



# **AG PRO PLUS HD**

## **Owner's Manual**

### **&**

## **Parts Book**

Purchase Date
Serial Number
Model Number
Tractor Model
Dealer

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## To The Owner

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This manual contains information concerning the operation, adjustment, and maintenance of the Ag Pro Plus HD blade assembly. You have purchased dependable, long lasting equipment, but only by proper care and operation can you expect to receive the performance and long service built into our products. Please have all operators read this manual carefully and keep the manual available for ready reference. If you have any questions or concerns, contact Grouser Products.

## Maintenance

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**Due to the harsh environment many of our equipment operates in, the following tasks should be performed every 10 hours or less.**

- Inspect all equipment before operation for existing or potential damages.
- Lubricate all joints with high quality grease.
- Inspect and tighten all bolts to torque specifications on page 3.
- Check replaceable cutting edge for wear ensuring there is enough material to prevent permanent damage to the blade.
- Make sure all non-rotating pins are secured properly.
- Check hydraulic cylinders and hoses for damage or leaks. For replacement parts, see hydraulic pages for your specific system.
- Check skid shoes for wear and replace if necessary. For adjustment, see page 6.
- Inspect all tilt-ways for aggressive wear. See page 6 for tilt plate adjustment.

# Safety Precautions

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. To help prevent accidents, read and take the following precautions before operating this equipment. In addition to these precautions, please follow all safety and operational instructions of your tractor manufacturer.

## The Dozer:

1. The Ag Pro Plus HD Dozer should be operated only by those who are responsible and instructed to do so.
2. Read the owner's manual carefully before using this equipment. Lack of operating knowledge can lead to accidents.
3. Keep the dozer maintained in reliable and satisfactory condition to ensure your safety.
4. Make sure the area is clear of people before moving any equipment.
5. Do not modify or permit anyone else to modify or alter the equipment and its components without first consulting Grouser Products.

## Servicing the Dozer:

1. Read and follow all safety instructions provided by the tractor manufacturer.
2. Always use proper personal safety gear when performing maintenance on equipment.
3. Before servicing, relieve hydraulic pressure, stop engine and fully engage parking brake.
4. Escaping hydraulic fluid under pressure can penetrate skin causing serious injury. If fluid is injected into skin, obtain medical attention immediately.
  - DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.
  - Stop the engine and relieve pressure before connecting or disconnecting lines.
  - Tighten all connections before starting the engine or pressurizing lines.

## Storing the Dozer:

1. Thoroughly clean the dozer before storage. Use paint where necessary to prevent rust.
2. Check for worn or damaged parts. Install new parts as required.
3. Lubricate all pins and joints.

# Torque Specifications

All bolts should be tightened to the specifications that are stated. If specifications are not stated, follow torque charts below.

Size	Torque - Dry (ft-lbs)			
	SAE Grade 5		SAE Grade 8	
	UNC	UNF	UNC	UNF
5/16	17	19	24	27
3/8	30	35	45	50
7/16	50	55	70	80
1/2	75	85	110	120
9/16	110	120	150	170
5/8	150	170	210	240
3/4	260	300	380	420
7/8	430	470	600	670
1	640	720	910	1020

Size	Torque - Dry (ft-lbs)
	Grade 10.9
M18 x 2.50	284
M20 x 2.50	401
M22 x 2.50	547
M24 x 3.00	694

# Unpacking Components

Unstrap and remove any components that are attached for shipping. If any components are missing, call Grouser.

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# Assembling Lift Components

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Install undercarriage per the tractor specific mounting instructions. Some assembly of Lift system components is necessary. Follow the steps listed below. Refer to Page 5 for the correct hardware and orientation of parts.

1. Remove all pins on each side of the undercarriage.
2. Position the lift frame between the two plates on both sides of the undercarriage.
3. Align the lift frame to the bottom holes of the undercarriage and attach with the proper pins and hardware.
4. Lift the end of the cylinders up and attach to the undercarriage with the proper pins and hardware.
5. Attach the top arms to the top of the undercarriage with the proper pins and hardware.
6. Attach the male quick attaches to the lift frame and top arms with the proper pins and hardware.
7. If the quick couplers and coupler mount are not already attached to the left top arm, attach the coupler mount to the top arm with 2 - 1/2" Carriage bolts and 2 - 1/2" Nuts. See Page 20 for proper orientation.
8. Take the lift hoses that are already attached to the bulkhead fittings on the undercarriage and attach them to the lift cylinders.  
**Note: For Step #9-15, refer to Page 20 for further information on hose routing and hose positions. The amount and location of the female couplers is determined by functions the blade is set up for.**
9. Run the remaining hoses on the undercarriage to the top arm and attach a 90° fitting to all the hoses.
10. Install a female quick coupler onto each 90° fitting from the previous step.
11. Install each coupler into the designated hole on the coupler mount and hold them in place with the coupler retainer plate, 3/8" x 3/4" bolts and 3/8" flange nuts.
12. Take the long hoses and attach each one to a fitting at the center of the undercarriage.
13. Mark each hose clearly so that once the hoses are routed to the back of the tractor, it's easy to determine what cylinder base or rod end they are connected to.
14. Route the hoses thru the hose loops on the undercarriage.
15. Continue to route the hoses thru the tractor and plug into the rear remotes on tractor. Keep away from all moving parts.
16. If applicable, attach the male blade break away end of the wire harness to the coupler mount. Hold in place with a zip tie. Run the switch end of the wire harness up into the cab of the tractor.
17. Locate the keyed and fused power supply. Connect the red wire to power and the black to ground. Install provided switch into an open switch hole in the right overhead console or another convenient place in the tractor. Connect the wire harness to the switch.
18. Get the blade ready to hook up by removing the 3/4" pin (#19 on Page 7) so that the skid shoes can move freely. The blade will lean back further for easier connection onto the male quick attaches. Store the pin in the empty hole right behind the hole you just took the pin out of.
19. Pull the pin puller handle on the left side of the quick attach system towards the outside of the blade to open the quick attach system. Refer to Page #12-13 for further clarification on the quick attach system.
20. Drive the tractor forward slowly until the top edge of the male quick attach is under the top lip of the female quick attach already on the blade assembly.
21. Lift the male quick attaches up till the blade is off the ground and the female quick attaches are against the front of the male quick attaches.
22. Shut off machine and set the parking brake.
23. Move the pin puller handle on the left side of the blade assembly towards the center of the blade to lock the blade in place and use the latch to lock the handle in place.
24. Plug the male couplers into the female couplers on the top arm. Refer to Page #20 for proper coupler locations for all functions. If applicable, plug the male blade break away end of the wire harness into the female blade break away end of the wire harness on the top arm.
25. Lock the Mushroom Skid Shoe Link back in place with the 3/4" pin you moved in Step #18 above.
26. To disconnect the blade, see Page 6.

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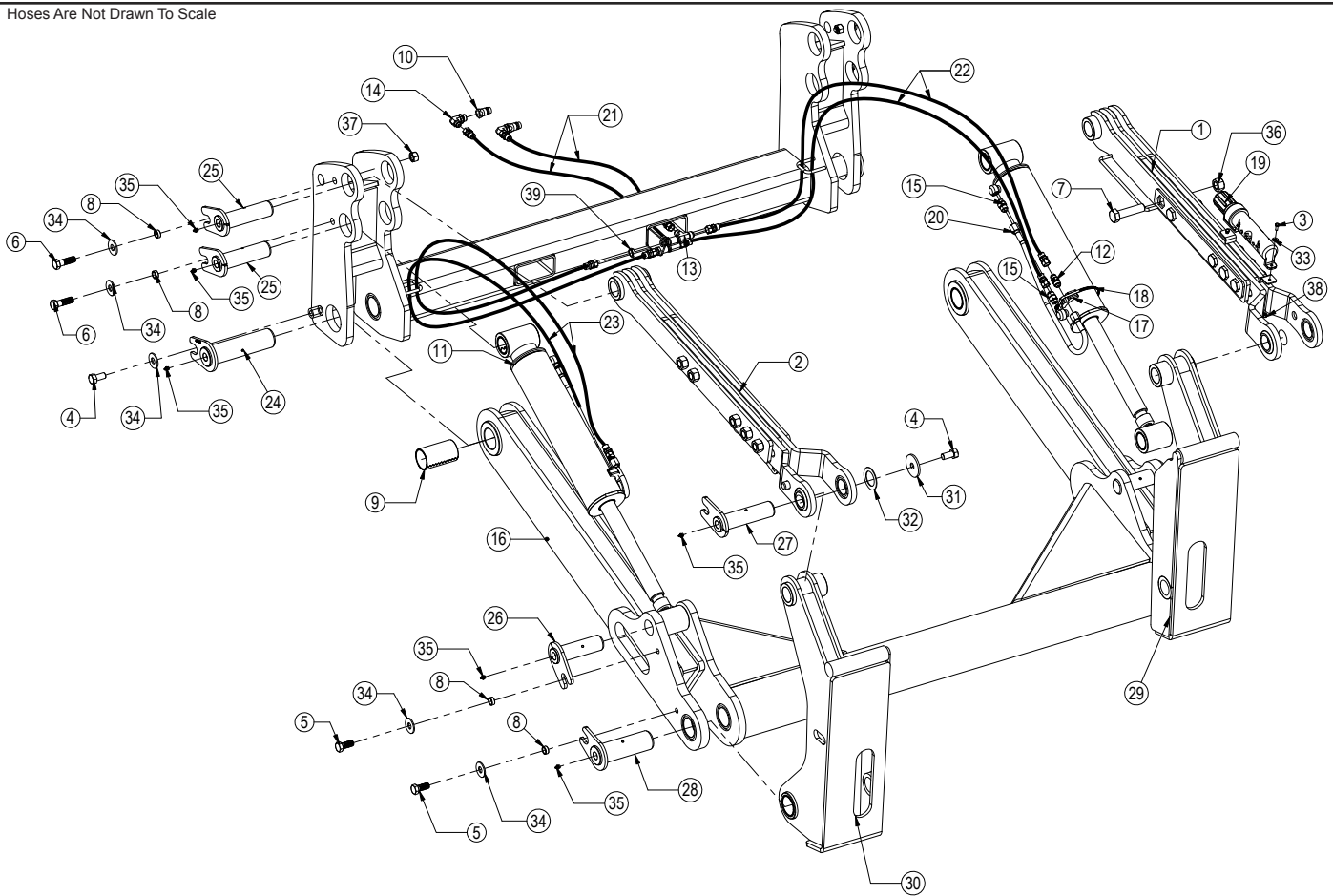
## Initial System Startup

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Start the tractor and run the blade thru all the functions. If any function does not work properly, bleeding of the system may be required. If problem still persists, call Grouser Products.

Hoses Are Not Drawn To Scale



Lift System

Item #A for Claas Tractors.

Item #B for Versatile and Challenger Tractors and Item #C for Steiger, New Holland, Claas and JD 9R Tractors.

Item No.	Qty.	Part No.	Description
1	1	11-19150-L	HD Top Arm - Left
2	1	11-19150-R	HD Top Arm - Right
3	2	16-20002	1/4" x 3/4" Hex Bolt Gr 5 NC
4	4	16-20216	3/4" x 1-1/2" Hex Bolt Gr 5 NC
5	4	16-20217	3/4" x 1-3/4" Hex Bolt Gr 5 NC
6	4	16-20220	3/4" x 2-1/2" Hex Bolt Gr 5 NC
7	10	16-20566	1" x 4" Hex Bolt Gr 8 NC
8	8	19-13515	3/4" ID - Non Rotating Pin Spacer Bushing
9	2	19-13525	2.75 x 2.50 x 4.75 Spring Bushing
10	2	25-34342	Tappet Quick Coupler Male
11	2	26-34751	5 x 18 Cylinder Tube Ends
12	2	31-11699-10-10	JIC Union (2403-10-10)
13	2	31-34031	Bulkhead Run Tee JIC (2704-10-10-10)
14	2	31-34052	Straight Thread Elbow 90° JIC x O-Ring (6801-10-10)
14A	2	31-34152	Straight Thread Elbow 45° JIC x O-Ring (6802-10-10)
15	4	31-6400-10-08	Straight JIC x O-Ring (6400-10-8)
16	1	32-19120	Ag Pro Plus HD - Lift Frame
17	2	34-12932	Cylinder Saddle (ZR518)
18	2	34-16578	Hose Clamp
19	1	34-14961	Manual Canister
20	2	35-18240	Ag Pro Plus - Steel Line (Lift Cylinder)

