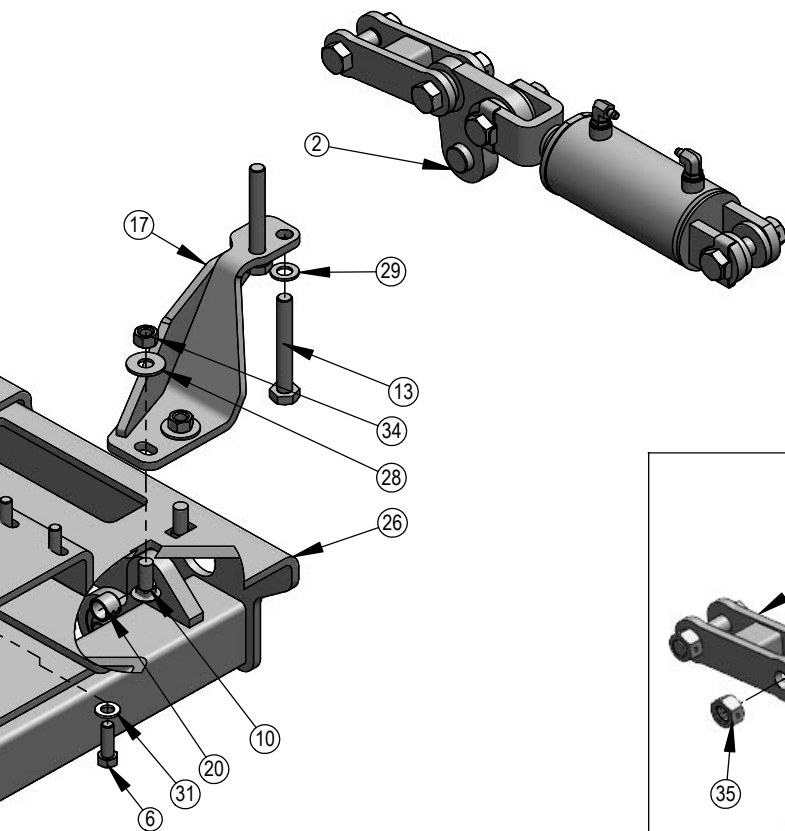


- 41.** Extend the side shift cylinder out to the cylinder connector. Insert pin **(Z)** and the clip pin on the bottom **(A)**.
- 42.** After mounting the blade, apply up and down pressure to verify proper blade installation.
- 43.** Cycle through blade functions checking for interferences.

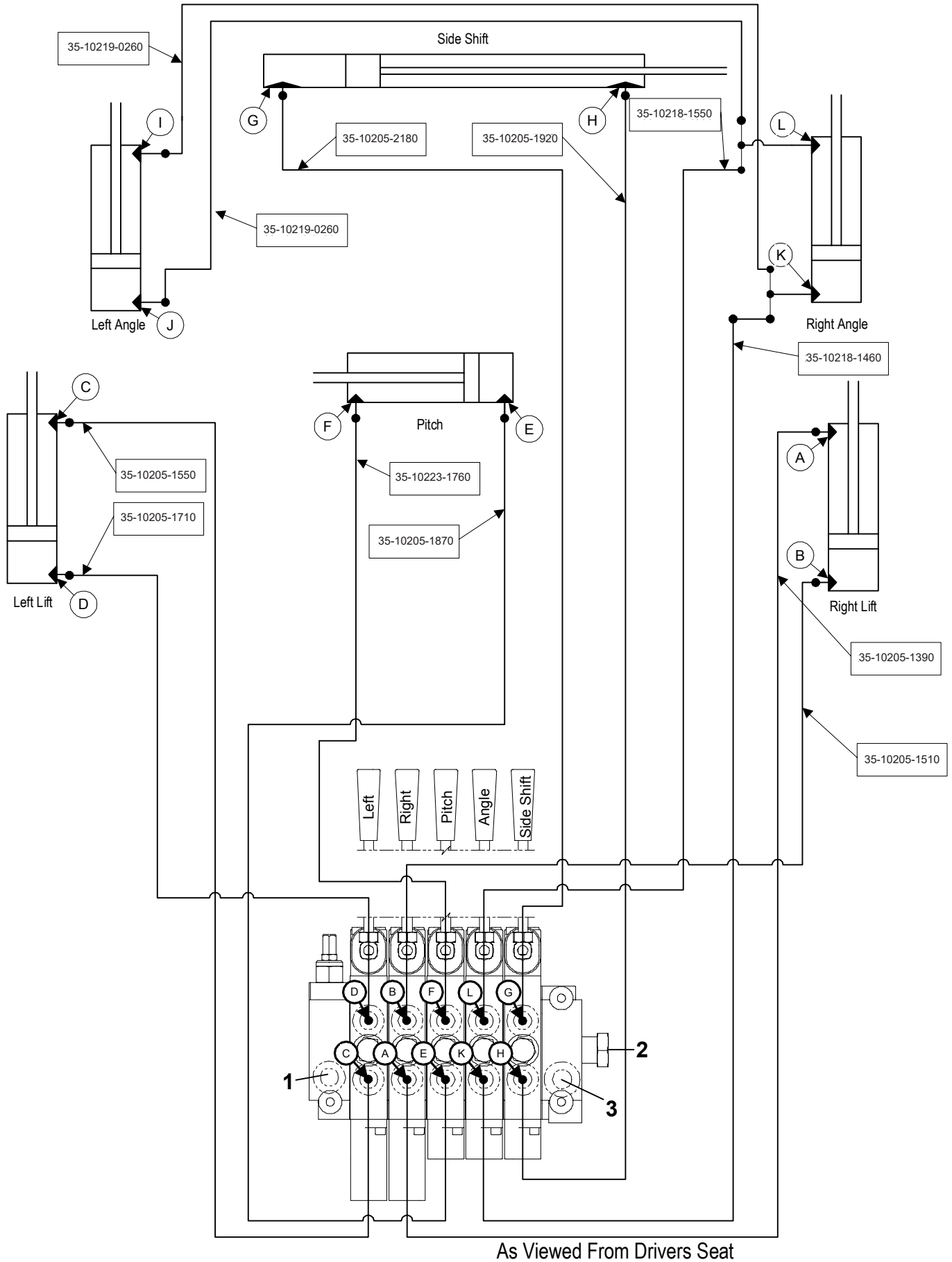
- 44.** Adjust angle stops **(B)** so blade does not interfere with tires during angle of blade. Use a wrench to loosen the nut and to the turn the bolt either in or out depending if the blade is hitting the tire. After adjustment, tighten the nut.
- 45.** Tractor and blade are ready for use. Refer to the blade operator's manual for safety, operation, and maintenance information.



