



12-20 (V6) - AG PRO PLUS

Owner's Manual

&

Parts Book

| |
|---------------|
| Purchase Date |
| Serial Number |
| Model Number |
| Tractor Model |
| Dealer |

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To The Owner

This manual contains information concerning the operation, adjustment, and maintenance of the 12-20 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

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 9.
- Inspect all tilt-ways for aggressive wear. See page 9 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 12-20 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 inside and outside of the dozer before storage. Use paint where necessary to prevent rust.
2. Check the dozer 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 |

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

Warning

When using the dozer blade, pay special attention to the area between the blade and the hood of the tractor. In the right conditions, material can build up. Grouser Products is not responsible for careless operation of the blade.

Unpacking Components

Unstrap and remove the lift frame, hoses, top arms, and any boxes of hardware from the undercarriage. If any components are missing, call Grouser.

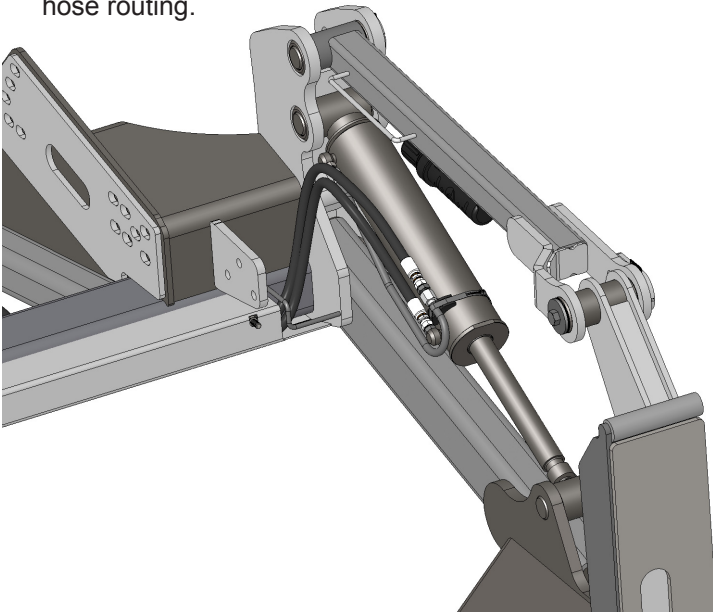
Undercarriage Installation

Install undercarriage per the tractor specific mounting instructions.

Assembling Lift Components

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.

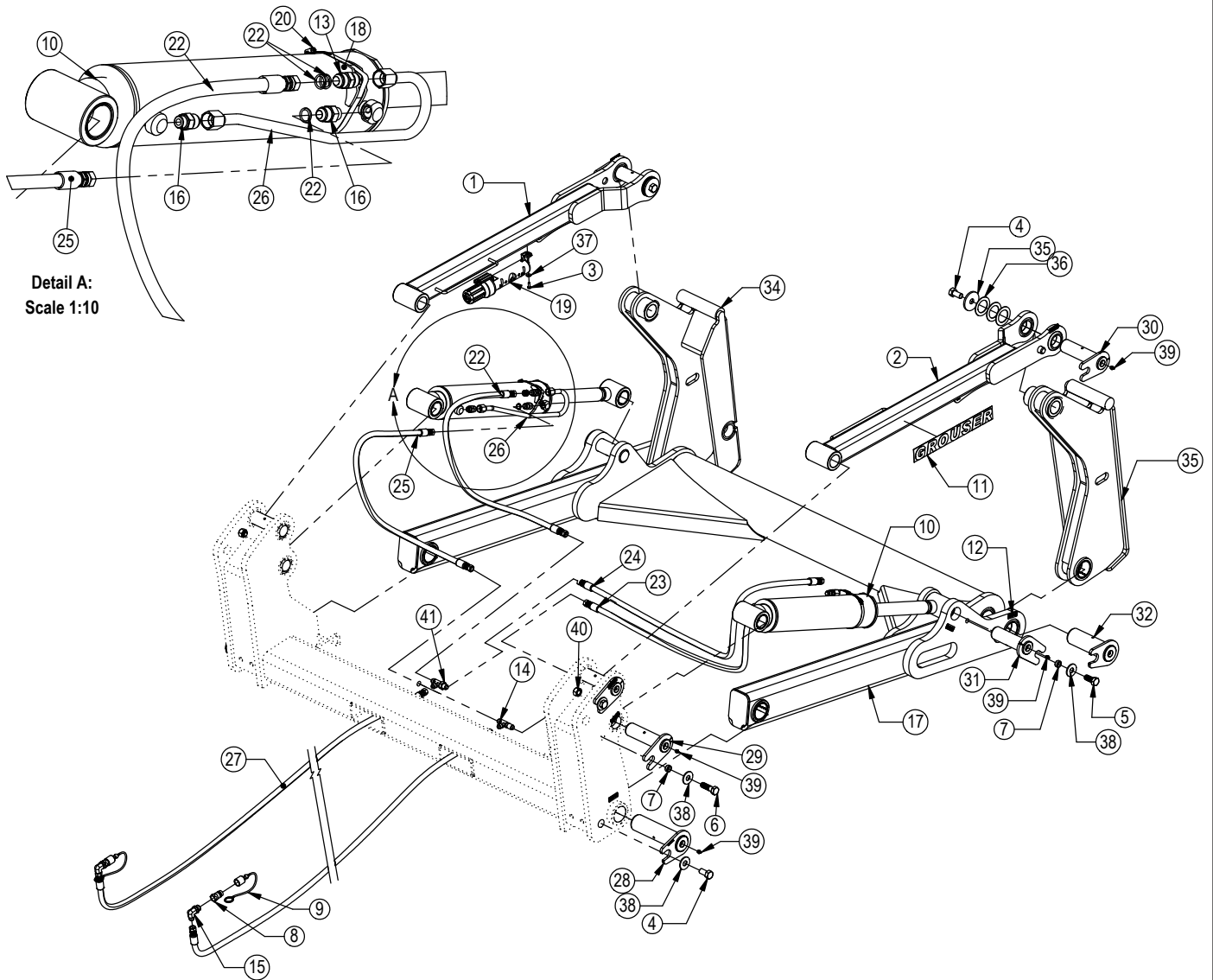
1. Remove all pins and fasteners on each side of the undercarriage and set aside for later installation.
2. Position the lift frame between the two plates on both sides of the undercarriage and align to the bottom holes.
3. Attach the lift frame, the base end of the lift cylinders, and the top arms to the undercarriage. Refer to Page 5 for proper components and orientation.
4. Attach the male quick attaches to the lift frame, and to the top arms. See Page 5 for proper orientation.
5. Tighten all fasteners.
6. Connect the lift hoses to the lift cylinders. The hoses are marked with 2 Orange Bands for the base end and 1 Orange Band for the rod end.
7. Verify that hoses are not twisted and protected from rubbing on any sharp edges. See picture below for proper hose routing.



Installing Hydraulic Coupler Components

Note: Refer to Diagram on Page 6 for further information on hose routing and hose positions. The quantity and location of the female couplers is determined by blade functionality.

8. Attach the coupler mounts to the left top arm and install the female quick couplers and 90° fittings.
9. Install each coupler into the designated hole on the coupler mount and fasten them in place with the coupler retainer plate, 3/8" x 3/4" bolts and 3/8" flange nuts.
10. Identify each remaining hose at the front of the undercarriage by the colored bands on the end of the hose and connect the hose to the corresponding 90° fitting and female coupler in the coupler mount.
11. If applicable, attach the wire harness to the coupler mount. Hold in place with a zip tie. Run the other end of the wire harness up into the cab of the tractor.
12. Locate the keyed and fused power supply. Connect the red wire to the power and the black to the ground. Install provided switch into an open switch hole in the right overhead console or another convenient place in the tractor.
13. Connect the wire harness to the switch.
14. Continue on Page 7 for instructions on how to remove the air from the system.



Detail A:
Scale 1:10

* Parts Not Shown

Item #A for Claas Tractors (24-19606)

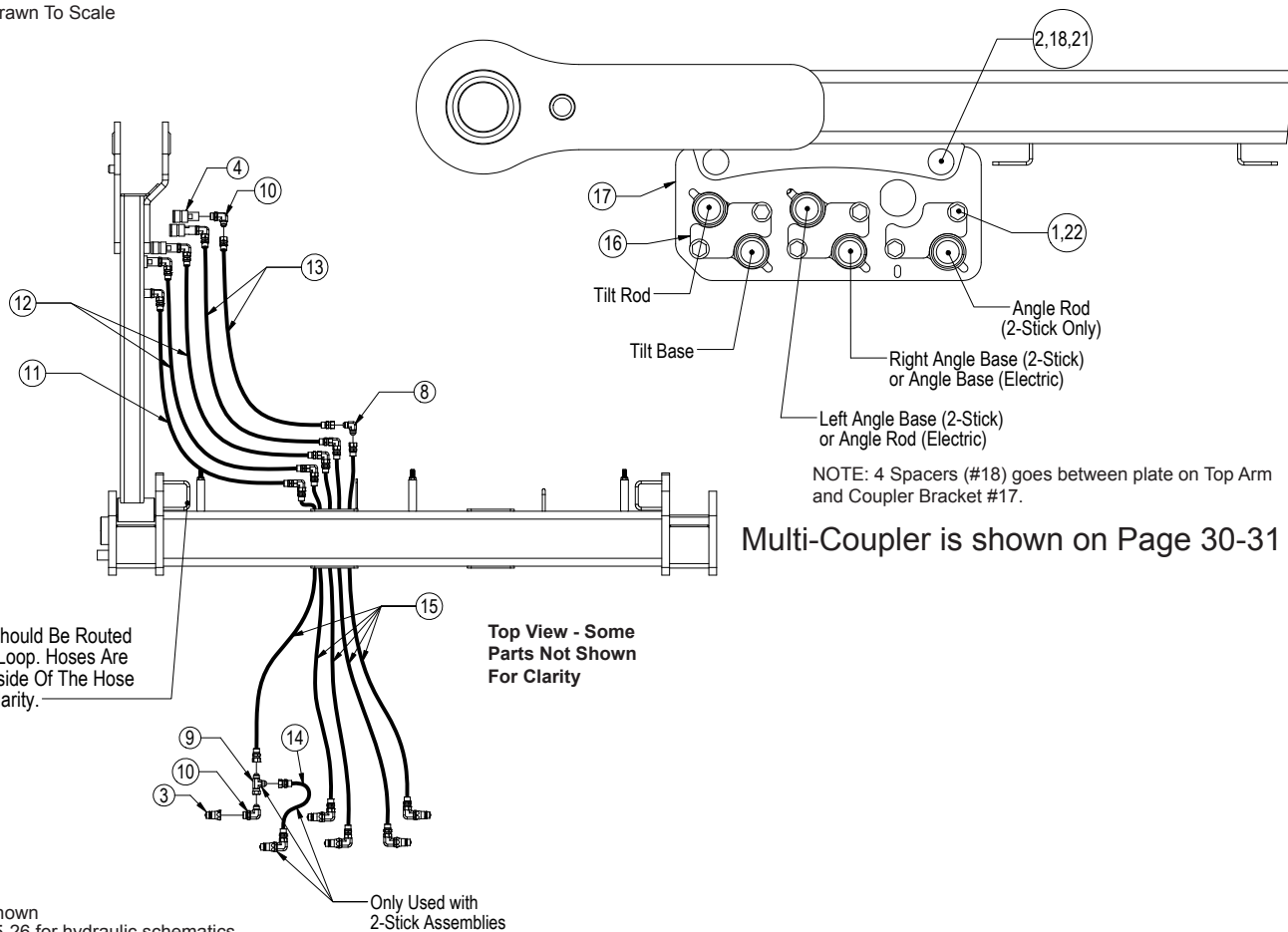
Item #B for Steiger (24-19601), New Holland (24-19601), and JD 9R Tractors (24-19602, 24-19603 or 24-19609)

Item #C for JD 9RX (24-19608), Versatile (24-19604) and Challenger Tractors (24-19607)

| NO. | QTY. | PART NO. | DESCRIPTION |
|-------|------|----------------|--|
| 1 | 1 | 11-18165-L R3 | Top Arm, Ag Pro + |
| 2 | 1 | 11-18165-R R3 | Top Arm, Ag Pro + |
| 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 | 8 | 19-13515 | Spacer, NR Pin |
| 8 | 2 | 25-34342 | Tappet Quick Coupler Male - Poppet Style |
| 9 | 2 | 25-3457 | Pioneer Dust Cap Lift (Orange) |
| 10 | 2 | 26-34745 | 4.5 x 18 Hydraulic Cylinder |
| 11 | 2 | 27-9504 | Decal, Grouser Horizontal |
| 12 | 12 | 27-9507 | Decal, Grease |
| 13 | 2 | 31-11699-10-10 | JIC Union |
| 14 | 2 | 31-34194 | Union Tee JIC |
| 15B,C | 2 | 31-34059 | Straight Thread Elbow 90° JIC x O-Ring |
| 15A | 2 | 31-6802-12-10 | Straight Thread Elbow 45° JIC x O-Ring |
| 16 | 4 | 31-6400-10-8 | Straight JIC x O-Ring |
| 17 | 1 | 32-18630 | Lift Frame, Ag Pro Plus |
| 18 | 2 | 34-12932 | Cylinder Saddle |
| 19 | 1 | 34-14961 | Manual Canister Small |
| 20 | 2 | 34-16578 | Hose Clamp (worm drive - 4.5) |
| 22 | 15 | 34-18889-OR | -12 Orange - Spiral Band |

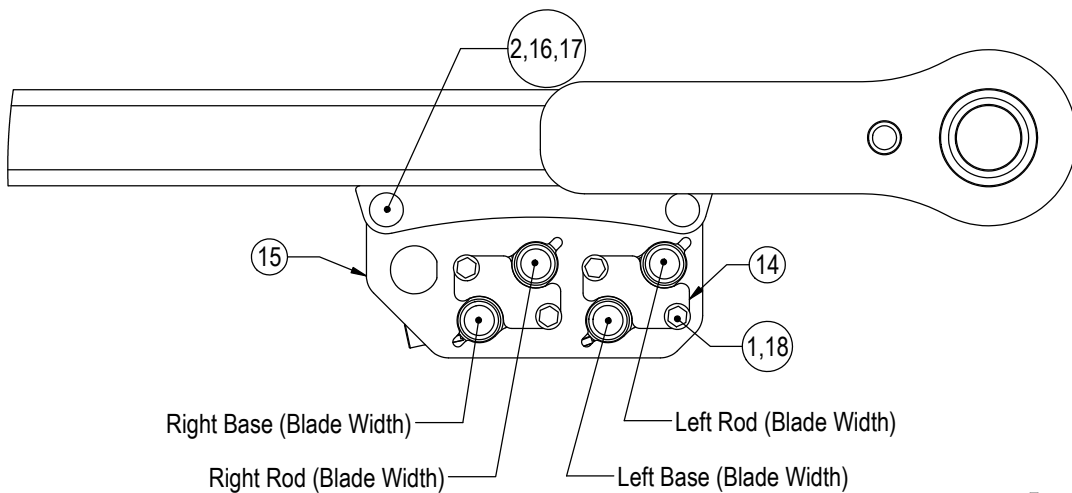
| NO. | QTY. | PART NO. | DESCRIPTION | |
|-------|------|-----------------|---|---|
| 22 | 1 | 35-12636-0515 | 51.5" x 5/8" -10JIC/-10JIC Hose | |
| 23 | 1 | 35-12636-0535 | 53.5" x 5/8" -10JIC/-10JIC Hose | |
| 24 | 1 | 35-12636-0665 | 66.5" x 5/8" -10JIC/-10JIC Hose | |
| 25 | 1 | 35-12636-0670 | 67" x 5/8" -10JIC/-10JIC Hose | |
| 26 | 2 | 35-18240 | Lift Cylinder Steel Line | |
| 27A,B | 2 | 35-12329-2930 | 293" (24.42") x 3/4" -12JIC/-12JIC Hose | |
| 27C | 2 | 35-18984-3200 | 320" (26.67") x 3/4" -12JIC/-12JIC Hose | |
| 28 | 2 | 43-14725 | Lift Frame / UC Pin | |
| 29 | 4 | 43-18120 | Top Pin Weld | |
| 30 | 2 | 43-18127 | Top Arm Pin Weld | |
| 31 | 2 | 43-18175 | Lift Cyl Pin Weld | |
| 32 | 2 | 43-18635 | Ag Pro Plus QA Pin | |
| 34 | 1 | 45-18130-L R5 | Ag Pro + Male QA | |
| 35 | 1 | 45-18130-R R5 | Ag Pro + Male QA | |
| 35 | 2 | 57-1530 | 3" OD X .75 ID X .25" HD Flat Washer | |
| 36 | 6 | 57-1811 | 2" Washer | |
| 37 | 2 | 57-20740 | 1/4" Flat Washer | |
| 38 | 10 | 57-20747 | 3/4" Flat Washer | |
| 39 | 12 | 58-9369 | Straight 1/8" NPT Grease Zerk | |
| 40 | 2 | 70-20607 | 3/4" Hex Center Lock Nut NC | |
| 41 | 1 | 70-20807 | 3/4" Hex Jam Nut NF | |
| | | Cylinder | Part No. | Description |
| | | 26-34745 | 49-12278 | Seal Kit 4.5" Bore x 2" Rod (658366) Nitrided Rod |