Item No.	Qty.	Part No.	Description
21B	2	35-30963	318" (26.5') x 5/8" -10JIC/-10JIC Hose
21C	2	35-30976	293" (24.42") x 5/8" -10JIC/-10JIC Hose w/165" Cordura
22	2	35-31928	57" x 5/8" -10JIC/-10JIC Hose W/Cordura
23	2	35-31934	75" x 5/8" -10JIC/-10JIC Hose W/Cordura
24	2	43-14725	AG Pin (Lift Frame / UC)
25	4	43-18120	Ag Pro + UC Top Pin (2" x 7.13")
26	2	43-18175	Ag Pro + Lift Cyl Pin (2" x 6.38")
27	2	43-18127	Ag Pro + Top Arm/QA Pin (2" x 7.5")
28	2	43-18635	Ag Pro + QA Pin (2.5" x 7.50")
29	1	45-18130-L	Ag Pro + Series Male QA - Left
30	1	45-18130-R	Ag Pro + Series Male QA - Right
31	2	57-1530	3" OD x .75" ID x .25" Flat Washer
32	2	57-1811	2" Narrow Rim Washer
33	2	57-20740	1/4" Flat Washer
34	10	57-20747	3/4" Flat Washer
35	12	58-9369	Grease Zerk 1/8" NPT Straight
36	10	70-20599	1" Hex Nut Gr 8 NC
37	2	70-20607	3/4" Hex Center Lock Nut Gr 2 NC
38	2	70-20610	1/4" Nyloc Hex Nut NC
39	2	70-20808	7/8" Hex Jam Nut NF

# Connecting and Disconnecting the Blade

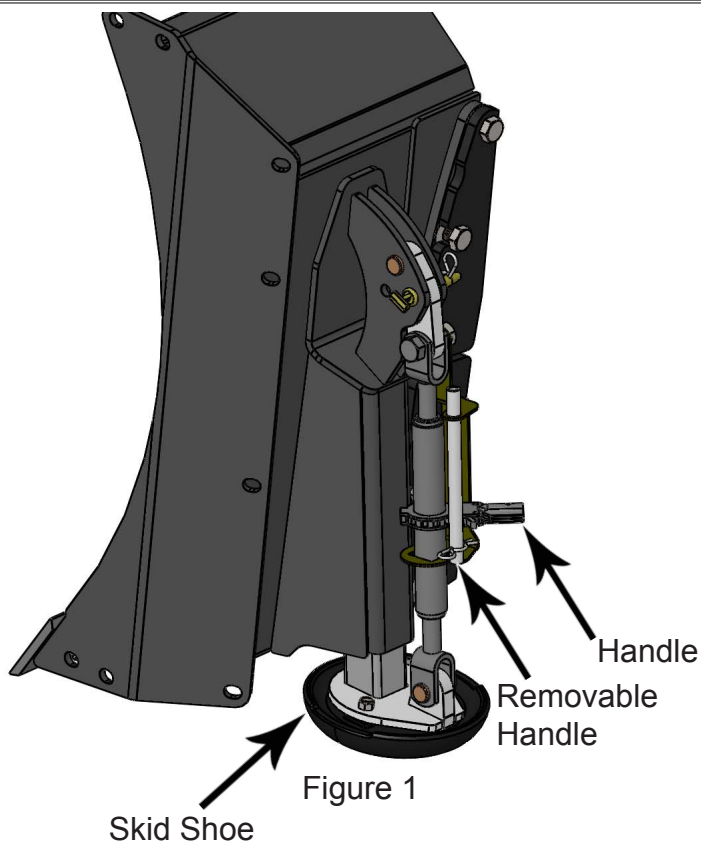
To connect the blade follow Steps #18-25 on Page 4.

To disconnect the blade, set the blade on the ground, unhook all of the couplers on the top arm and pull the 3/4" pin (Part #19 on Page 7) from the mushroom skid shoe link (#34 on Page 7) and store the pin in the empty hole on blade side of the skid shoe mount. The skid shoe link can now rotate freely. This will allow the blade to lean back further for easy disconnection and reconnection later without affecting your skid shoe height for dozing. Unlock the quick attach system with the pin pulling handle. Slowly lower the lift system and quick attaches from the blade to disconnect the blade and back away from the blade.

## Skid Shoe and Tilt Plate Adjustment

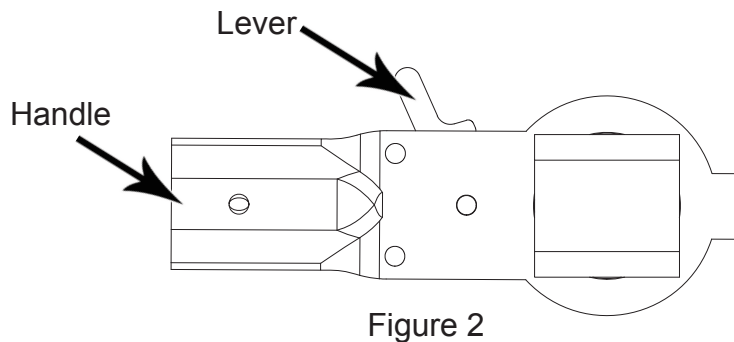
### Skid Shoe Adjustment:

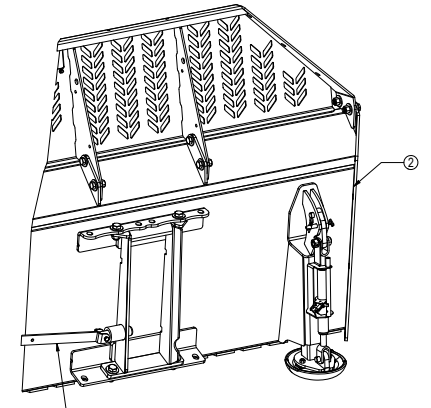
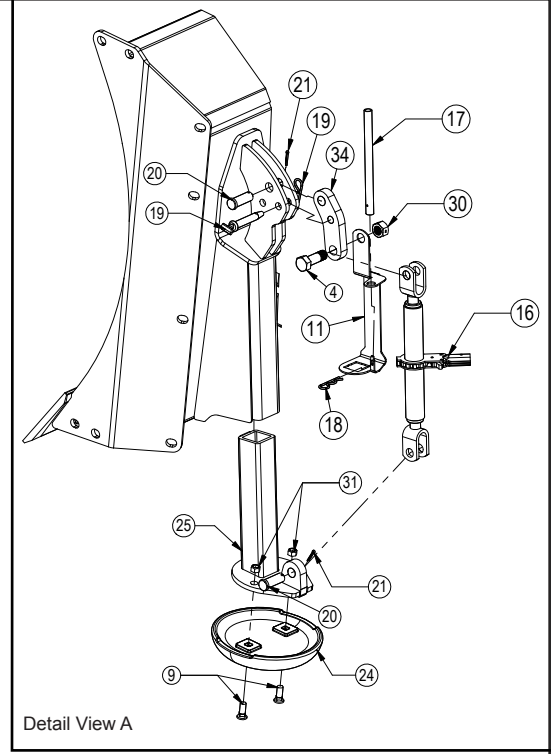
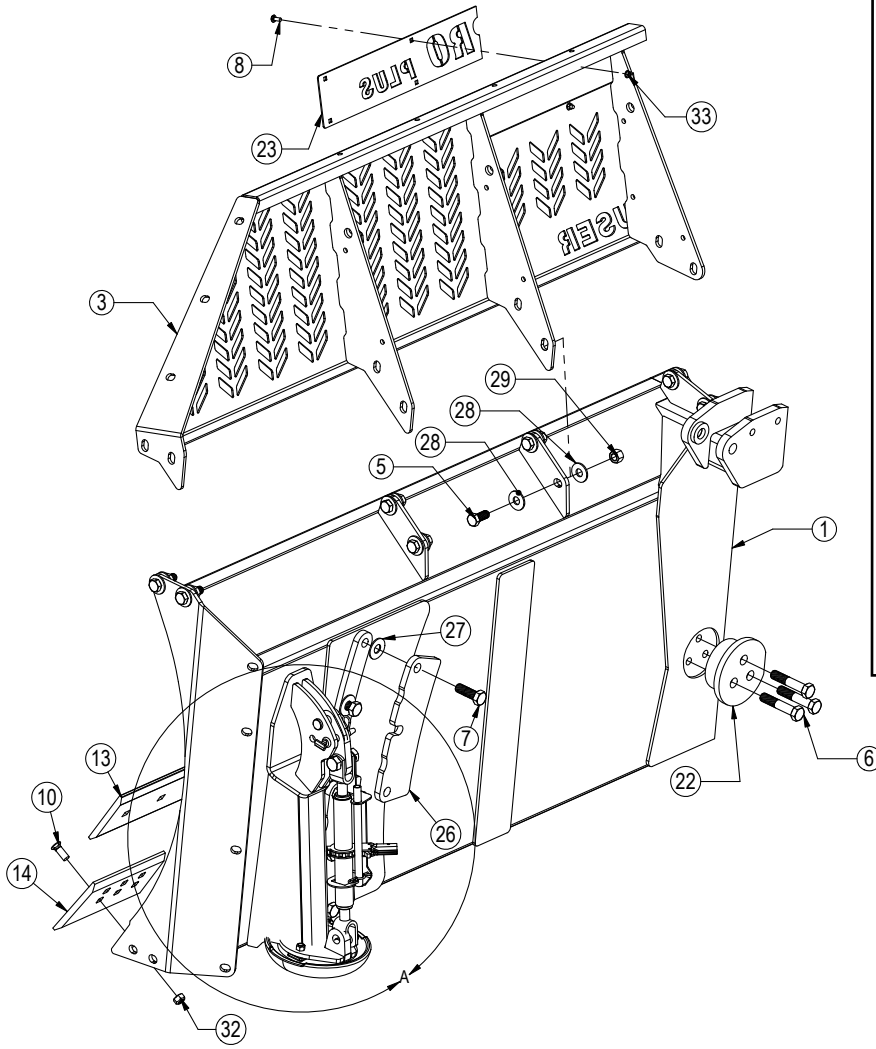
1. Remove the handle from the ratchet keeper by pulling the hitch clip pin and insert into the handle on the ratchet jack.
2. Loosen the locking nut on the ratchet jack.
3. Hold the body of the ratchet jack and rotate the ratchet jack handle to raise or lower the skid shoes.
4. If the skid shoe is not moving in the proper direction, move the forward/reverse lever on the handle (see Figure 2). Rotate the ratchet jack handle again to move the skid shoe in the direction needed.
5. After skid shoe is adjusted, rotate the ratchet jack handle until it rests up against the ratchet keeper. Return the removable handle to the ratchet keeper ensuring that the ratchet jack handle is captured by the removable handle and the ratchet keeper. Secure the handle to the ratchet keeper with a hitch clip pin.
6. Tighten the locking nut against the ratchet jack body to keep it from moving.
7. When skid shoes are worn, replace with new skid shoes.



### Tilt Plate Adjustment:

1. Remove bolts and tilt plates.
- Note: Don't remove all of the bolts at the same time.
2. Add or remove washers as needed to adjust tilt-way clearance to have 1/16" - 1/8" of clearance in direction 'B' shown in Figure 2.
  3. Once the tilt-way clearance is set, tighten bolts to 640 ft-lbs.





\* Parts Not Shown  
Item #A for Custom Name Plate and Item #B for AG Pro Plus Name Plate

Item No.	Part No.	Description	Blade Length		
			14'	16'	18'
Qty.	Qty.	Qty.			
1	15-19110-XX	AG Pro HD Blade XX' - Slant Top	1	1	1
2	15-18475-XX	AG Pro NANT Blade XX' - Slant Top	1	1	1
3	15-18520-XX	12" x 24" Bolt on Top Extension	1	1	1
4	16-18945	1" x 3" Hex Bolt Gr 5 NC - Short Thread	2	2	2
5	16-20538	7/8" x 2" Hex Bolt Gr 8 NC	14	18	18
6	16-20568	1" x 5" Hex Bolt Gr 8 NC	3	3	3
7	16-20562	1" x 3" Hex Bolt Gr 8 NC	12	12	12
8	16-21064	3/8" x 1" Carriage Bolt Gr 5 NC	8	8	8
9	16-21666	5/8" x 1-3/4" Plow Bolt Gr 5 NC	4	4	4
10	16-21752	3/4" x 2-1/2" Plow Bolt Gr 8 NC	36	40	44
11	18-18498-L	Ratchet Keeper - Left	1	1	1
12*	18-18498-R	Ratchet Keeper - Right	1	1	1
13	29-11118-6	6'- 3/4" x 8" Double Bevel Cutting Edge	2	-	-
13	29-11118-7	7'- 3/4" x 8" Double Bevel Cutting Edge	-	2	-
13	29-11118-8	8'- 3/4" x 8" Double Bevel Cutting Edge	-	-	2
14	29-19116-L	3/8" x 8" HD Dozer End Bit - Left	1	1	1
15*	29-19116-R	3/8" x 8" HD Dozer End Bit - Right	1	1	1
16	34-17565	Ratchet Jack	2	2	2
17	34-17567	Ratchet Jack - Handle	2	2	2

Refer to Pages 12-13 for Quick Attach System

Item No.	Part No.	Description	Blade Length		
			14'	16'	18'
Qty.	Qty.	Qty.			
18	43-7767	Hitch Clip Pin	2	2	2
19	43-15712	3/4" x 3-1/4" Safety Hitch Pin w/ Clip Pin	2	2	2
20	43-18463	1" x 2.75" Pin	4	4	4
21	43-18943	3/16" x 1-1/2" Cotter Pin	4	4	4
22	52-12380	Center Tilt Way Cover	1	1	1
23A	44-14830	Custom Name Plate	1	1	1
23B	44-18285	Ag Pro Plus Name Plate	1	1	1
24	50-15458	12" Round Mushroom Skid Shoe	2	2	2
25	50-18470	Mushroom Skid Shoe Mount	2	2	2
26	52-18299	Tilt Plate	4	4	4
27	57-20749	1" Flat Washer	12	12	12
28	57-20818	7/8" Flat Washer Heavy Duty Gr. 8 (USS)	28	36	36
29	70-20598	7/8" Hex Nut Gr 8 NC	14	18	18
30	70-18999	1" Hex Center Lock Nut Gr 2 NC - YZ	2	2	2
31	70-20646	5/8" Hex Top Lock Nut Gr 5 NC	4	4	4
32	70-20647	3/4" Hex Top Lock Nut Gr 5 NC	36	40	44
33	70-20622	3/8" Flange Nut	8	8	8
34	75-18479	Mushroom Skid Shoe Link	2	2	2

# Hydraulic Instructions

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Prior to operating the blade, bleed all air out of the hydraulic system. Start with the furthest location away from the remote until all air is out.

