



## 200 Series Belly Blade

# Operation & Maintenance Manual

Purchase Date
Serial Number
Model Number
Tractor Model
Dealer

# Table of Contents

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<b>Description</b>	<b>Page</b>
General Information _____	2
Safety _____	3-4
Operating Instructions _____	5-6
Blade Removal _____	7
Blade Installation _____	8
Troubleshooting _____	9
Maintenance _____	9
Bolt Torque Specifications _____	10
Parts List _____	11-13
Hydraulic Schematic - Without Cab _____	14
Hydraulic Schematic - With Cab _____	15
Warranty _____	16

## General Information

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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 operating to help you and others avoid injuries. This manual provides information on the proper way of operating the Belly Blade to prevent injuries and any machine damage.

All references to the tractor or undercarriage are taken from the view at the tractor's seat or from standing behind the tractor and looking towards the front of the tractor.

The Belly Blade assembly shown throughout this manual may differ slightly from your Belly Blade assembly, but the instructions will still be compatible.

# Safety

## Safety Labels

Read all of the safety information before operating a Belly Blade. Refer to your tractor manual for additional safety information.

The safety label for this Belly Blade is shown below and should always be visible. If any safety label wears off, is hard to read, or is removed, contact your dealer for replacements.



## 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.

## Operation Safety

- Follow the tractor's operating safety measures.
- Inspect the machine before operation. Verify that all parts are tight. Replace or repair all damaged, missing or worn parts. Make any adjustments before you operate the machinery.
- Keep pets and people away from work area. Stop the machine if anyone enters the working area.
- Clear area of objects that may damage the blade or tractor.
- If an object is hit, stop the tractor and inspect the damage. Repair or replace any damaged parts before continuing operation.
- Be careful of shallow underground cables.
- Always keep the tractor and Belly Blade attachment properly maintained and in good working condition.
- Keep the Belly Blade raised when driving from job to job or if it is not being used.
- Operate the Belly Blade only from the operator's seat.
- Clean operator's platform and steps of all dirt, trash and grease.
- Avoid operating on steep slopes.
- ALWAYS drive up and down slopes and NEVER across the face of the slope.
- Use extreme caution when changing direction on a slope.

- NEVER leave a running machine unattended.
- NEVER operate the machine at high speeds.
- NEVER allow anyone to ride on the Belly Blade or the tractor.
- NEVER allow an untrained person to operate the machine.
- ALWAYS look carefully and use caution when backing up.
- ALWAYS watch for traffic when working near roadways.
- ALWAYS operate during the day or with good artificial light.
- NEVER wear headphones while operating the Belly Blade. Your full attention is essential.
- NEVER operate machinery when ill, tired, or under the influence of alcohol or drugs.
- ALWAYS wear a seat belt while operating the tractor.
- NEVER use the Belly Blade as a jacking device to lift the tractor.

## **Parking**

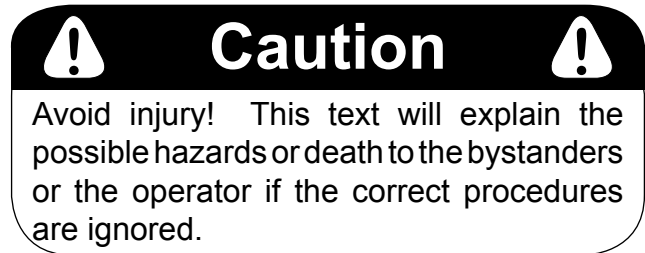
- Stop the tractor on a level surface.
- Lower Belly Blade to the ground.
- Set parking brake.
- Shut off the engine.
- Remove the ignition key.
- After the engine and any moving parts have stopped, get off the tractor.

## **Appropriate Clothing**

- Wear safety equipment and close fitting clothes that are appropriate for the job.
- Wear ear protection to prevent loss of hearing from loud noises.
- Wear protective eye wear.

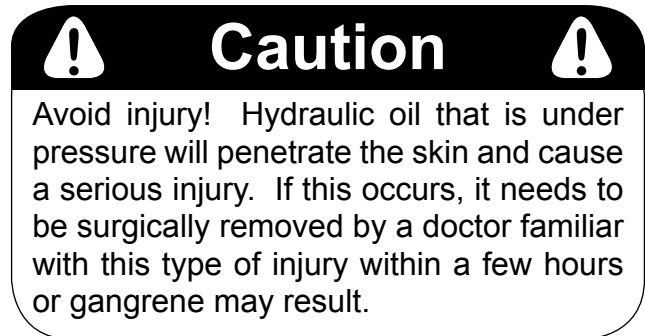
## **Important Messages**

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.



## **Hydraulic Safety**

Pressurized hydraulic oil is very dangerous and harmful. Medical attention is needed if oil penetrates the skin. Below is the caution statement used in this manual.



