



Belly Blade

Installation Instructions

Kubota M9960 - Cab

Without Factory 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
		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
6	16-1615050	16mm x 1.50mm x 50mm Metric Hex Bolt Gr. 10.9 Fine
4	16-2015050	20mm x 1.50mm x 40mm Metric Hex Bolt Gr. 10.9 Fine
4	16-20035	5/16" X 1-1/4 " Hex Bolt Gr 5 NC
2	16-20064	3/8" x 1" Hex Bolt Gr 5 NC
8	16-20218	3/4" x 2" Hex Bolt Gr 5 NC
4	16-20125	1/2" x 1-1/4" Hex Bolt Gr 5 NC
3	16-19532	1/4" x 1-1/8" x 2-1/4" Round U-bolt
1	18-19525-R	Rear Bracket - Right
1	18-19525-L	Rear Bracket - Left
1	18-19528-R	Front Bracket - Right
1	18-19528-L	Front Bracket - Left
1	18-19531	Electric Controller Bracket
2	31-34054	Straight Thread Elbow 90° JIC x O-Ring (6801-10-12)
1	31-34101	Swivel Nut Elbow 90° JIC (6500-10-10)
1	31-34045	Straight JIC x O-Ring (6400-10-12)
10	31-34149	Straight Thread Elbow 45° JIC x O-Ring (6802-4-8)
2	35-10204-0360	36" x 5/8" -10JIC-10JIC Hose
1	35-11689-0360	36" x 5/8" -8JIC-10JIC Hose
1	43-7767	Cylinder Hitch Pin Clip
1	43-7995	Pin 1" x 2.125"
1	44-49530	Valve Cover
1	54-19520	Undercarriage Assembly
1	56-10280-F	Belly Blade Electric Valve System
4	57-20744	1/2" Flat Washer
12	57-20747	3/4" Flat Washer
4	57-20741	5/16" Flat Washer
6	57-20825	16mm Flat Washer
4	57-20827	20mm Lock Washer
10	59-34950	Zip Ties (large)
8	70-20607	3/4" Hex Center Lock Nut Gr 5 NC
4	70-20611	5/16" Hex Nut

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.

Plumbing

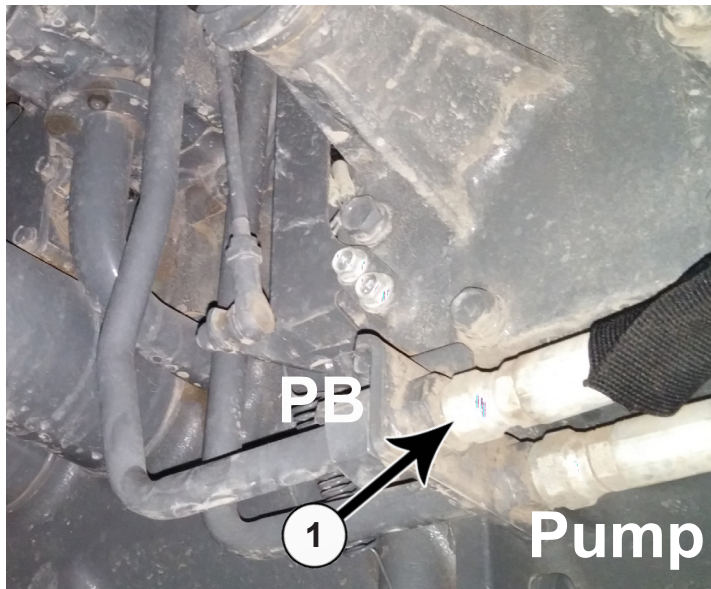
- Note:**
1. Have a catch pan available to collect hydraulic oil when removing hydraulic lines.
 2. Before removing any hydraulic lines, release all hydraulic pressure with the engine off.



Caution



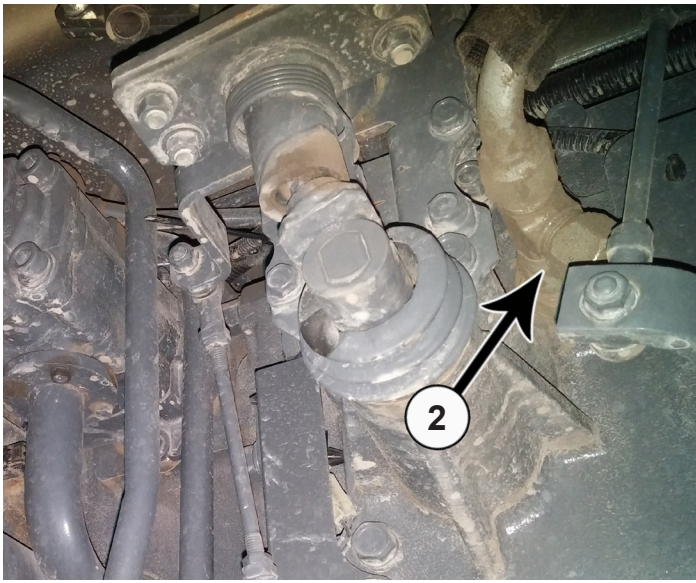
Avoid injury! Hydraulic oil that is under pressure will penetrate the skin and cause a serious injury. If this occurs, it needs to be surgically removed by a doctor familiar with this type of injury within a few hours or gangrene may result.



8. Remove plugs (1) from the outlet plate located under the operator platform on the right side.

Note: Tractors with an outlet block, remove fittings and replace with #12 fittings.

9. Attach a 36" hose to each previously installed fitting. Set the other end of the hoses aside to be attached to the BBCV later in Step #35-36 on Page 9.

