GROUSER® PRODUCTS

770 - Versatile 350-550

Owner's Manual

&

Parts Book

For Models:
Versatile - 350, 375, 400, 450, 500, 550

Purchase Date
Serial Number
Model Number
Tractor Model
Dealer

PN: 63-17763

Date 4-17-2015

Contents

To The Owner

This manual contains information concerning the operation, adjustment, and maintenance of the 770 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. Your machine may vary slightly from the machine in this parts book, but the same installation procedure will be compatible. 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.

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.

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 10.
- 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 770 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 the dozer for worn or damaged parts. Install new parts as required.
3. Lubricate all pins and joints.

Undercarriage Installation Instructions

Caution:

- Always use precaution when working around any equipment.
- Always wear safety glasses.
- Follow tractor manufacturer's safety guidelines when installing this product.

NOTE: For all steps below, see diagram on Page 4 for clarification.

1. Read all instructions prior to installation.
2. Remove existing toolboxes, front weights, and tow cable holder if equipped. Tow cable holder can be reinstalled later with the undercarriage.
3. If the bulkhead bracket (PN: 18-14370) is not factory installed, attach to the undercarriage with 2 - 1/2" x 1-1/4" bolts (PN: 16-20125) and 1/2" flat washers (PN: 57-20744). See pages 7 and 20-23 for bulkhead fittings, steel lines, and hose locations.
4. If bulkhead covers (PN: 44-14375 & 44-14376) are not factory installed, verify that all hydraulics are installed correctly and then attach the covers to the U/C with 6 - 1/2" x 1-1/4" bolts (PN: 16-20125) and 1/2" flat washers (PN: 57-20744).
5. Attach the rear brackets (PN: 18-15945-R,L) to the rear of the undercarriage with 8 - 3/4" x 2" bolts (PN: 16-20218), 16 - 3/4" washers (PN: 57-20757), and 8 - 3/4" nuts (PN: 70-20607). See notes below and diagram for further clarification on the orientation of the brackets.

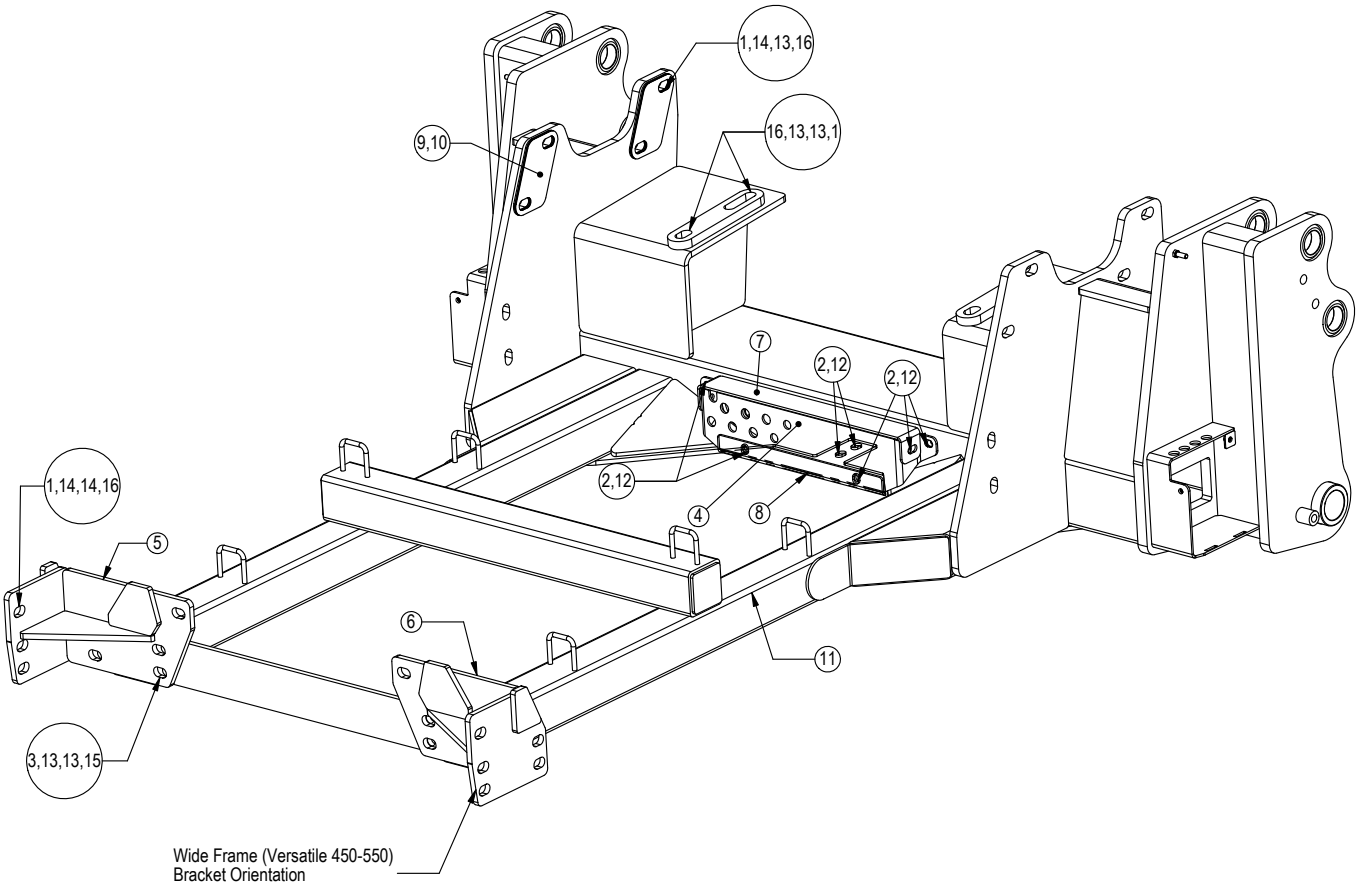
   Note: For tractor models 450-550, put the left bracket (long plate against undercarriage) on the left side of the undercarriage and the right bracket on the right side.

   Note: For tractor models 350-400, put the right bracket (short plate against undercarriage) on the left side of the undercarriage and the left bracket on the right side.
6. Torque the the 3/4" bolts to 257 ft·lbs.
7. Position the undercarriage (U/C) under tractor and center on the frame of the tractor.
8. Lift the rear of the undercarriage up and attach the rear brackets to the frame of the tractor with a 20mm x 70mm bolt (PN: 16-1876), 2 - heavy duty washers (PN: 57-3680), and a 20mm nut (PN: 70-20872-10) on each side.
9. Lift the front of the undercarriage up till the holes line up with the holes on the tractor.

   Note: Add shims between the U/C and the tractor frame on each side to reduce any gap if necessary. Use shims till there is a gap of 1/16" or less. See attached diagram for the proper location and orientation of each shim.
10. Insert a 20mm x 70mm bolt (PN: 16-1876) with a heavy duty washer (PN: 57-3680) into each of the side holes of the undercarriage and tractor frame.
11. After all bolts are through the tractor frame and U/C, attach with a 3/4" hardened washer (PN: 57-20757) and a 20mm nut (PN: 70-20872-10).
12. At the center of the undercarriage, insert a 20mm x 50mm bolts (PN: 16-1878) and a hardened washer (PN: 57-20757) into each of the front 6 vertical holes of the undercarriage and tractor frame. Bolt has to be inserted from the bottom.

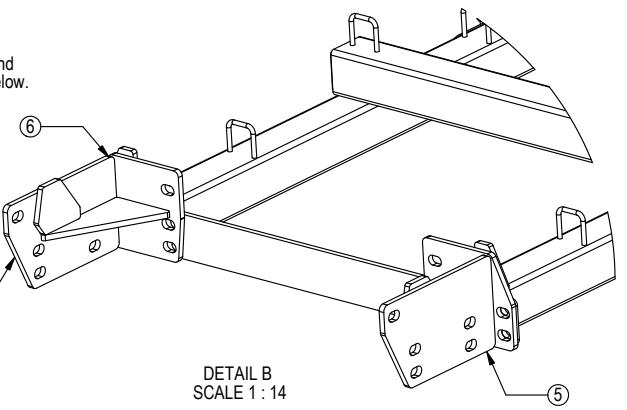
    Note: If the tow cable bracket was equipped, reinstall the bracket when installing the front 6 vertical bolts. See Page 30 for more hardware and installation information.
13. Once the bolts are thru the undercarriage and tractor frame, attach with a hardened washer (PN: 57-20757) and a 20mm nut (PN: 70-20872-10).
14. Push the undercarriage back till the rear brackets are pushed up against the tractor frame.
15. Once all bolts have been installed, torque the rear 20mm bolts to 432 ft·lbs., then the vertical 20mm bolts to 432 ft·lbs., and then the side 20mm bolts to 432 ft·lbs..
16. After first 8 hours of use, re-torque all bolts.
17. Check all fasteners regularly to ensure proper operation of equipment.

    NOTE: Installer is responsible to route hoses in a practical manner. The hoses need to be routed away from sharp corners and moving parts and need to be secure. Install all hoses when assembling the lift system on Pages 6-7.



Wide Frame (Versatile 450-550)
Bracket Orientation

Note: Narrow frame uses the left rear bracket on the right side of the undercarriage and the right rear bracket on the left side of the undercarriage as shown in the diagram below.