ITEM NO.	Qty.	PART NO.	DESCRIPTION
1	1	11-10400-L	Arm Weld Left
2	1	11-10400-R	Arm Weld Right
3	2	11-10410	Arm Weld
4	4	16-10165	1" x 3-3/4" Hex Bolt Gr.5 NC
5	3	16-1620040	16mm x 2.00mm x 40mm Metric Hex Bolt Gr 10.9 Coarse ZC
6	7	16-1620050	16mm x 2.00mm x 50mm Metric Hex Bolt Gr 10.9 Coarse ZC
7	2	16-20216	3/4" x 1-1/2" Hex Bolt Gr 5 NC
8	4	16-20219	3/4" x 2-1/4" Hex Bolt Gr 5 NC
9	4	16-20566	1" X 4" Hex Bolt Gr 8 NC
10	4	16-21218	3/4" x 2" Carriage Bolt Gr 5 NC
11	3	16-35C612	3/8" x 3/4" Flange Bolt
12	4	16-35C616	3/8" x 1" Flanged Bolt
13	4	16-3651	20mm x 2.5mm x 150mm Hex Bolt
14	3	16-812520	8mm x 1.25mm x 20mm Metric Hex Bolt Gr 10.9 Coarse
15	4	18-10430	Bracket, NR 1.00" Bolt
16	1	18-43142-L	Rear Bracket
17	1	18-43142-R	Rear Bracket
18	2	18-43146	Bracket, Front
19	1	18-43149	Bracket, Valve Support
20	4	19-7774	1" x 1" Spring Bushing
21	2	26-34731	4 x 5 Cylinder Clevis Ends
22	4	31-34049	Straight Thread Elbow 90° JIC x O-Ring (6801-4-8)
23	1	31-34050	Straight Thread Elbow 90° JIC x O-Ring
24	2	31-34051	Straight Thread Elbow 90° JIC x O-Ring
25	1	44-43150	Plate, Valve Mount
26	1	54-43145	200 Massey 4700 Series LPL U/C Weld
27	1	56-10200-5	Valve
28	12	57-20747	3/4" Flat Washer
29	4	57-20757	3/4" Flat Washer - 1-1/2" OD
30	4	57-20792	3/8" Fender Washer
31	10	57-20825	16mm Flat Washer
32	2	57-3680	0.75" ID x 2.00" OD x .375" Heavy Washer
33	8	57-3682	1.00" ID x 2.50" OD x .375" Heavy Washer
34	8	70-20607	3/4" Center Lock Hex Nut Gr 2 NC
35	8	70-20609	1" Hex Center Lock Nut Gr.2 NC
36	4	70-20612	3/8" Nyloc Hex Nut Gr 5 NC



Hydraulic Schematic



As Viewed From Drivers Seat

Contact Us

As always, if you have any questions about your Belly Blade or other products made by Grouser, feel free to contact us.

Grouser Products

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Improvements

Grouser Products Inc. is continually striving to improve its products. We reserve the right to change prices, specification, or equipment at any time without notice. We also reserve the right to make improvements or changes when it becomes practical and possible to do so without incurring any obligation to make changes or additions to the equipment sold previously.

Warranty

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 two years from date of original retail delivery. If such equipment is found to be defective within two years, 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 in the setup process.

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.