# Operating Instructions

## Before Operation

1. Become familiar with all controls and how they work.
2. Verify that all hydraulic cylinders are extending and contracting fully.
3. Verify that all components are working correctly and effectively.
4. If adjustments are needed, set parking brake, shut off engine, and remove the key before making any adjustments.
5. Make any operating adjustments if necessary.
6. Tighten all loose parts.
7. Replace or repair all damaged, missing or worn parts.
8. Check the tractor's operator manual for the proper tire pressures.
9. When transporting, pitch the blade all of the way back and have it fully raised to have the greatest ground clearance.
10. The float circuit for the lift cylinders adjusts the blade automatically to follow the contour of the ground. This feature is only for the manual Belly Blade control valve and not the laser system.

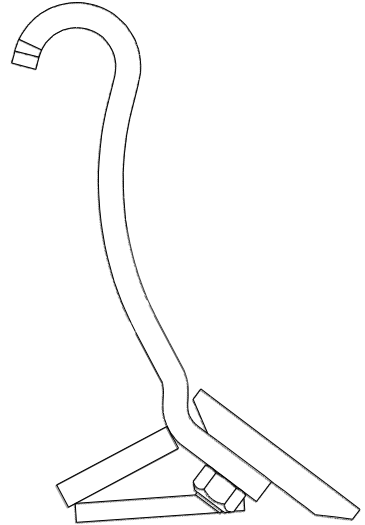
## Operation of Blade

The blade can be positioned in many different configurations by adjusting all of the hydraulic cylinders with the control levers.

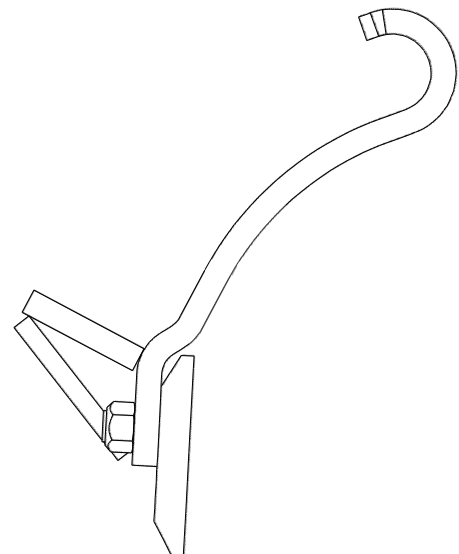
1. Do not try to cut more material than the tractor can handle.
2. Start off slow, and gradually build up to the correct cutting thickness.
3. Do not allow the blade to contact the tires at any time during operation.
4. Avoid back dragging.
4. Sideshift periodically to eliminate buildup around the sideshift cylinder.

## Tips on Operation of Belly Blade

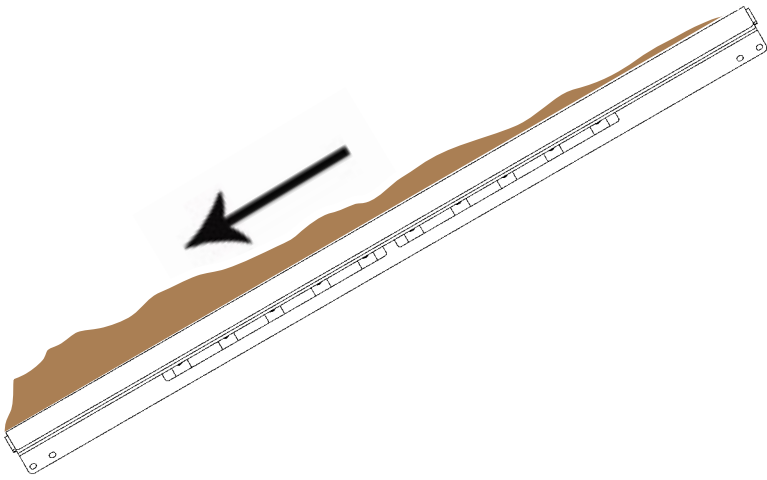
- Set the blade to an angle that you want to work with.
- When cutting or carrying material, pitch the blade back.



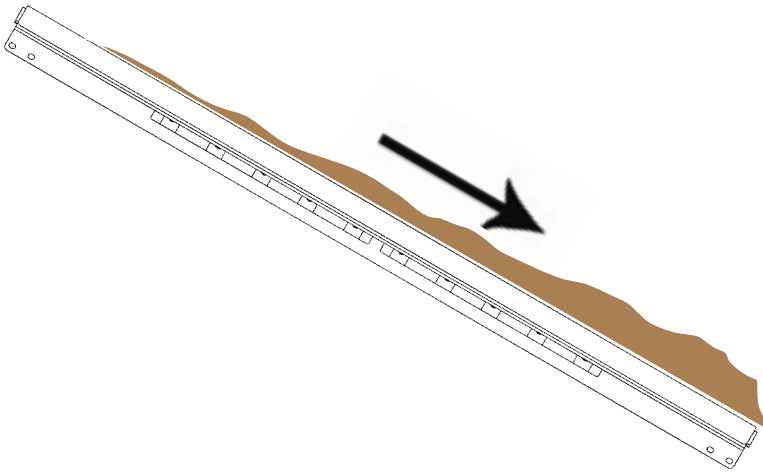
- When spreading or packing material, pitch the blade forward.