## Hydraulic Angle System Operating Instructions

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If your Grouser blade was purchased with the Hydraulic Angle Option, you will have the ability to angle the blade 30 degrees left or right. To achieve these angles, the two cylinders are designed to operate independently of each other through an electric diverter valve. To angle the blade to the left, actuate the tractor hydraulic control lever in the cab with the diverter valve un-powered. To angle the blade to the right, apply power to the diverter valve and then actuate the tractor hydraulic control lever.

## 2-Lever Angle System Operating Instructions

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If your Grouser blade was purchased with the 2-Lever Hydraulic Angle Option, you will have the ability to angle the blade 30 degrees left or right. To achieve these angles, the two cylinders are designed to operate independently of each other with the use of 2 tractor hydraulic control levers and a safety relief valve. To angle the blade to the left or right, actuate the tractor hydraulic control lever corresponding to the left or right cylinder.

The safety relief valve allows the cylinder to retract if its internal pressure becomes excessive. With this safety feature in place, when either cylinder reaches the end of its stroke, the safety relief valve will reroute pressure to the opposite cylinder causing it to extend. If this occurs, refer to the Relief Valve Instructions below for possible adjustments. Only one cylinder should be extended when angled dozing.

## Relief Valve Instructions

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**Set the safety relief valve at a higher pressure than tractor:** To increase the pressure of the relief valve, install a 0-5,000 psi pressure gauge into the base end of right angle cylinder (see page 26). Loosen the jam nut on the safety valve and tighten the Allen screw 1/2 turn. Next, extend the right side cylinder out until the safety valve activates, while the safety valve is in function, record the pressure reading on the gauge. Continue to tighten the Allen screw in 1/2 turn increments and record the pressure until a high enough relief setting is obtained. **Do not exceed the 3,000-psi operating pressure of the cylinders.** Tighten the jam nut and remove the gauge. Follow the same steps for the left side cylinder.

**Automatic lever release:** In certain newer model tractors, the hydraulic control lever will automatically release and instantly stop oil flow once the end of the stroke is reached.

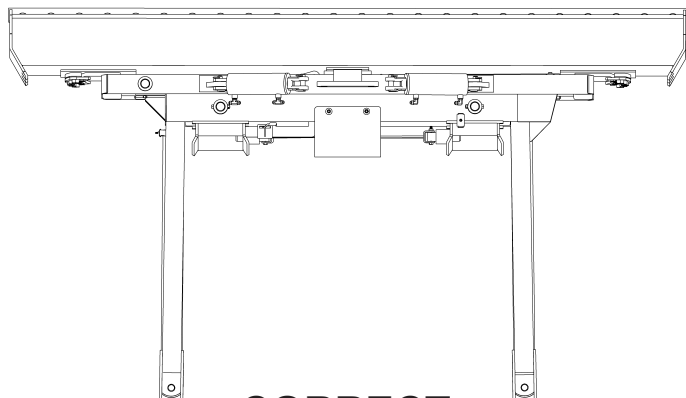
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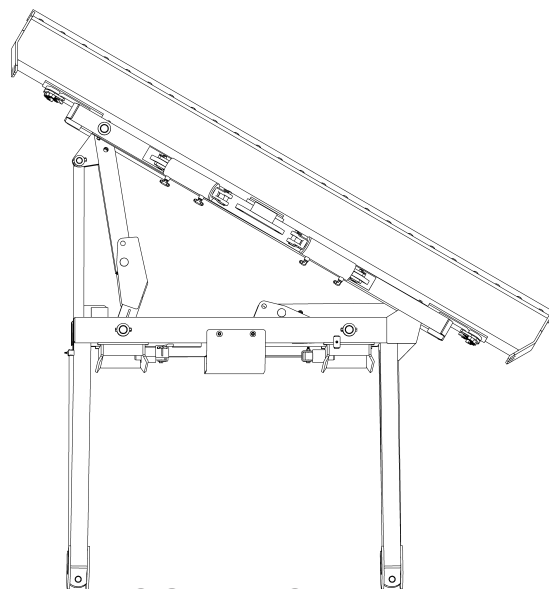
**CAUTION: Do not bypass the safety relief valve and plumb each cylinder to separate valves on the tractor.**

To ensure proper use and life of equipment, it is recommended to have both cylinders closed for straight ahead dozing and only one cylinder partially or fully extended for angled dozing as shown in the diagrams below. **If the angle system is not used correctly, frame damage may occur.** Some damaged frames can be repaired, please contact Grouser Products for repair instructions if needed.

**Please contact Grouser Products with any questions by:**  
Phone - 701-282-7710 or 800-747-6182; Fax - 701-282-8131

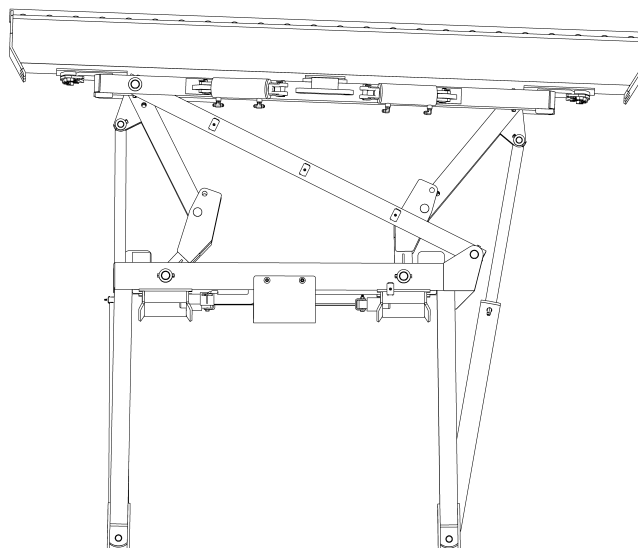


**CORRECT**



**CORRECT**

(Left or Right)

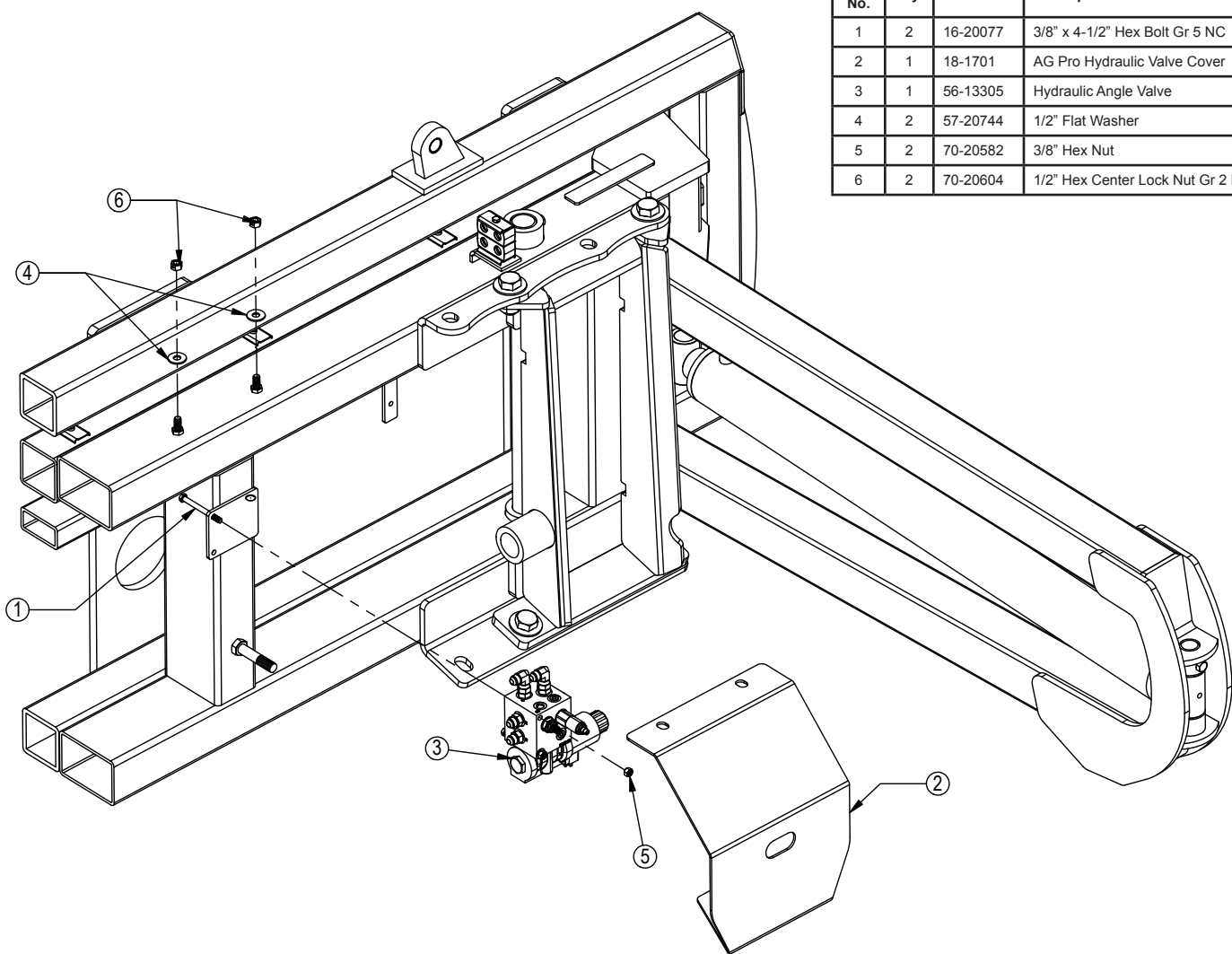


**INCORRECT**

# Angle / Tilt Function Abbreviation Key

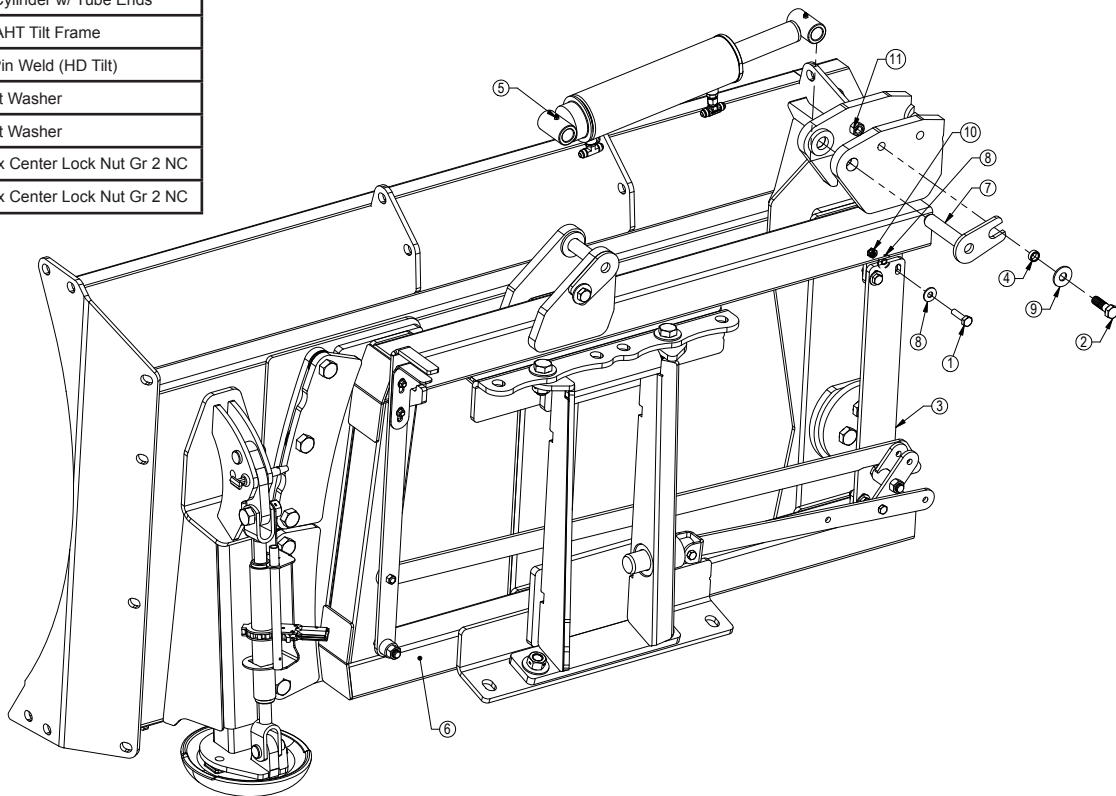
HAHT	Hydraulic Angle - Hydraulic Tilt	6-Way
HANT	Hydraulic Angle - No Tilt	4-Way
NAHT	No Angle - Hydraulic Tilt	4-Way
NANT	No Angle - No Tilt	2-Way