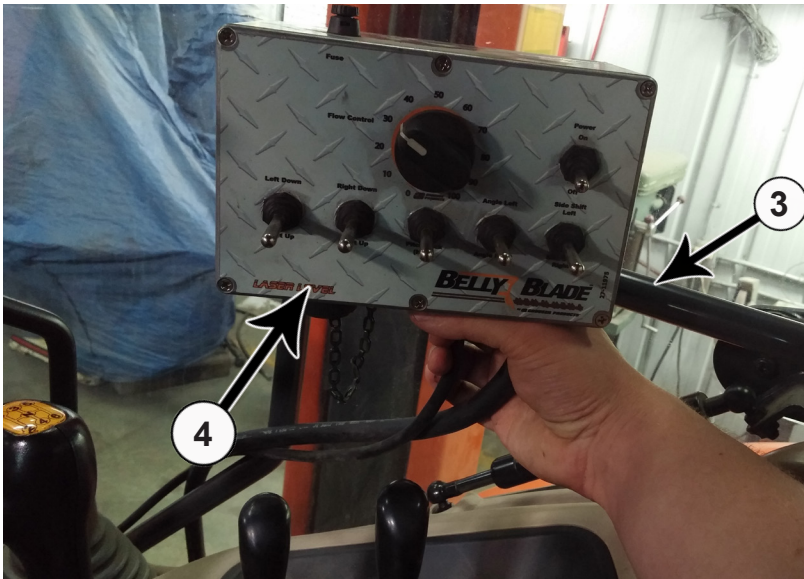


10. Remove plug from the Tank Port located under the operator platform on the right side and replace with a fitting from Kubota (order Part Number 75572-61802) (2).

Note: Tractors with no factory loader, will have a plug in the Tank Port instead of a T-fitting (as shown).

11. Attach a 36" hose to the previously installed fitting. Set the other end of the hose aside to be attached to the BBCV later in Step #37 on Page 9.

Electric Valve Control Box

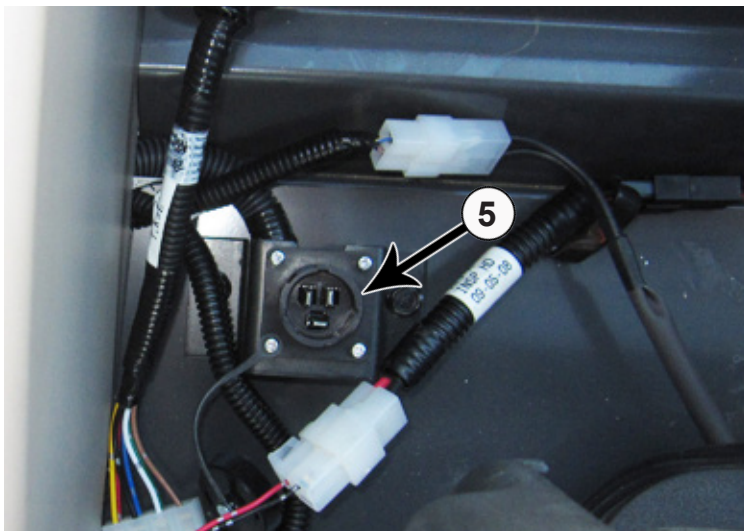


Note: Control Box Mount is not shown in the picture.

12. Attach the control box mount (PN: 18-19531) to the rail on the right door (3). Use 3 - u-bolts.

13. Attach the valve controller (4) to the control box mount with 2 - 1/4" x 1" bolts, 4 - 1/4" flat washers, and 2 - 1/4" nuts.

14. After positioning the valve controller to the operator's preference, tighten all hardware.

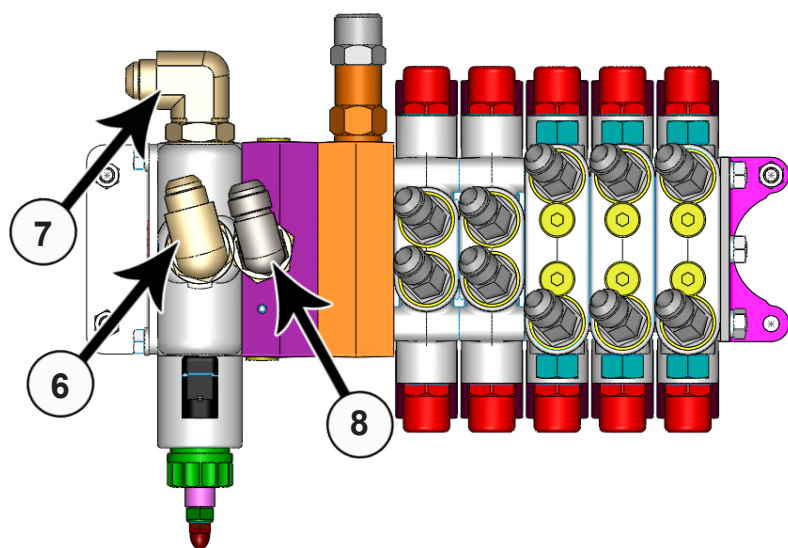


15. Attach the power cord from the valve controller to the auxiliary power socket (5).

Note: Your auxiliary power socket area may look slightly different than the area shown in the picture.

16. Run the wire harness to the electric valve. Connect the colored wires from the wire harness to their corresponding port on the back of the electric valve. Refer to the diagram on Page 15.