- When moving material from right to left, angle the right side of the blade forward.



- When moving material from left to right, angle the left side of the blade forward.



## Adjusting the Cutting Depth

The most efficient way to adjust the cutting depth is to adjust the pitch.

1. First start out by setting the blade pitch for either cutting or spreading material. (See page 5)
2. Lower the blade until the cutting edge is about 1" or 1-1/2" off the ground with the blade level.
3. Start blading material by pitching the blade forward until the blade starts moving material.
4. Adjust the full blade cut with the pitch lever as needed.
5. Only use the two up and down levers to adjust the left and or right cut.
6. The slight change in the cutting edge angle due to the pitching the blade for cut will not affect the performance of the blade.
7. If needed, use the sideshift to reach out for the material.
8. Most ground is uneven and you will see more and less material being pushed by the blade.
9. Resist adjusting the blade cut (pitch lever) or the side to side cut (left or right levers) to maintain an even load in front of the blade. Leave the blade alone, and it will pick up and dump the dirt as it levels out the area being blended.

## Method of Moving Material

1. The easiest method to level an area is to use around and around method. Start on the outside and work in to the center.
2. Adjust the angle of the blade so that the material will move to the center at all times.
3. Continue to drive the around and around method until you arrive at the center. A pile of material will only be in the center with this method, and the material can be spread by the blade or removed by your own method.
4. The around and around method is the easiest and doesn't require resetting the angle after each turn.

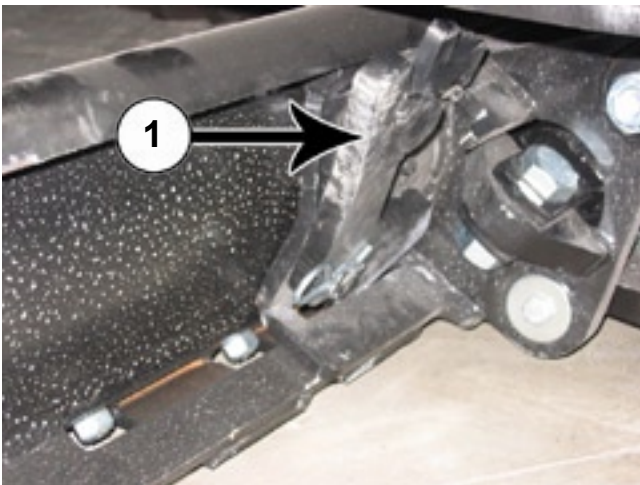
# Blade Removal

The blade will need to be removed to change the cutting edge.

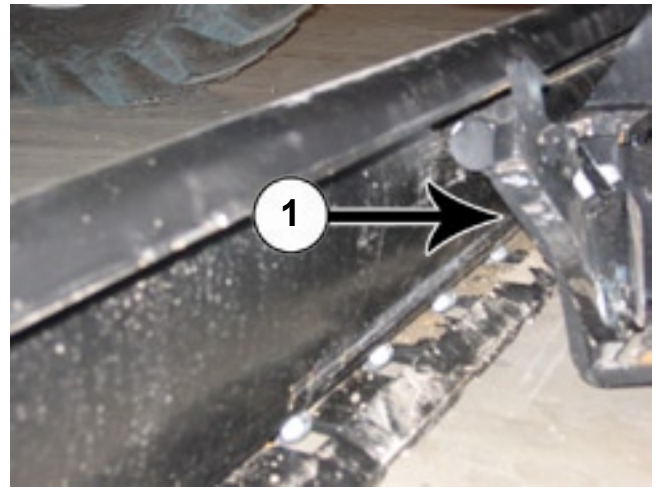
1. Park the machine and follow the parking safety guidelines.
2. Lower blade to the ground.



3. Remove the pin and hitch clip pin from hydraulic cylinder arm and the Belly Blade (1).

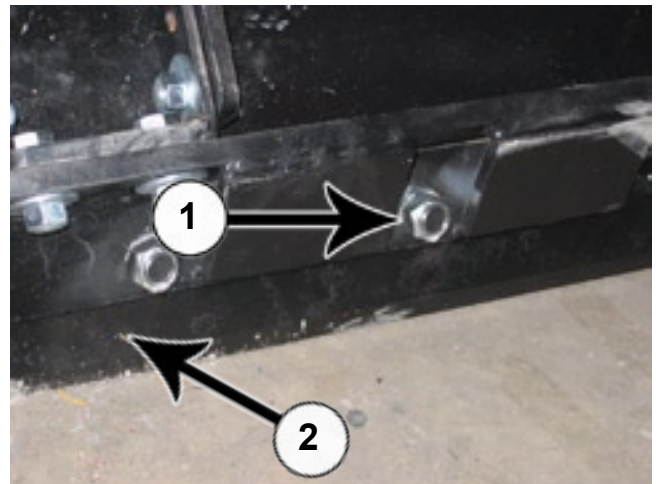


4. Unlock the quick attach levers on both sides (1).
5. Contract the side shift hydraulic cylinder.



6. Pitch the male quick attach forward to release the top round bar hook from the blade (1).
7. Slide the blade out from under the tractor.