Hoses Not Drawn To Scale



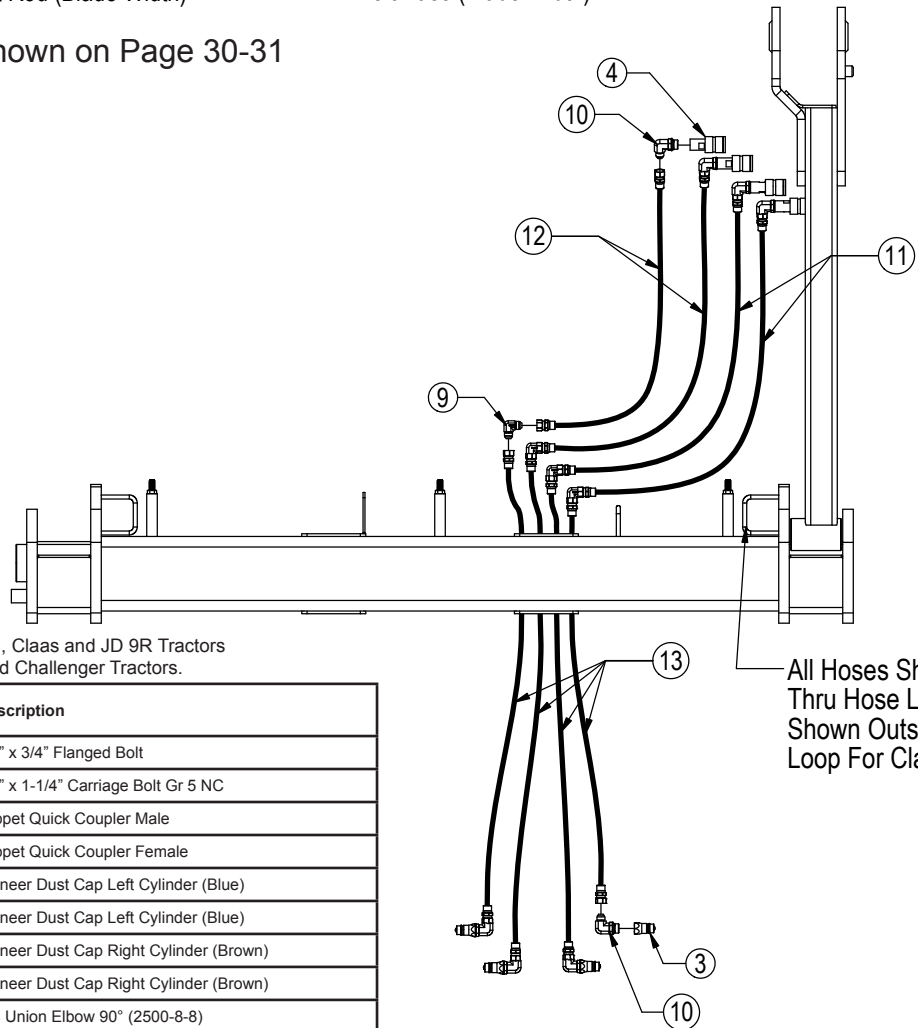
* Parts Not Shown
See Pages 25-26 for hydraulic schematics.
Item #A & B for Claas Tractors.
Item #C for Steiger, New Holland, Claas and JD 9R Tractors and Item #D for JD 9RX, Versatile and Challenger Tractors.

| 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 | 16-21127 | 1/2" x 1-3/4" 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 | 35-31132 | 69" x 1/2" -8JIC/-8JIC Hose W/Cordura | | 1 | - | 1 | - | - | - |
| 12 | 35-31133 | 72" x 1/2" -8JIC/-8JIC Hose W/Cordura | | 2 | 2 | 2 | 2 | - | - |
| 13 | 35-31134 | 75" x 1/2" -8JIC/-8JIC Hose W/Cordura | | 2 | 2 | - | - | 2 | - |
| 14 | 35-30121 | 35" x 1/2" -8JIC/-8JIC Hose | | 1 | - | 1 | - | - | - |
| 15D | 35-18953-3200 | 320" (26.67") x 1/2" -8JIC/-8JIC Hose w/180" Cordura | | 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 | 44-8490 | Spacer Bushing | | 4 | 4 | 4 | 4 | 4 | - |
| 19* | 69-18890 | Wire Harness - Valve to Disconnect | | - | 1 | - | 1 | - | - |
| 20* | 69-1531 | Wire Harness - Disconnect to Tractor | | - | 1 | - | 1 | - | - |
| 21 | 70-20604 | 1/2" Hex Center Lock Nut NC | | 2 | 2 | 2 | 2 | 2 | - |
| 22 | 70-20622 | 3/8" Flange Hex Nut NC | | 6 | 4 | 4 | 2 | 2 | - |



Right Base (Blade Width) Left Rod (Blade Width)
 Right Rod (Blade Width) Left Base (Blade Width)

Multi-Coupler is shown on Page 30-31



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

| Item No. | Qty. | Part No. | Description |
|----------|------|---------------|--|
| 1 | 4 | 16-35C612 | 3/8" x 3/4" Flanged Bolt |
| 2 | 2 | 16-21125 | 1/2" x 1-1/4" Carriage Bolt Gr 5 NC |
| 3 | 4 | 25-34342 | Tappet Quick Coupler Male |
| 4 | 4 | 25-34321 | Tappet Quick Coupler Female |
| 5* | 2 | 25-3403 | Pioneer Dust Cap Left Cylinder (Blue) |
| 6* | 2 | 25-3404 | Pioneer Dust Cap Left Cylinder (Blue) |
| 7* | 2 | 25-3405 | Pioneer Dust Cap Right Cylinder (Brown) |
| 8* | 2 | 25-3406 | Pioneer Dust Cap Right Cylinder (Brown) |
| 9 | 4 | 31-15199-8-8 | JIC Union Elbow 90° (2500-8-8) |
| 10 | 8 | 31-34051 | Straight Thread Elbow 90° JIC x O-Ring (6801-8-10) |
| 10A | 4 | 31-34051 | Straight Thread Elbow 90° JIC x O-Ring (6801-8-10) |
| 10B | 4 | 31-6802-08-10 | Straight Thread Elbow 45° JIC x O-Ring (6802-08-10) |
| 11 | 2 | 35-31133 | 72" x 1/2" -8JIC/-8JIC Hose W/Cordura |
| 12 | 2 | 35-31134 | 75" x 1/2" -8JIC/-8JIC Hose W/Cordura |
| 13D | 4 | 35-18953-3200 | 320" (26.67") x 1/2" -8JIC/-8JIC Hose w/180" Cordura |
| 13C | 4 | 35-30183 | 293" (24.42") x 1/2" -8JIC/-8JIC Hose w/165" Cordura |
| 14 | 2 | 44-14734 | Female Coupler Retainer |
| 15 | 1 | 44-16236 | Female Coupler Mount Bracket |
| 16 | 4 | 44-8490 | Spacer Bushing |
| 17 | 2 | 70-20604 | 1/2" Hex Center Lock Nut NC |
| 18 | 4 | 70-20622 | 3/8" Flange Hex Nut NC |

Initial Startup Instructions

Prior to operating the blade system, all air must be purged from the hydraulic system. Follow the steps below for each function on your blade.

Lift Function:

1. With the lift frame down and blocked, loosen the fittings on both ends of the lift cylinders.
2. Actuate the raise function to supply oil to the rod end of the cylinders.
3. When oil starts to flow from the fittings, stop oil flow, and tighten the fitting on the rod end of the lift cylinders.
4. Continue to flow oil until the system is fully raised and then block the lift frame.
5. Actuate the function in the opposite direction to supply oil to the base end of the lift cylinders.
6. When all air is removed from the lift system, stop oil flow and tighten the fittings on the base end of the lift cylinders.
7. Raise lift system and remove blocks. Cycle up and down 5 more times.
8. Check tractor oil level and fill if necessary.
9. Continue with connecting the blade on Page 8.

Blade Width Function:

1. Loosen the fittings on the rod and base end of the blade width cylinders.
2. Actuate the function to extend the right cylinder and supply oil to the base end.
3. When oil starts to flow from the fitting, stop oil flow, and tighten the fitting on the base end of the right cylinder.
4. Fully extend the right cylinder.
5. Actuate the function in the opposite direction to supply oil to the rod end of the right cylinder.
6. When all air is removed from the system, stop oil flow and tighten the fitting on the rod end of the right cylinder.
7. Repeat Steps 2-7 for the left cylinder.
8. Cycle both cylinders in and out 5 more times.
9. Check tractor oil level and fill if necessary.

Tilt Function:

1. Use a lift or jack to tilt the blade system until the left side is fully up, loosen the fittings on the rod and base end of both tilt cylinders.
2. Actuate the tilt function to extend the right tilt cylinder and supply oil to the base end of the right cylinder and to the rod end of the left cylinder.
3. When oil starts to flow from the fittings, stop oil flow, and tighten the fitting on the base end of the right cylinder and rod end of the left cylinder.
4. Remove the lift or jack.
5. Continue to actuate the tilt function until oil flows out of the remaining open ports.
6. Actuate the tilt function in the opposite direction.
7. When all air is removed from the tilt system, stop oil flow, and tighten the remaining fittings on the cylinders.
8. Cycle both cylinders in and out 5 more times.
9. Check tractor oil level and fill if necessary.

Angle Function (2-Lever System):

1. Loosen the fittings on the rod and base end of the left angle cylinder.
2. Actuate the angle function to extend the left angle cylinder and supply oil to the base end of the left cylinder.
3. When oil starts to flow from the fittings, stop oil flow, and tighten the fitting on the base end of the left cylinder.
4. Continue to actuate the left angle function until oil flows out of the remaining open ports on the left cylinder.
5. Actuate the left angle function in the opposite direction.
6. When all air is removed from the left angle system, stop oil flow, and tighten the remaining fittings on the left angle cylinder.
7. Repeats Steps 1-6 for the right angle cylinder
8. Cycle the left cylinder in and out 5 more times and then the right cylinder in and out 5 more times.
9. Check tractor oil level and fill if necessary.

Run the blade through all the functions. If any function does not operate correctly, refer to corresponding section above and re-bleed. If problem still persists, call Grouser Products.

NOTE: If blade does not function to the operator's liking or preferred direction, swap the couplers at the rear of the tractor or control the function location in the cab.

Connecting and Disconnecting the Blade

To Connect:

1. Lift the locking latch and pull the quick attach lock handle on the left side of the angle system to open the quick attach system. Refer to Page #16-17 for further clarification on the quick attach system.
2. Drive the tractor forward slowly until the top edge of the male quick attach is under the top hook of the female quick attach already on the blade assembly.
3. Raise the lift system until the male quick attach engages the female. Continue to raise the lift system until the blade is off the ground and the female quick attaches are against the front of the male quick attaches.
4. Shut off the tractor engine and set the parking brake.
5. Push the quick attach lock handle and lift the locking latch to lock the handle in place.
6. Connect hydraulics couplers on the top arm. Refer to Page #6 for proper locations of all functions.
7. 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.
8. Refer to the Initial Startup Instructions on Page 7 before operating any function on the blade.

To Disconnect:

1. Place a block under the cutting edge to provide the proper blade angle for disconnecting the quick attach. You will need about 5-6" of height.
2. Set the blade on the ground.
3. Unhook all of the couplers on the top arm.
4. Lift the locking latch and pull the quick attach lock handle to unlock the quick attach system.
5. Slowly lower the lift system to disengage the blade.
6. Slowly back away from the blade. When lift system is clear from the blade, raise the lift system.

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.

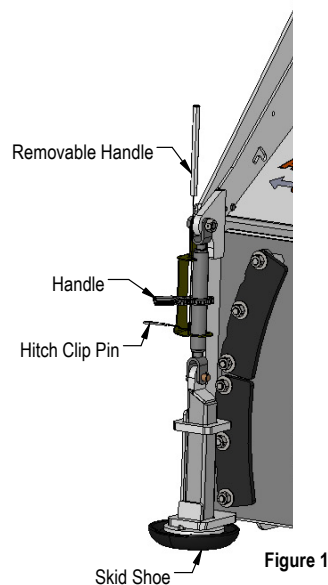


Figure 1

Tilt Plate Adjustment:

1. Remove nuts and each tilt plate separately.
- Note: Don't remove all of the nuts at the same time.
2. Install or remove washers as needed to adjust tilt-way clearance to have 1/16" - 1/8" of clearance.
 3. Once the tilt-way clearance is set, tighten nuts to 640 ft-lbs.

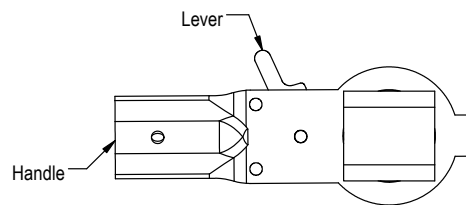
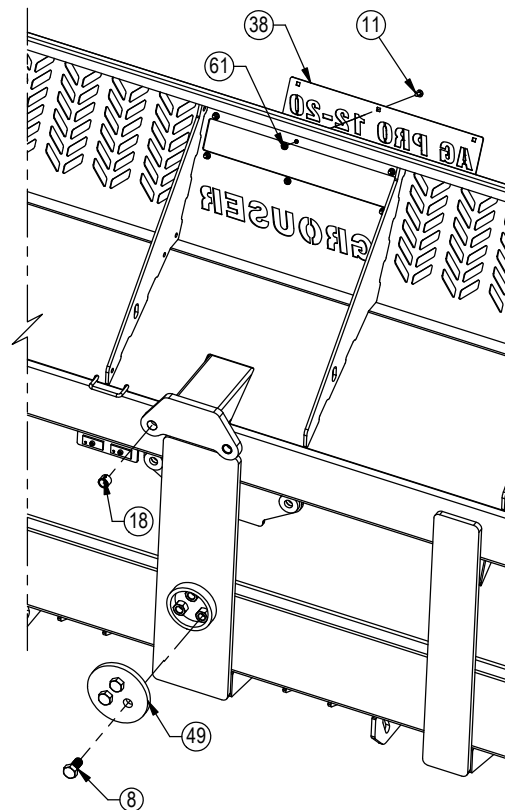
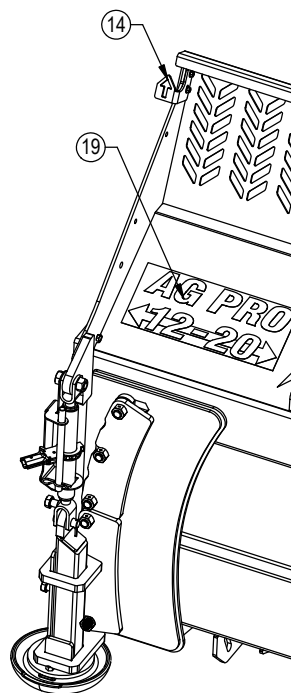
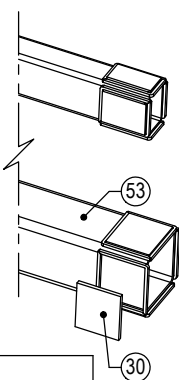
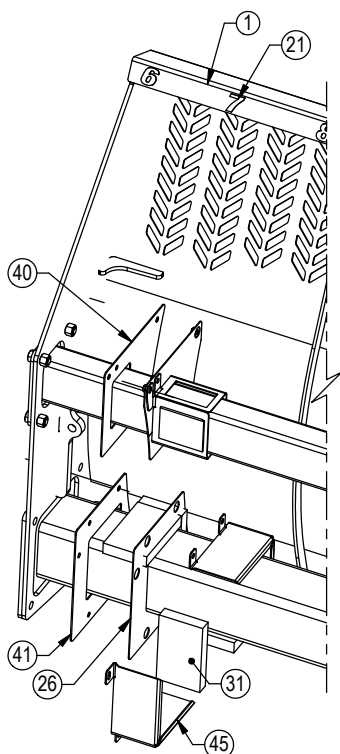
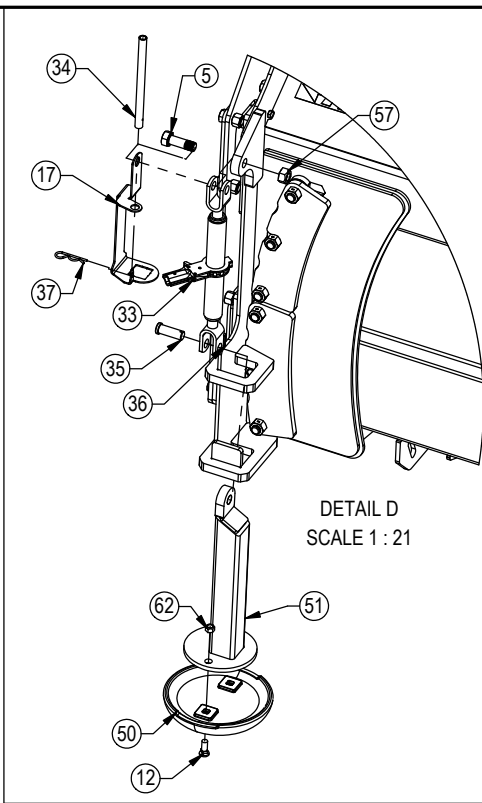