Narrow Frame (Versatile 350-400)
Bracket Orientation

DETAIL B
SCALE 1 : 14

Item No.	Qty.	Part No.	Description
1	16	16-1876	20mm x 2.5mm x 70mm Metric Hex Bolt Gr 10.9 ZC
2	8	16-20125	1/2" X 1 1/4" Hex Bolt Gr 5 NC
3	8	16-20218	3/4" X 2" Hex Bolt Gr 5 NC
4	1	18-14370	Bracket, Bulkhead - 770 Wide Frame
5	1	18-15945-L	Versatile T4 UC Rear Bracket, (Left-Wide), (Right-Narrow)
6	1	18-15945-R	Versatile T4 UC Rear Bracket, (Right-Wide), (Left-Narrow)
7	1	44-14375	Plate, Top Bulkhead Cover - AG Wide Frame
8	1	44-14376	Plate, Bottom Bulkhead Cover - AG Wide Frame
9	4	44-15966	770 - Versatile 350-550 - Shim Plate - 1/8" (CL Zinc)
10	8	44-15967	770 - Versatile 350-550 - Shim Plate - 1/16" (CL Zinc)
11	1	54-15930	Versatile T4 Undercarriage
12	8	57-20744	1/2" Flat Washer
13	36	57-20757	3/4" Hardened Flat Washer - 1-1/2" OD
14	12	57-3680	2.00 OD X .75 ID x .375" Washer CZ Plated
15	8	70-20607	3/4" Hex Center Lock Nut Gr 2 NC
16	16	70-20872-10	20mm Hex Nut 2.5 Pitch Class 10 Zinc

TITLE: 770 Versatile 350-550 UC Assy.

Assembling Lift Components

Now that the undercarriage is installed, some assembly of components is necessary. Follow the steps listed below. Refer to Page 7 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. Remove the male quick attaches that are in the female quicks on the blade, angle frame, or tilt frame.
7. Attach the male quick attaches to the lift frame and top arms with the proper pins and hardware.
8. If the quick couplers and coupler mount are not already attached to the left top arm, attach the coupler mount to the left top arm with 4 - 3/8" flange nuts. See Page #20 for proper orientation.
9. Take the lift hoses that are already attached to the furthest forward fittings on the left and right side of the undercarriage and attach them to the lift cylinders.

   Note: For Step #10-19, refer to Page #20-29 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.

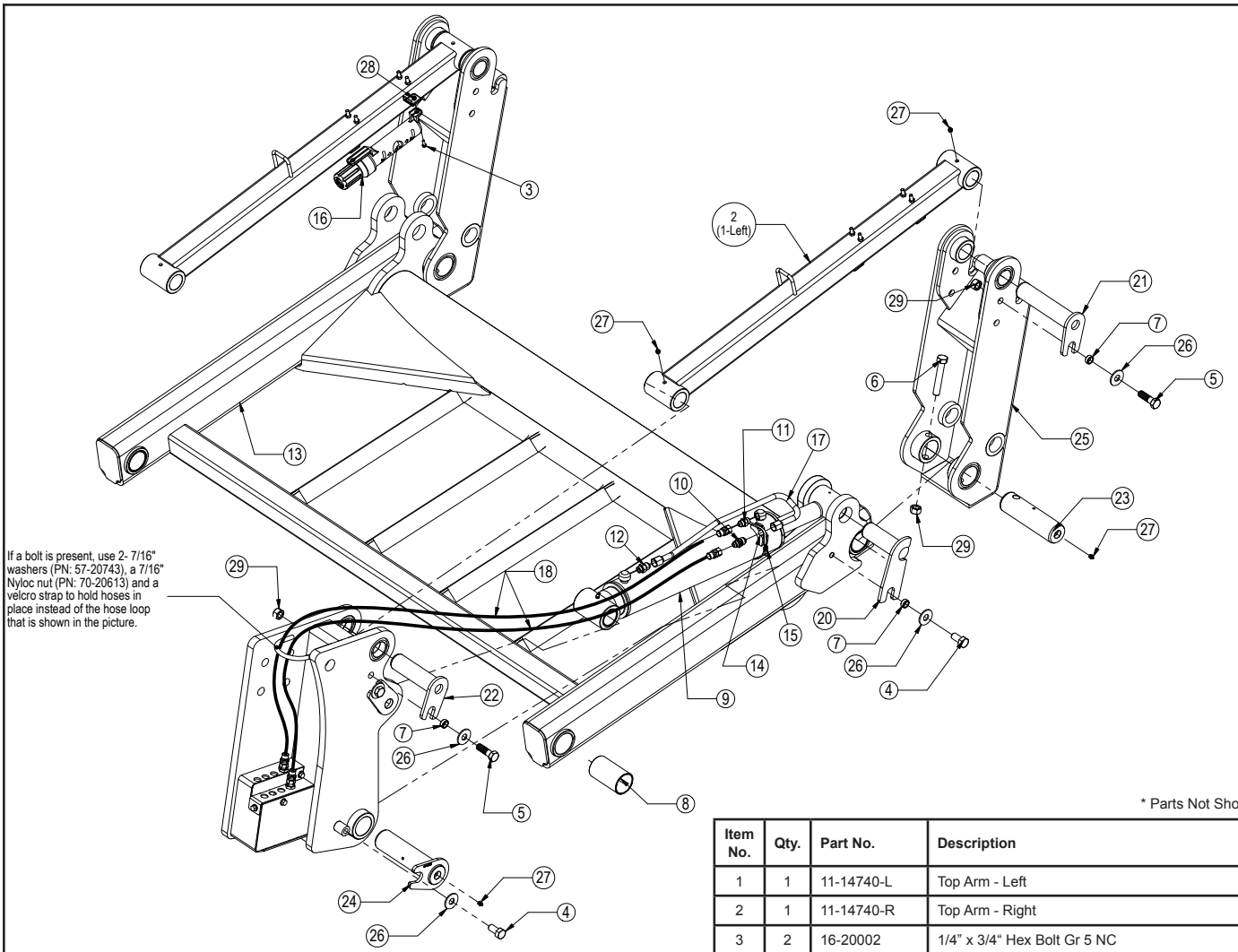
10. Run the remaining hoses thru the hose loop on the top arm and attach a 90° fitting to all the hoses.
11. Install a female quick coupler onto each 90° fitting from the previous step.
12. Install each coupler into the designated hole on the coupler mount and hold them in place with the coupler retainer plate, 3/8" x 3/4" bolts and 3/8" flange nuts.
13. Take the 318" hoses and attach each one to their designated fitting at the center of the undercarriage.
14. 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.

    Note: Installer is responsible to route hoses in a practical manner. The hoses need to be routed away from sharp corners and moving parts and need to be secure.

15. Route the hoses thru the hose loops on the undercarriage.
16. Once the hoses are at the rear of the undercarriage, route the hoses up thru the tractor frame and follow any of the tractor's hoses while still staying away from any sharp corners and moving parts. If there is room in the original cordura, run the new hoses inside the cordura as well. See Page 31 for some pictures.
17. After the hoses are at the rear of the tractor, install a 90° fitting and a male coupler at the end of each hose.
18. Plug each coupler in a rear SCV. As an example, keep both lift hoses together on one section. Refer to hydraulic schematics on page 27 or 29.
19. After all hoses are routed, group hoses together and secure with zip ties.
20. If applicable, attach the wire harness to the coupler mount on the top arm with 1/4" bolts and 1/4" nuts. Run the other end of the wire harness up into the cab of the tractor.
21. Locate the fused power supply. Connect the red wire to power and the black to ground. Attach the 2-lever plug to the wire harness or 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.
22. Get the blade ready to hook up by removing the 3/4" pin (#15 on Page 24) 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.
23. 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.
24. 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.
25. Tilt the male quick attaches backward till the blade is off the ground and the female quick attaches are against the front of the male quick attaches.
26. Shut off machine and set the parking brake.
27. 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 the lock the handle in place. If applicable, turn up the blade stands on the blade.
28. Plug the male couplers into the female couplers on the top arm. Refer to Page #22-23 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.
29. Lock the Mushroom Skid Shoe Link back in place with the 3/4" pin you moved in Step #22 above.
30. To disconnect the blade, see Page 9.
31. Refer to Page 25 for clarification on the wire harness ends.

Initial System Startup

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.



* Parts Not Shown

Item No.	Qty.	Part No.	Description
1	1	11-14740-L	Top Arm - Left
2	1	11-14740-R	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	6	16-20220	3/4" x 2-1/2" Hex Bolt Gr 5 NC
6	2	16-20227	3/4" x 4-1/2" Hex Bolt Gr 5 NC
7	8	19-13515	3/4" ID - Non Rotating Pin Spacer Bushing
8	4	19-13525	2.75 x 2.50 x 4.75 Spring Bushing
9	2	26-34738	4x20 Long Cylinder - Bushed Tube Ends (647267)
10	2	31-11699-10-8	JIC Union (2403-10-8)
11	2	31-34040	Straight JIC x O-Ring (6400-8-8)
12	2	31-6400-10-8	Straight JIC x O-Ring (6400-10-8)
13	1	32-16950	770 Lift Frame
14	2	34-12932	Cylinder Saddle (ZR518)
15	2	34-12994	Hose Clamp
16	1	34-14961	Manual Canister
17	2	35-12931	Formed Steel Line (Lift Cylinder)
18	4	35-31130	63" x 1/2" -8JIC/-8JIC Hose W/Cordura
19*	1	43-12929-L	Pin Weld - Long Ear (Lift Cyl. / Lift Frame) - Left
20	1	43-12929-R	Pin Weld - Long Ear (Lift Cyl. / Lift Frame) - Right
21	2	43-13478	Pin Weld (Top Arm / QA)
22	4	43-13482	Pin Weld (Top Arm / UC & Lift Cyl. / UC)
23	2	43-14720	Pin (Lift Frame / QA)
24	2	43-14725	Pin Weld (Lift Frame / UC)
25	2	45-12175	700 Series Male Quick Attach
26	10	57-20747	3/4" Flat Washer
27	8	58-9369	Grease Zerk 1/8" NPT Straight
28	2	70-20580	1/4" Hex Nut Gr 5 NC
29	8	70-20607	3/4" Hex Center Lock Nut Gr 2 NC

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
26-34738	49-12272	Seal Kit 4" Bore x 2" Rod (647204) Nitrided Rod

Electric Hydraulic Angle System Operating Instructions

If your Grouser blade was purchased with the Electric 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. Then fully retract. To angle the blade to the right, apply power to the diverter valve and then actuate the tractor hydraulic control lever. Always retract cylinders fully prior to switching functions. If a cylinder fails to retract fully, clear any possible obstruction.