Angle Hydraulic Components

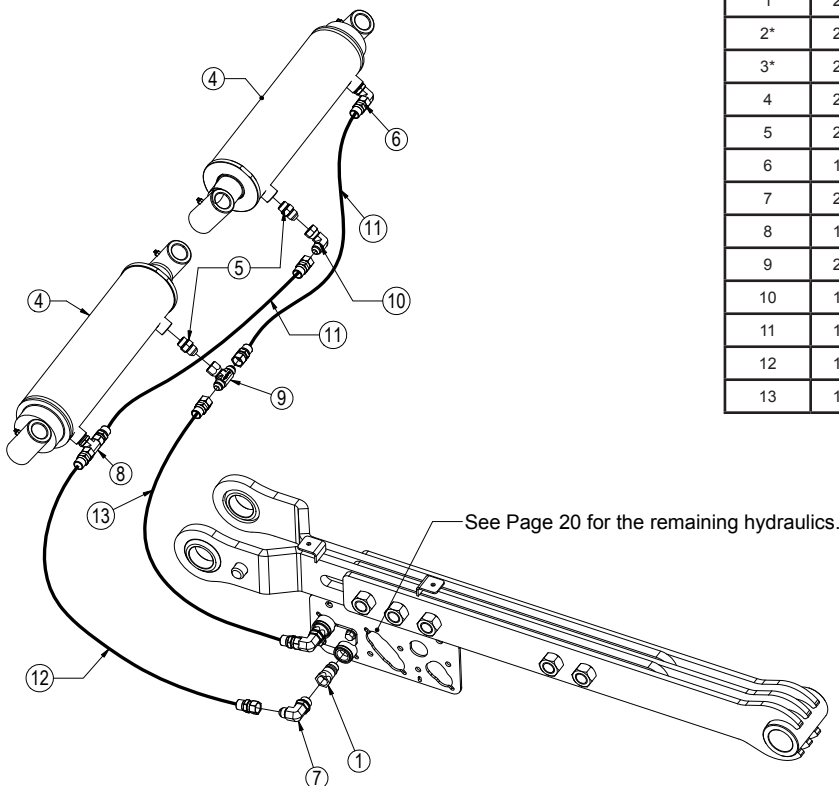


Item No.	Qty.	Part No.	Description
1	2	16-20077	3/8" x 4-1/2" Hex Bolt Gr 5 NC
2	1	18-1701	AG Pro Hydraulic Valve Cover
3	1	56-13305	Hydraulic Angle Valve
4	2	57-20744	1/2" Flat Washer
5	2	70-20582	3/8" Hex Nut
6	2	70-20604	1/2" Hex Center Lock Nut Gr 2 NC

Item No.	Qty.	Part No.	Description
1	4	16-20128	1/2" x 2" Hex Bolt Gr 5 NC
2	4	16-20220	3/4" x 2-1/2" Hex Bolt Gr 5 NC
3	1	18-14658	NAXT Center Bracket
4	4	19-13515	3/4" ID - Non Rotating Pin Bushing
5	2	26-34728	4 x 12 Cylinder w/ Tube Ends
6	1	32-17810	HD - NAHT Tilt Frame
7	4	43-16116	1-1/4" Pin Weld (HD Tilt)
8	8	57-20744	1/2" Flat Washer
9	4	57-20747	3/4" Flat Washer
10	4	70-20604	1/2" Hex Center Lock Nut Gr 2 NC
11	4	70-20607	3/4" Hex Center Lock Nut Gr 2 NC



Hoses Not Drawn To Scale

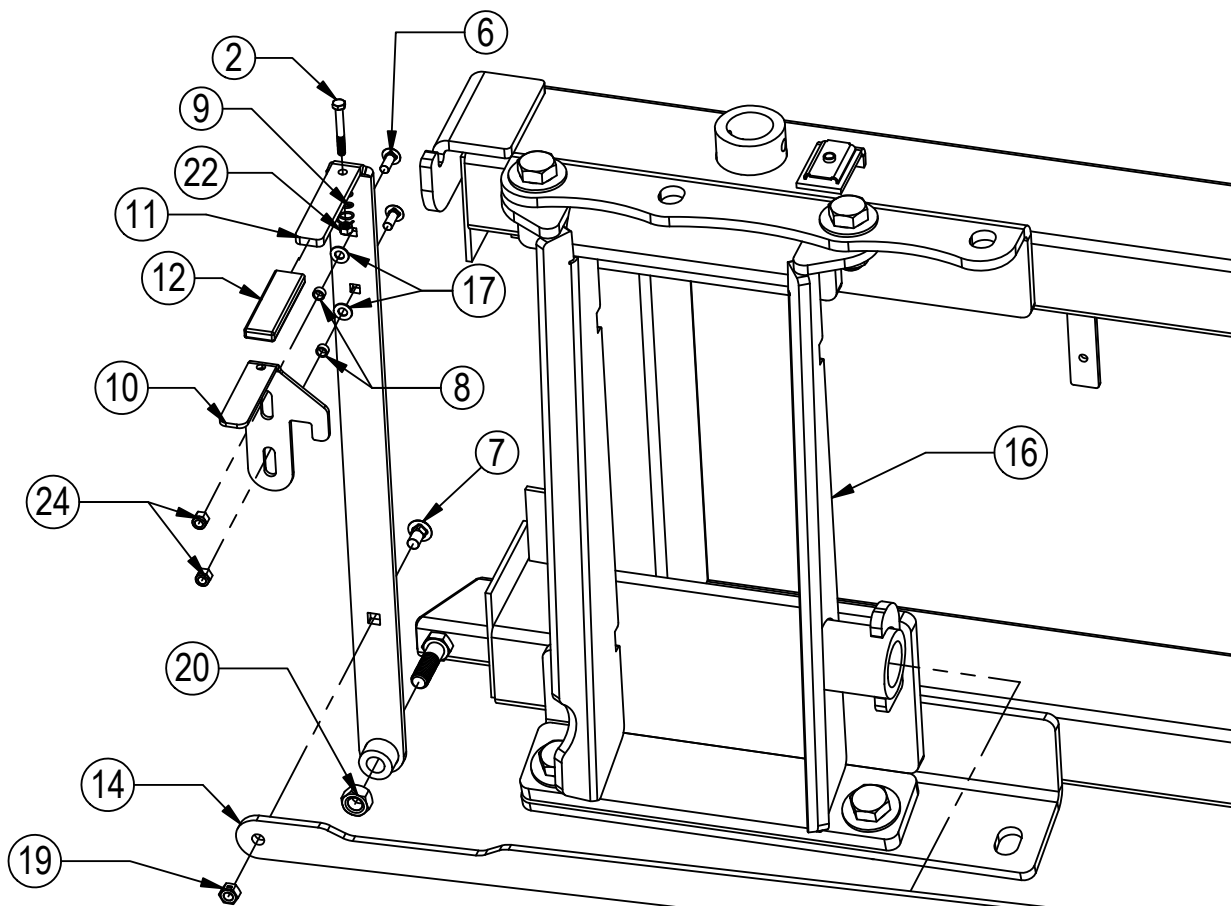


Item No.	Qty.	Part No.	Description
1	2	25-34342	Tappet Quick Coupler Male
2*	2	25-3453	Pioneer Dust Cap Tilt (Green)
3*	2	25-3454	Pioneer Dust Plug Tilt (Green)
4	2	26-34728	4 x 12 Cylinder W/ Cast Clevis Ends
5	2	31-34040	Straight JIC x O-Ring (6400-08-08)
6	1	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)
7	2	31-34051	Straight Thread Elbow 90° JIC x O-Ring (6801-8-10)
8	1	31-34060	Branch Tee JIC x O-Ring (6803-8-8-8)
9	2	35-30124	45" x 1/2" -8JIC/-8JIC Hose
10	1	31-34080	Swivel Nut Branch Tee JIC (6600-8-8-8)
11	1	31-34100	Swivel Nut Elbow 90° JIC (6500-8-8)
12	1	35-31123	42" x 1/2" -8JIC/-8JIC Hose w/ Cordura
13	1	35-12633-0520	52" x 1/2" -8JIC/-8JIC Hose w/ Cordura

\* Parts Not Shown

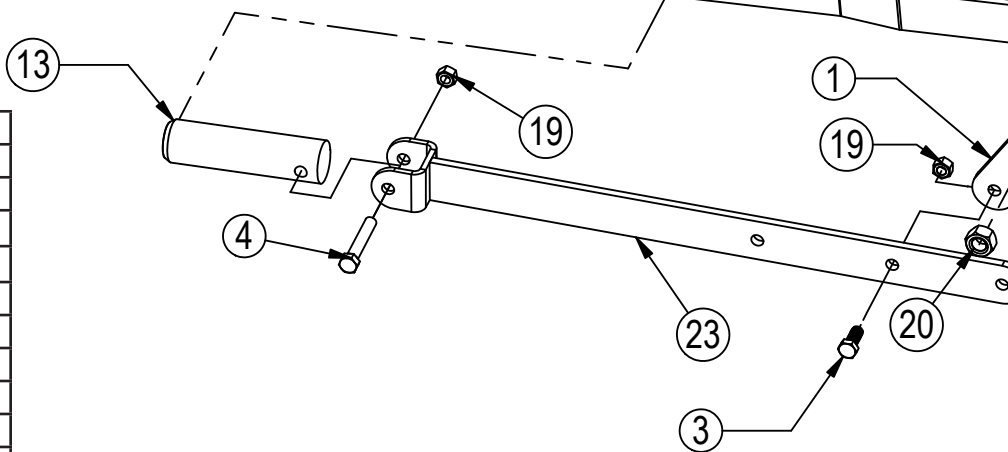
NOTE: When ordering cylinder seal kits, the part number on the cylinder is needed. The number is stamped on the base end of the cylinder opposite of the hydraulic ports.