Figure 2



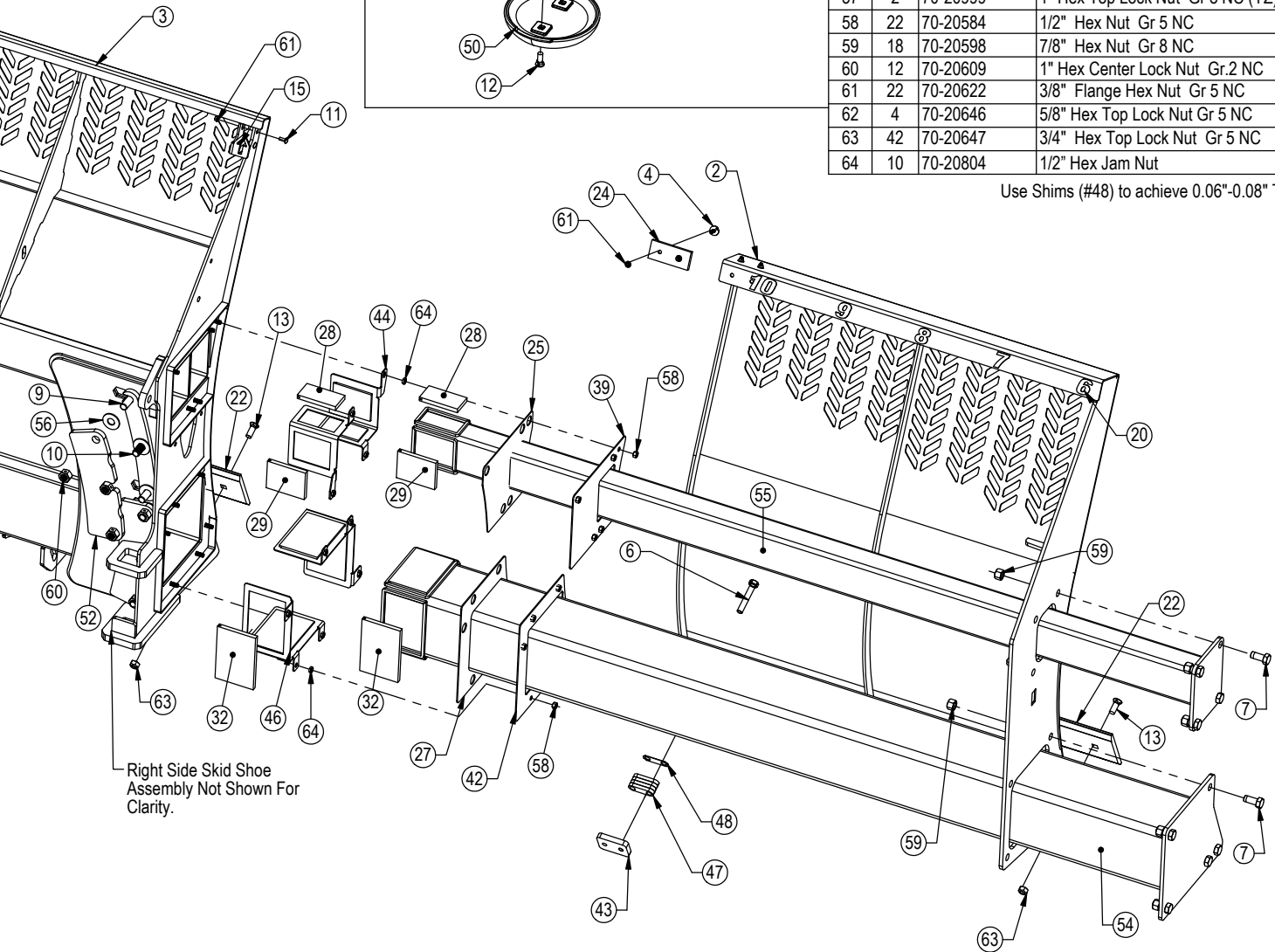
* Part Not Shown

| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|---------------|--|
| 1 | 1 | 15-16855-L | 12-20 Blade End Weld, Left |
| 2 | 1 | 15-16855-R | 12-20 Blade End Weld, Right |
| 3 | 1 | 15-17570R5 | XAXT Blade Weld |
| 4 | 12 | 16-16305 | 3/8" x 1.25" Flanged Elevator Bolt |
| 5 | 2 | 16-18945 | 1" x 3" Hex Bolt Gr 5 NC - Short Thread |
| 6 | 4 | 16-20517 | 3/4" X 4-1/2" Hex Bolt Gr. 8 NC |
| 7 | 18 | 16-20538 | 7/8" x 2" Hex Bolt Gr 8 NC |
| 8 | 3 | 16-20558 | 1" x 2" Hex Bolt Gr. 8 NC |
| 9 | 8 | 16-20561 | 1" x 2-3/4" Hex Bolt Gr.8 NC |
| 10 | 4 | 16-20563 | 1" x 3-1/4" Hex Bolt Gr.8 NC |
| 11 | 10 | 16-21064 | 3/8" x 1" Carriage Bolt Gr 5 NC |
| 12 | 4 | 16-21666 | 5/8" x 1-3/4" Plow Bolt Gr 5 NC |
| 13 | 42 | 16-21748 | 3/4" X 2" Plow Bolt Gr 8 NC |
| 14 | 1 | 18-16304-L | Bracket, Left Location |
| 15 | 1 | 18-16304-R | Bracket, Right Location |
| 16* | 1 | 18-18498-L R2 | Ratchet Keeper - Left |
| 17 | 1 | 18-18498-R R2 | Ratchet Keeper - Right |
| 18 | 2 | 19-7774 | 1" x 1" Spring Bushing |
| 19 | 1 | 27-15598 | Decal, AG PRO 12-20 |
| 20 | 1 | 27-15612-R | Ag Pro 12-20 Width Decal - 10-6 (Right Side) |
| 21 | 1 | 27-15612-L | Ag Pro 12-20 Width Decal - 6-10 (Left Side) |
| 22 | 3 | 29-11118-5 | 5' - 3/4"x 8" Cutting Edge |
| 23* | 1 | 29-11118-6 | 6' - 3/4"x 8" Cutting Edge |
| 24 | 6 | 34-16158 | Bearing, 2.625 x 6.00 W/Holes |
| 25 | 2 | 34-16419 | Top Seal |
| 26 | 1 | 34-16420 | 8" Tube Seal |
| 27 | 1 | 34-16421 | 10" Tube Seal |
| 28 | 8 | 34-16425 | Top Narrow UHMW |
| 29 | 8 | 34-16426 | Top Wide UHMW |
| 30 | 4 | 34-16427 | 8" Inner UHMW |
| 31 | 4 | 34-16428 | 8" Outer UHMW |
| 32 | 8 | 34-16429 | 10" UHMW |
| 33 | 2 | 34-17565 | Skid Shoe Ratchet Jack (S01054100) |



| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|-------------|--|
| 34 | 2 | 34-17567 | Handle, Ratchet Jack |
| 35 | 2 | 43-18463 | 1" x 2.75" Pin (S57190400) |
| 36 | 2 | 43-18943 | 3/16" x 1-1/2" Cotter Pin |
| 37 | 2 | 43-7767 | Cylinder Pin Clip |
| 38 | 1 | 44-15605 | Ag Pro 12-20 Name Plate - (6.2" x 25.6") |
| 39 | 1 | 44-16401 R1 | Plate, Top Cover Right |
| 40 | 1 | 44-16402 R1 | Plate, Top Cover Left |
| 41 | 1 | 44-16403 | Plate, 8" Cover |
| 42 | 1 | 44-16404 R1 | Plate, 10" Cover |
| 43 | 2 | 44-16417 R1 | Plate, Slider |
| 44 | 4 | 44-16422 | Top Outer Retainer |
| 45 | 2 | 44-16423 R1 | 8" Outer Retainer |
| 46 | 2 | 44-16424 | 10" Outer Retainer |
| 47 | 2 | 44-16525 | Standoff |
| 48 | 6 | 44-16977 R1 | Plate, Slider Standoff Shim |
| 49 | 1 | 44-3749R1 | Backdrag Brace Plate |
| 50 | 2 | 50-15458 | 12" Round Mushroom Skid Shoe |
| 51 | 2 | 50-18775 | Slider Skid Shoe Weld |
| 52 | 4 | 52-18299R1 | Tilt Plate |
| 53 | 1 | 53-16408 R1 | 8 x 8 Tube Weld |
| 54 | 1 | 53-16410 R1 | 10 x 10 Tube Weld |
| 55 | 2 | 53-16990 | 4 x 6 Tube Weld |
| 56 | 12 | 57-20749 | 1" Flat Washer |
| 57 | 2 | 70-20999 | 1" Hex Top Lock Nut Gr 8 NC (YZ) |
| 58 | 22 | 70-20584 | 1/2" Hex Nut Gr 5 NC |
| 59 | 18 | 70-20598 | 7/8" Hex Nut Gr 8 NC |
| 60 | 12 | 70-20609 | 1" Hex Center Lock Nut Gr.2 NC |
| 61 | 22 | 70-20622 | 3/8" Flange Hex Nut Gr 5 NC |
| 62 | 4 | 70-20646 | 5/8" Hex Top Lock Nut Gr 5 NC |
| 63 | 42 | 70-20647 | 3/4" Hex Top Lock Nut Gr 5 NC |
| 64 | 10 | 70-20804 | 1/2" Hex Jam Nut |

Use Shims (#48) to achieve 0.06"-0.08" Tolerance



Hydraulic Angle System Operating Instructions

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

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 exceeds 2,000 psi. 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. Refer to the Relief Valve Instructions below for possible adjustments.

Relief Valve Instructions

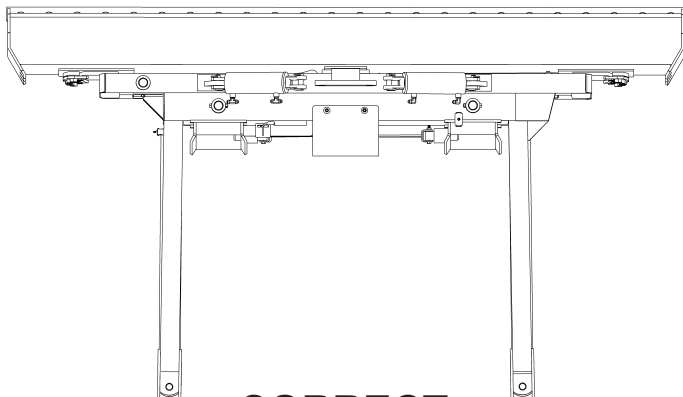
Set the safety relief valve at a higher pressure than tractor: To increase the pressure of the relief valve, install a 0-5,000 psi pressure gauge into the base end of right angle cylinder (see page 30). Loosen the jam nut on the safety valve and tighten the Allen screw 1/2 turn. Next, extend the right 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.

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.

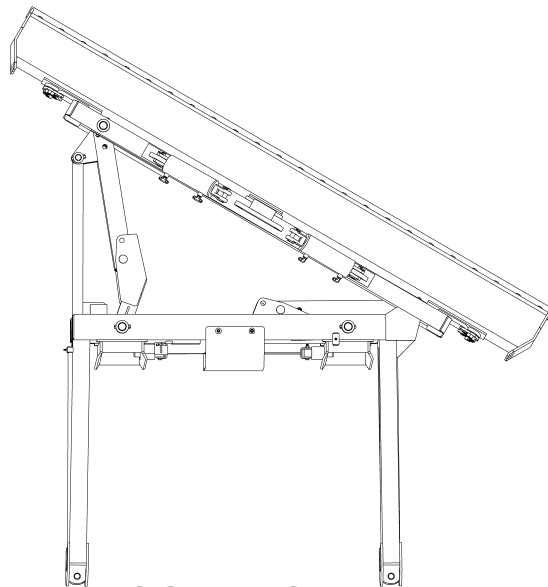
CAUTION: Do not bypass the safety relief valve and plumb each cylinder to separate valves on the tractor.

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.

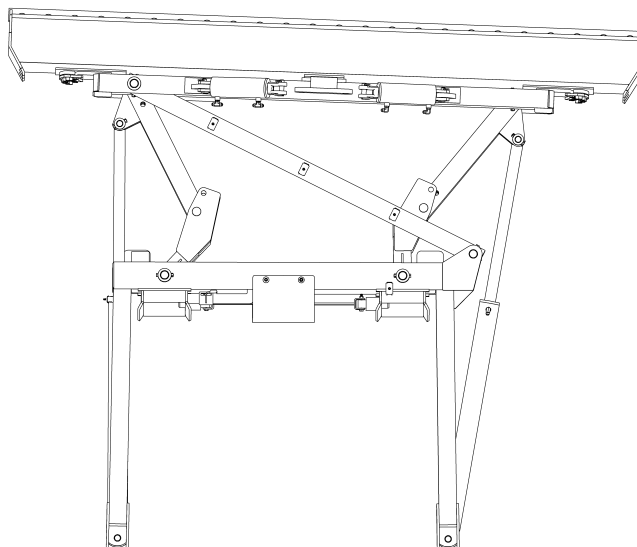
Please contact Grouser Products with any questions by:
Phone - 701-282-7710 or 800-747-6182; Fax - 701-282-8131



CORRECT

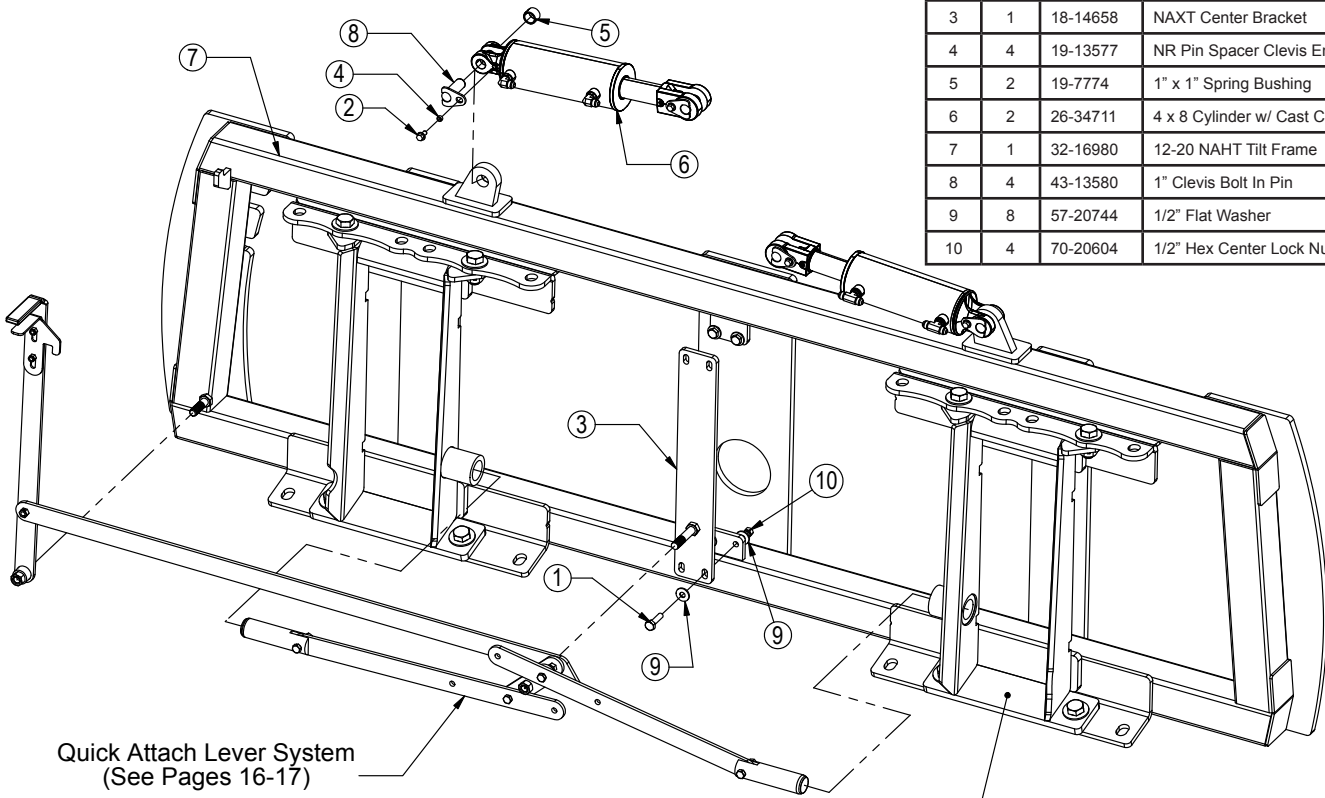


CORRECT
(Left or Right)



INCORRECT

| Item No. | Qty. | Part No. | Description |
|----------|------|-----------|------------------------------------|
| 1 | 4 | 16-20128 | 1/2" x 2" Hex Bolt Gr 5 NC |
| 2 | 4 | 16-35C612 | 3/8" x 3/4" Flanged Bolt |
| 3 | 1 | 18-14658 | NAXT Center Bracket |
| 4 | 4 | 19-13577 | NR Pin Spacer Clevis End |
| 5 | 2 | 19-7774 | 1" x 1" Spring Bushing |
| 6 | 2 | 26-34711 | 4 x 8 Cylinder w/ Cast Clevis Ends |
| 7 | 1 | 32-16980 | 12-20 NAHT Tilt Frame |
| 8 | 4 | 43-13580 | 1" Clevis Bolt In Pin |
| 9 | 8 | 57-20744 | 1/2" Flat Washer |
| 10 | 4 | 70-20604 | 1/2" Hex Center Lock Nut Gr 2 NC |