## Changing Cutting Edge



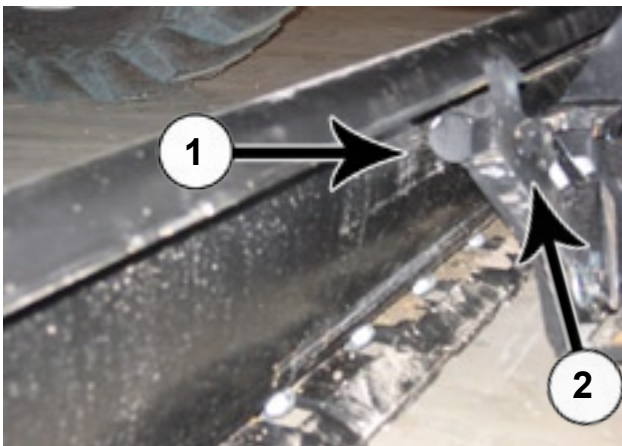
8. Remove the plow bolts and nuts (1) to remove the cutting edge (2).
9. Install a new cutting edge back onto the belly blade assembly with the plow bolts and nuts. Torque all of the fasteners to the correct specifications.

# Blade Installation

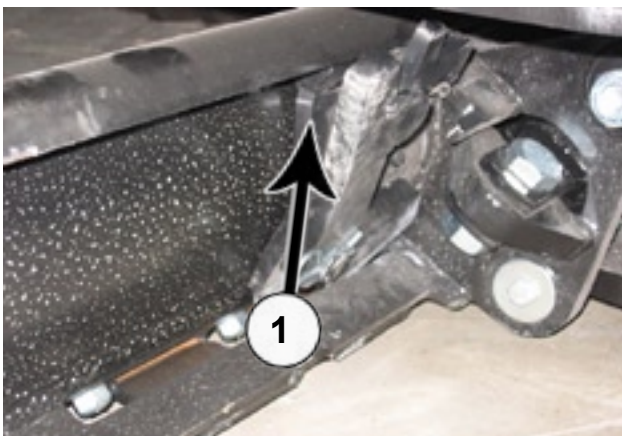
1. With the blade off, cycle through functions of blade and check for leaks



2. Slide blade under the tractor until the quick attach is approximately in the center of the upright blade (1).



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



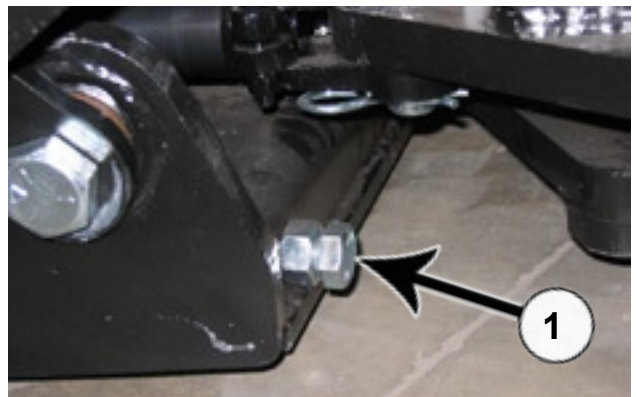
4. Pitch the male quick attach back to lift the blade off the ground (1).



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



6. Extend the side shift hydraulic cylinder. Insert a pin from the top and a clip pin on the bottom (1)



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

8. Cycle through all blade functions while checking for interferences



# Troubleshooting

IF	CORRECTION
Cylinders are not extending or contracting fully.	Check for packed in dirt.
	If quick couplers are used, check to see if they are hooked up correctly.
	Check the hydraulic oil level and add when needed.
	Check for any leaks, and repair them if necessary
The tractor loses power when using the blade.	Reduce the cut depth.
	Slow tractor down.
Blade isn't cutting effectively.	Change cutting edge pitch.
The tractor comes off the ground or loses traction.	Change the cutting depth using the pitch lever.
	Change left or right side cutting depth (left or right lever).

## Maintenance

### Blade & Quick Attach Inspection

1. Check that the side shift hydraulic cylinder is still attached to the blade with a pin and a hitch clip pin. See figure 6 on page 9.
2. Check to verify that the quick attach levers are still locked. See figure 5 on page 9
3. Check for any cracks and extensive wear on the male quick attach and the blade.
4. Inspect the male quick attach and the blade for any cracked welds. Contact the dealer for repair or replacement parts.
5. Check the cutting edge on the blade for excessive wear or damage. If the edge is damaged, or the entire blade is damaged, replace the cutting edge.

### Lubrication

1. Grease all zirks on the undercarriage and main assembly. Grease labels, as shown below, identify the locations of the grease zirks.