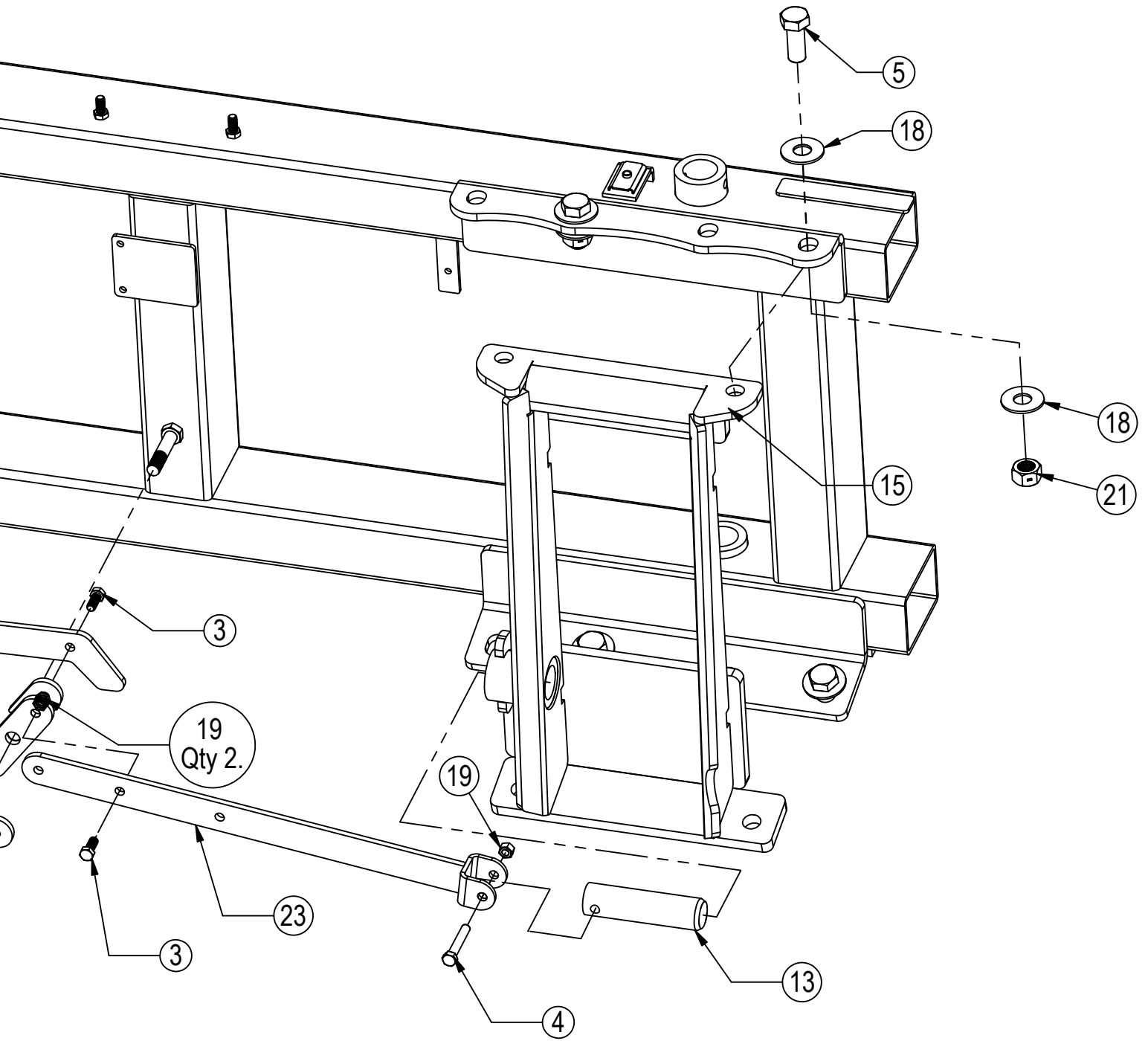
No. On Cylinder	Part No.	Description
26-34728	49-12272	Seal Kit 4" Bore x 2" Rod (647204) Nitrided Rod



Some Parts Hidden For Clarity  
 Item #A for HAHT & HANT and Item #B for NAHT & NANT

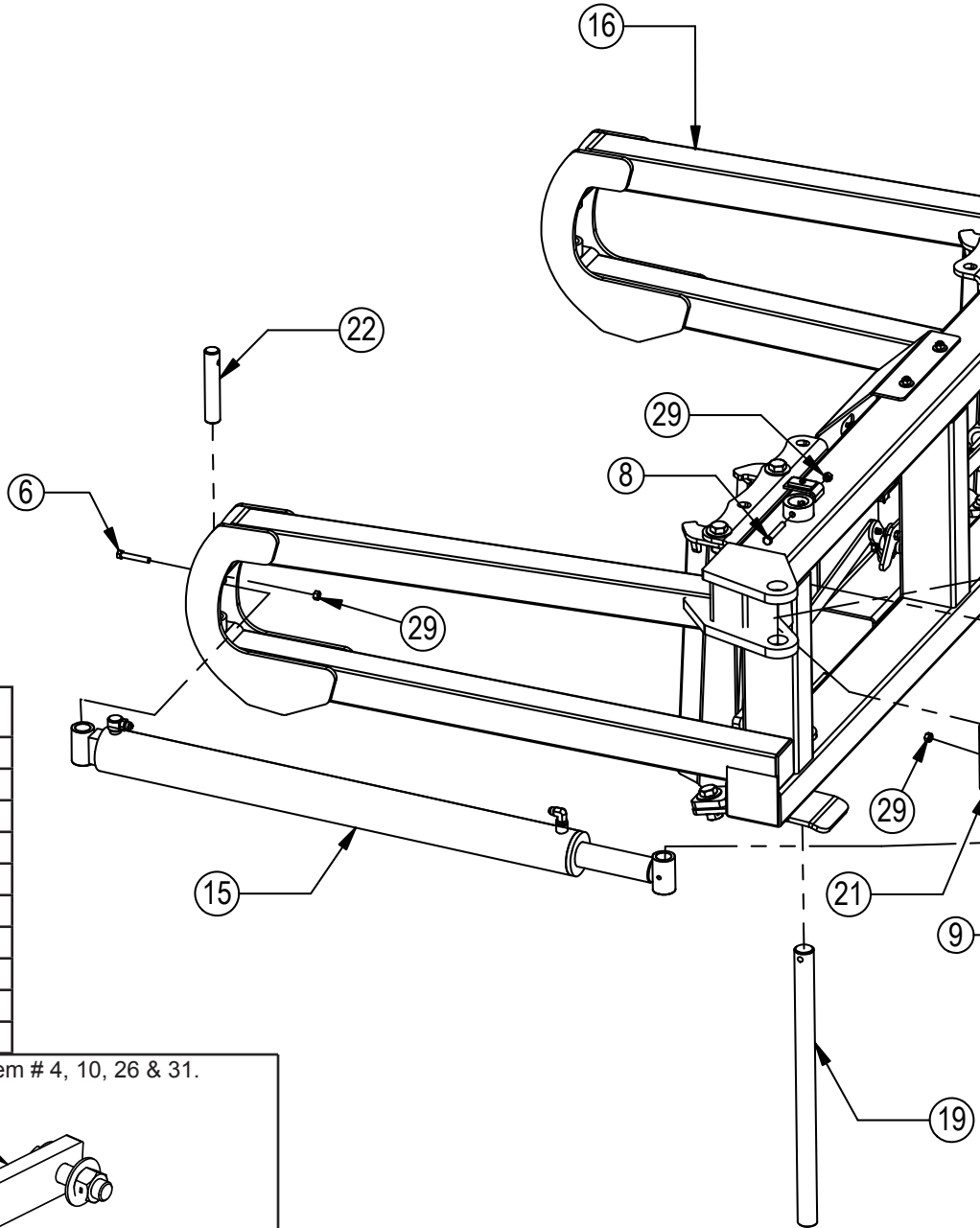
Item No.	Qty.	Part No.	Description
1	1	11-3049	Bell Crank Weld
2	1	16-20040	5/16" x 2-1/2" Hex Bolt Gr 5 NC
3	3	16-20125	1/2" x 1-1/4" Hex Bolt Gr 5 NC
4	2	16-20132	1/2" x 3" Hex Bolt Gr 5 NC
5	8	16-20560	1" x 2-1/2" Hex Bolt Gr 8 NC
6	2	16-21064	3/8" x 1" Carriage Bolt
7	1	16-21125	1/2" x 1-1/4" Carriage Bolt
8	2	19-13577	NR Pin Spacer Clevis End
9	1	34-17799	Pin Pulling Latch Spring
10	1	39-14663	AG Pro Pin Puller Latch
11	1	39-14665	AG Pro Pin Puller Handle Weld
12	1	39-3072	Handle Cover (Orange)
13	2	43-3050	QA Lock Pin
14A	1	44-14709	Pin Puller Link Plate
14B	1	44-14662	Pin Puller Link Plate
15	1	45-16035-R	Female Bolt On Quick Attach, Right
16	1	45-16035-L	Female Bolt On Quick Attach, Left
17	2	57-20742	3/8" Flat Washer
18	16	57-20819	1" Flat Washer Heavy Duty Gr 8 (USS)
19	6	70-20604	1/2" Hex Center Lock Nut Gr 2 NC
20	2	70-20607	3/4" Hex Center Lock Nut Gr 2 NC
21	8	70-20609	1" Hex Center Lock Nut Gr 2 NC
22	1	70-20611	5/16" Nyloc Hex Nut Gr 5 NC
23	2	75-14655	AG Pro Pin Puller Link Weld
24	2	70-20622	3/8" Flange Nut





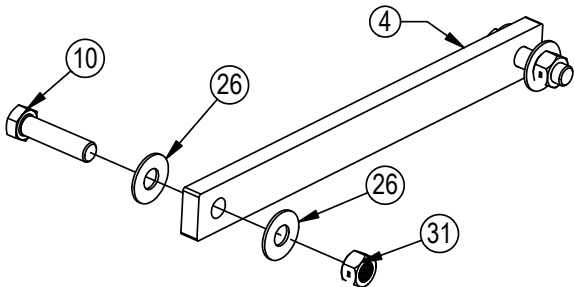
**Hydraulic Angle - Hydraulic Tilt Or Hydraulic Angle - No Tilt**

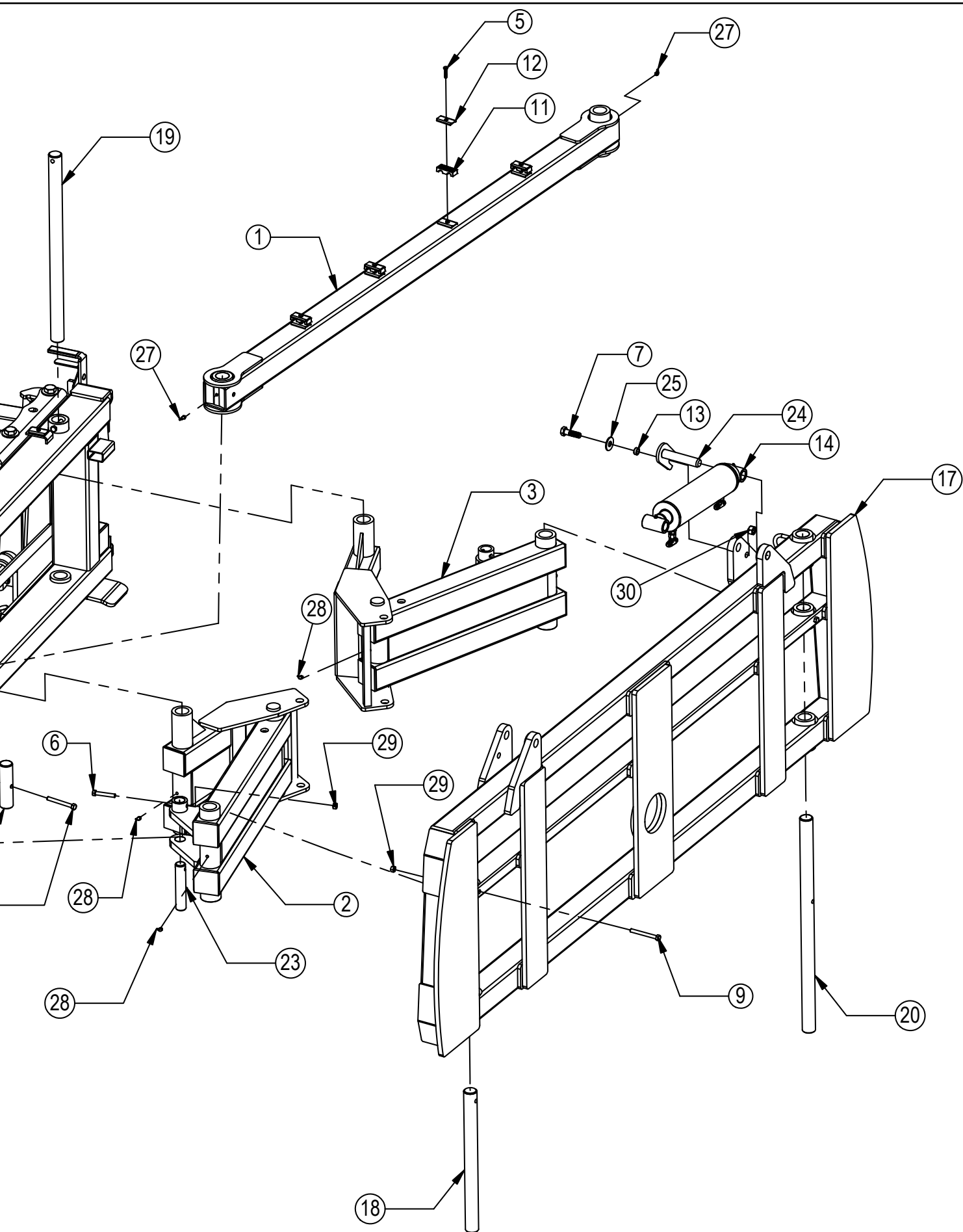
Item No.	Qty.	Part No.	Description
1	1	11-12397	HD Stabilizer Arm
2	1	11-8082	Angle Arm Right
3	1	11-9039	Angle Arm Left
4	1	14-9366	Non Tilt Bar
5	4	16-20036	5/16" x 1-1/2" Hex Bolt Gr 5 NC
6	4	16-20132	1/2" x 3" Hex Bolt Gr 5 NC
7	4	16-20220	3/4" x 2-1/2" Hex Bolt Gr 5 NC
8	2	16-20424	1/2" x 3-1/2" Hex Bolt Gr 8 NC
9	3	16-20427	1/2" x 4-1/2" Hex Bolt Gr 8 NC
10	2	16-20564	1" x 3-1/2" Hex Bolt Gr 8 NC
11	2	18-3074	Hose Hold Down Clamp
12	4	18-3075	Hose Hold Down Clamp Plate
13	4	19-13515	3/4" NR Pin Spacer
14	2	26-34728	4 x 12 Cylinder W/ Tube Ends
15	2	26-34725	4 x 43.5 Cylinder Tube Ends, Top Port
16	1	32-18900	Angle Frame
17	1	32-18265	HD Tilt Frame
18	1	43-8130	1-15/16" x 23-1/4" Pin
19	2	43-8131	1-15/16" x 31" Pin
20	1	43-8132	1-15/16" x 35-1/2" Pin
21	1	43-8133	1-15/16" x 7-1/8" Stabilizer Arm Pin