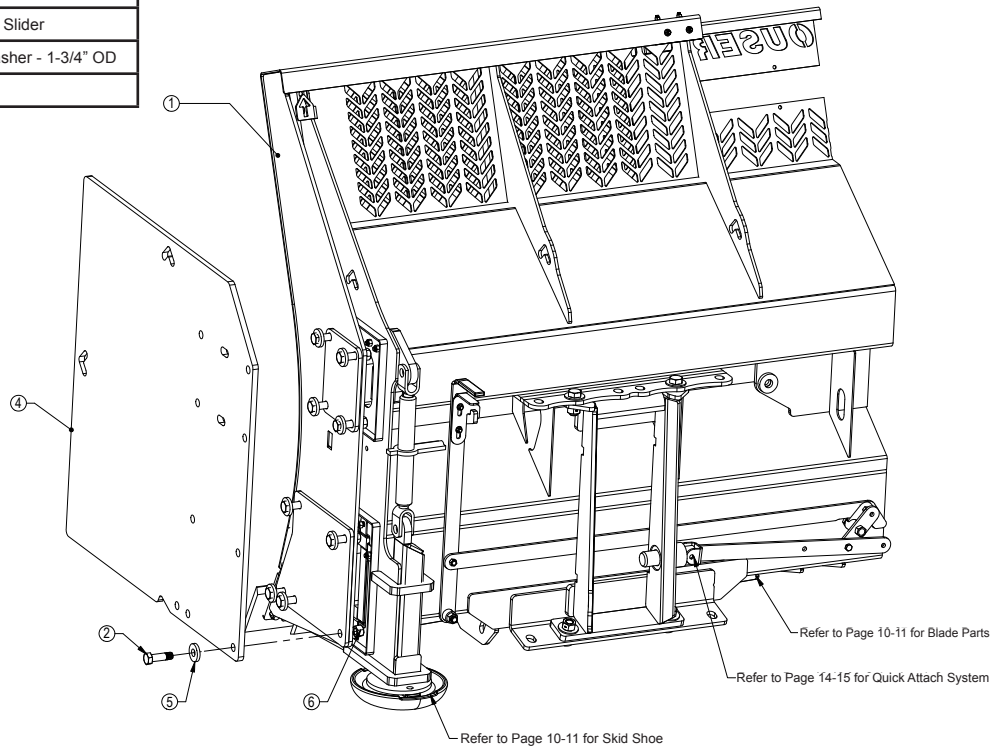


Quick Attach Lever System
(See Pages 16-17)

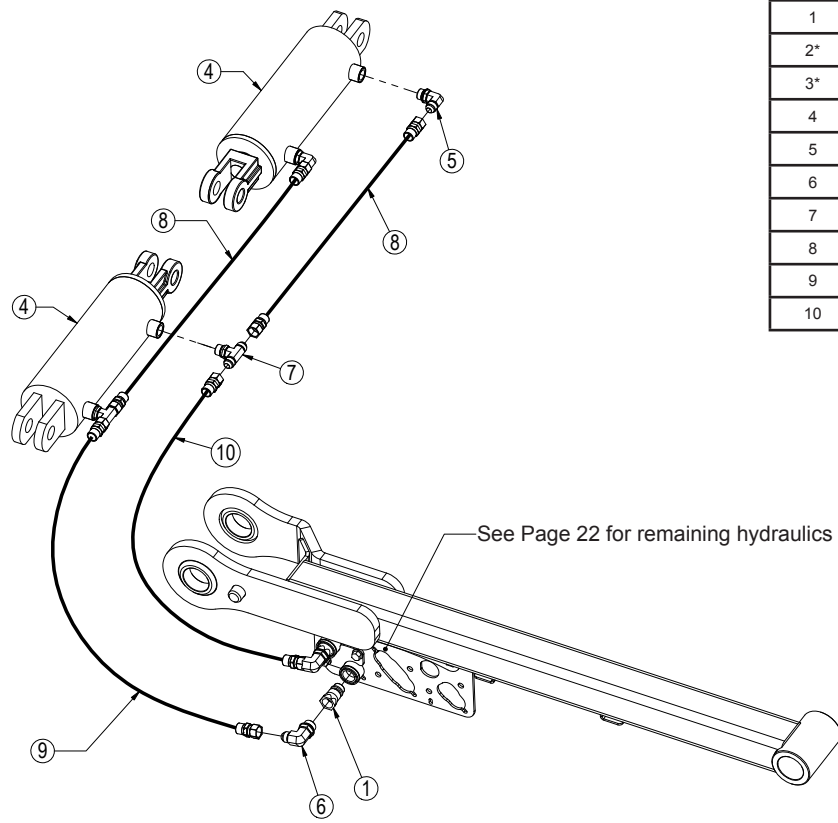
Quick Attach (See Pages 16-17)

| Item No. | Qty. | Part No. | Description |
|----------|------|----------|---|
| 1 | 1 | 15-17590 | NANT - Blade Weld 12-20 Slider (V6) |
| 2 | 18 | 16-20542 | 7/8" X 3" Hex Bolt Gr 5 NC |
| 3* | 2 | 44-16470 | Box End Plate 12-20 Slider |
| 4 | 2 | 44-16480 | Silage Box End Plate 12-20 Slider |
| 5 | 18 | 57-20758 | 7/8" SAE Hardened Flat Washer - 1-3/4" OD |
| 6 | 18 | 70-20598 | 7/8" Hex Nut Gr 8 NC |

* Parts Not Shown



Hoses Not Drawn To Scale

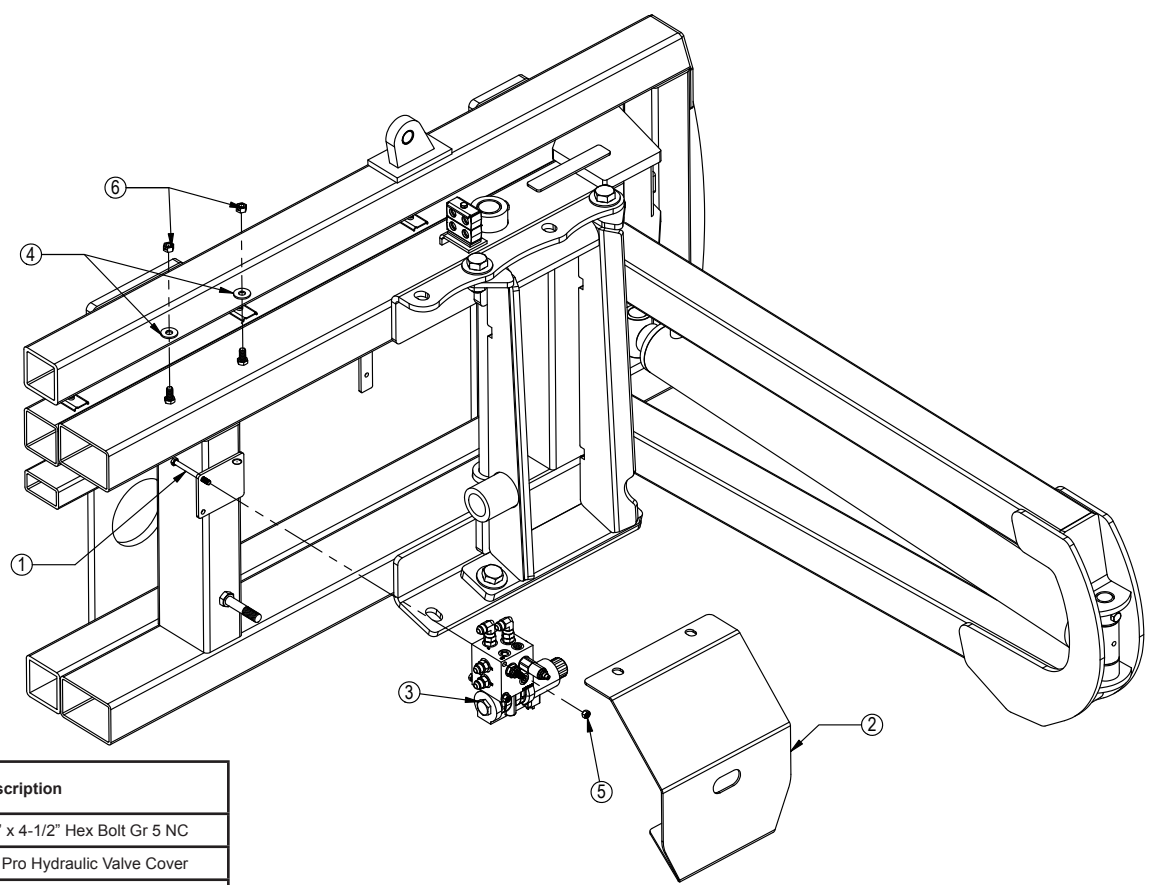


| Item No. | Qty. | Part No. | Description |
|----------|------|----------|--|
| 1 | 2 | 25-34342 | Tappet Quick Coupler Male |
| 2* | 2 | 25-3453 | Pioneer Dust Cap Tilt (Green) |
| 3* | 2 | 25-3454 | Pioneer Dust Plug Tilt (Green) |
| 4 | 2 | 26-34711 | 4 x 8 Cylinder W/ Cast Clevis Ends |
| 5 | 2 | 31-34050 | Straight Thread Elbow 90° JIC x O-Ring (6801-8-8) |
| 6 | 2 | 31-34051 | Straight Thread Elbow 90° JIC x O-Ring (6801-8-10) |
| 7 | 2 | 31-34060 | Branch Tee JIC x O-Ring (6803-8-8-8) |
| 8 | 2 | 35-30022 | 39" x 3/8" -8JIC/-8JIC Hose |
| 9 | 1 | 35-31184 | 37" x 1/2" -8JIC/-8JIC Hose w/ Cordura (3.5M) |
| 10 | 1 | 35-31185 | 47" x 1/2" -8JIC/-8JIC Hose w/ Cordura (3.5M) |

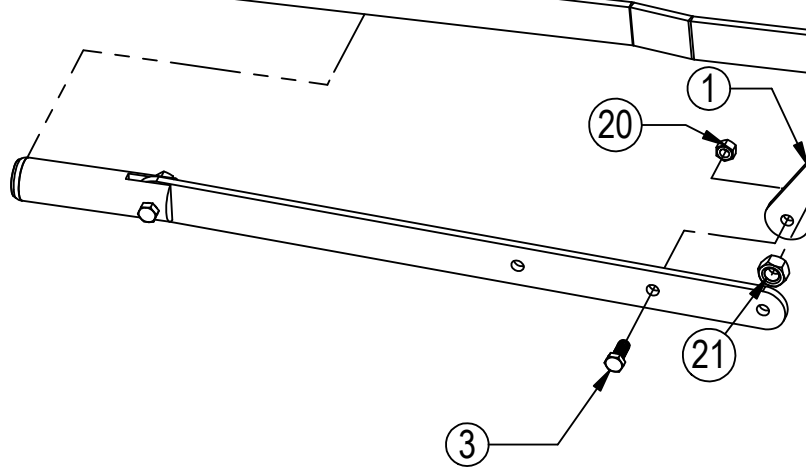
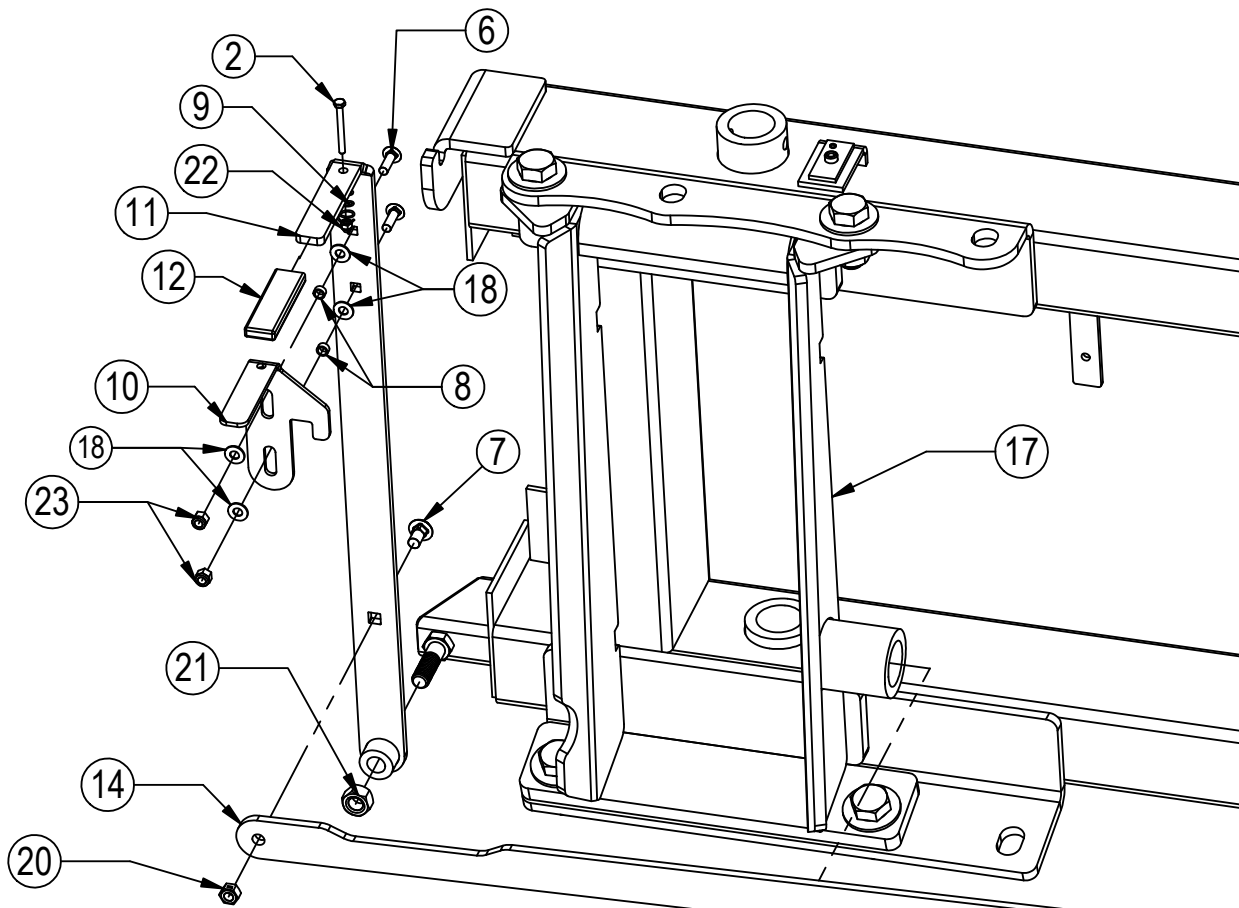
* Parts Not Shown

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 |
|-----------------|----------|---|
| 26-34711 | 49-12271 | Seal Kit 4 x 8 (647135) Nitrided Rod, Clevis Ends |



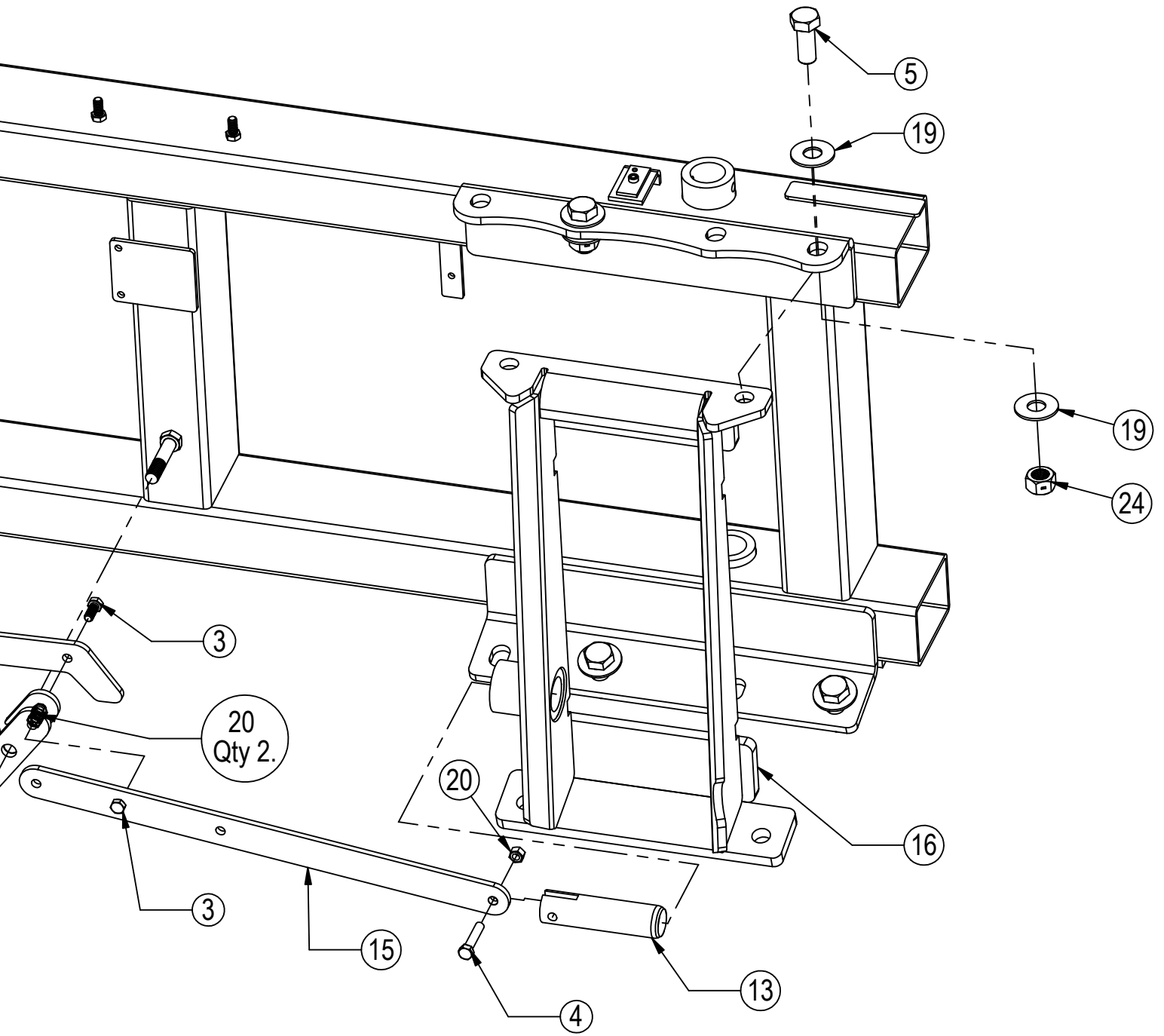
| Item No. | Qty. | Part No. | Description |
|----------|------|----------|----------------------------------|
| 1 | 2 | 16-20077 | 3/8" x 4-1/2" Hex Bolt Gr 5 NC |
| 2 | 1 | 18-1701 | AG Pro Hydraulic Valve Cover |
| 3 | 1 | 56-13305 | Hydraulic Angle Valve |
| 4 | 2 | 57-20744 | 1/2" Flat Washer |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