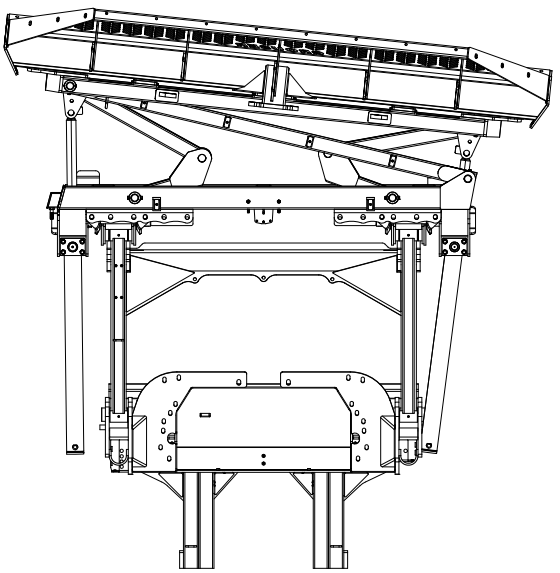
2-Lever Angle System Operating Instructions

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 2-lever angle valve. To angle the blade to the left or right, actuate the tractor hydraulic control lever corresponding to the left or right cylinder. Only one cylinder can be extended at a time.

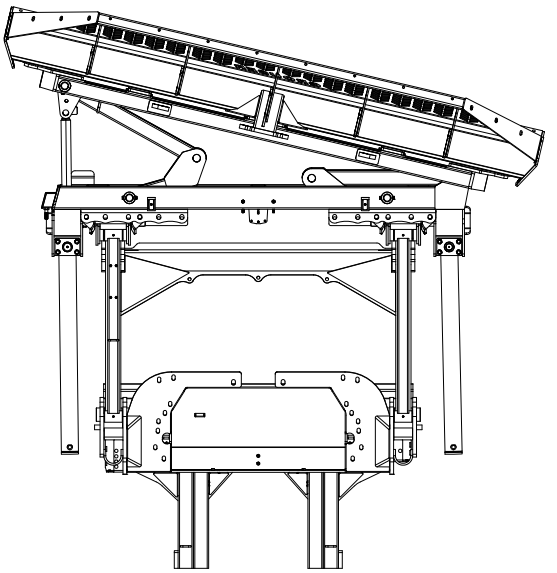
CAUTION: Do not bypass the hydraulic valve and plumb each cylinder to separate valves on the tractor.

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, damage may occur.**

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



INCORRECT



CORRECT

(Left or RIght)

Angle Position Sensor Adjustment

The angle position sensor is set from the factory. If the system does not function correctly, verify the gap between the sensor and the plate and the position of the sensor. If any adjustments are necessary, follow the instructions below.

With cylinder retracted, verify that the proximity sensor is in the center of the plate that is on the cylinder end. To adjust the spacing between the plate and the sensor, loosen one of the nuts and turn the other nut till the spacing between the plate and the sensor is between 3/16” and 3/8”. Once the correct spacing is achieved, tighten the locking nut.

Connecting and Disconnecting the Blade

To connect the blade follow Steps #19-26 on Page 6.

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 #15 on Page 24) from the mushroom skid shoe link (#27 on Page 24) 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. Slide the ratchet keeper out of the way.
2. Loosen the jam nut on the ratchet.
3. Use the ratchet to adjust the skid shoe up or down in the direction ‘A’ shown in Figure 1.
4. Once the depth is set, slide the ratchet keeper back down into place to hold the ratchet from rotating.
5. Tighten the jam nut to lock the ratchet in place.
6. Place the handle in the manual holder container which is on the left top arm.
7. When skid shoes are worn down, replace with new skid shoes.

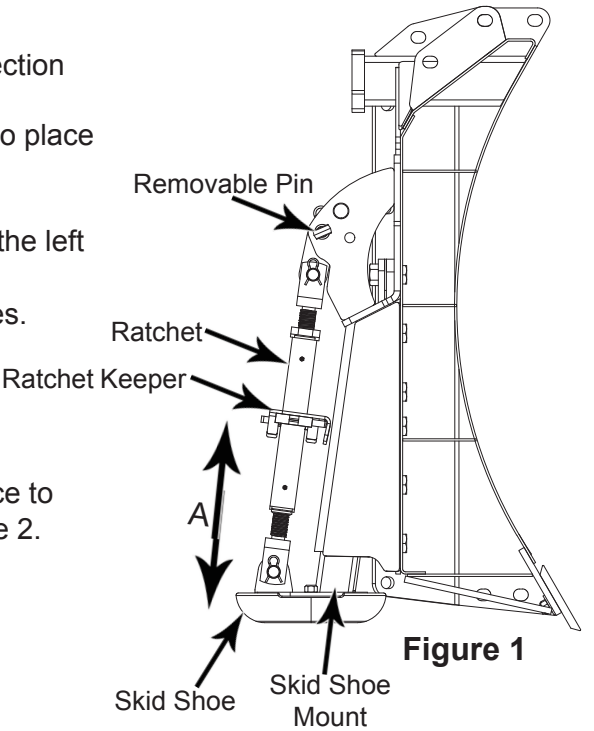


Figure 1

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.

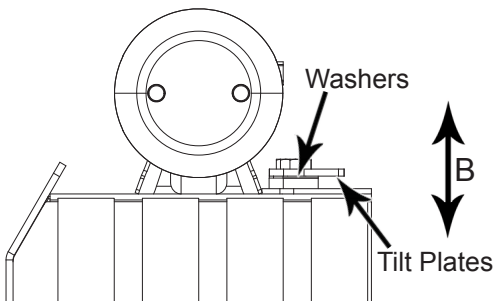


Figure 2

Angle / Tilt Function Abbreviation Key

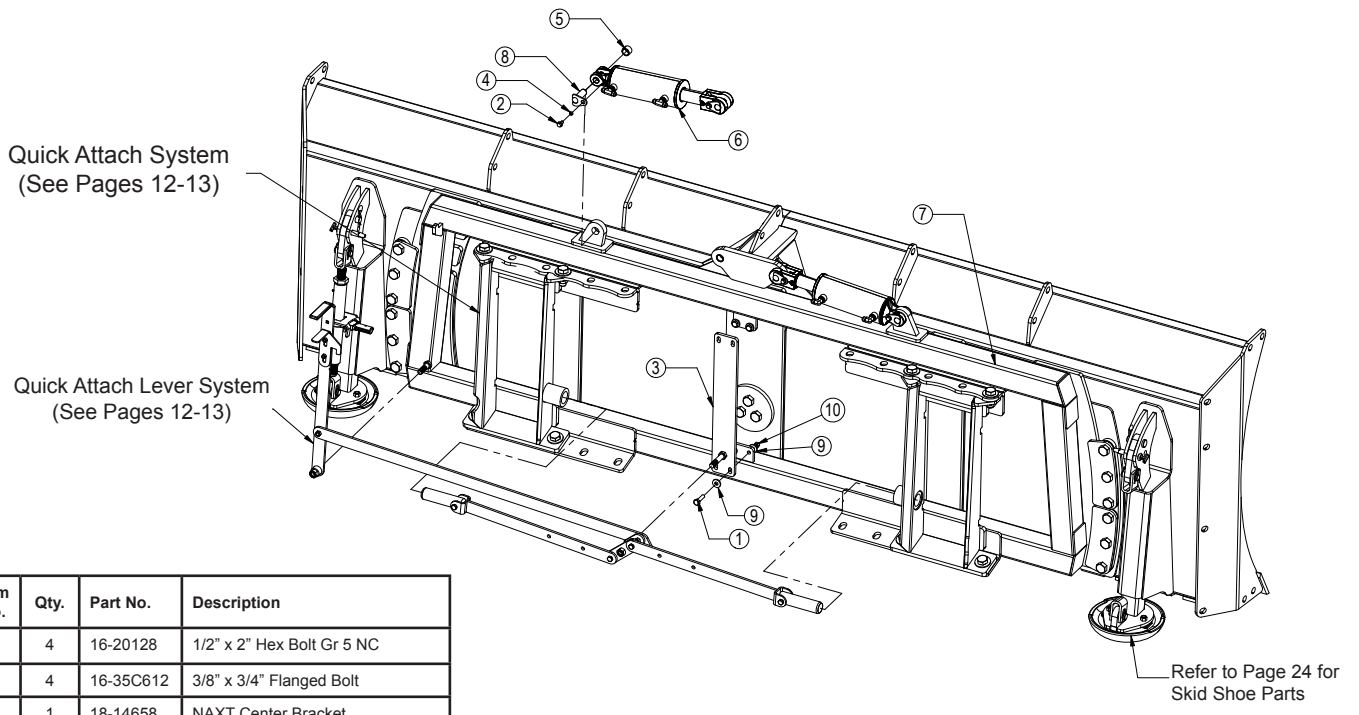
HAHT	Hydraulic Angle - Hydraulic Tilt	6-Way
HANT	Hydraulic Angle - No Tilt	4-Way
NAHT	No Angle - Hydraulic Tilt	4-Way
NANT	No Angle - No Tilt	2-Way

Torque Specifications

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

	Torque - Dry (ft–lbs)			
	SAE Grade 5		SAE Grade 8	
Size	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

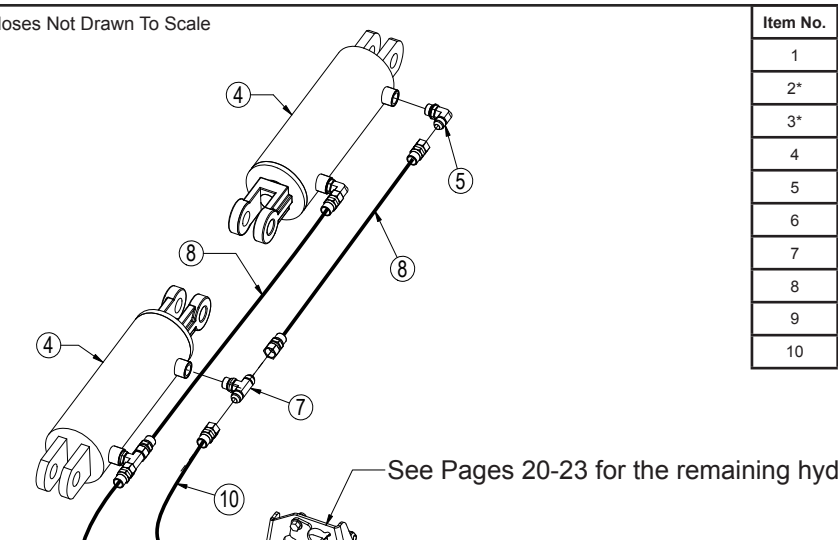
	Torque - Dry (ft-lbs)
Size	Grade 10.9
M18 x 2.50	284
M20 x 2.50	401
M22 x 2.50	547
M24 x 3.00	694