Valve Installation



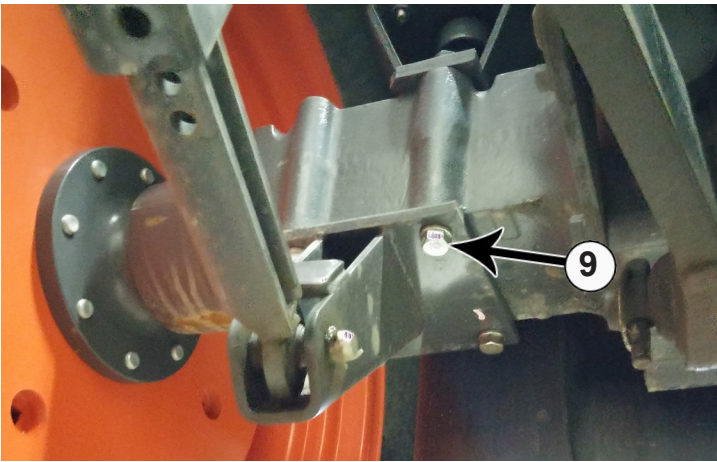
17. If hydraulic fittings are not installed, install a 90° fitting (PN: 31-34054) in the **In** (6) and **Out** (7) Ports on the electric valve.

18. Install a straight fitting (PN: 31-34045) and a 90° swivel fitting (PN: 31-34101) in the **Tank** Port on the electric valve (8).

19. Install 45° fittings (PN: 31-34149) into all remaining ports.

20. Use 4 - 5/16" x 1-1/4" bolts, 5/16" washers, and 5/16" nuts to attach the electric valve to the top of the undercarriage on the right side.

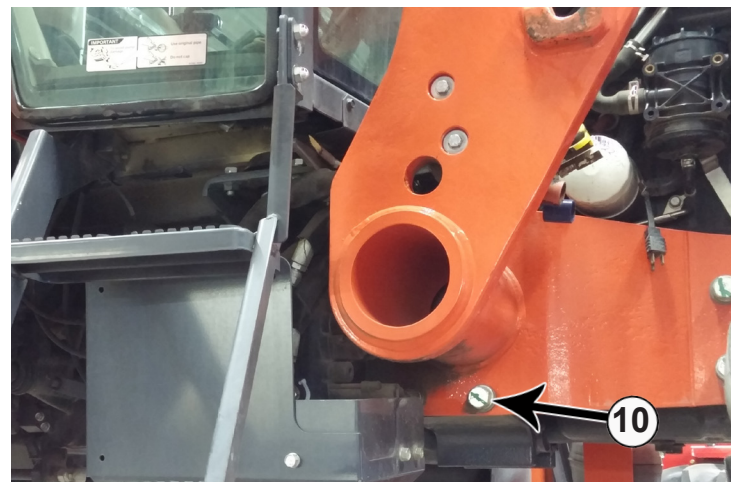
Bracket Installation



21. Remove two bolts from the 3-point hitch brace from the bottom of the left rear axle. Attach left rear bracket (PN: 18-19525-L) (9) with three 16mm x 50mm bolts and a 16mm flat washer on each bolt.

22. Repeat Step #21 for the right side with the right rear bracket (PN: 18-19525-R) (1).

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



Note: Picture shows tractor with loader mount. Use the picture only as reference to where the front brackets get mounted on the tractor.

23. Attach the left and right front bracket (PN: 18-19528-R,L) (10) to the bottom set of holes on the tractor frame below and in front of the cab with 2 - 20mm x 40mm bolts and a 20mm flat washer on each bolt for each side.

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.

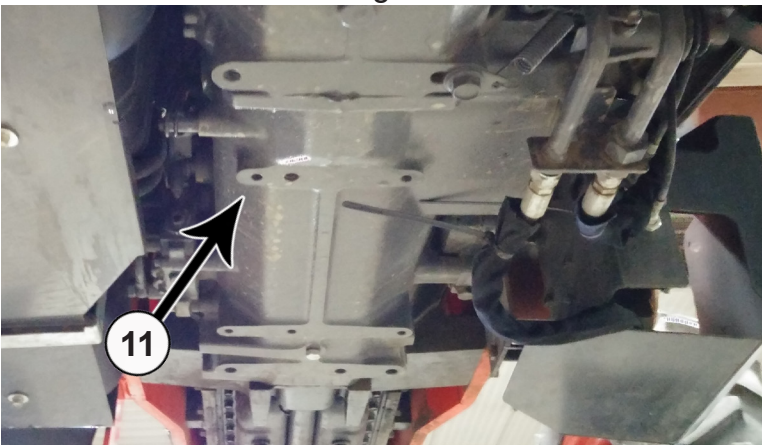
NOTE: When raising the undercarriage, properly guide the hoses to avoid pinching them between the tractor frame and the undercarriage.

⚠ Caution ⚠

Avoid injury! Watch for pinch points when raising the undercarriage.

24. Align the undercarriage behind the tractor.

25. Guide the undercarriage under the tractor. Make sure not to hit the valve on anything.



26. 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 and the holes on the undercarriage line up with the holes in the tractor frame (11).

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

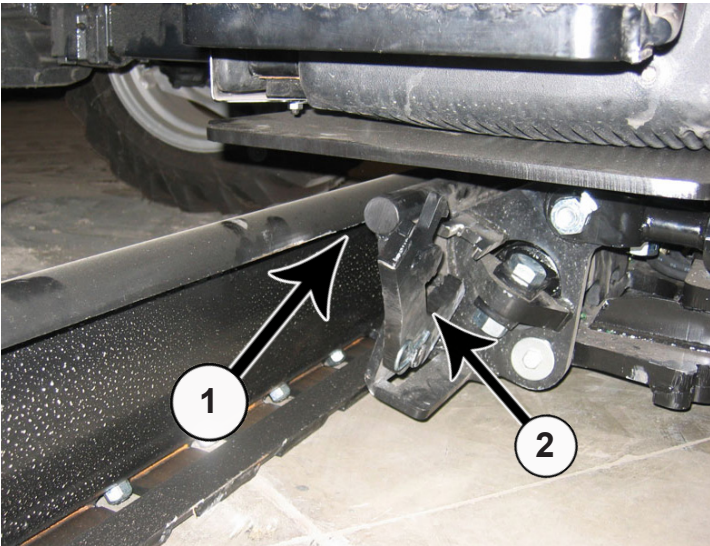
27. Use two 16mm x 50mm bolts with a 16mm flat washer on each bolt to attach the middle of the undercarriage to the tractor.