Some Parts Hidden For Clarity

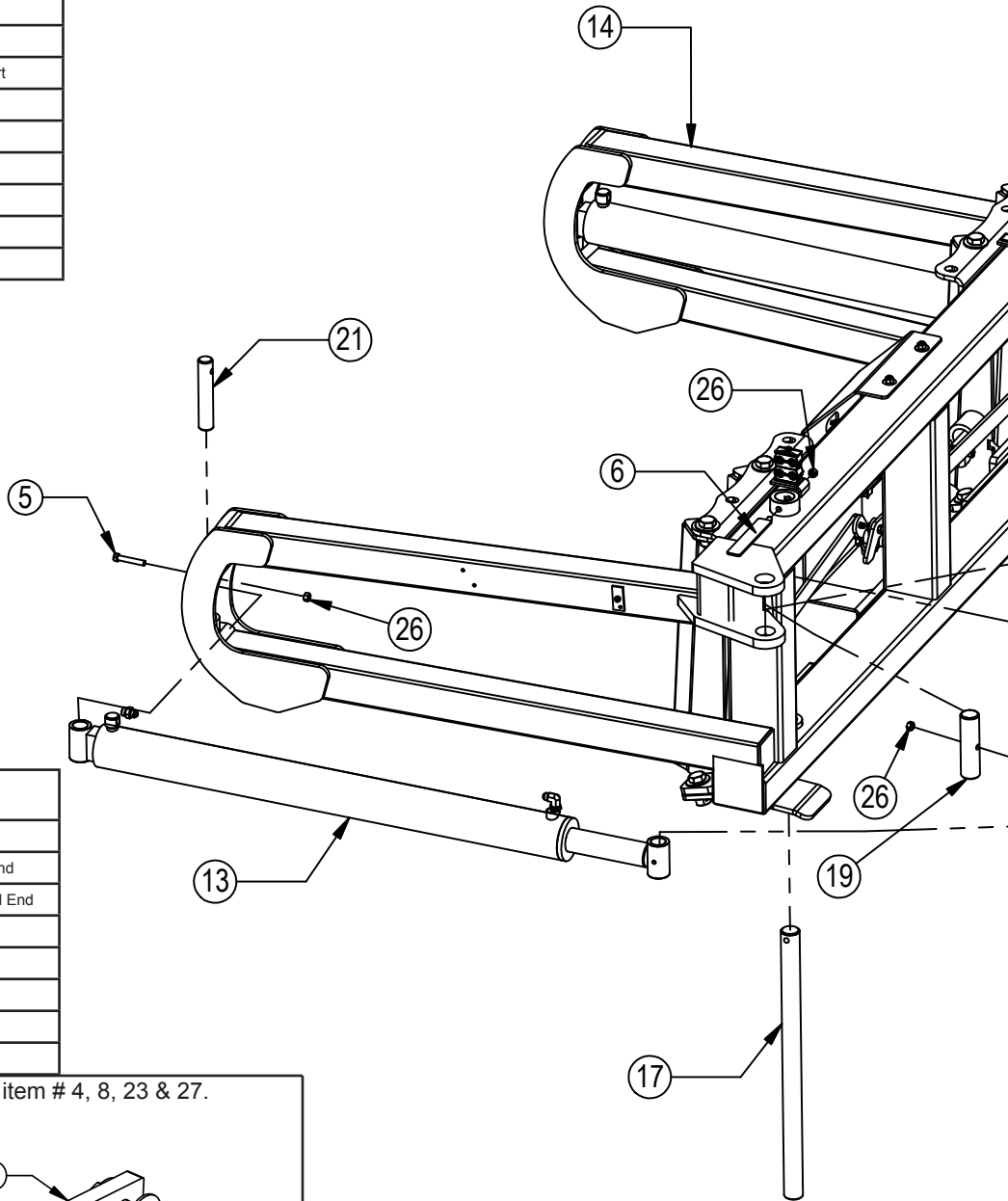
Item #A for HAHT & HANT and Item #B for NAHT & NANT

| Item No. | Qty. | Part No. | Description |
|----------|------|------------|--------------------------------------|
| 1 | 1 | 11-3049 | Bell Crank Weld |
| 2 | 1 | 16-20011 | 1/4" x 2-3/4" Hex Bolt Gr 5 NC |
| 3 | 3 | 16-20125 | 1/2" x 1-1/4" Hex Bolt Gr 5 NC |
| 4 | 2 | 16-20130 | 1/2" x 2-1/2" 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 | 43-18965 | QA Lock Pin |
| 14A | 1 | 44-14709 | Pin Puller Link Plate |
| 14B | 1 | 44-14662 | Pin Puller Link Plate |
| 15 | 2 | 44-18970 | Pin Pulling Arm |
| 16 | 1 | 45-14710-R | Female Bolt On Quick Attach, Right |
| 17 | 1 | 45-14710-L | Female Bolt On Quick Attach, Left |
| 18 | 4 | 57-19696 | 3/8" Nylon Washer |
| 19 | 16 | 57-20819 | 1" Flat Washer Heavy Duty Gr 8 (USS) |
| 20 | 6 | 70-20604 | 1/2" Hex Center Lock Nut Gr 2 NC |
| 21 | 2 | 70-20607 | 3/4" Hex Center Lock Nut Gr 2 NC |
| 22 | 1 | 70-20610 | 1/4" Nyloc Hex Nut Gr 5 NC |
| 23 | 2 | 70-20622 | 3/8" Flange Nut |
| 24 | 8 | 70-20999 | 1" Hex Top Lock Nut Gr 8 NC |



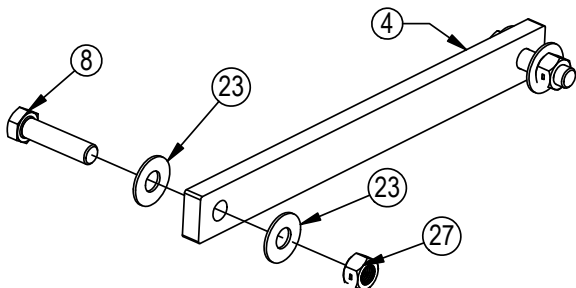
Hydraulic Angle - Hydraulic Tilt Or Hydraulic Angle - No Tilt

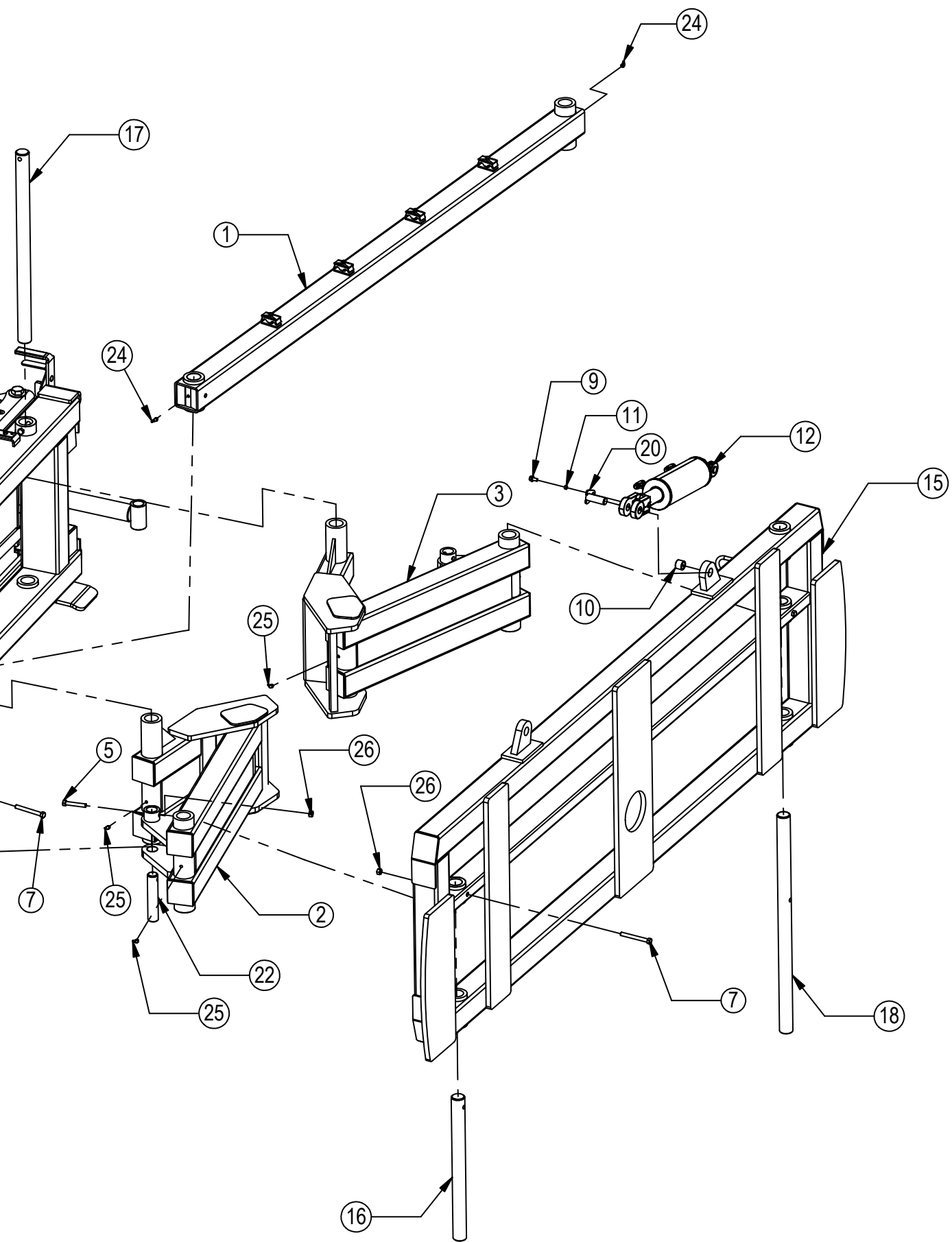
| Item No. | Qty. | Part No. | Description |
|----------|------|-----------|---------------------------------------|
| 1 | 1 | 11-5055 | Stabilizer Arm |
| 2 | 1 | 11-19685 | Angle Arm Right |
| 3 | 1 | 11-19690 | Angle Arm Left |
| 4 | 1 | 14-9366 | Non Tilt Bar |
| 5 | 4 | 16-20132 | 1/2" x 3" Hex Bolt Gr 5 NC |
| 6 | 2 | 16-20424 | 1/2" x 3-1/2" Hex Bolt Gr 8 NC |
| 7 | 3 | 16-20427 | 1/2" x 4-1/2" Hex Bolt Gr 8 NC |
| 8 | 2 | 16-20564 | 1" x 3-1/2" Hex Bolt Gr 8 NC |
| 9 | 4 | 16-35C612 | 3/8" x 3/4" Flanged Bolt |
| 10 | 2 | 19-7774 | 1" x 1" Spring Bushing |
| 11 | 4 | 19-13577 | NR Pin Spacer Clevis End |
| 12 | 2 | 26-34711 | 4 x 8 Cylinder W/ Cast Clevis Ends |
| 13 | 2 | 26-34725 | 4 x 43.5 Cylinder Tube Ends, Top Port |
| 14 | 1 | 32-18900 | Angle Frame |
| 15 | 1 | 32-16975 | HA Tilt Frame |
| 16 | 1 | 43-8130 | 1-15/16" x 23-1/4" Pin |
| 17 | 2 | 43-8131 | 1-15/16" x 31" Pin |
| 18 | 1 | 43-8132 | 1-15/16" x 35-1/2" Pin |
| 19 | 1 | 43-8133 | 1-15/16" x 7-1/8" Stabilizer Arm Pin |



| Item No. | Qty. | Part No. | Description |
|----------|------|----------|--|
| 20 | 4 | 43-13580 | 1" Clevis Bolt In Pin |
| 21 | 2 | 43-8134 | 1-1/2" x 8" Angle Cylinder Pin Base End |
| 22 | 2 | 43-9352 | 1-1/2" x 7-1/2" Angle Cylinder Pin Rod End |
| 23 | 4 | 57-20749 | 1" Flat Washer |
| 24 | 2 | 58-9371 | Grease Zerk 1/8" NPT 45° |
| 25 | 6 | 58-9372 | Grease Zerk 1/8" NPT 90° |
| 26 | 9 | 70-20604 | 1/2" Hex Center Lock Nut Gr 2 NC |
| 27 | 2 | 70-20609 | 1" Hex Center Lock Nut Gr 2 NC |

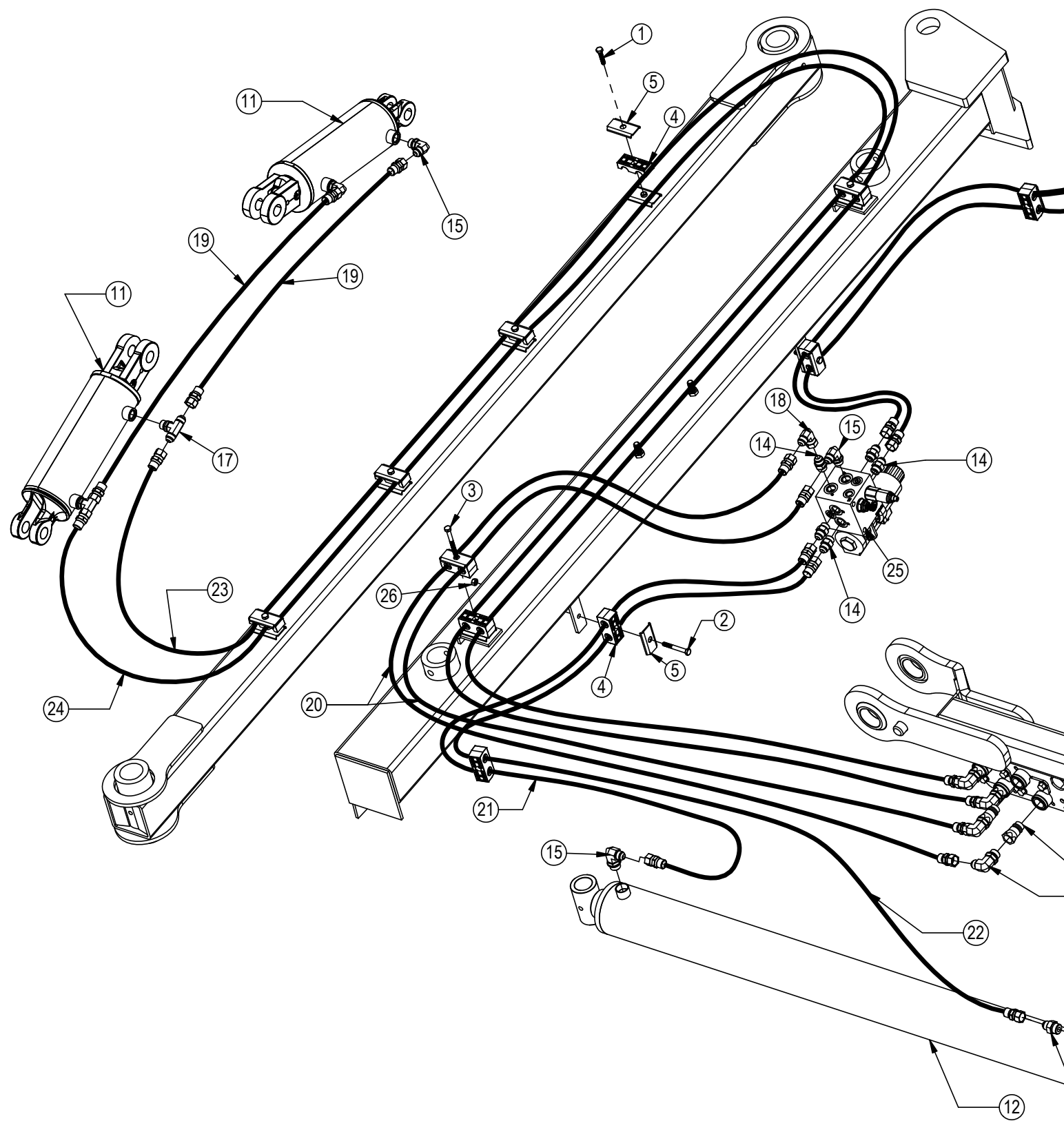
HANT - Replace item # 9, 10, 11, 12 & 20 with item # 4, 8, 23 & 27.