Refer to Page 24 for
Skid Shoe Parts

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	32-14560	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

Hoses Not Drawn To Scale



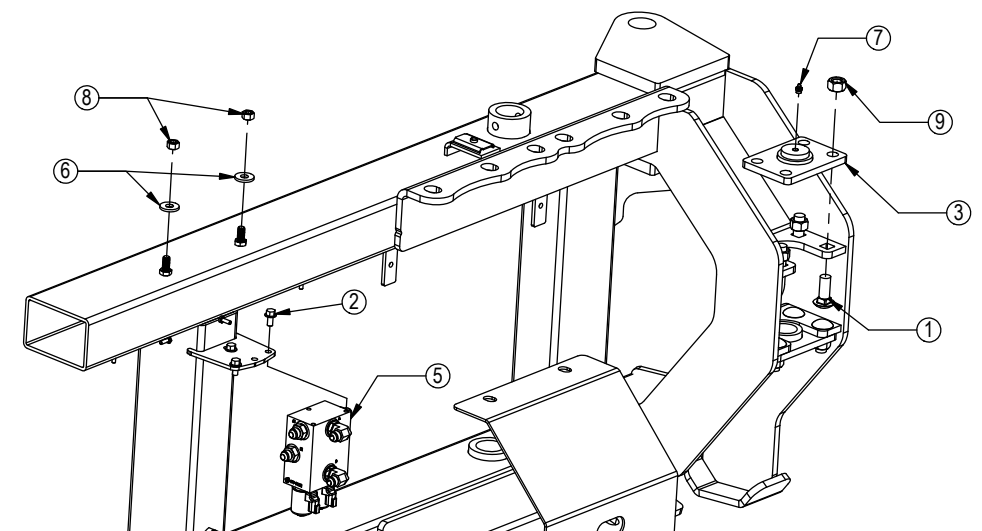
Item No.	Qty.	Part No.	Description
1	2	25-34342	Tappet Quick Coupler Male
2*	2	25-3453	Pioneer Dust Cap Tilt (Green)
3*	2	25-3454	Pioneer Dust Plug Tilt (Green)
4	2	26-34711	4 x 8 Cylinder W/ Cast Clevis Ends
5	2	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)
6	2	31-34051	Straight Thread 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	35-30122	40” x 1/2” -8JIC/-8JIC Hose
10	1	35-30126	50” x 1/2” -8JIC/-8JIC Hose

* Parts Not Shown

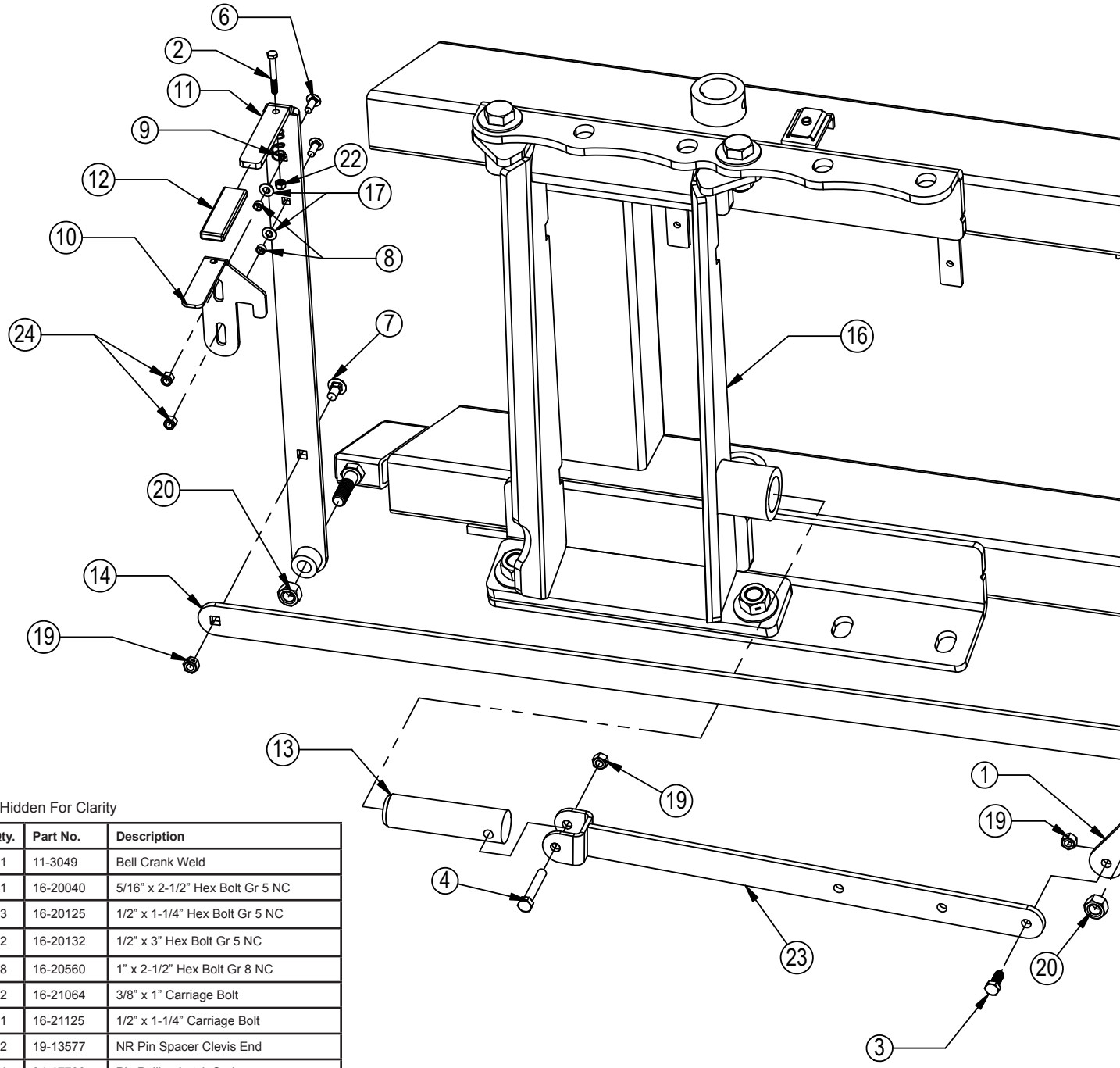
See Pages 20-23 for the remaining hydraulics.