Item No.	Qty.	Part No.	Description
22	2	43-8134	1-1/2" x 8" Angle Cylinder Pin Base End
23	2	43-9352	1-1/2" x 7-1/2" Angle Cylinder Pin Rod End
24	4	43-16116	1-1/4" Pin Weld (Tilt Cylinder)
25	4	57-20747	3/4" Flat Washer
26	4	57-20749	1" Flat Washer
27	2	58-9373	Grease Zerk 1/8" NPT 65°
28	6	58-9372	Grease Zerk 1/8" NPT 90°
29	9	70-20604	1/2" Hex Center Lock Nut Gr 2 NC
30	4	70-20607	3/4" Hex Center Lock Nut Gr 2 NC
31	2	70-20609	1" Hex Center Lock Nut Gr 2 NC

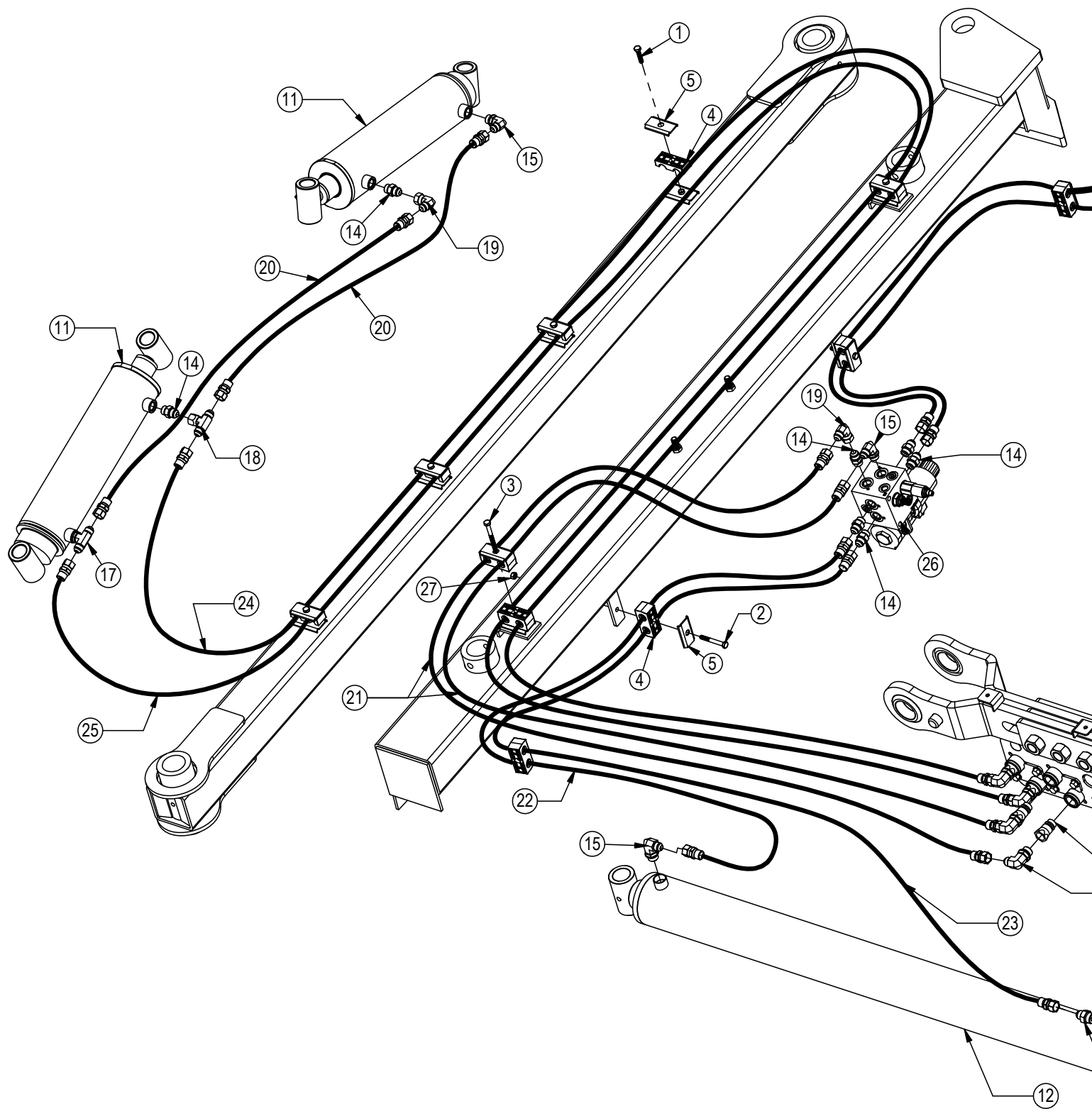
HANT - Replace item # 7, 13, 24, 25 & 30 with item # 4, 10, 26 & 31.





**Hydraulic Angle - Hydraulic Tilt Or Hydraulic Angle - No Tilt Hose Routing**

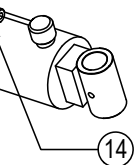
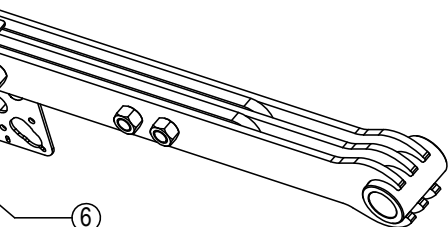
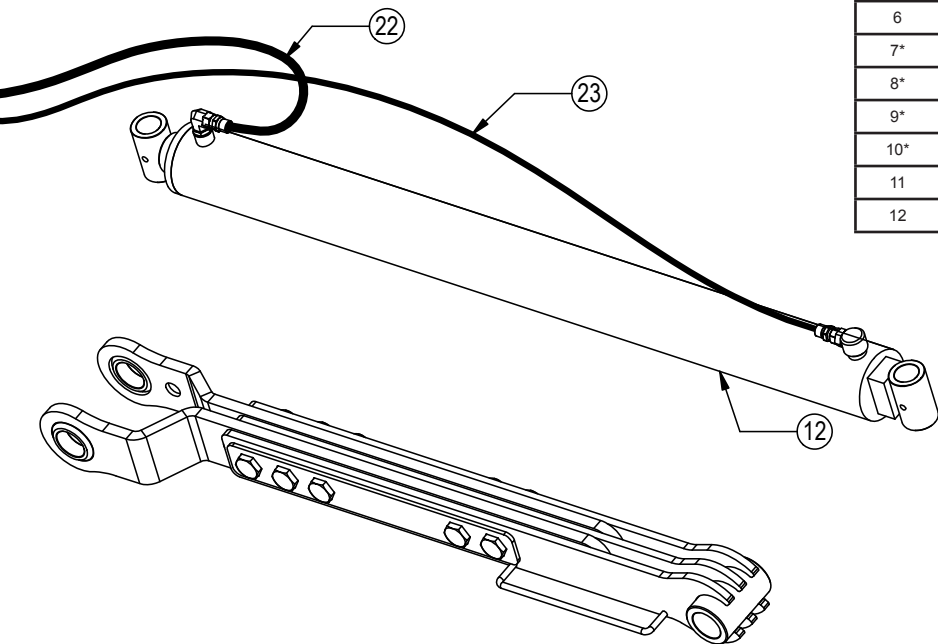
Hoses Not Drawn To Scale





		Configuration	HAHT	HANT
Item No.	Part No.	Description	Qty.	Qty.
1	16-20036	5/16" x 1-1/2" Hex Bolt Gr 5 NC	7	3
2	16-20040	5/16" x 2-1/2" Hex Bolt Gr 5 NC	2	2
3	16-20043	5/16" x 3-1/4" Hex Bolt Gr 5 NC	1	-
4	18-3074	Hose Hold Down Clamp	9	5
5	18-3075	Hose Hold Down Clamp Plate	10	5
6	25-34342	Tappet Quick Coupler Male	4	2
7*	25-3453	Pioneer Dust Cap Tilt (Green)	2	-
8*	25-3454	Pioneer Dust Plug Tilt (Green)	2	-
9*	25-3455	Pioneer Dust Cap Angle (Red)	2	2
10*	25-3456	Pioneer Dust Plug Angle (Red)	2	2
11	26-34728	4 x 12 Cylinder W/ Tube Ends	2	-
12	26-34725	4 x 43.5 Cylinder Tube Ends, Top Port	2	2

\* Parts Not Shown



See Page 20 for the remaining hydraulics and hydraulic connections.  
See Page 22 for hydraulic schematics.

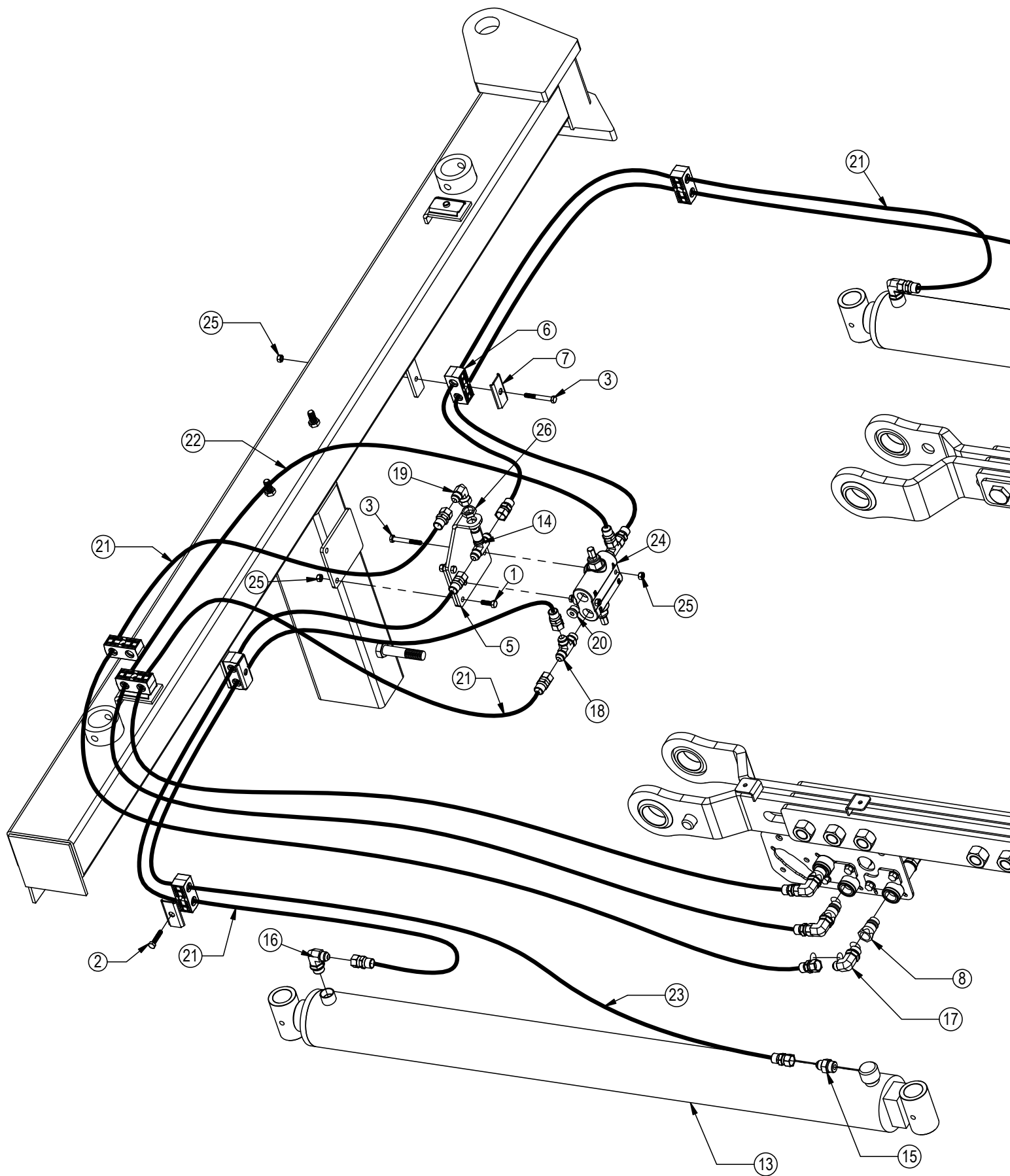
		Configuration	HAHT	HANT
Item No.	Part No.	Description	Qty.	Qty.
13*	31-13332	-6 SAE Breather Fitting	1	1
14	31-34040	Straight JIC x O-Ring (6400-8-8)	9	7
15	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)	4	3
16	31-34051	Straight Thread Elbow 90° JIC x O-Ring (6801-8-10)	4	2
17	31-34060	Branch Tee JIC x O-Ring (6803-8-8-8)	1	-
18	31-34080	Swivel Nut Branch Tee JIC (6600-8-8-8)	1	-
19	31-34100	Swivel Nut Elbow 90° JIC (6500-8-8)	2	1
20	35-30124	45" x 3/8" -8JIC/-8JIC Hose	2	-
21	35-30131	66" x 1/2" -8JIC/-8JIC Hose (3.5M)	2	2
22	35-30132	69" x 1/2" -8JIC/-8JIC Hose	2	2
23	35-30141	96" x 1/2" -8JIC/-8JIC Hose	2	2
24	35-30181	217" x 1/2" -8JIC/-8JIC Hose	1	-
25	35-30186	207" x 1/2" -8JIC/-8JIC Hose	1	-
26	56-13305	Hydraulic Angle Valve	1	1
27	70-20581	5/16" Hex Nut NC	2	2