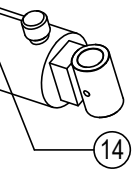
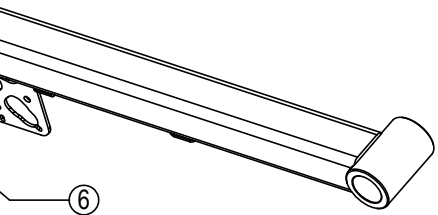
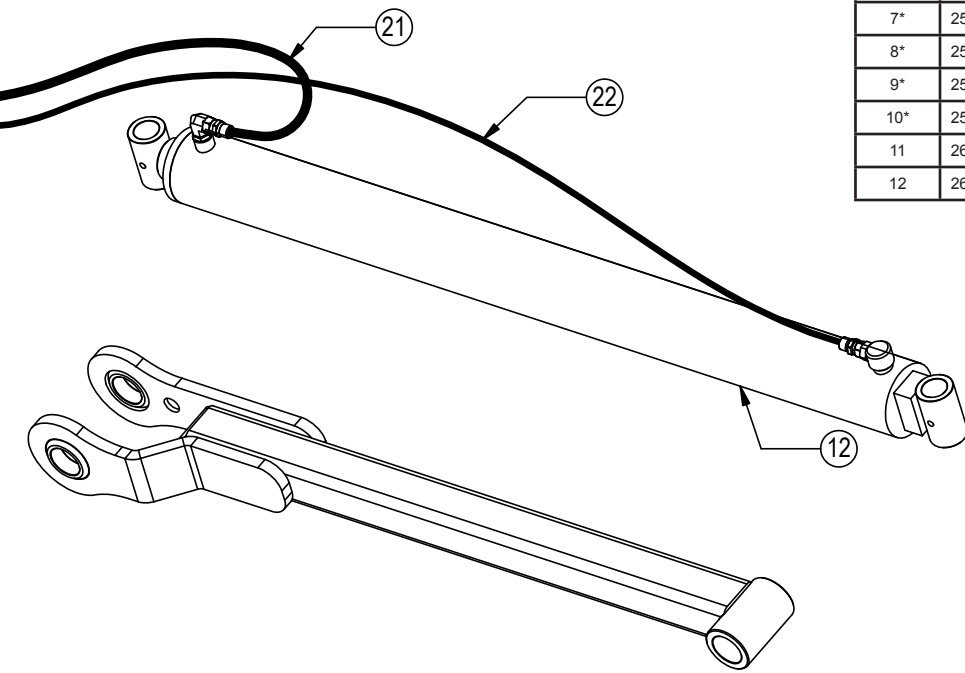
Hydraulic Angle - Hydraulic Tilt Or Hydraulic Angle - No Tilt Hose Routing

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 | 26-34711 | 4 x 8 Cylinder W/ Cast Clevis Ends | 2 | - |
| 12 | 26-34725 | 4 x 43.5 Cylinder Tube Ends, Top Port | 2 | 2 |

* Parts Not Shown



See Page 22 for the remaining hydraulics and hydraulic connections.
See Page 26 for hydraulic schematics.

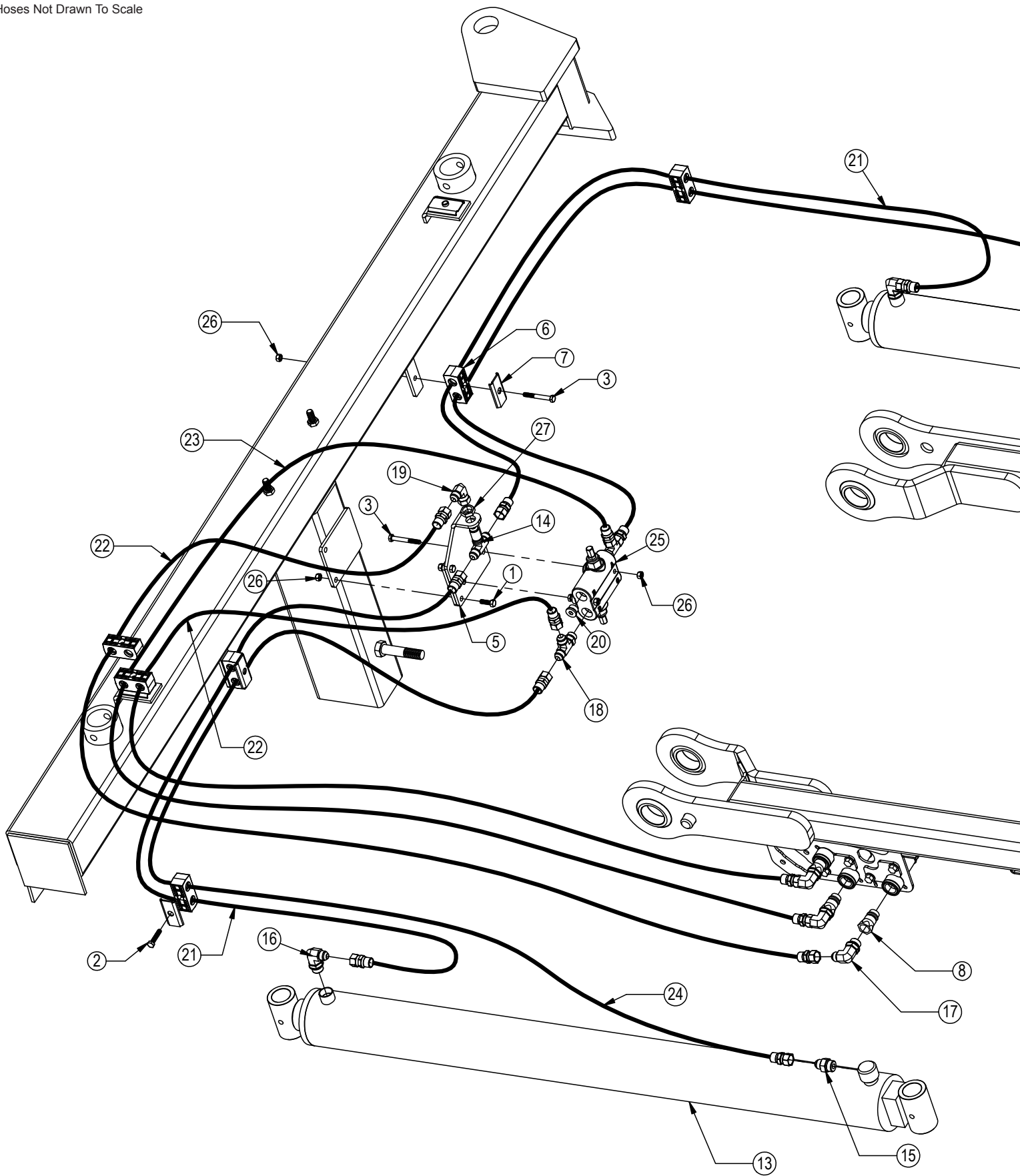
| | | Configuration | HAHT | HANT |
|----------|----------|--|------|------|
| Item No. | Part No. | Description | Qty. | Qty. |
| 13* | 31-13332 | -6 SAE Breather Fitting | 1 | 1 |
| 14 | 31-34040 | Straight JIC x O-Ring (6400-8-8) | 7 | 7 |
| 15 | 31-34050 | Straight Thread Elbow 90° JIC x O-Ring (6801-8-8) | 5 | 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) | 2 | - |
| 18 | 31-34100 | Swivel Nut Elbow 90° JIC (6500-8-8) | 1 | 1 |
| 19 | 35-30022 | 39" x 3/8" -8JIC/-8JIC Hose | 2 | - |
| 20 | 35-30131 | 66" x 1/2" -8JIC/-8JIC Hose (3.5M) | 2 | 2 |
| 21 | 35-30132 | 69" x 1/2" -8JIC/-8JIC Hose | 2 | 2 |
| 22 | 35-30141 | 96" x 1/2" -8JIC/-8JIC Hose | 2 | 2 |
| 23 | 35-30071 | 217" x 3/8" -8JIC/-8JIC Hose | 1 | - |
| 24 | 35-30075 | 207" x 3/8" -8JIC/-8JIC Hose | 1 | - |
| 25 | 56-13305 | Hydraulic Angle Valve | 1 | 1 |
| 26 | 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 |
|-----------------|----------|---|
| 26-34711 | 49-12271 | Seal Kit 4 x 8 (647135) Nitrided Rod, Clevis Ends |
| 26-34725 | 49-12274 | Seal Kit 4 x 43.5 (647210) Nitrided Rod |

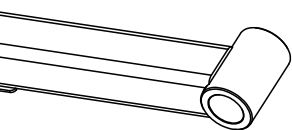
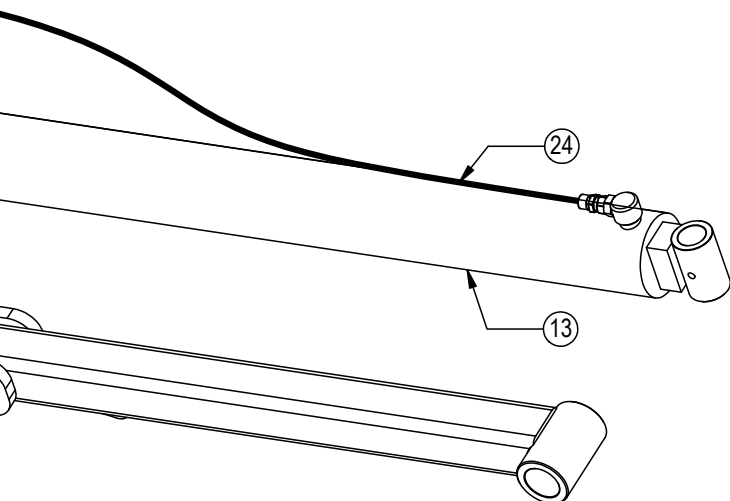
Hydraulic Angle - 2 Lever System Hose Routing

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 22 for the remaining hydraulics and hydraulic connections.
See Page 27 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 | 2 | 35-30132 | 69" x 1/2" -8JIC/-8JIC Hose |
| 22 | 2 | 35-30133 | 72" x 1/2" -8JIC/-8JIC Hose |
| 23 | 1 | 35-30134 | 75" x 1/2" -8JIC/-8JIC Hose |
| 24 | 2 | 35-30141 | 96" x 1/2" -8JIC/-8JIC Hose |
| 25 | 1 | 56-7772 | Relief Valve |
| 26 | 6 | 70-20581 | 5/16" Hex Nut NC |
| 27 | 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 |

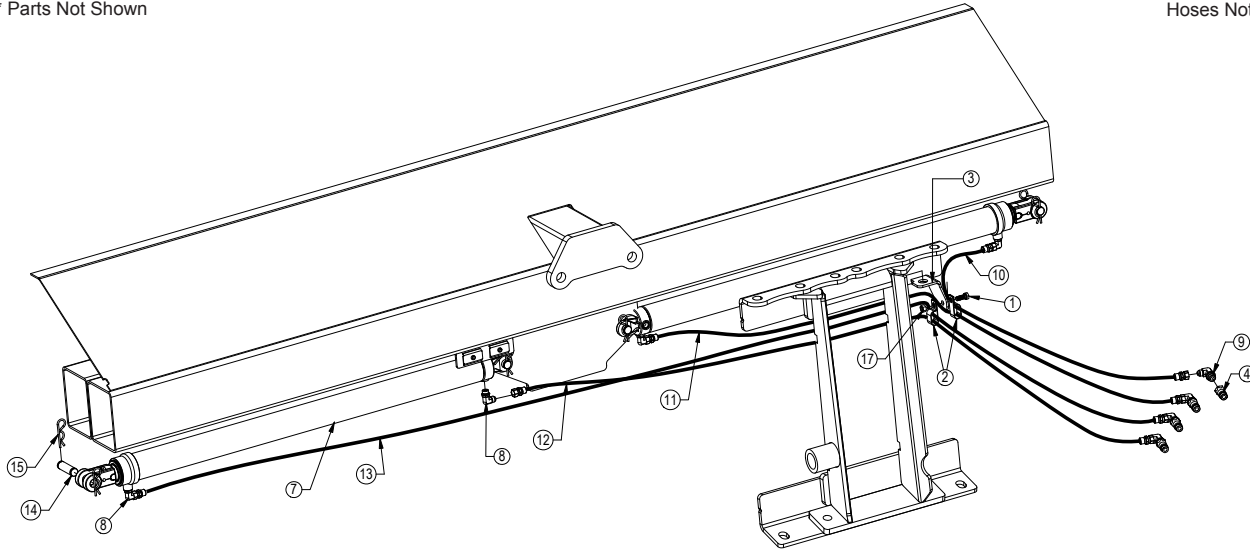
12-20 - NAHT Hydraulic Hose Routing

| Item No. | Qty. | Part No. | Description |
|----------|------|---------------|--|
| 1 | 1 | 16-20125 | 1/2" X 1-1/4 " Hex Bolt Gr 5 NC |
| 2 | 2 | 18-12991 | Double Tube Clamp |
| 3 | 1 | 18-19187-R | Tube Clamp Bracket - Right |
| 4 | 4 | 25-34342 | Tappet Quick Coupler Male - Poppet Style |
| 5* | 2 | 25-3403 | Pioneer Dust Cap Slider (Blue) |
| 6* | 2 | 25-3405 | Pioneer Dust Cap Slider (Brown) |
| 7 | 2 | 26-34741 | 3 x 48 Welded Cylinder (647660) |
| 8 | 4 | 31-34050 | Straight Thread Elbow 90° JIC x O-Ring (6801-8-8) |
| 9 | 4 | 31-34051 | Straight Thread Elbow 90° JIC x O-Ring (6801-8-10) |
| 10 | 1 | 35-11686-0670 | 67" x 3/8" -8JIC/-8JIC Hose |

* Parts Not Shown

| Item No. | Qty. | Part No. | Description |
|----------|------|---------------|--------------------------------|
| 11 | 1 | 35-11686-0820 | 82" x 3/8" -8JIC/-8JIC Hose |
| 12 | 1 | 35-11686-1000 | 100" x 3/8" -8JIC/-8JIC Hose |
| 13 | 1 | 35-11686-1390 | 139" x 3/8" -8JIC/-8JIC Hose |
| 14 | 2 | 43-16306 | Cylinder Pin |
| 15 | 4 | 43-7767 | Hitch Pin Clip |
| 16* | 4 | 43-18943 | Cotter Pin |
| 17 | 1 | 70-20604 | 1/2" Hex Center Lock Nut NC |
| 18* | 2 | 16-20125 | 1/2" X 1-1/4" Hex Bolt Gr 5 NC |
| 19* | 2 | 34-17585 | 12-20 Cylinder Strap |
| 20* | 2 | 70-20604 | 1/2" Hex Center Lock Nut NC |

Hoses Not Drawn To Scale



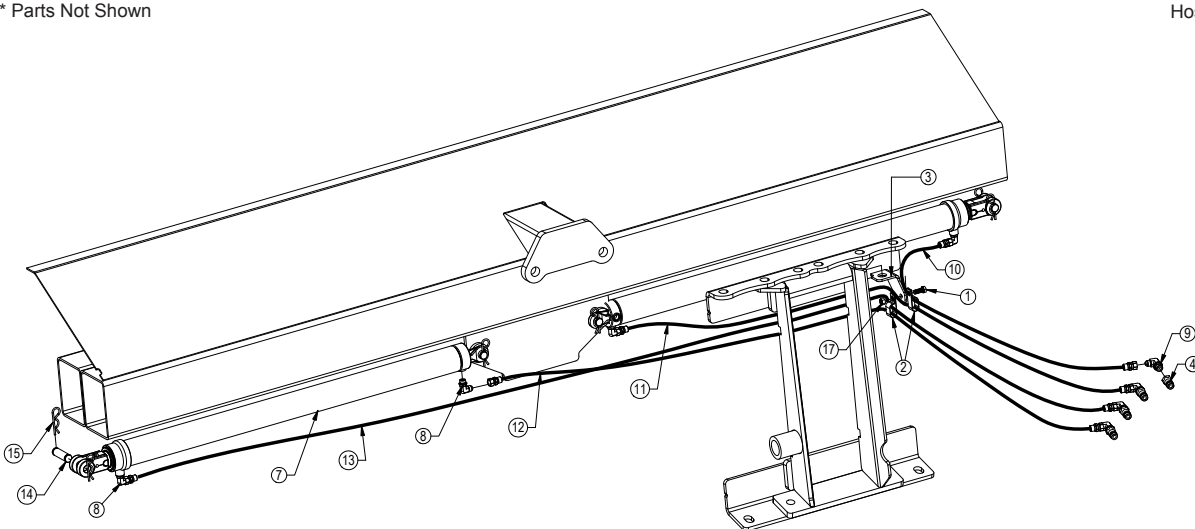
12-20 - NANT Hydraulic Hose Routing

| Item No. | Qty. | Part No. | Description |
|----------|------|---------------|--|
| 1 | 1 | 16-20125 | 1/2" X 1-1/4 " Hex Bolt Gr 5 NC |
| 2 | 2 | 18-12991 | Double Tube Clamp |
| 3 | 1 | 18-19187-R | Tube Clamp Bracket - Right |
| 4 | 4 | 25-34342 | Tappet Quick Coupler Male - Poppet Style |
| 5* | 2 | 25-3403 | Pioneer Dust Cap Slider (Blue) |
| 6* | 2 | 25-3405 | Pioneer Dust Cap Slider (Brown) |
| 7 | 2 | 26-34741 | 3 x 48 Welded Cylinder (647660) |
| 8 | 4 | 31-34050 | Straight Thread Elbow 90° JIC x O-Ring (6801-8-8) |
| 9 | 4 | 31-34051 | Straight Thread Elbow 90° JIC x O-Ring (6801-8-10) |
| 10 | 1 | 35-11686-0560 | 56" x 3/8" -8JIC/-8JIC Hose |