**GREASE**

### Undercarriage Inspection

1. Check all the hydraulic cylinders and hoses for any cracks or leaks.
2. Check the entire undercarriage for any cracks in the welds or the frame. Contact the dealer for repair or replacement parts.
3. Verify that all warning and caution labels are in place. If replacements are needed, contact your Belly Blade dealer.



### Caution



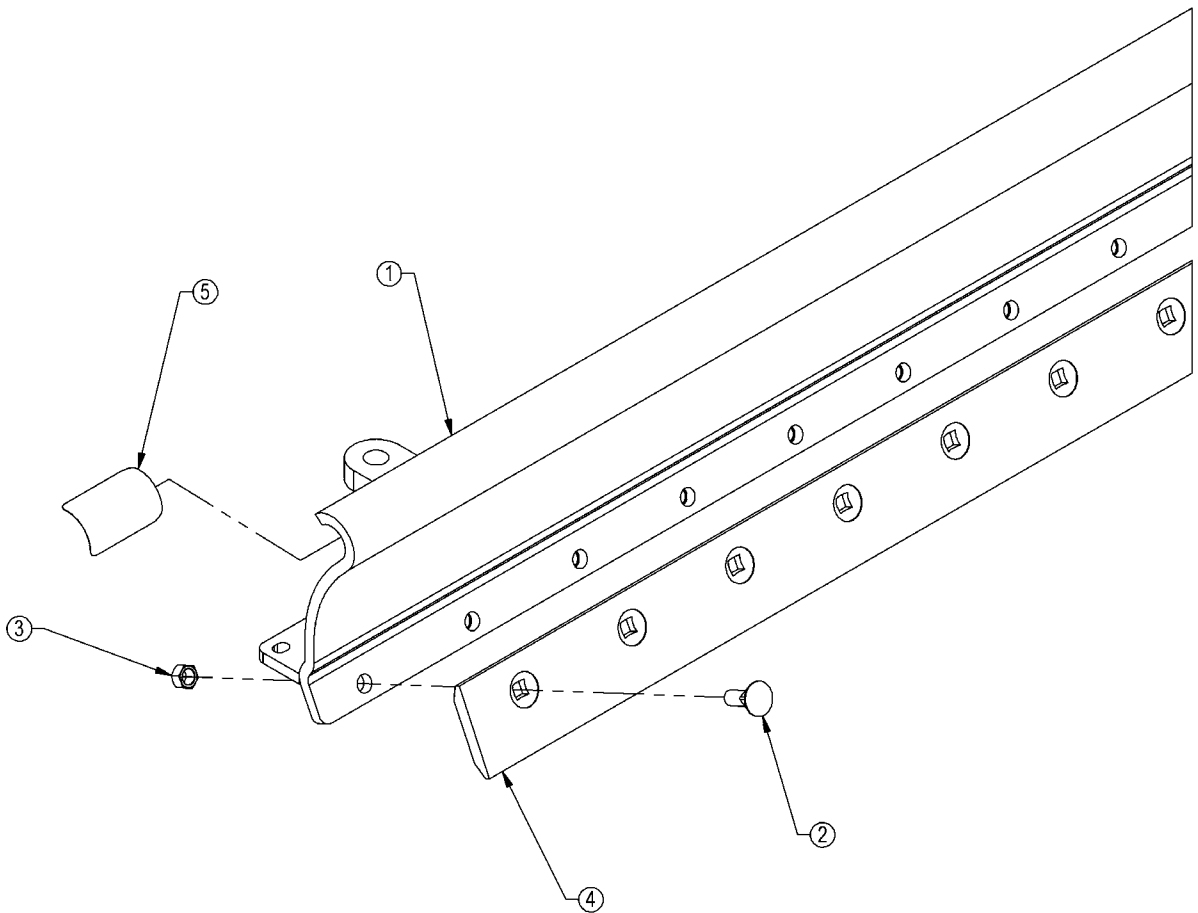
Avoid injury! Hydraulic oil that is under pressure will penetrate the skin and cause a serious injury. If this occurs, it needs to be surgically removed by a doctor familiar with this type of injury within a few hours or gangrene may result.