NOTE: When ordering cylinder seal kits, the part number on the cylinder is needed. The number is stamped on the base end of the cylinder opposite of the hydraulic ports.

No. On Cylinder	Part No.	Description
26-34728	49-12272	Seal Kit 4" Bore x 2" Rod (647204) Nitrided Rod
26-34725	49-12274	Seal Kit 4 x 43.5 (647210) Nitrided Rod

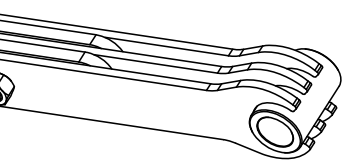
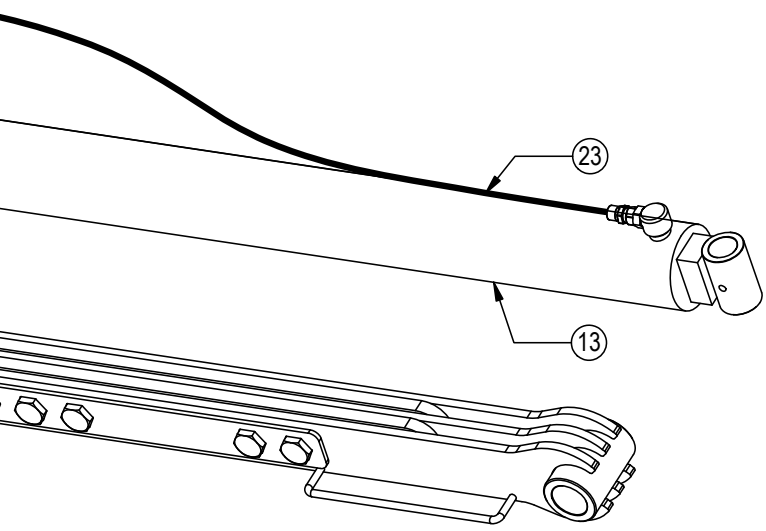
# Hydraulic Angle - 2 Lever System Hose Routing

Hoses Not Drawn To Scale



Item No.	Qty.	Part No.	Description
1	2	16-20034	5/16" x 1" Hex Bolt Gr 5 NC
2	2	16-20036	5/16" x 1-1/2" Hex Bolt Gr 5 NC
3	4	16-20040	5/16" x 2-1/2" Hex Bolt Gr 5 NC
4*	1	16-20048	5/16" x 5" Hex Bolt Gr 5 NC
5	1	18-14695	Bracket, Relief Valve
6	6	18-3074	Hose Hold Down Clamp
7	5	18-3075	Hose Hold Down Clamp Plate
8	3	25-34342	Tappet Quick Coupler Male
9*	1	25-3401	Pioneer Dust Cap Left Angle (Yellow)
10*	1	25-3402	Pioneer Dust Plug Left Angle (Yellow)
11*	2	25-3455	Pioneer Dust Cap Right Angle (Red)

\* Parts Not Shown



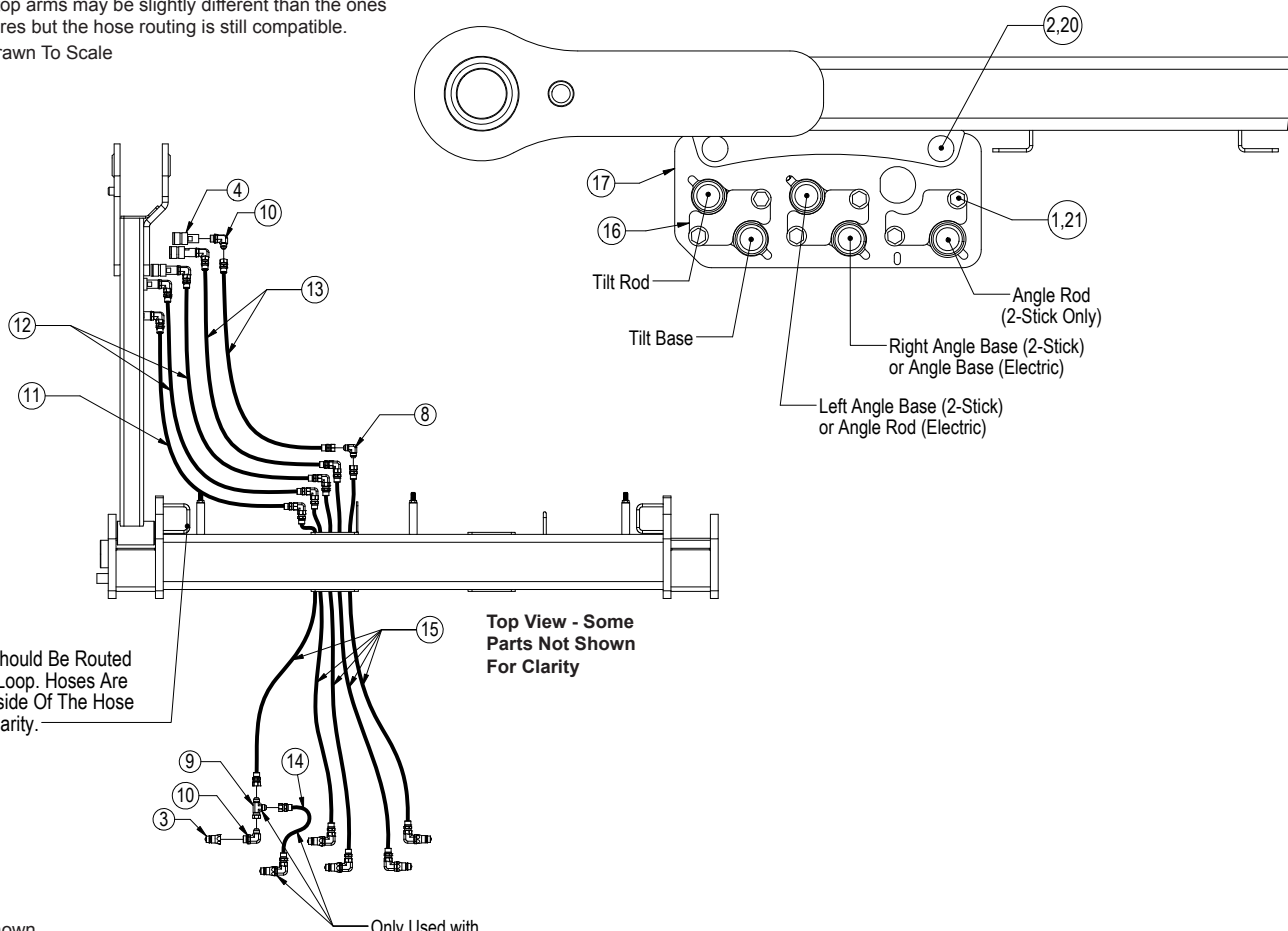
See Page 20 for the remaining hydraulics and hydraulic connections.  
See Page 23 for hydraulic schematics.

Item No.	Qty.	Part No.	Description
12*	2	25-3456	Pioneer Dust Plug Right Angle (Red)
13	2	26-34725	4 x 43.5 Cylinder Tube Ends, Top Port
14	1	31-34020	Bulkhead Branch Tee JIC (2703-8-8)
15	2	31-34040	Straight JIC x O-Ring (6400-8-8)
16	2	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)
17	3	31-34051	Straight Thread Elbow 90° JIC x O-Ring (6801-8-10)
18	2	31-34070	Run Tee JIC x O-Ring (6804-8-8)
19	1	31-34100	Swivel Nut Elbow 90° JIC (6500-8-8)
20	2	31-34123	Hex Socket O-Ring Plug (6409-8-8)
21	4	35-30132	69" x 1/2" -8JIC/-8JIC Hose
22	1	35-30133	72" x 1/2" -8JIC/-8JIC Hose
23	2	35-30141	96" x 1/2" -8JIC/-8JIC Hose
24	1	56-7772	Relief Valve
25	6	70-20581	5/16" Hex Nut NC
26	1	70-20807	3/4" Hex Jam Nut NF

NOTE: When ordering cylinder seal kits, the part number on the cylinder is needed. The number is stamped on the base end of the cylinder opposite of the hydraulic ports.

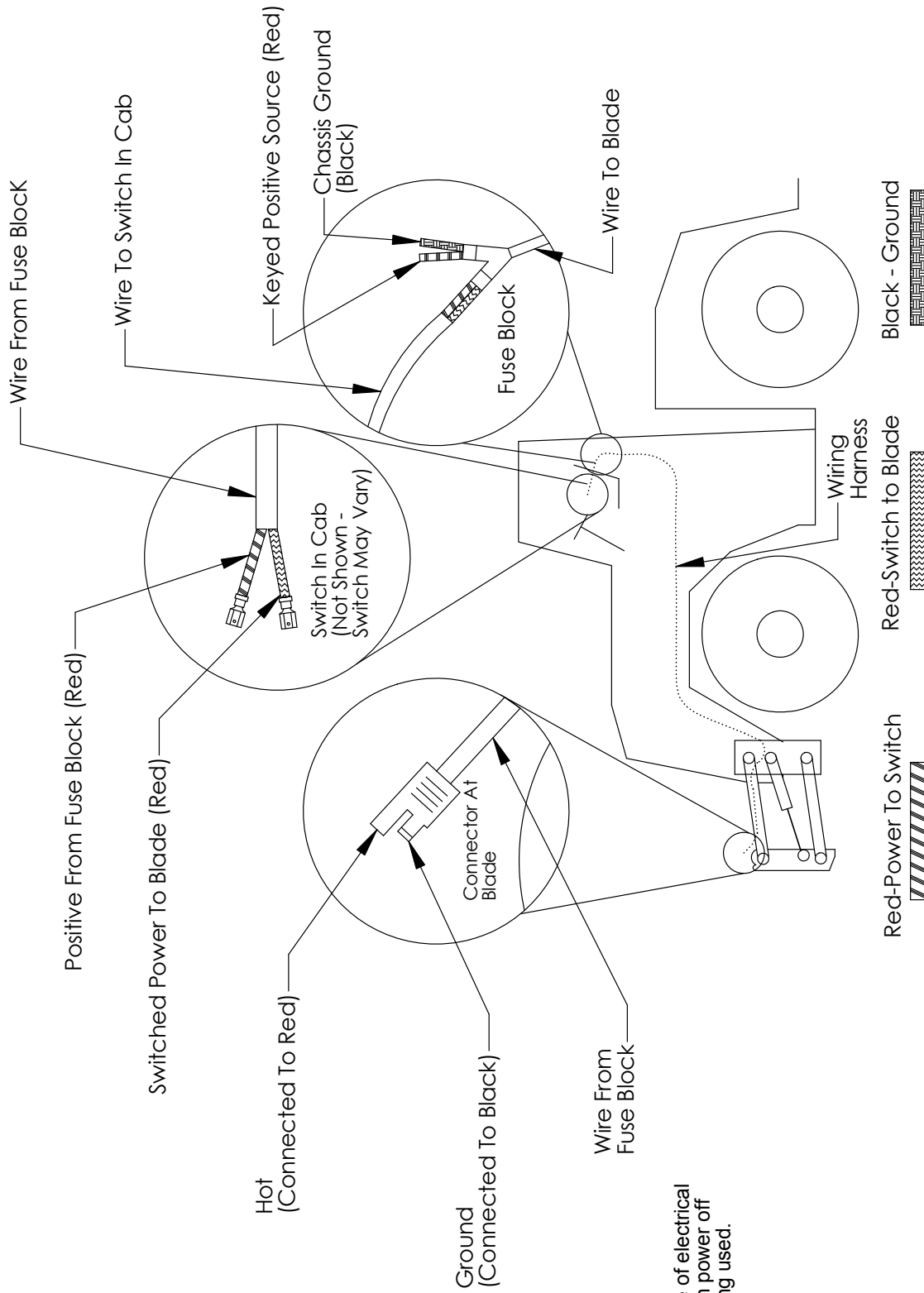
No. On Cylinder	Part No.	Description
26-34725	49-12274	Seal Kit 4 x 43.5 (647210) Nitrided Rod

NOTE: Your top arms may be slightly different than the ones in these pictures but the hose routing is still compatible.  
Hoses Not Drawn To Scale



\* Parts Not Shown  
See Pages 22-23 for hydraulic schematics.  
Item #A & B for Claas Tractors.  
Item #C for Steiger, New Holland, Claas and JD 9R Tractors and Item #D for Versatile and Challenger Tractors.