* Parts Not Shown

| Item No. | Qty. | Part No. | Description |
|----------|------|---------------|--------------------------------|
| 11 | 1 | 35-11686-0690 | 69" x 3/8" -8JIC/-8JIC Hose |
| 12 | 1 | 35-11686-0850 | 85" x 3/8" -8JIC/-8JIC Hose |
| 13 | 1 | 35-11686-1360 | 136" x 3/8" -8JIC/-8JIC Hose |
| 14 | 2 | 43-16306 | Cylinder Pin |
| 15 | 4 | 43-7767 | Hitch Pin Clip |
| 16* | 4 | 43-18943 | Cotter Pin |
| 17 | 1 | 70-20604 | 1/2" Hex Center Lock Nut NC |
| 18* | 2 | 16-20125 | 1/2" X 1-1/4" Hex Bolt Gr 5 NC |
| 19* | 2 | 34-17585 | 12-20 Cylinder Strap |
| 20* | 2 | 70-20604 | 1/2" Hex Center Lock Nut NC |

Hoses Not Drawn To Scale

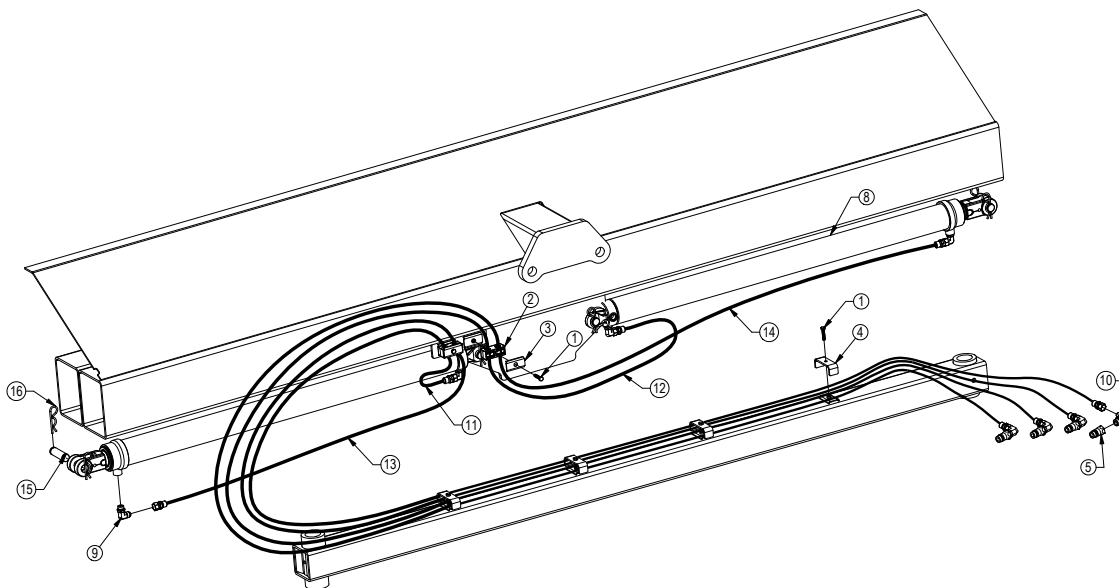


| Item No. | Qty. | Part No. | Description |
|----------|------|---------------|--|
| 1 | 6 | 16-20036 | 5/16" X 1-1/2 " Hex Bolt Gr 5 NC |
| 2 | 2 | 18-3074 | Hose Hold Down Clamp |
| 3 | 2 | 18-3075 | Hose Hold Down Clamp Plate |
| 4 | 5 | 18-15684 | Hose Hold Down Clamp Plate |
| 5 | 4 | 25-34342 | Tappet Quick Coupler Male - Poppet Style |
| 6* | 2 | 25-3403 | Pioneer Dust Cap Slider (Blue) |
| 7* | 2 | 25-3405 | Pioneer Dust Cap Slider (Brown) |
| 8 | 2 | 26-34741 | 3 x 48 Welded Cylinder (647660) |
| 9 | 4 | 31-34050 | Straight Thread Elbow 90° JIC x O-Ring (6801-8-8) |
| 10 | 4 | 31-34051 | Straight Thread Elbow 90° JIC x O-Ring (6801-8-10) |
| 11 | 1 | 35-11686-1820 | 182" x 3/8" -8JIC/-8JIC Hose |

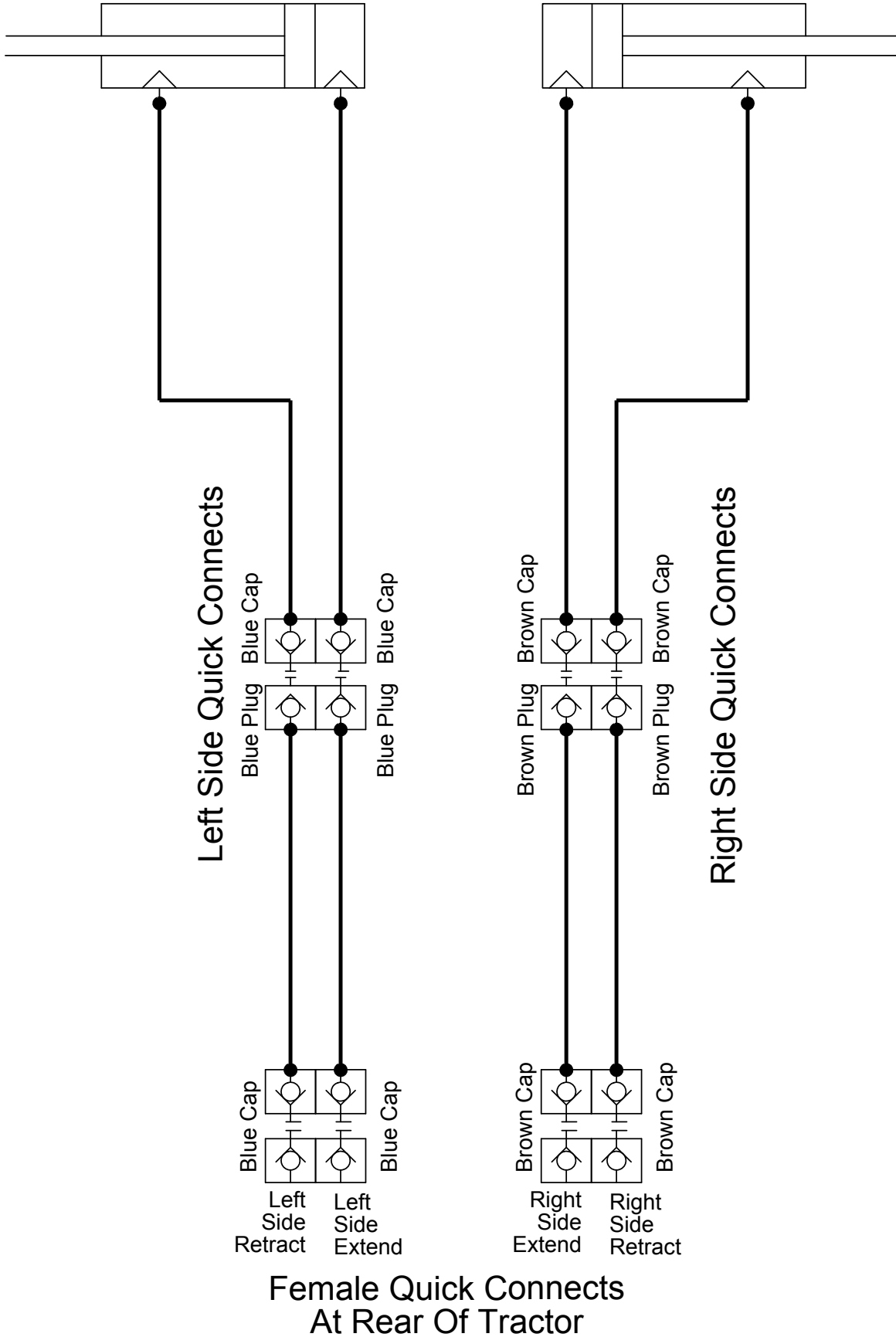
| Item No. | Qty. | Part No. | Description |
|----------|------|---------------|--------------------------------|
| 12 | 1 | 35-11686-1980 | 198" x 3/8" -8JIC/-8JIC Hose |
| 13 | 1 | 35-11686-2270 | 227" x 3/8" -8JIC/-8JIC Hose |
| 14 | 1 | 35-11686-2560 | 256" x 3/8" -8JIC/-8JIC Hose |
| 15 | 2 | 43-16306 | Cylinder Pin |
| 16 | 8 | 43-7767 | Hitch Pin Clip |
| 17* | 2 | 16-20125 | 1/2" X 1-1/4" Hex Bolt Gr 5 NC |
| 18* | 2 | 34-17585 | 12-20 Cylinder Strap |
| 19* | 2 | 70-20604 | 1/2" Hex Center Lock Nut NC |

Hoses Not Drawn To Scale

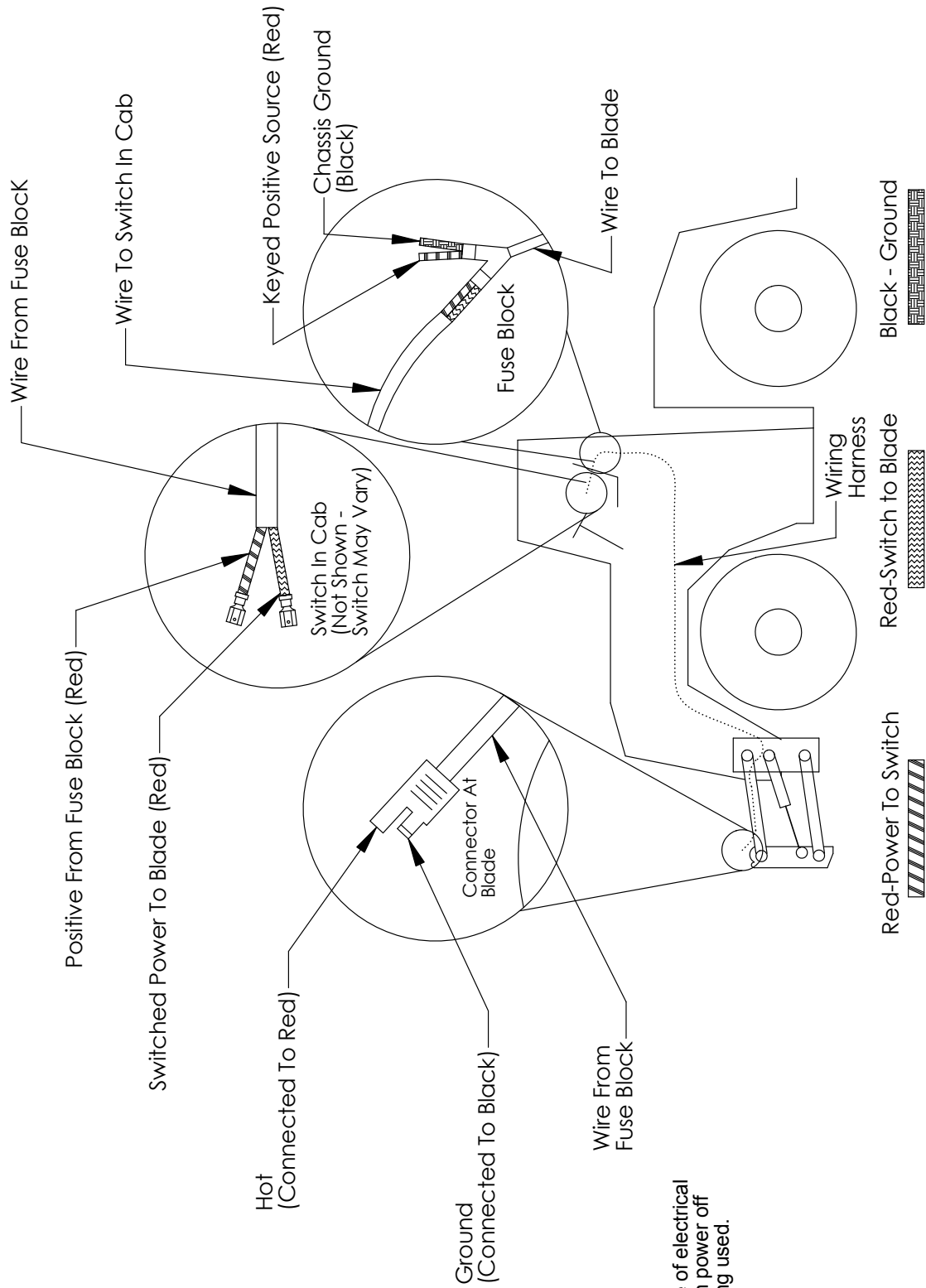
* Parts Not Shown



12-20 Blade Cylinders



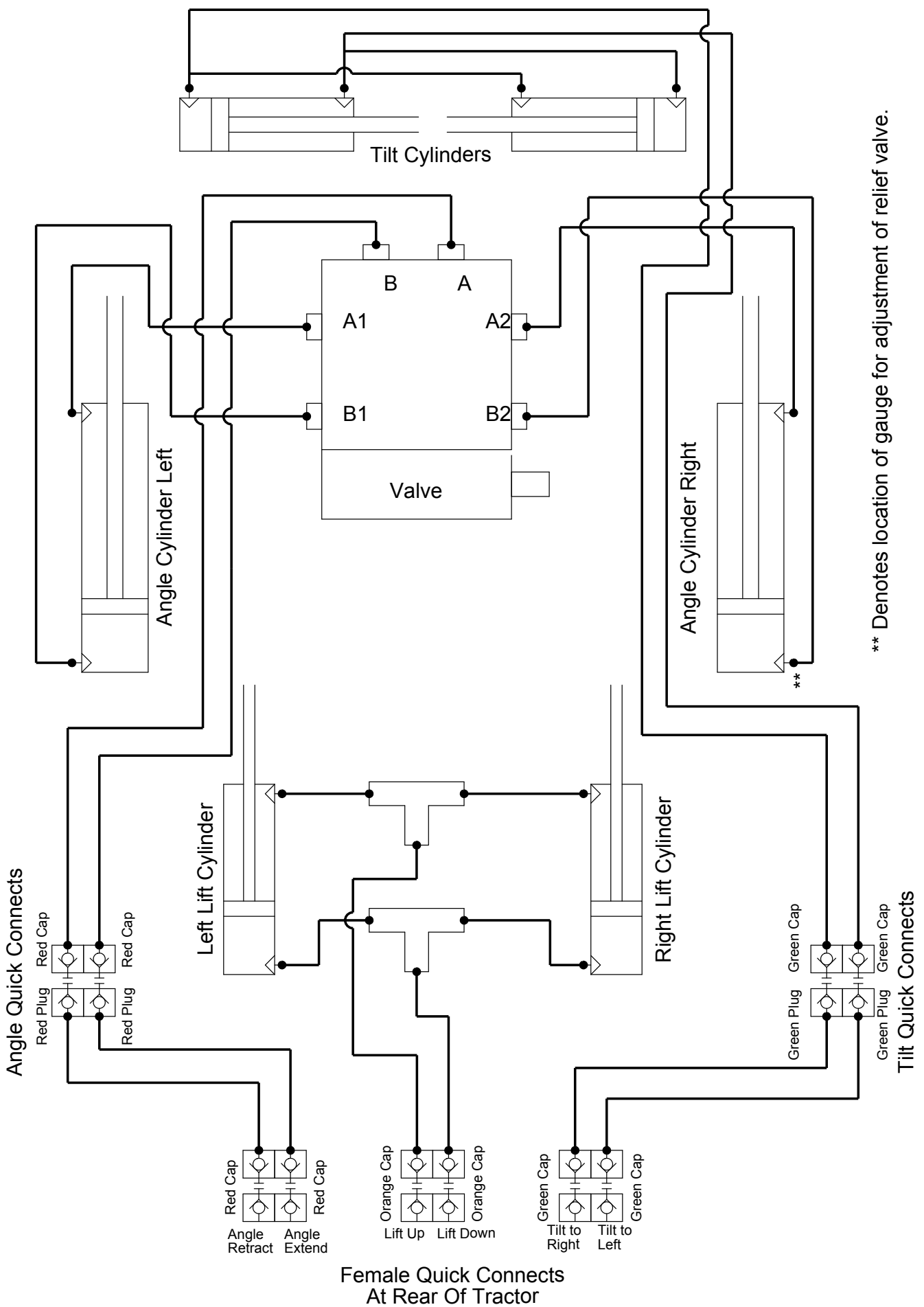
**Female Quick Connects
At Rear Of Tractor**