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

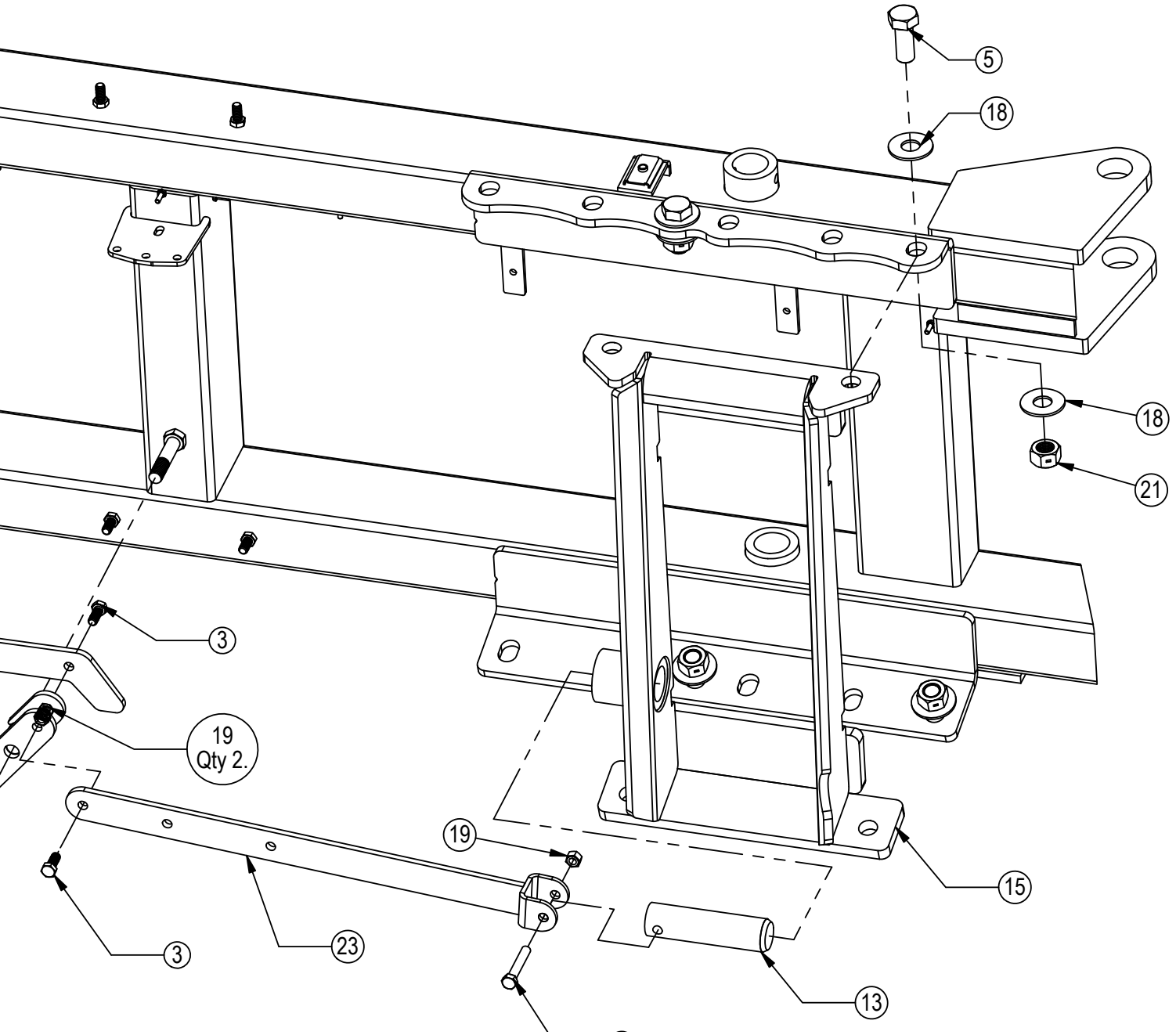


Item No.	Qty.	Part No.	Description
1	16	16-21218	3/4” x 2” Carriage Bolt Gr 5 NC
2	3	16-35C612	3/8” x 3/4” Flanged Bolt
3	4	18-14670	770- Trunnion Mount Bracket
4	1	18-1701	AG Pro Hydraulic Valve Cover
5	1	56-14680	Logic Hydraulic Angle Valve
6	2	57-20744	1/2” Flat Washer
7	4	58-9369	Grease Zerk 1/8” NPT Straight
8	2	70-20604	1/2” Hex Center Lock Nut Gr 2 NC
9	16	70-20607	3/4” Hex Center Lock Nut Gr 2 NC



Some Parts Hidden For Clarity

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
14	1	44-14662	Pin Puller Link Plate
15	1	45-14710-R	Female Bolt On Quick Attach, Right
16	1	45-14710-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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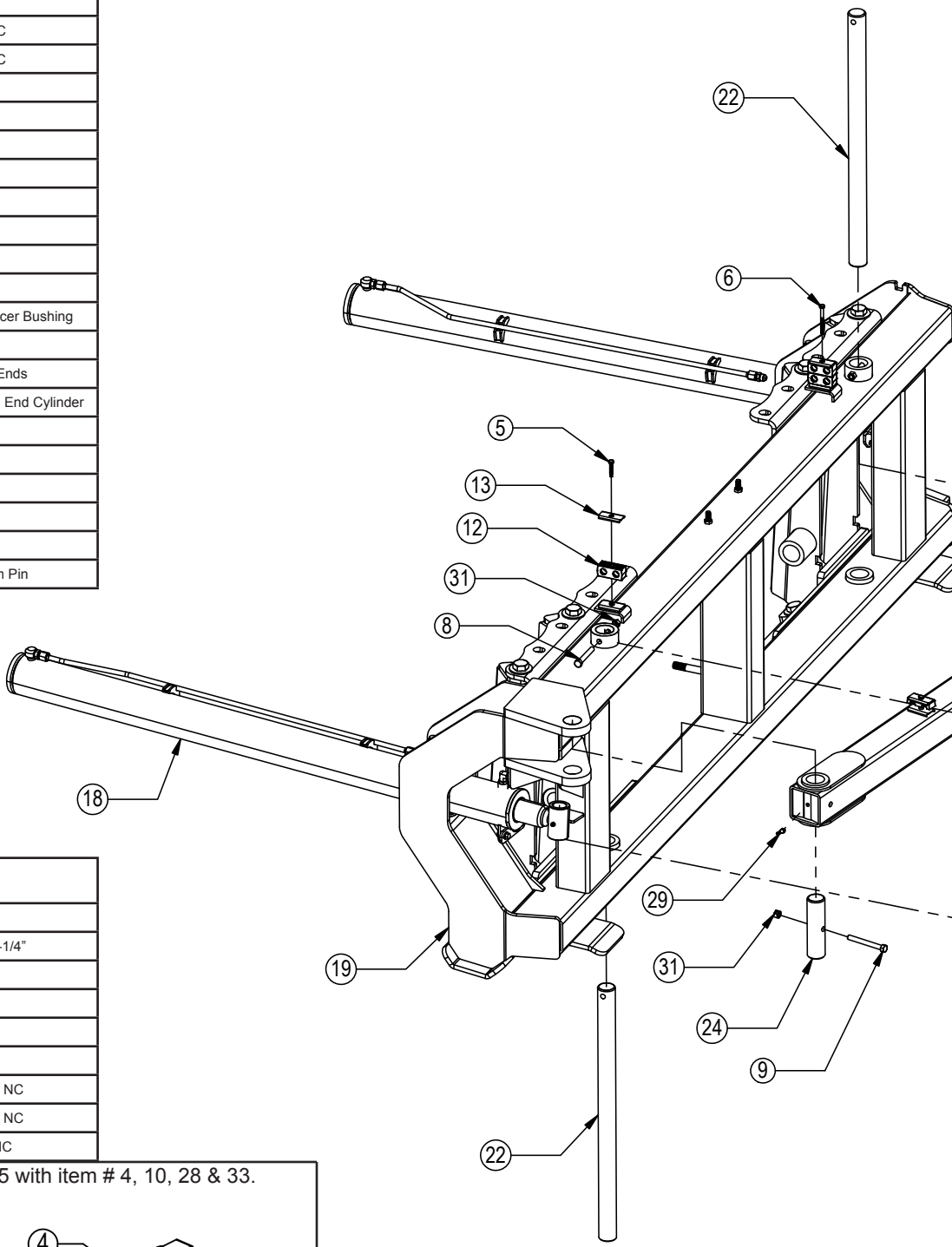
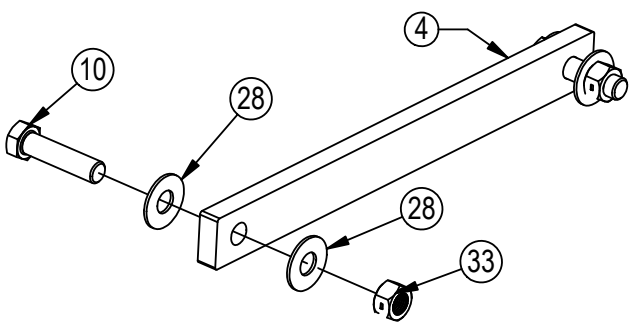
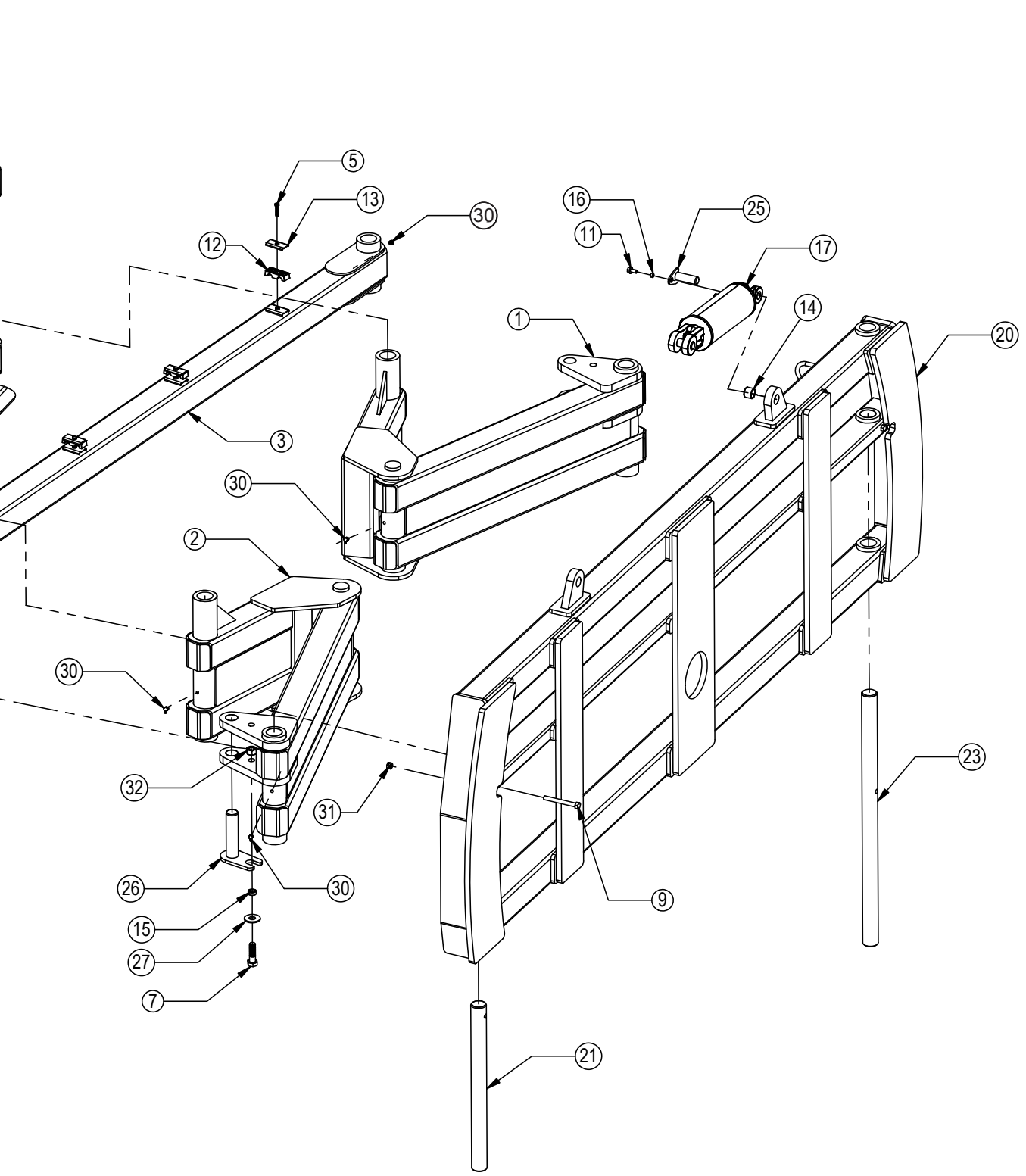
Item No.	Qty.	Part No.	Description
1	1	11-14640-L	770 Series Angle Arm Left
2	1	11-14640-R	770 Series Angle Arm Right
3	1	11-14650	770 Series Stabilizer Arm
4	1	14-9366	Non Tilt Bar
5	5	16-20036	5/16" x 1-1/2" Hex Bolt Gr 5 NC
6	1	16-20043	5/16" x 3-1/4" Hex Bolt Gr 5 NC
7	2	16-20220	3/4" x 2-1/2" Hex 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	4	16-35C612	3/8" x 3/4" Flanged Bolt
12	5	18-3074	Hose Hold Down Clamp
13	6	18-3075	Hose Hold Down Clamp Plate
14	2	19-7774	1" x 1" Spring Bushing
15	2	19-13515	3/4" ID - Non Rotating Pin Spacer Bushing
16	4	19-13577	NR Pin Spacer Clevis End
17	2	26-34711	4 x 8 Cylinder W/ Cast Clevis Ends
18	2	26-34739	4 x 55 Trunnion Mounted Tube End Cylinder
19	1	32-14610	770 Angle Frame
20	1	32-14620	770 HA Tilt Frame
21	1	43-8130	1-15/16" x 23-1/4" Pin
22	2	43-8131	1-15/16" x 31" Pin
23	1	43-8132	1-15/16" x 35-1/2" Pin
24	1	43-8133	1-15/16" x 7-1/8" Stabilizer Arm Pin