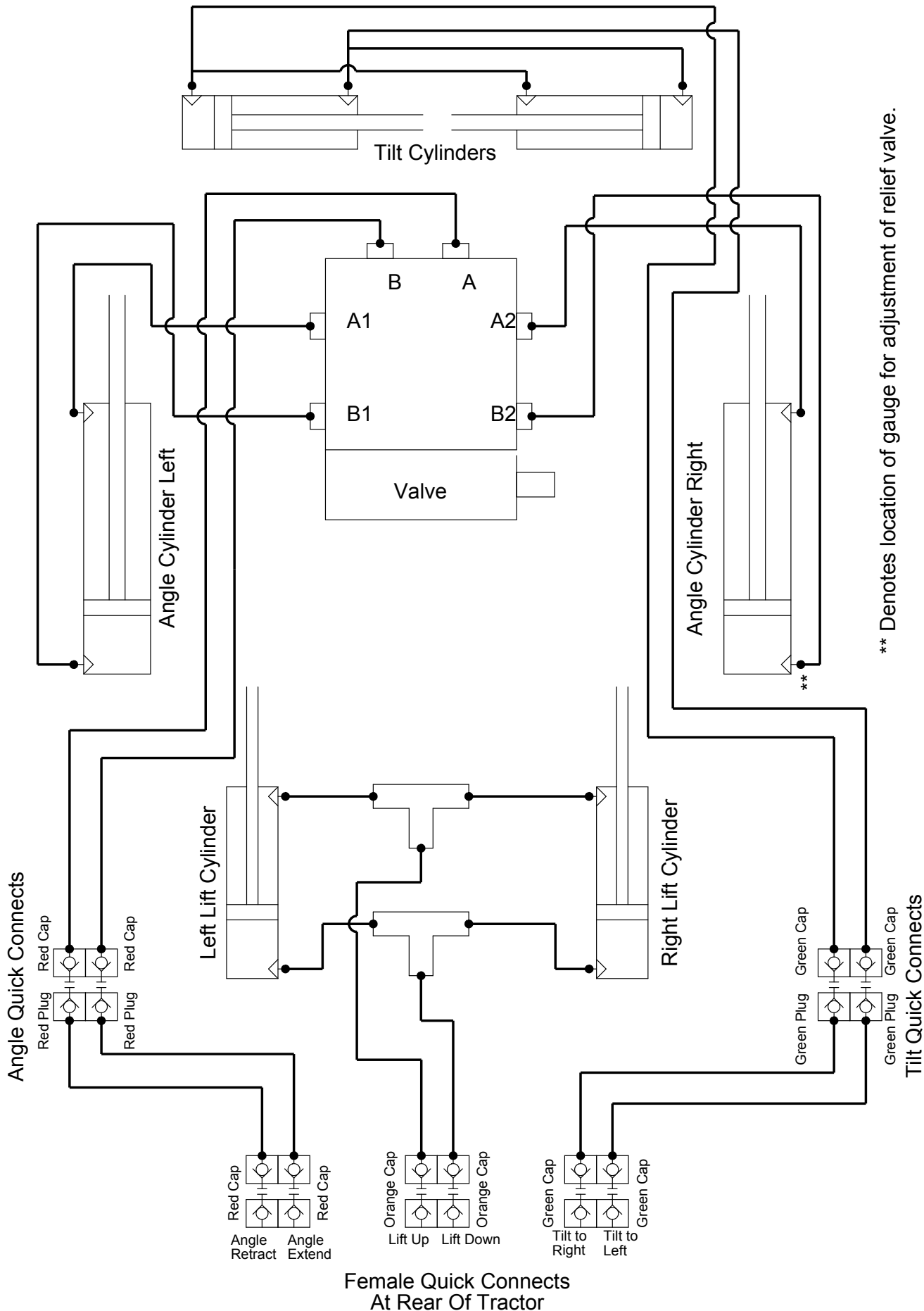
Item No.	Part No.	Description	Configuration					
			HAHT - 2 Stick	HAHT	HANT - 2 Stick	HANT	NAHT	NANT
			Qty.	Qty.	Qty.	Qty.	Qty.	Qty.
1	16-35C612	3/8" x 3/4" Flanged Bolt	6	4	4	2	2	-
2	16-21125	1/2" x 1-1/4" Carriage Bolt Gr 5 NC	2	2	2	2	2	-
3	25-34342	Tappet Quick Coupler Male	6	4	4	2	2	-
4	25-34321	Tappet Quick Coupler Female	5	4	3	2	2	-
5*	25-3401	Pioneer Dust Cap Left Angle (Yellow)	2	-	2	-	-	-
6*	25-3453	Pioneer Dust Cap Tilt (Green)	2	2	-	-	2	-
7*	25-3455	Pioneer Dust Cap Right Angle (Red)	2	2	2	2	-	-
8	31-15199-8-8	JIC Union Elbow 90° (2500-8-8)	5	4	3	2	2	-
9	31-34090	Swivel Nut Run Tee JIC (6602-8-8-8)	1	-	1	-	-	-
10	31-34051	Straight Thread Elbow 90° JIC x O-Ring (6801-8-10)	11	8	7	4	4	-
10A	31-34051	Straight Thread Elbow 90° JIC x O-Ring (6801-8-10)	5	4	3	2	2	-
10B	31-6802-08-10	Straight Thread Elbow 45° JIC x O-Ring (6802-08-10)	6	4	4	2	2	-
11	35-31134	75" x 1/2" -8JIC/-8JIC Hose W/Cordura	1	-	1	-	-	-
12	35-31188	79" x 1/2" -8JIC/-8JIC Hose W/Cordura	2	2	2	2	-	-
13	35-31189	85" x 1/2" -8JIC/-8JIC Hose W/Cordura	2	2	-	-	2	-
14	35-30121	35" x 1/2" -8JIC/-8JIC Hose	1	-	1	-	-	-
15D	35-30172	318" (26.5') x 1/2" -8JIC/-8JIC Hose	5	4	3	2	2	-
15C	35-30183	293" (24.42') x 1/2" -8JIC/-8JIC Hose w/165" Cordura	5	4	3	2	2	-
16	44-14734	Female Coupler Retainer	3	2	2	1	1	-
17	44-18180	Female Coupler Mount Bracket	1	1	1	1	1	-
18*	69-18890	Wire Harness - Valve to Disconnect	-	1	-	1	-	-
19*	69-1531	Wire Harness - Disconnect to Tractor	-	1	-	1	-	-
20	70-20604	1/2" Hex Center Lock Nut NC	2	2	2	2	2	-
21	70-20622	3/8" Flange Hex Nut NC	6	4	4	2	2	-

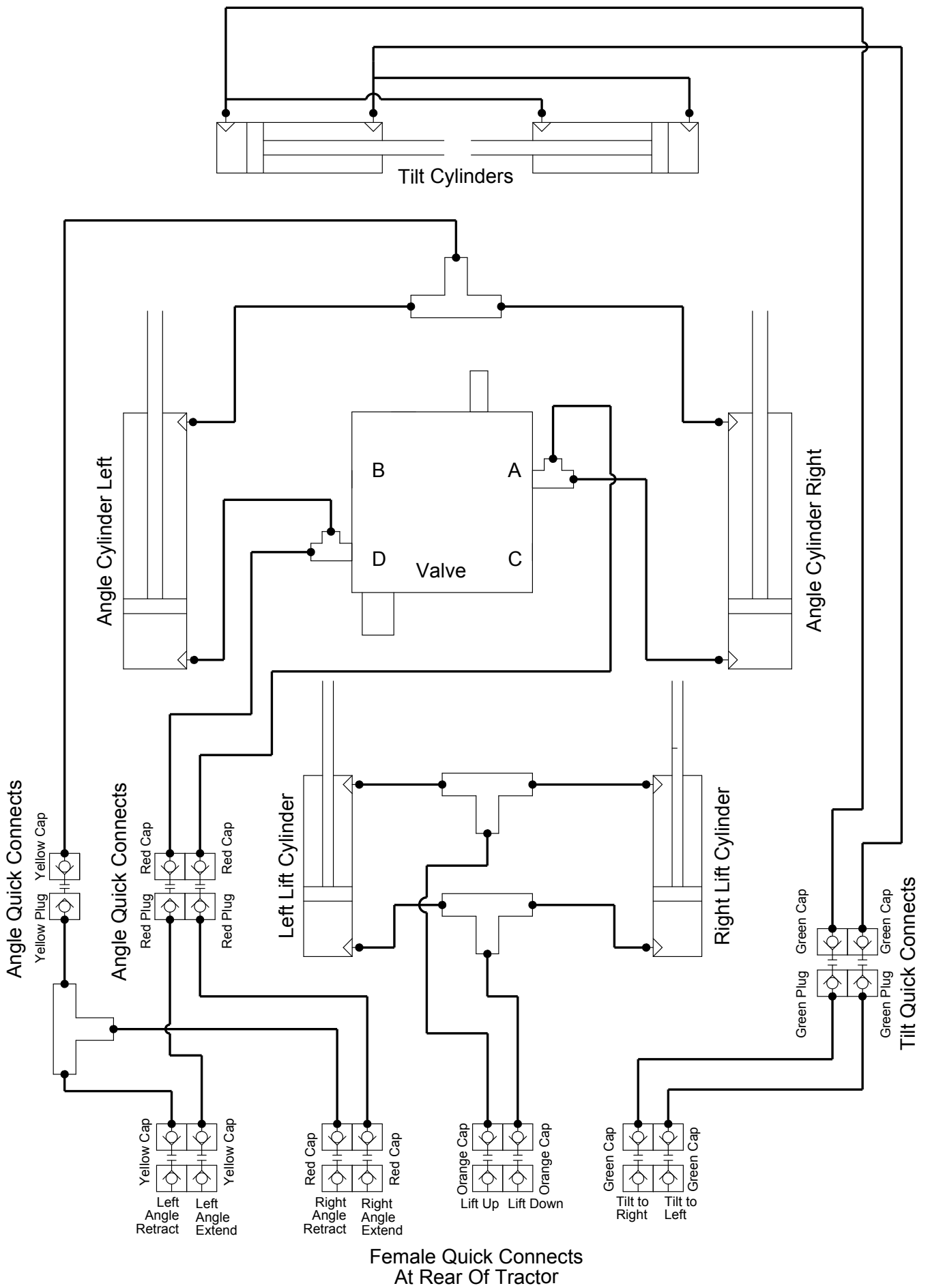


Note: To maximize life of electrical system and valve, turn power off when dozer is not being used.

**Instructions**

1. Locate "keyed and fused" 12 V power supply in cab of tractor.
2. Disconnect battery.
3. Connect the red wire to power and the black wire to ground.
4. Install switch in convenient place in cab.
5. Route wire harness from switch to the blade. (plug-in connector at blade)
6. Connect the switch to the wire harness.
7. Reconnect the battery.





Female Quick Connects  
At Rear Of Tractor

# Contact Us

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As always, if you have any questions about your Ag Pro Plus HD Dozer or other products made by Grouser, feel free to contact us.

## **Grouser Products**

755 2nd Ave NW - West Fargo, ND 58078

**Phone:** 1-800-747-6182

**Fax:** 1-701-282-8131

**E-mail:** [grouser@grouser.com](mailto:grouser@grouser.com)

**Website:** [www.grouser.com](http://www.grouser.com)



# Improvements

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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

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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 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.