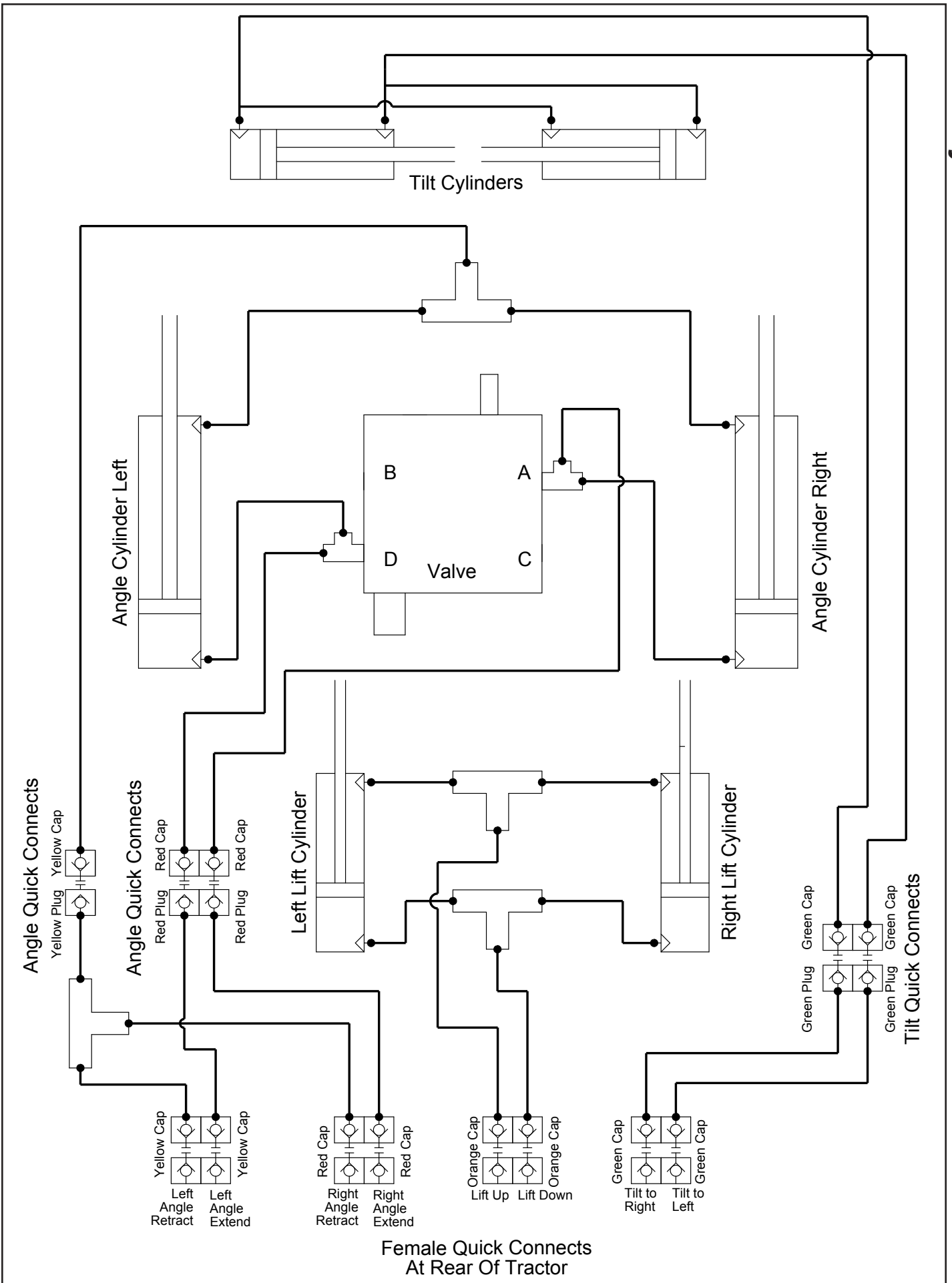


Note: To maximize life of electrical system and valve, turn power off when dozer is not being used.

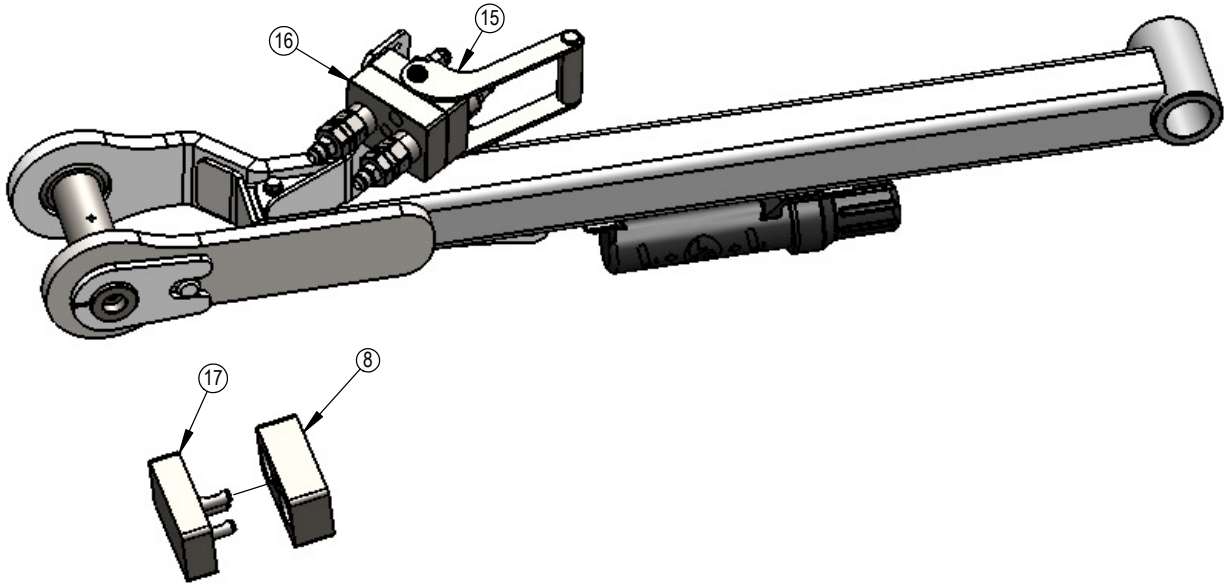
Instructions

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.

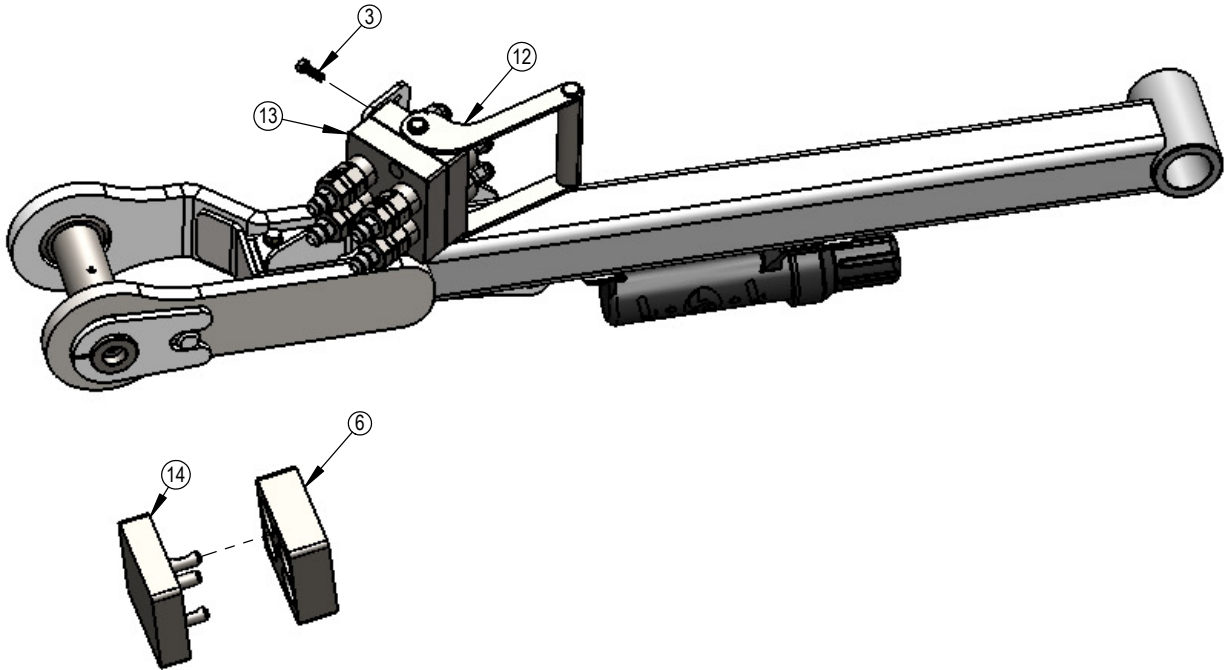




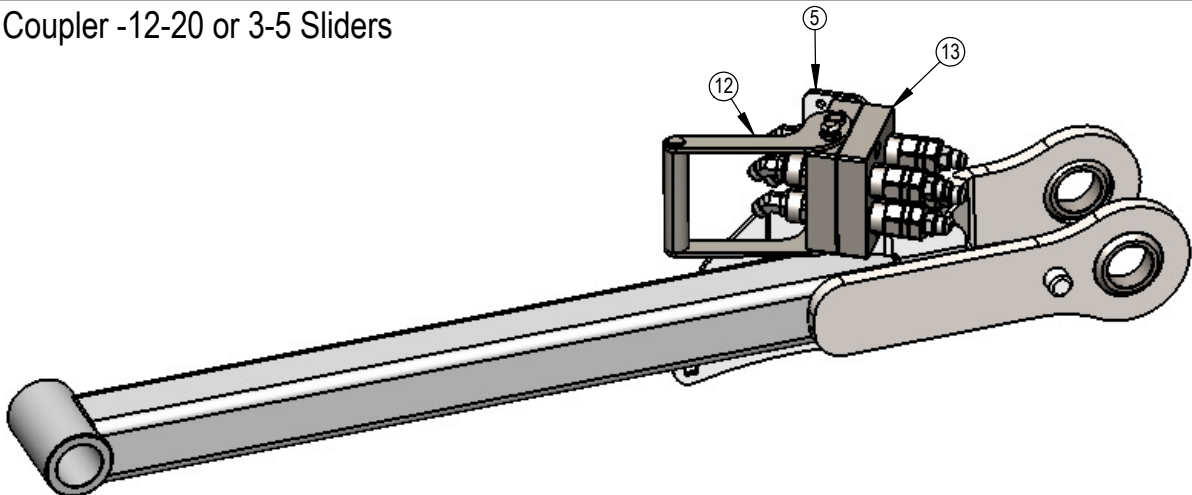
2 Port Multi Coupler - NAHT or HANT Electric



4 Port Multi Coupler -HANT 2-Stick or HAHT Electric



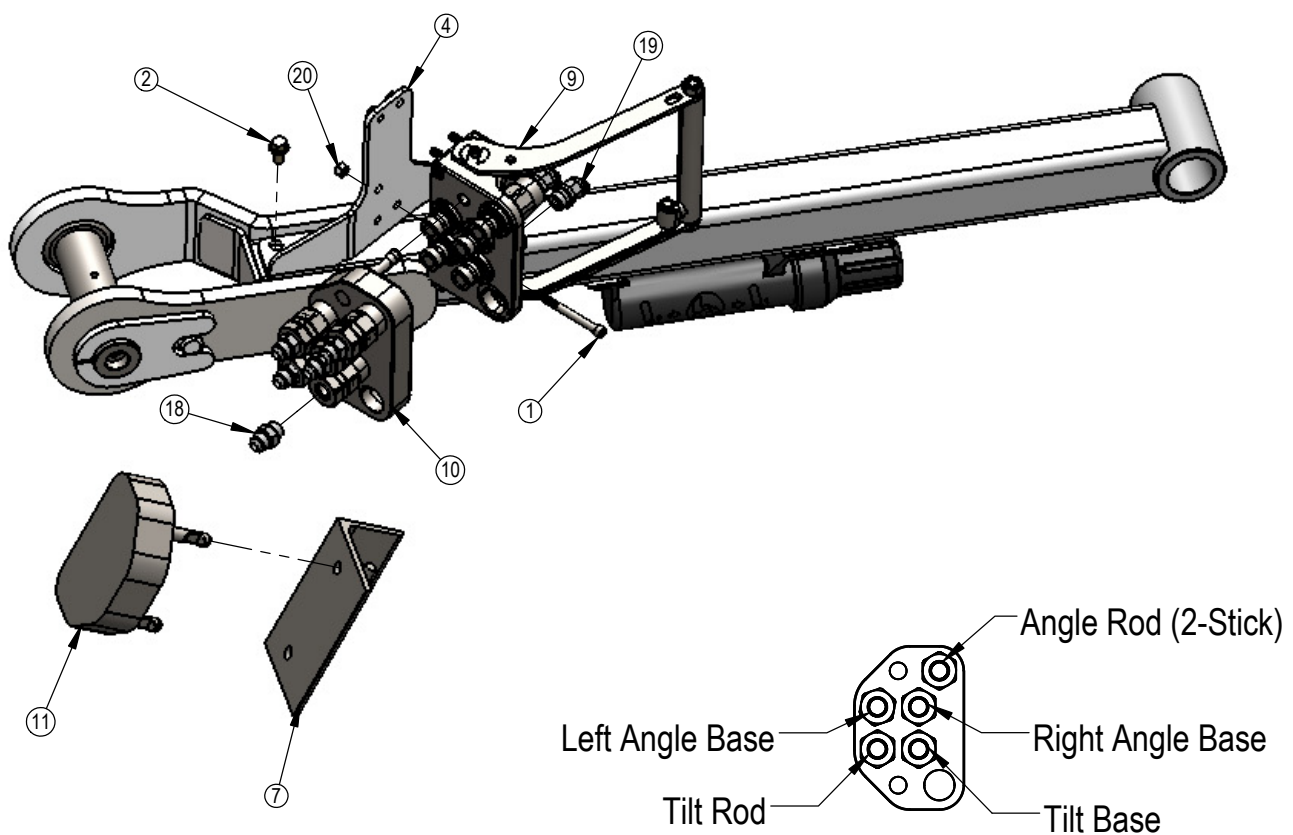
4 Port Multi Coupler -12-20 or 3-5 Sliders



| ITEM NO. | PART NO. | HAHT 2-Stick | HANT 2-Stick or HAHT Electric | NAHT or HANT Electric | 12-20 or 3-5 Blades | DESCRIPTION |
|----------|------------|--------------|-------------------------------|-----------------------|---------------------|---|
| 1 | 16-18957 | 4 | - | - | - | 5/16" x 3-1/4" Allen Head Screw |
| 2 | 16-35C612 | 3 | 3 | 3 | 3 | 3/8" x 3/4" Flange Bolt |
| 3 | 16-812525 | - | 2 | 2 | 2 | 8mm x 1.25mm x 25mm Metric Hex Bolt Gr 10.9 |
| 4 | 18-18430R1 | 1 | 1 | 1 | - | Quick Coupler Mount |
| 5 | 18-18514 | - | - | - | 1 | Quick Coupler Mount |
| 6 | 25-18956 | - | 1 | - | 1 | Multi-Coupling Plate - 4 Port Parking Station |
| 7 | 25-18961 | 1 | - | - | - | Multi-Coupling Plate - 5/6 Port Parking Station |
| 8 | 25-19657 | - | - | 1 | - | Multi-Coupling Plate - 2 Port Parking Station |
| 9 | 25-19861 | 1 | - | - | - | Multi-Coupling Plate - 5 Port - Fixed |
| 10 | 25-19862 | 1 | - | - | - | Multi-Coupling Plate - 5 Port - Mobile |
| 11 | 25-19863 | 1 | - | - | - | Multi-Coupling Plate - 5 Port - Cap |
| 12 | 25-19864 | - | 1 | - | 1 | Multi-Coupling Plate - 4 Port Fixed |
| 13 | 25-19866 | - | 1 | - | 1 | Multi-Coupling Plate - 4 Port Mobile |
| 14 | 25-19867 | - | 1 | - | 1 | Multi-Coupling Plate - 4 Port - Cap |
| 15 | 25-19868 | - | - | 1 | - | Multi-Coupling Plate - 2 Port - Fixed |
| 16 | 25-19869 | - | - | 1 | - | Multi-Coupling Plate - 2 Port - Mobile |
| 17 | 25-19871 | - | - | 1 | - | Multi-Coupling Plate - 2 Port - Cap |
| 18 | 31-34040 | 5 | 4 | 2 | 4 | Straight JIC x O-Ring |
| 19 | 31-34150 | 5 | 4 | 2 | 4 | Straight Thread Elbow 45° JIC x O-Ring (6802-8-8) |
| 20 | 70-20611 | 4 | - | - | - | 5/16" Nyloc Hex Nut Gr 5 NC |

Parking Stations are located on the angle frames or blades. Place the Cap in the Parking Stations when blade is in use. When disconnecting the blade, place the Cover on the Fixed Multi-Coupler and the Mobile Multi-Coupler in the Parking Station.

5 Port Multi Coupler -HAHT 2-Stick



Contact Us

As always, if you have any questions about your 12-20 Dozer 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.