# 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				

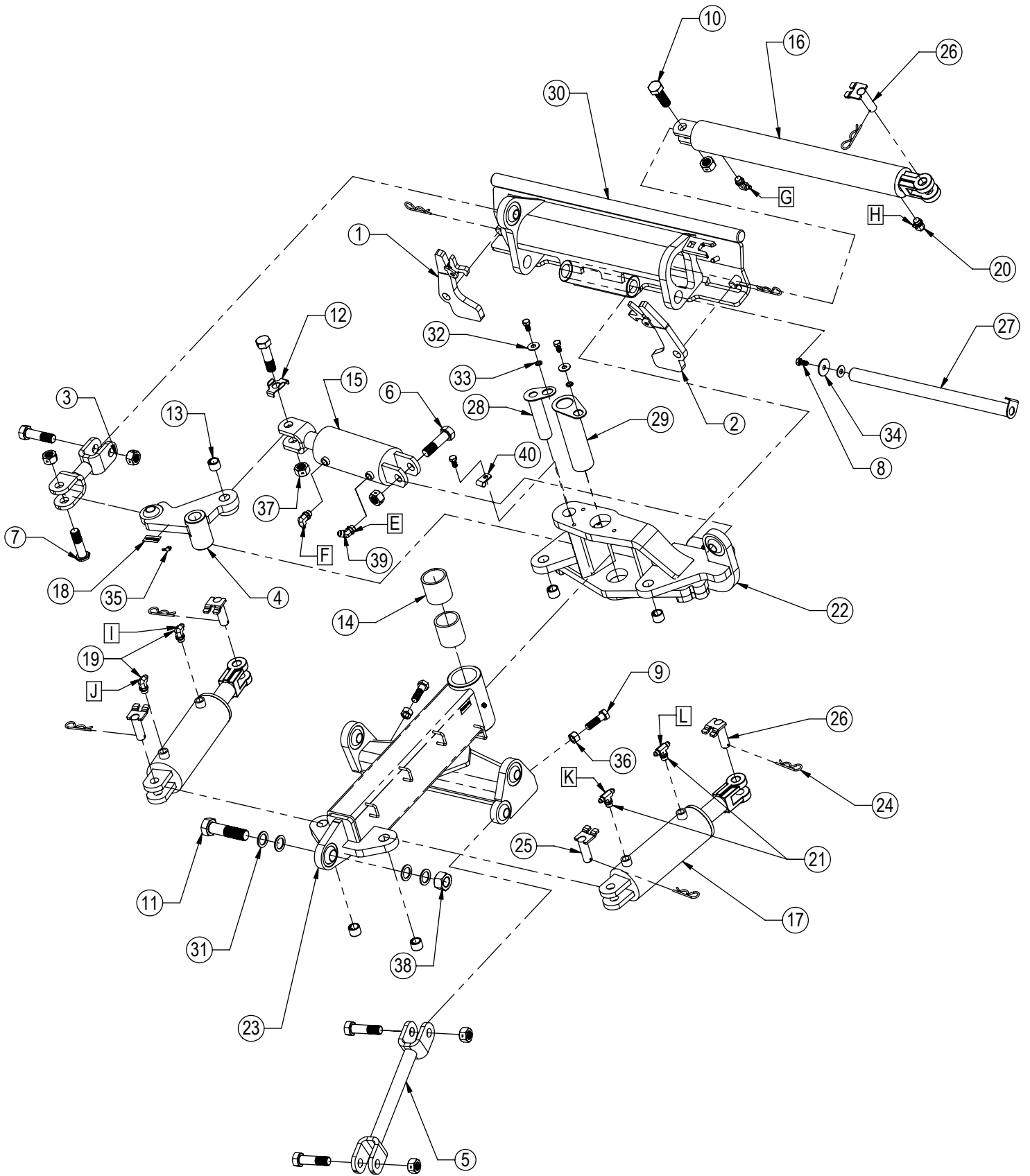
# Parts List

ITEM NO.	PART NO.	10300-6-A/ QTY.	10300-7-A/ QTY.	10300-8-A/ QTY.	10300-9-A/ QTY.	10300-10-A/ QTY.	DESCRIPTION
1	15-10300-6	1	-	-	-	-	Blade
1	15-10300-7	-	1	-	-	-	Blade
1	15-10300-8	-	-	1	-	-	Blade
1	15-10300-9	-	-	-	1	-	Blade
1	15-10300-10	-	-	-	-	1	Blade
2	16-21666	12	14	16	18	20	5/8" x 1-3/4" Plow Bolt Gr.5 NC
3	70-20646	12	14	16	18	20	5/8" Hex Top Lock Nut Gr.5 NC
4	29-10135-6	1	-	-	-	-	Cutting Edge
4	29-10135-7	-	1	-	-	-	Cutting Edge
4	29-10135-8	-	-	1	-	-	Cutting Edge
4	29-10135-9	-	-	-	1	-	Cutting Edge
4	29-10135-10	-	-	-	-	1	Cutting Edge
5	27-10251	2	2	2	2	2	Decal, Pinch Point Blade