28. Attach the front of the undercarriage to the front brackets with four -3/4" x 2" bolts with a 3/4" flat washer on each bolt. Install the bolts from the bottom.
29. Once the front bolts are installed, attach with eight 3/4" flat washers and 3/4" center lock nuts.
30. Attach the rear of the undercarriage to the rear brackets with four - 3/4" x 2" bolts.
31. Once the rear bolts are installed, attach with eight 3/4" flat washers and 3/4" center lock nuts.
32. Push undercarriage against drawbar mount (1).
33. Torque all fasteners to the correct specifications after all bolts and nuts have been installed.
34. Reinstall tires on the tractor, lower the tractor and remove the jacks. The undercarriage installation is complete.

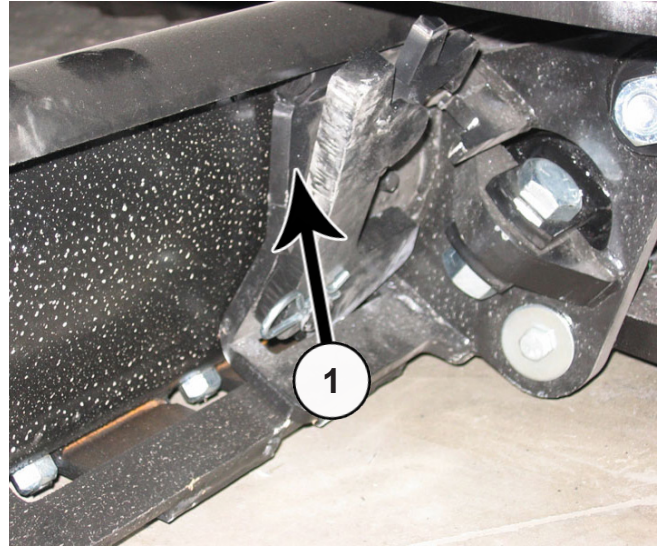
Hose Installation

35. Attach the 36" hose from the **Pump Port** that was installed in Step #9 to the 90° fitting installed in the **In Port** in Step #17.
 36. Attach the 36" hose from the **Power Beyond Port** that was installed in Step #9 to the 90° fitting installed in the **Out Port** in Step #17.
 37. Attach the 36" hose from the **Tank Port** that was installed in Step #11 to the 90° fitting installed in the **Tank Port** in Step #18.
 38. After all hoses are in place, group hoses together and secure hoses with zip ties (PN: 59-34950).
 39. Install the valve cover (PN:44-19530) with 4 - 1/2" x 1-1/4" bolts and a 1/2" flat washer on each bolt.
 40. Reconnect the battery.
 41. Start the tractor and run the controls to check for any leaks.
- Note:** Watch the blade carefully for any collisions when running the controls.
42. Check hydraulic oil level after all cylinders have been cycled. Add hydraulic oil if necessary.

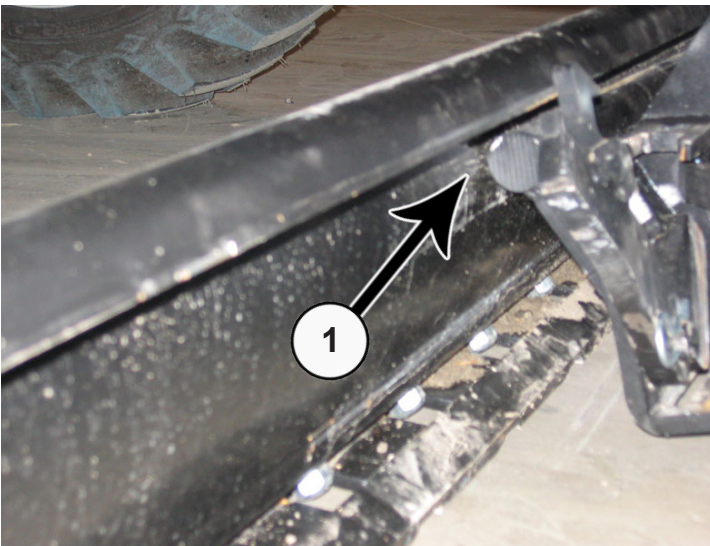
Blade Installation



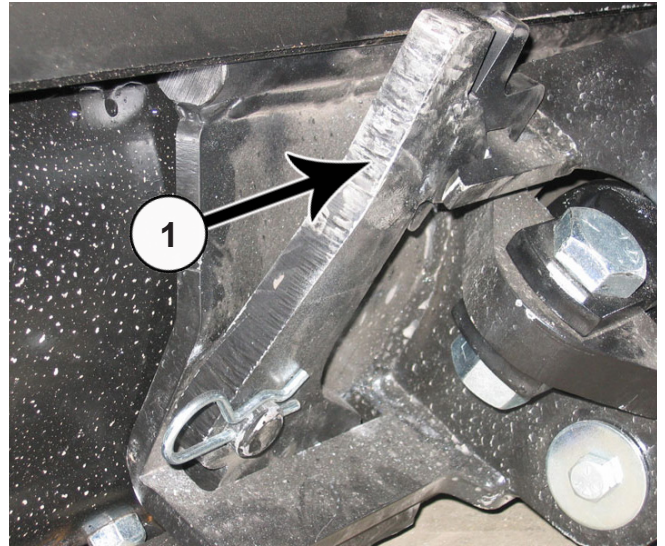
43. Slide blade under tractor until the quick attach is in line with the center of the blade (1). Make sure that the quick attach locking levers are still up (2)