Item No.	Qty.	Part No.	Description
25	4	43-13580	1" Clevis Bolt In Pin
26	2	43-8466	Angle Cylinder Pin - 1-1/2" x 6-1/4"
27	2	57-20747	3/4" Flat Washer
28	4	57-20749	1" Flat Washer
29	1	58-9371	Grease Zerk 1/8" NPT 45°
30	7	58-9372	Grease Zerk 1/8" NPT 90°
31	5	70-20604	1/2" Hex Center Lock Nut Gr 2 NC
32	2	70-20607	3/4" Hex Center Lock Nut Gr 2 NC
33	2	70-20609	1" Hex Center Lock Nut Gr 2 NC

HANT - Replace item # 11, 14, 16, 17 & 25 with item # 4, 10, 28 & 33.

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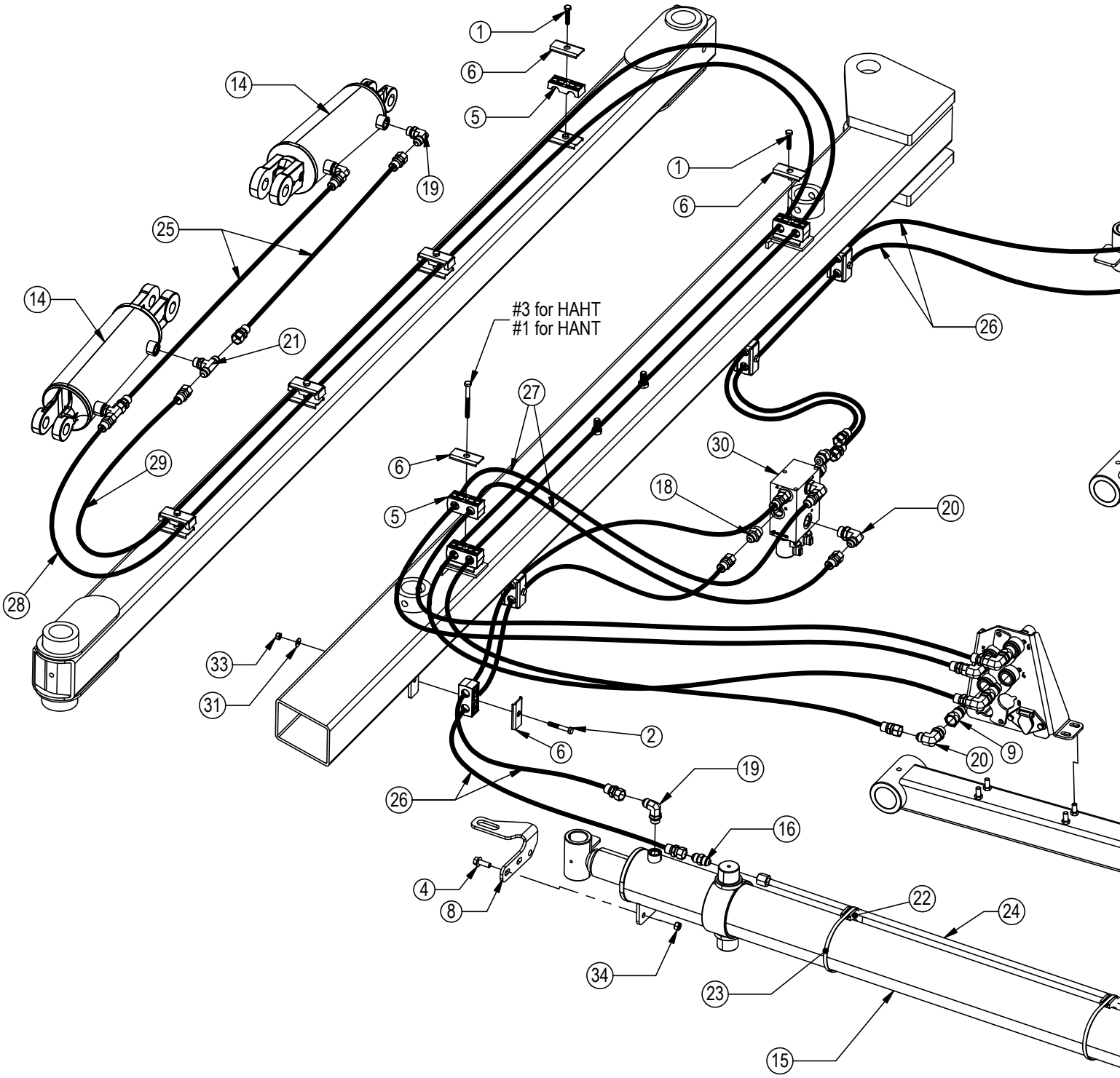
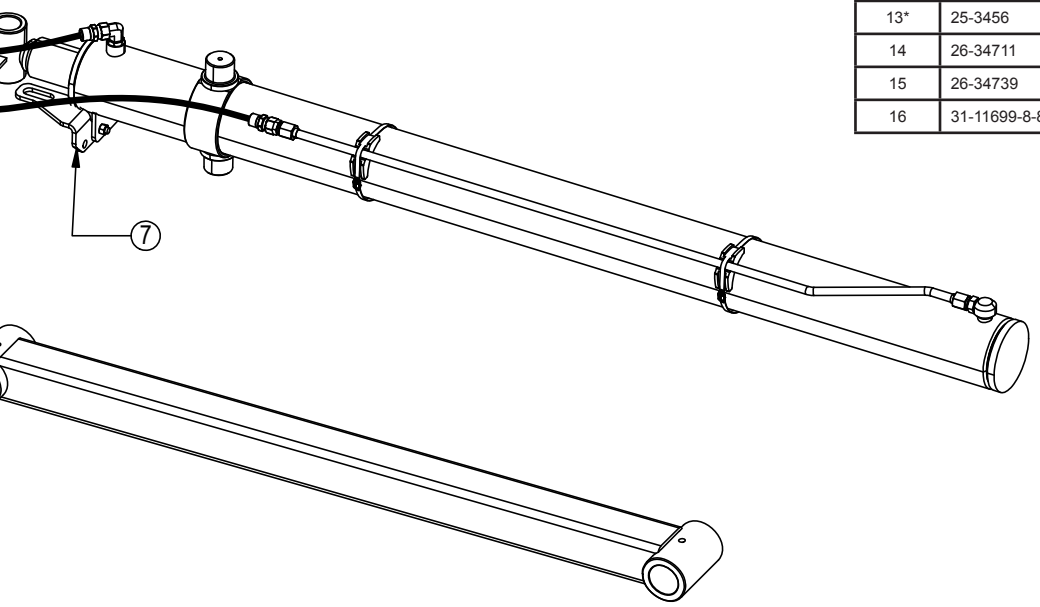
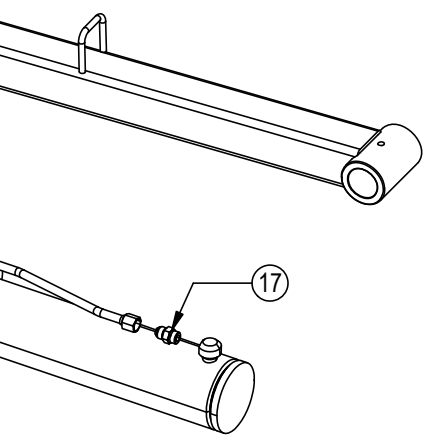
Hoses Not Drawn To Scale



		Configuration	HAHT	HANT
Item No.	Part No.	Description	Qty.	Qty.
1	16-20036	5/16" x 1-1/2" Hex Bolt Gr 5 NC	5	1
2	16-20038	5/16" x 2" Hex Bolt Gr 5 NC	4	4
3	16-20043	5/16" x 3-1/4" Hex Bolt Gr 5 NC	1	-
4	16-35C616	3/8" x 1" Flanged Bolt	4	4
5	18-3074	Hose Hold Down Clamp	9	5
6	18-3075	Hose Hold Down Clamp Plate	10	5
7	18-14684-R	Switch Mount Bracket - Right	1	1
8	18-14684-L	Switch Mount Bracket - Left	1	1
9	25-34342	Tappet Quick Coupler Male	4	2
10*	25-3453	Pioneer Dust Cap Tilt (Green)	2	-
11*	25-3454	Pioneer Dust Plug Tilt (Green)	2	-
12*	25-3455	Pioneer Dust Cap Angle (Red)	2	2
13*	25-3456	Pioneer Dust Plug Angle (Red)	2	2
14	26-34711	4 x 8 Cylinder W/ Cast Clevis Ends	2	-
15	26-34739	4 x 55 Trunnion Mounted Tube End Cylinder	2	2
16	31-11699-8-8	JIC Union (2403-8-8)	2	2

* Parts Not Shown





See Pages 20-23 for the remaining hydraulics and hydraulic connections.
See Page 27 for hydraulic schematic.