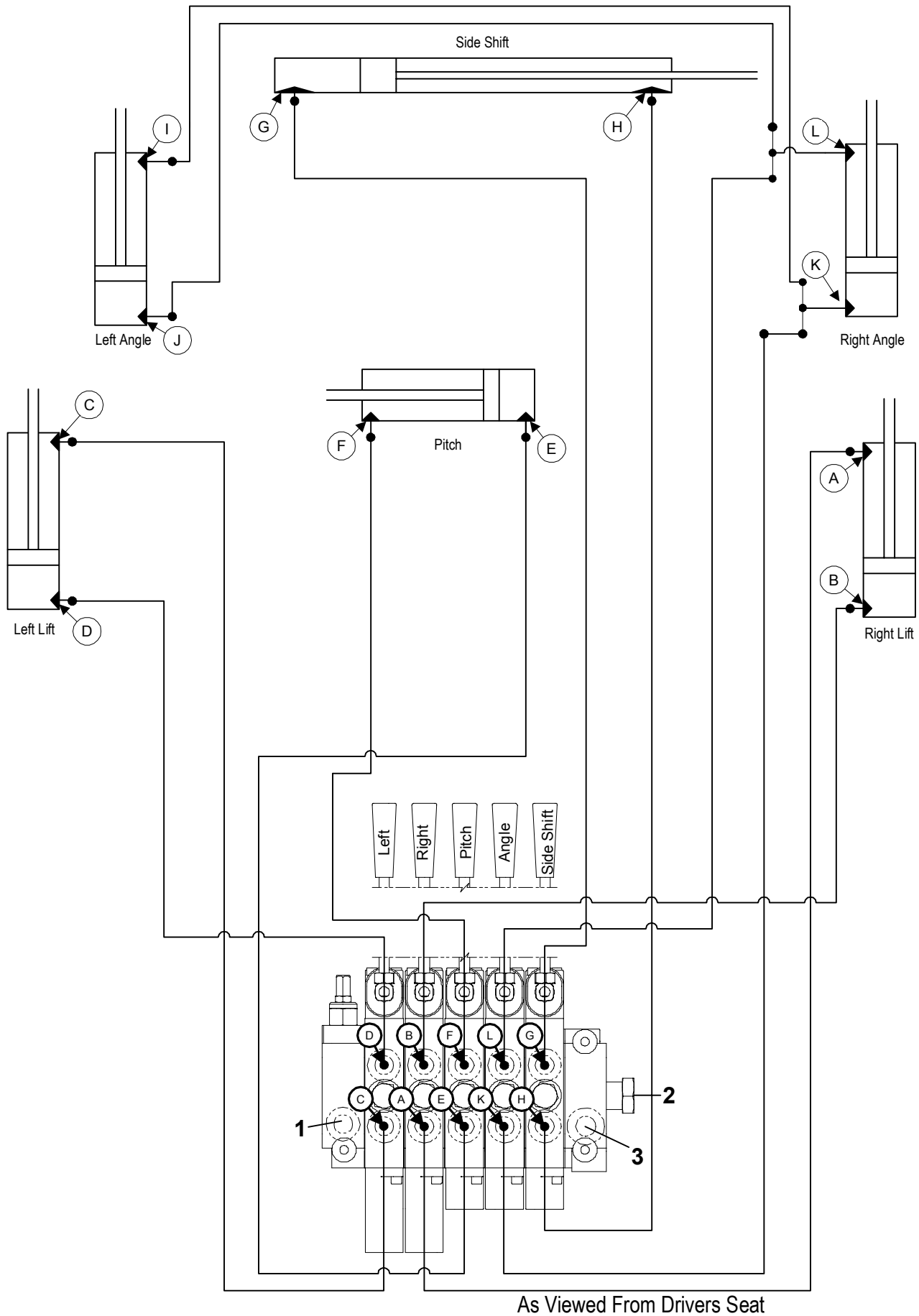


ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	11-10353-L	Q.A. Lock Handle - Left
2	1	11-10353-R	Q.A. Lock Handle - Right
3	1	11-10359	Arm, Pitch
4	1	11-10360	Arm, Bellcrank
5	1	11-10425	Arm, Stabilizer
6	5	16-10165	1" x 3-3/4" Hex Bolt Gr.5 NC
7	1	16-10167	1" x 3-3/4" Hex Bolt Gr.5 NC Special
8	4	16-20124	1/2" x 1" Hex Bolt Gr.5 NC
9	2	16-20220	3/4" x 2-1/2" Hex Bolt Gr.5 NC
10	1	16-20272	1" x 3" Hex Bolt Gr.5 NC
11	1	16-20900	1-1/4" x 5" Hex Bolt Gr.5 NC
12	1	18-10430	Bracket, NR 1.00" Bolt
13	5	19-7774	1" x 1" Spring Bushing
14	2	19-10340	2-1/2" x 3" x 3" Bushing
15	1	26-10349	4" x 5" Hydraulic Cylinder
16	1	26-10350	3" x 24" Hydraulic Cylinder
17	2	26-34710	4" x 8" Hydraulic Cylinder
18	4	27-9507	Decal, Grease
19	2	31-34047	Straight Thread Elbow 90° JIC x O-Ring (6801-6-8)
20	4	31-34049	Straight Thread Elbow 90° JIC x O-Ring (6801-4-8)
21	2	31-34061	Branch Tee JIC x O-Ring (6803-6-6-8)
22	1	32-10320	Angle Frame
23	1	32-10330	Lift Frame
24	7	43-7767	Cylinder Pin Clip
25	2	43-7994	Clevis Cylinder Base Pin
26	3	43-7995	Clevis Cylinder Rod Pin
27	1	43-10370	Pin 1.50" x 23.125"
28	1	43-10373	Pin 1.50" x 6.125"
29	1	43-10376	Pin 2.50" x 9.125"
30	1	45-10310	Quick Attach
31	4	57-10377	Shim Washer 1.25" x 1.875" x .1345"
32	3	57-20744	1/2" Flat Washer
33	2	57-20764	1/2" Lock Washer
34	1	57-20794	1/2" Fender Washer
35	4	58-9371	45° 1/8" NPT Grease Fitting
36	2	70-20587	3/4" Hex Nut Gr.5 NC
37	7	70-20609	1" Hex Center Lock Nut Gr.5 NC
38	1	70-20981	1-1/4" Hex Nut Gr.5 NC