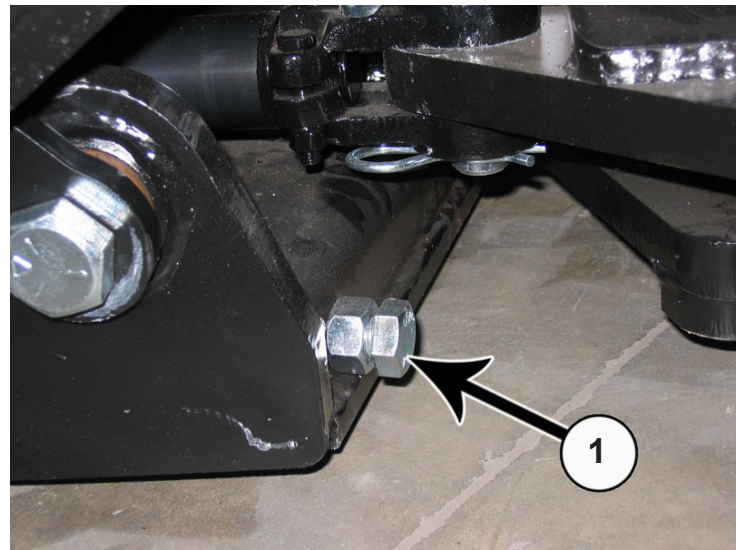
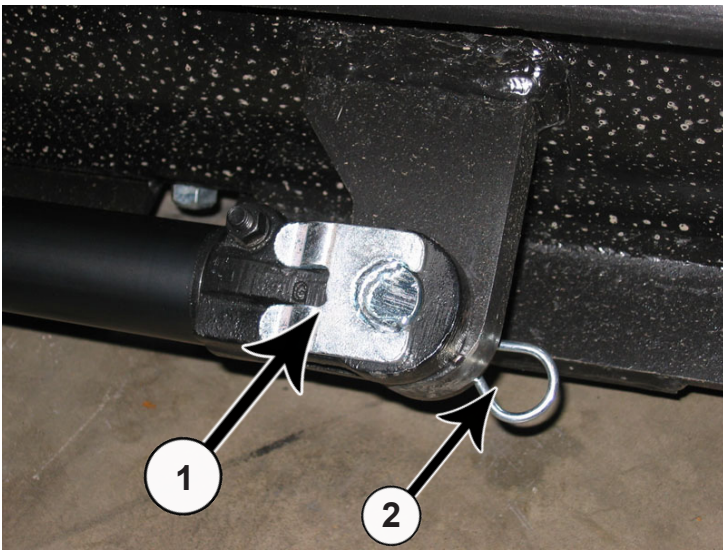
45. Pitch the male quick attach back to lift the blade off the ground (1).



44. Pitch the male quick attach forward. Position the blade so the top round bar will hook under blade lip (1).



46. Lock the quick attach lever on each side (1). Verify that the lever engaged the corresponding slot on the bottom of the blade.



47. Extend the side shift cylinder out to the cylinder connector. Insert pin (PN: 43-7995) (1) and the clip pin (PN: 43-7767) on the bottom (2).

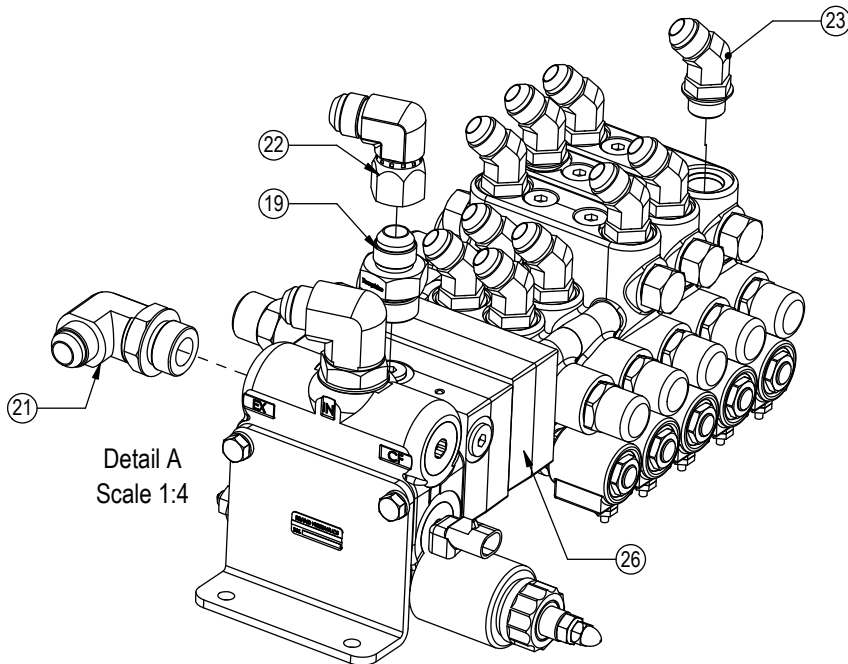
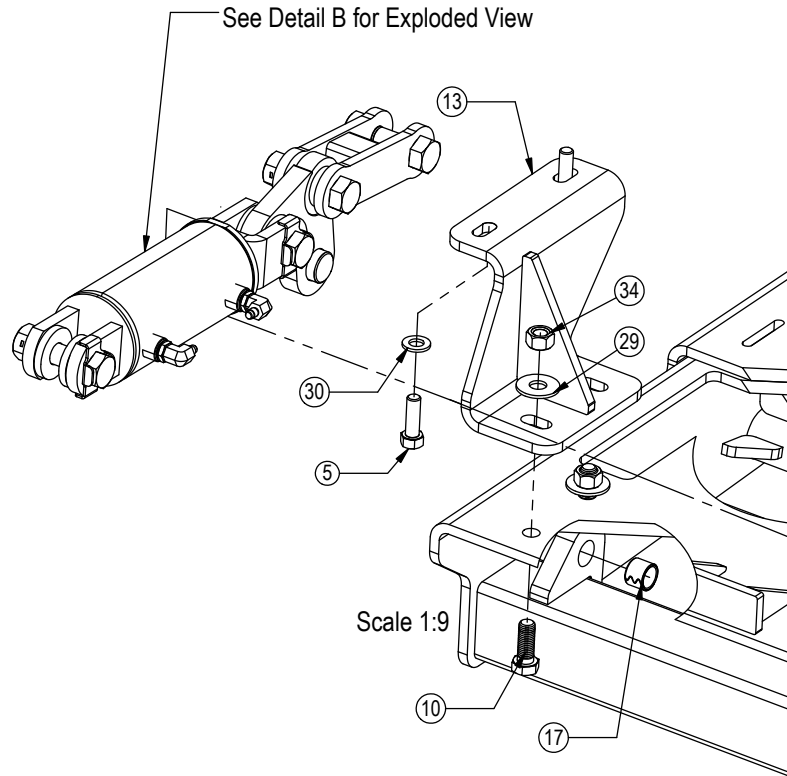
48. After mounting the blade, apply up and down pressure to verify proper blade installation.