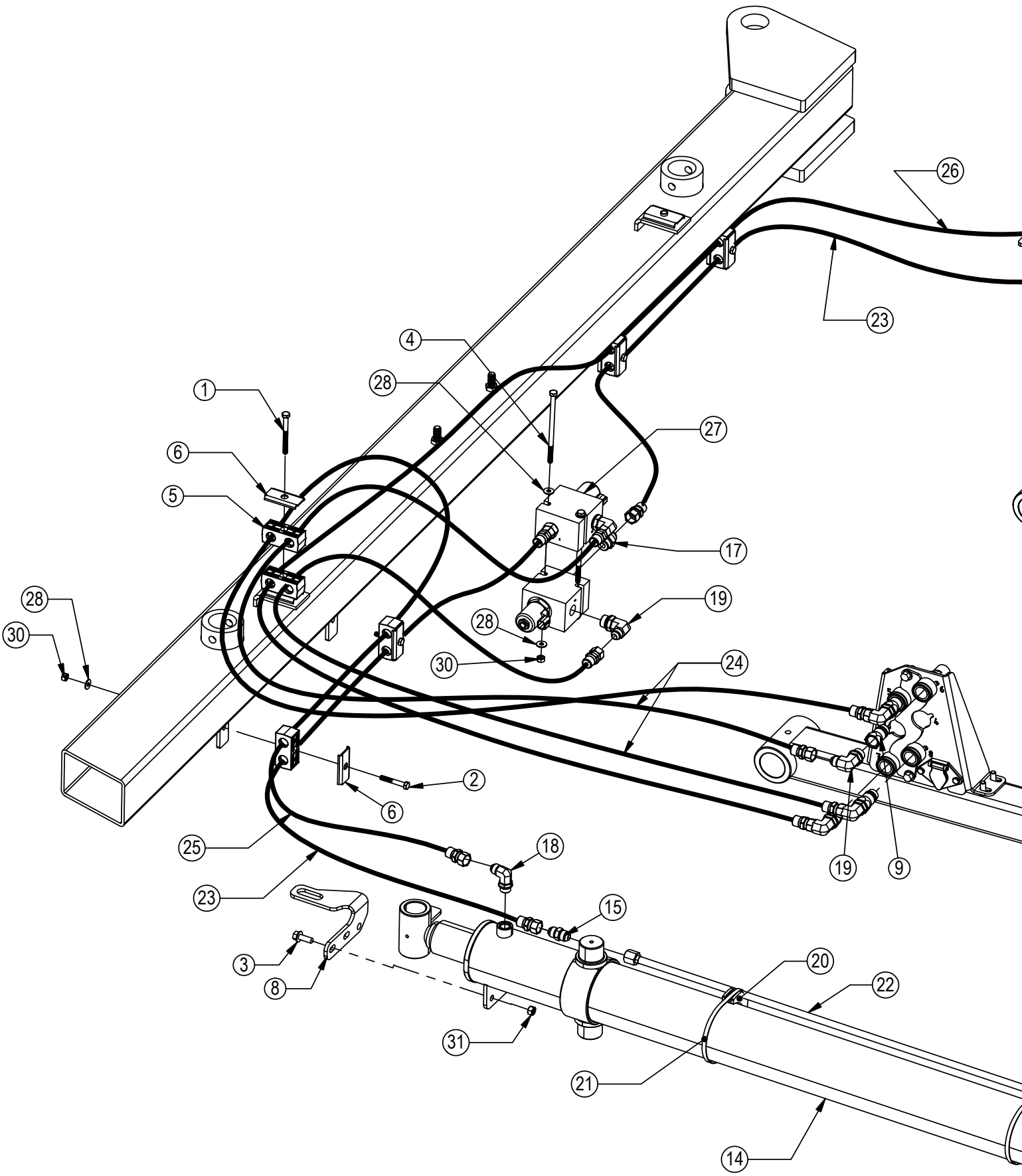
		Configuration	HAHT	HANT
Item No.	Part No.	Description	Qty.	Qty.
17	31-34040	Straight JIC x O-Ring (6400-8-8)	2	2
18	31-34041	Straight JIC x O-Ring (6400-8-10)	4	4
19	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)	4	2
20	31-34051	Straight Thread Elbow 90° JIC x O-Ring (6801-8-10)	6	4
21	31-34060	Branch Tee JIC x O-Ring (6803-8-8-8)	2	-
22	34-12932	Cylinder Saddle	4	4
23	34-12994	Cylinder Hose Clamp	4	4
24	35-14674	45" -8 Formed Steel Line - Tier 4 Angle	2	2
25	35-30022	39" x 3/8" -8JIC/-8JIC Hose	2	-
26	35-30131	66" x 1/2" -8JIC/-8JIC Hose	4	4
27	35-30135	78" x 1/2" -8JIC/-8JIC Hose	2	2
28	35-30173	230" (19.17') x 1/2" -8JIC/-8JIC Hose	1	-
29	35-30174	240" (20') x 1/2" -8JIC/-8JIC Hose	1	-
30	56-14680	Logic Hydraulic Angle Valve	1	1
31	57-20741	5/16" Flat Washer	4	4
32*	59-34952	Stud Mounted Zip Tie	10	10
33	70-20581	5/16" Hex Nut NC	4	4
34	70-20622	3/8" Flange Hex Nut NC	4	4

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
26-34739	49-12274	Seal Kit 4 x 55 (647210) Nitrided Rod

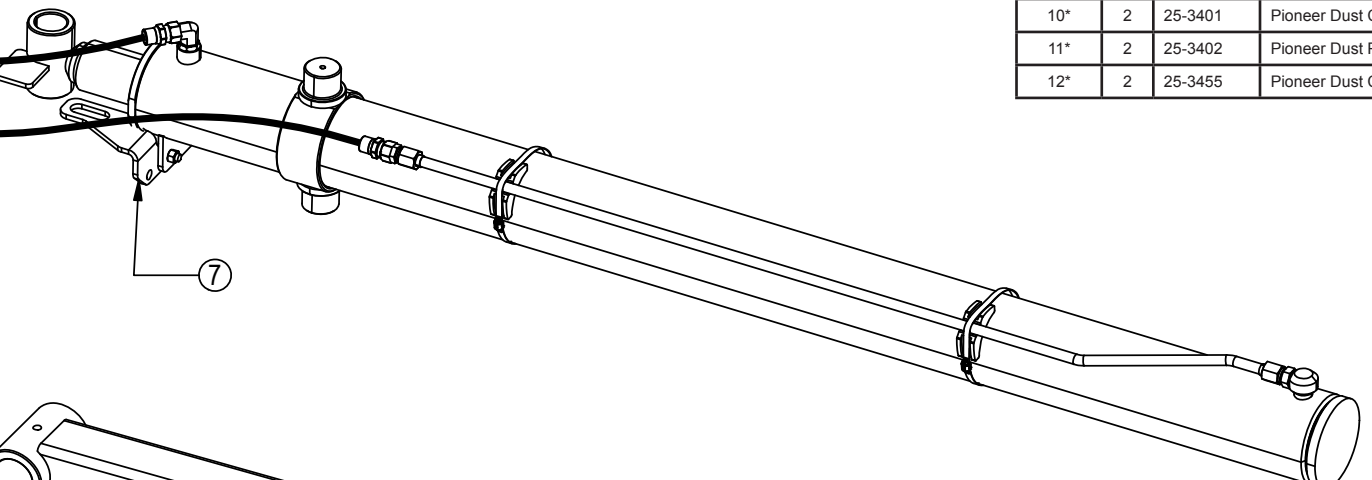
Hydraulic Angle - 2 Lever System Hose Routing

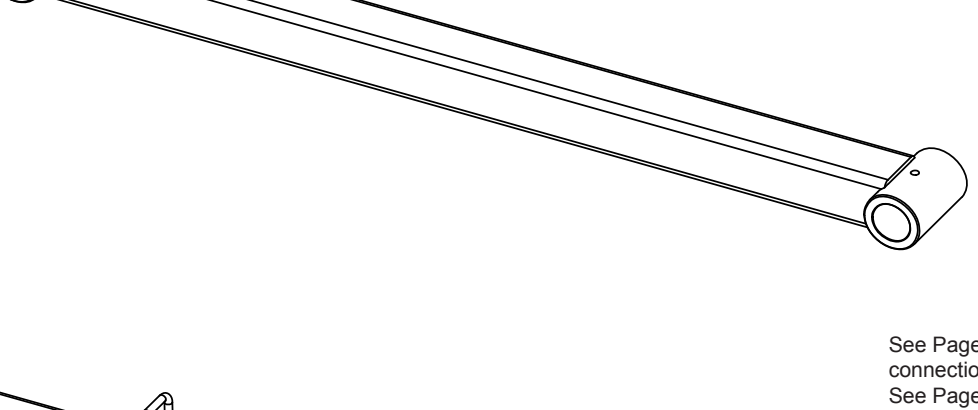
Hoses Not Drawn To Scale

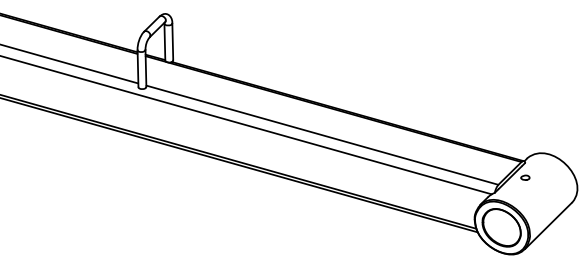


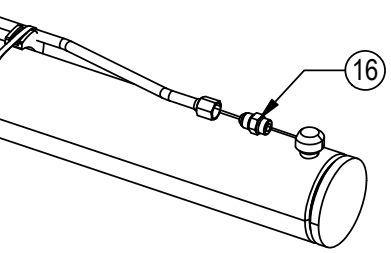
Item No.	Qty.	Part No.	Description
1	1	16-20043	5/16” x 3-1/4” Hex Bolt Gr 5 NC
2	4	16-20038	5/16” x 2” Hex Bolt Gr 5 NC
3	4	16-35C616	3/8” x 1” Flanged Bolt
4	2	16-20050	5/16” x 6” Hex Bolt Gr 5 NC
5	6	18-3074	Hose Hold Down Clamp
6	5	18-3075	Hose Hold Down Clamp Plate
7	1	18-14684-R	Switch Mount Bracket - Right
8	1	18-14684-L	Switch Mount Bracket - Left
9	4	25-34342	Tappet Quick Coupler Male
10*	2	25-3401	Pioneer Dust Cap Left Angle (Yellow)
11*	2	25-3402	Pioneer Dust Plug Left Angle (Yellow)
12*	2	25-3455	Pioneer Dust Cap Right Angle (Red)