**NOTE:** The list of parts along with the exploded views for the undercarriage assembly are located in the Belly Blade Instructions manual for your tractor specific Belly Blade.

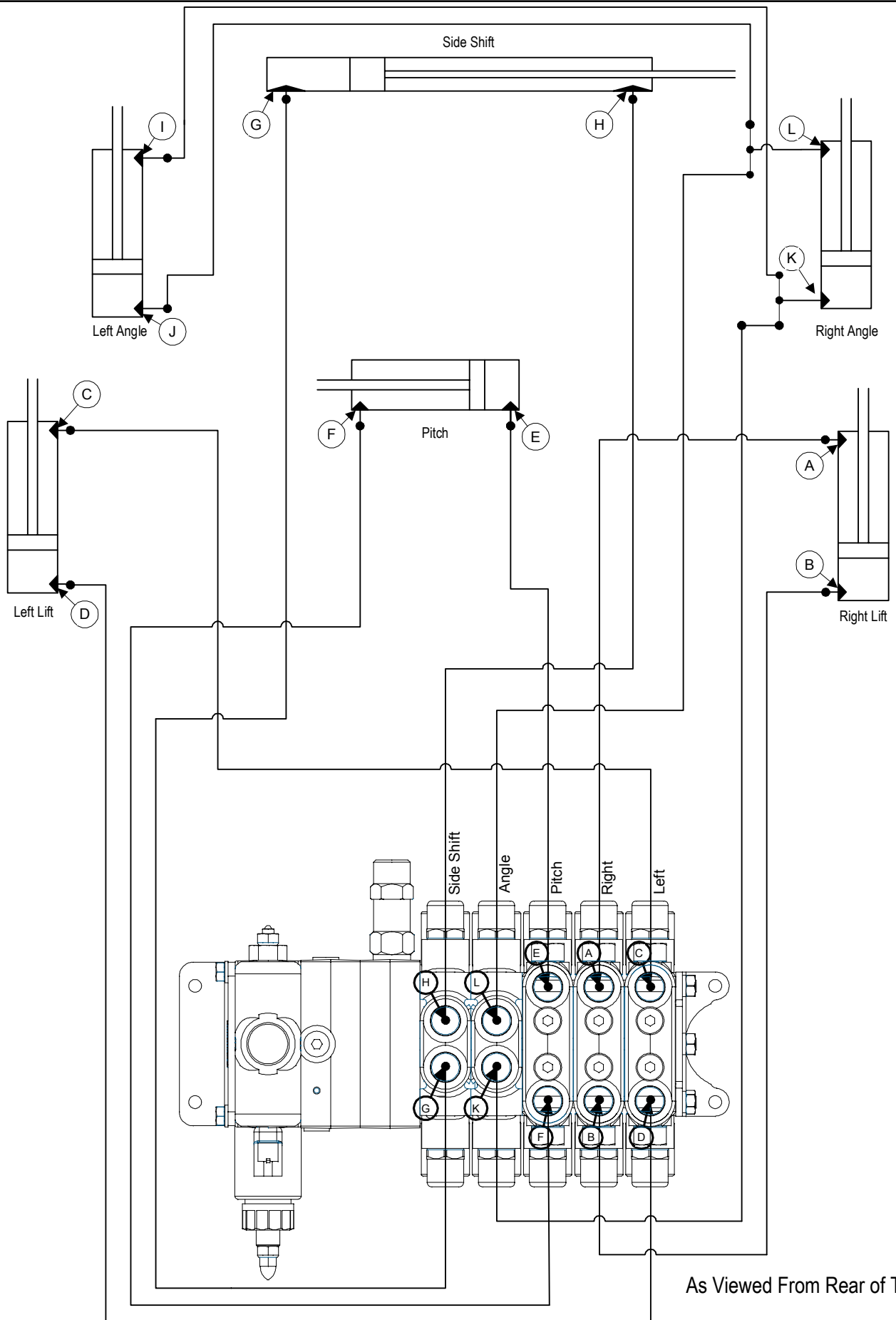


# Hydraulic Schematic - Without Cab



As Viewed From Drivers Seat

# Hydraulic Schematic - With Cab



# Warranty

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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**

1-800-747-6182 or 1-701-282-7710

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