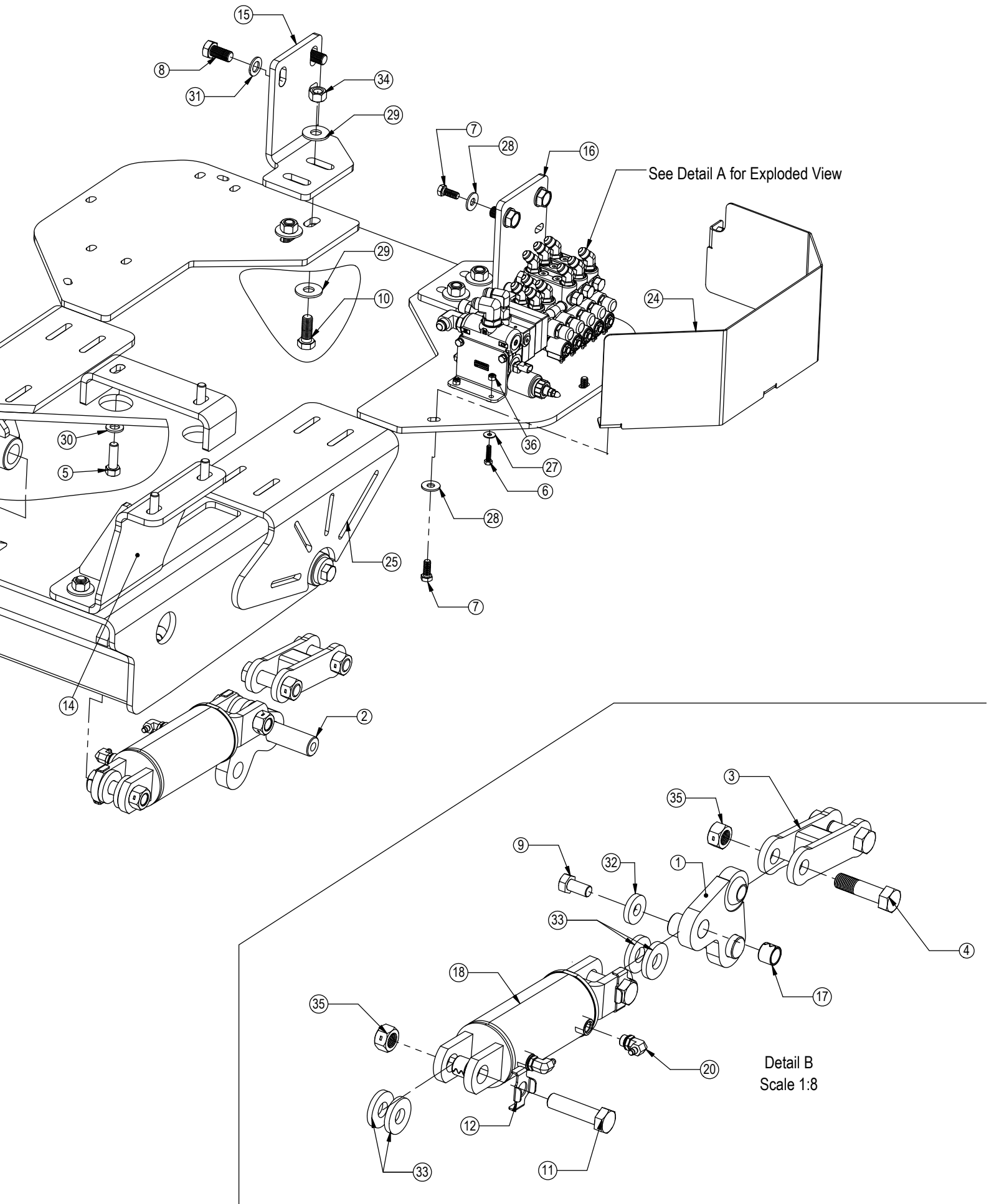
49. Cycle through blade functions checking for interferences.

50. Adjust angle stops (1) 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.

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

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	11-10400-L	1	Arm Weld Left
2	11-10400-R	1	Arm Weld Right
3	11-10410	2	Arm Weld
4	16-10165	4	1" x 3-3/4" Hex Bolt Gr.5 NC
5	16-1615050	6	16mm x 1.50mm x 50mm Metric Hex Bolt Gr 10.9 Fine ZC
6	16-20035	4	5/16" x 1-1/4" Hex Bolt Gr 5 NC
7	16-20125	4	1/2" x 1-1/4" Hex Bolt Gr 5 NC
8	16-2015040	4	20mm x 1.50mm x 40mm Metric Hex Bolt Gr 10.9 Fine
9	16-20216	2	3/4" x 1-1/2" Hex Bolt Gr 5 NC
10	16-20218	8	3/4" X 2" Hex Bolt Gr.5 NC
11	16-20566	4	1" X 4" Hex Bolt Gr 8 NC
12	18-10430	4	Bracket, NR 1.00" Bolt
13	18-19525-L	1	Bracket, Rear
14	18-19525-R	1	Bracket, Rear
15	18-19528-L	1	Bracket, Front
16	18-19528-R	1	Bracket, Front
17	19-7774	4	1" x 1" Spring Bushing
18	26-34731	2	4 x 5 Cylinder Clevis Ends
19	31-34045	1	Straight JIC x O-Ring
20	31-34049	4	Straight Thread Elbow 90° JIC x O-Ring (6801-4-8)
21	31-34054	2	Straight Thread Elbow 90° JIC x O-Ring
22	31-34101	1	Swivel Nut Elbow 90° JIC (6500-10-10)
23	31-34149	10	Straight Thread Elbow 45° JIC x O-Ring (6802-4-8)
24	44-19530	1	Valve Shield
25	54-19520	1	Undercarriage Weld
26	56-11925	1	Valve Assembly
27	57-20741	4	5/16" Flat Washer
28	57-20744	4	1/2" Flat Washer
29	57-20747	12	3/4" Flat Washer
30	57-20825	6	16mm Flat Washer
31	57-20827	4	20mm Flat Washer
32	57-3680	2	3/4" ID x 2.00 OD x .375" Heavy Washer CZ Plated
33	57-3682	8	1.00" ID x 2-1/2" OD x .375" Heavy Washer CZ Plated
34	70-20607	8	3/4" Hex Center Lock Nut NC
35	70-20609	8	1" Hex Center Lock Nut Gr.2 NC
36	70-20611	4	5/16" Nyloc Hex Nut Gr 5 NC

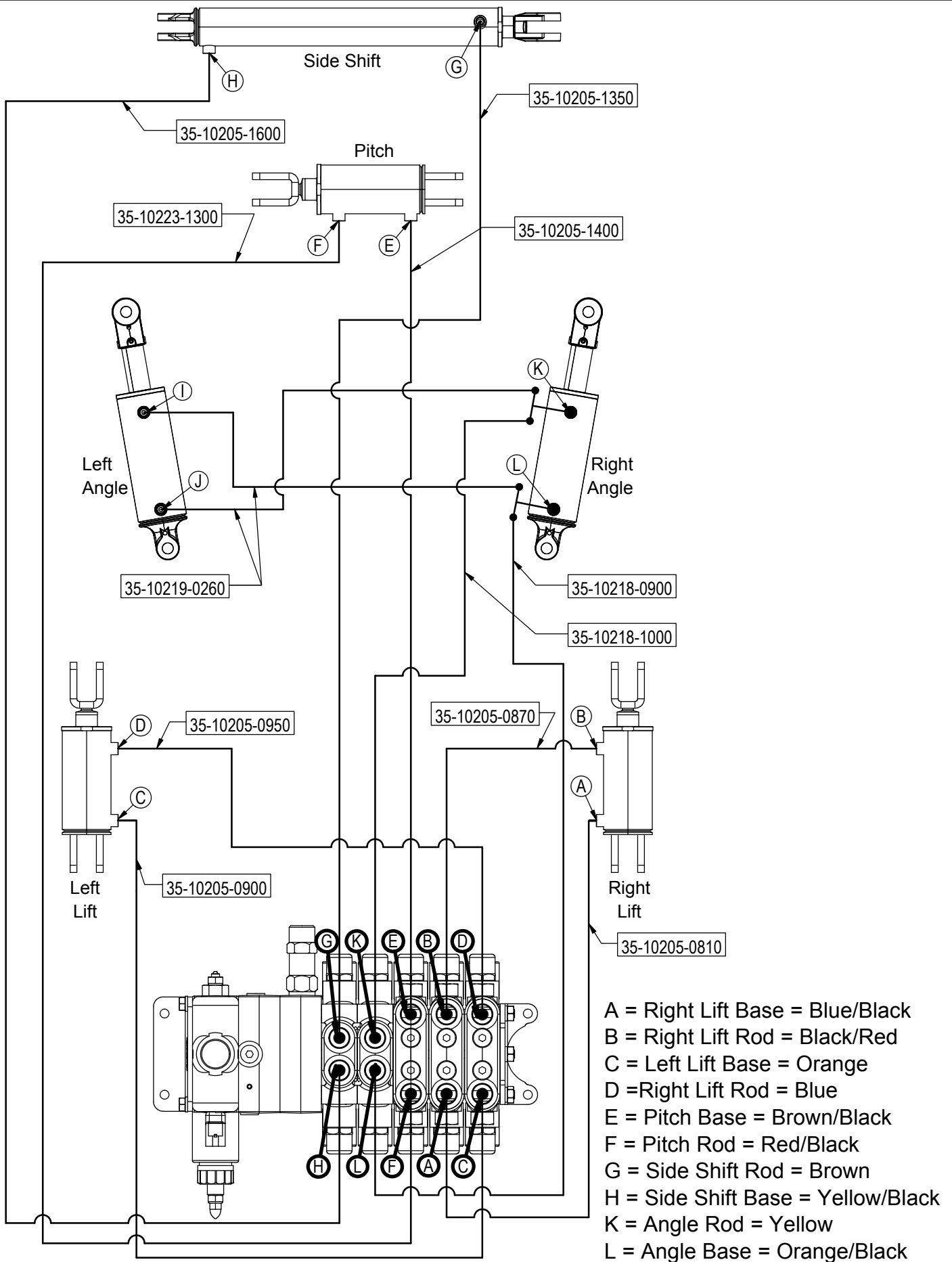




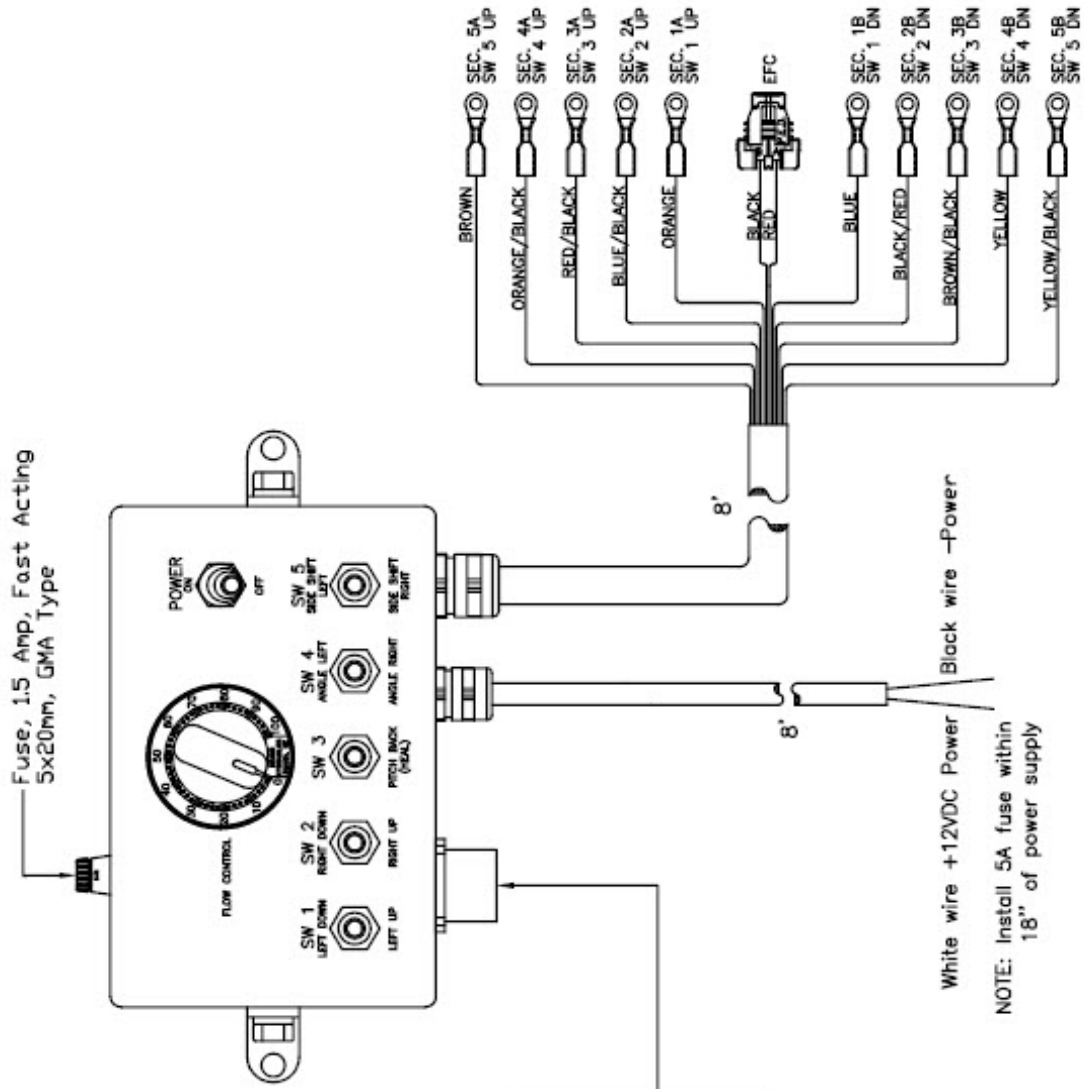
See Detail A for Exploded View

Detail B
Scale 1:8

Hydraulic Schematic



Control Box Wire Schematic



Manufacture: DDK
Part Number: DMS3102R-18P-1P

Pin	Function	Control Switch Desc.	Output Cable Wire Color	Valve Section Callout
A	Left Up	SW1, Down Direction	Blue	Sec 1B
B	Left Down	SW1, Up Direction	Orange	Sec 1A
C	-	Not Used	-	-
E	-	Not Used	-	-
F	Right Down	SW2, Up Direction	Blue/Black	Sec 2A
G	Right Up	SW2, Down Direction	Black/Red	Sec 2B
H	-	Not Used	-	-
I	-	System Ground	-	-
J	-	System Ground	-	-

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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