* Parts Not Shown









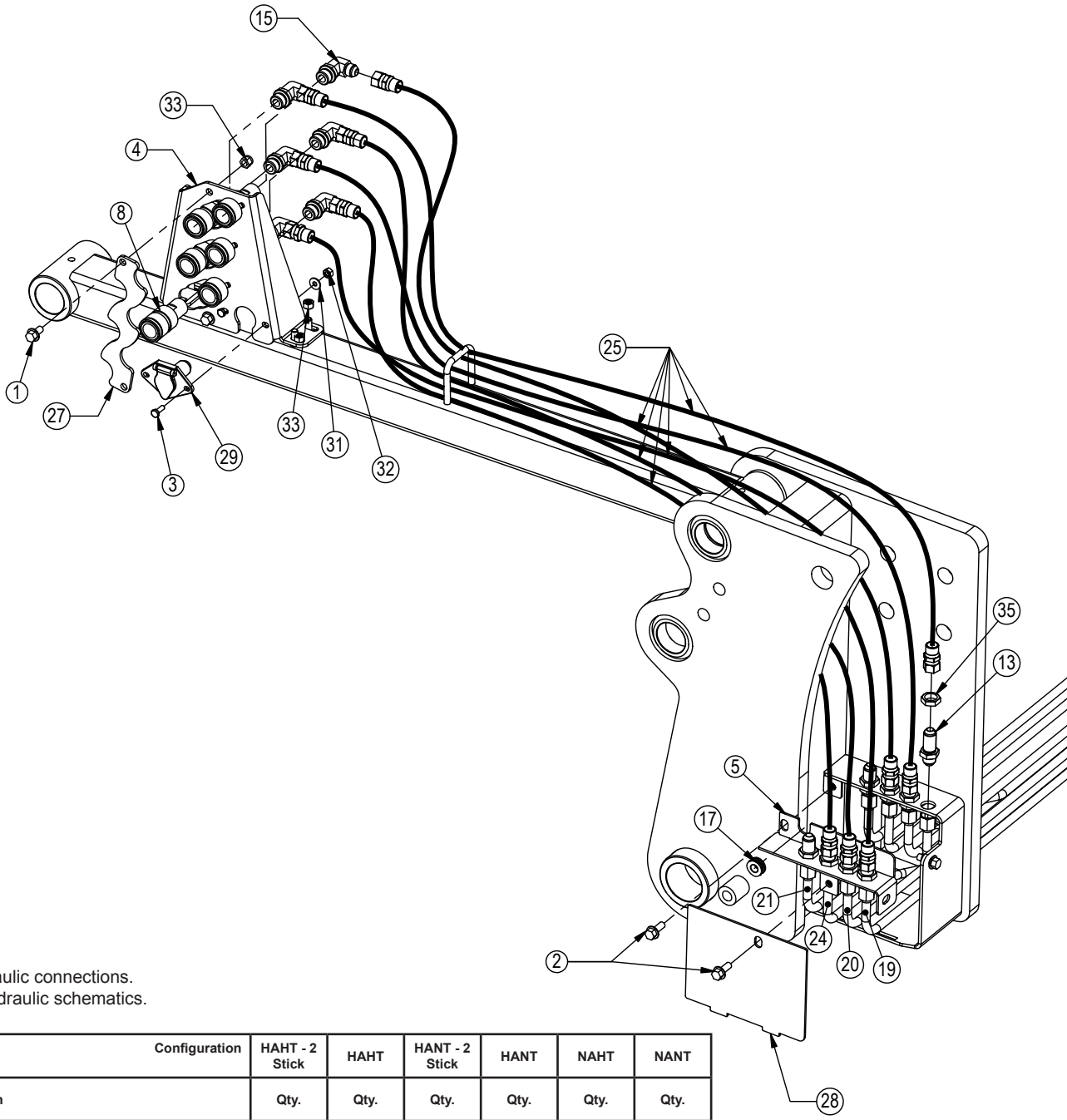
NOTE: When ordering cylinder seal kits, the part number on the cylinder is needed. The number is stamped on the base end of the cylinder opposite of the hydraulic ports.

No. On Cylinder	Part No.	Description
26-34739	49-12274	Seal Kit 4 x 55 (647210) Nitrided Rod

See Pages 20-23 for the remaining hydraulics and hydraulic connections.
See Page 29 for hydraulic schematic.

Item No.	Qty.	Part No.	Description
13*	2	25-3456	Pioneer Dust Plug Right Angle (Red)
14	2	26-34739	4 x 55 Trunnion Mounted Tube End Cylinder
15	2	31-11699-8-8	JIC Union (2403-8-8)
16	2	31-34040	Straight JIC x O-Ring (6400-8-8)
17	2	31-34041	Straight JIC x O-Ring (6400-8-10)
18	2	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)
19	6	31-34051	Straight Thread Elbow 90° JIC x O-Ring (6801-8-10)
20	4	34-12932	Cylinder Saddle
21	4	34-12994	Cylinder Hose Clamp
22	2	35-14674	45” -8 Formed Steel Line - Tier 4 Angle
23	2	35-30131	66” x 1/2” -8JIC/-8JIC Hose
24	2	35-30135	78” x 1/2” -8JIC/-8JIC Hose
25	1	35-30175	119” x 1/2” -8JIC/-8JIC Hose
26	1	35-30176	138” x 1/2” -8JIC/-8JIC Hose
27	1	56-14772	2-Stick Logic Angle Valve Kit
28	8	57-20741	5/16” Flat Washer
29*	10	59-34952	Stud Mounted Zip Tie
30	6	70-20581	5/16” Hex Nut NC
31	4	70-20622	3/8” Flange Hex Nut NC

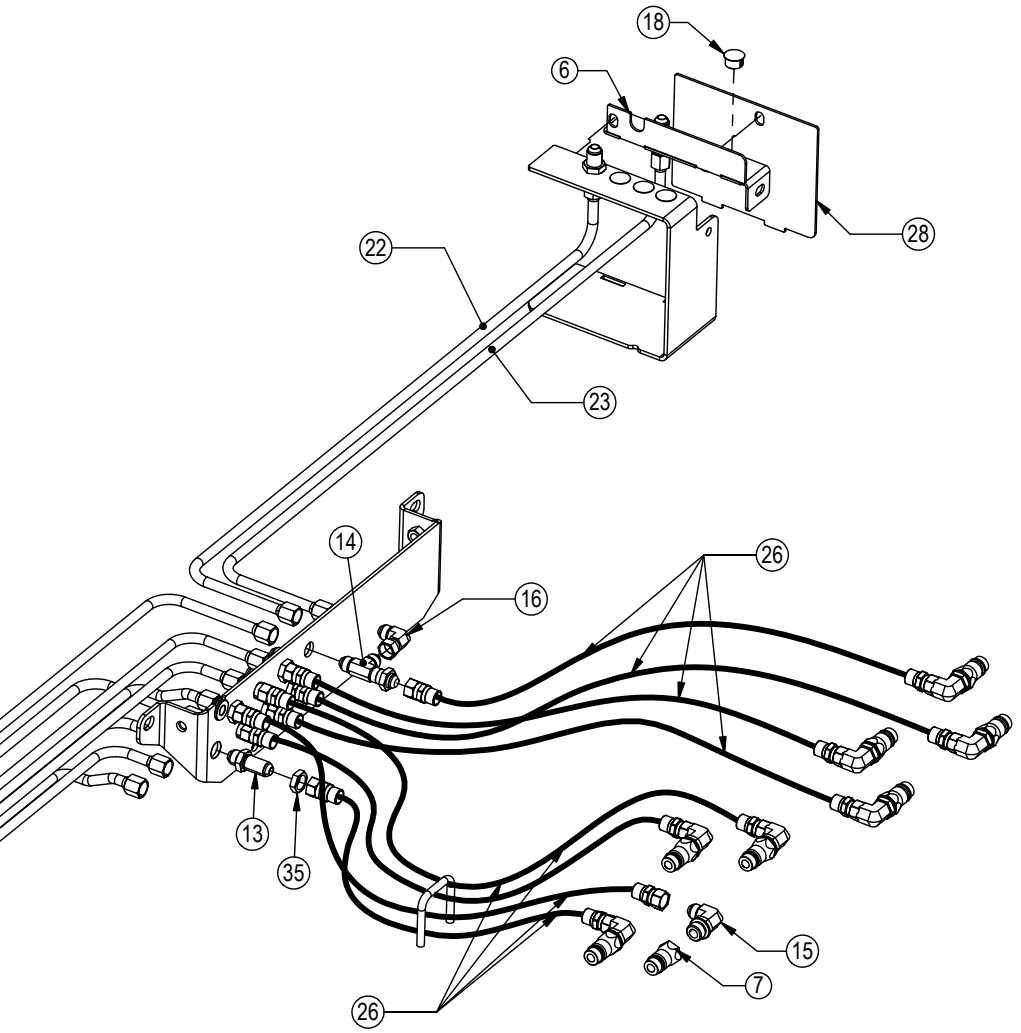
Hoses Not Drawn To Scale



See Pages 22-23 for hydraulic connections.
See Pages 27 or 29 for hydraulic schematics.

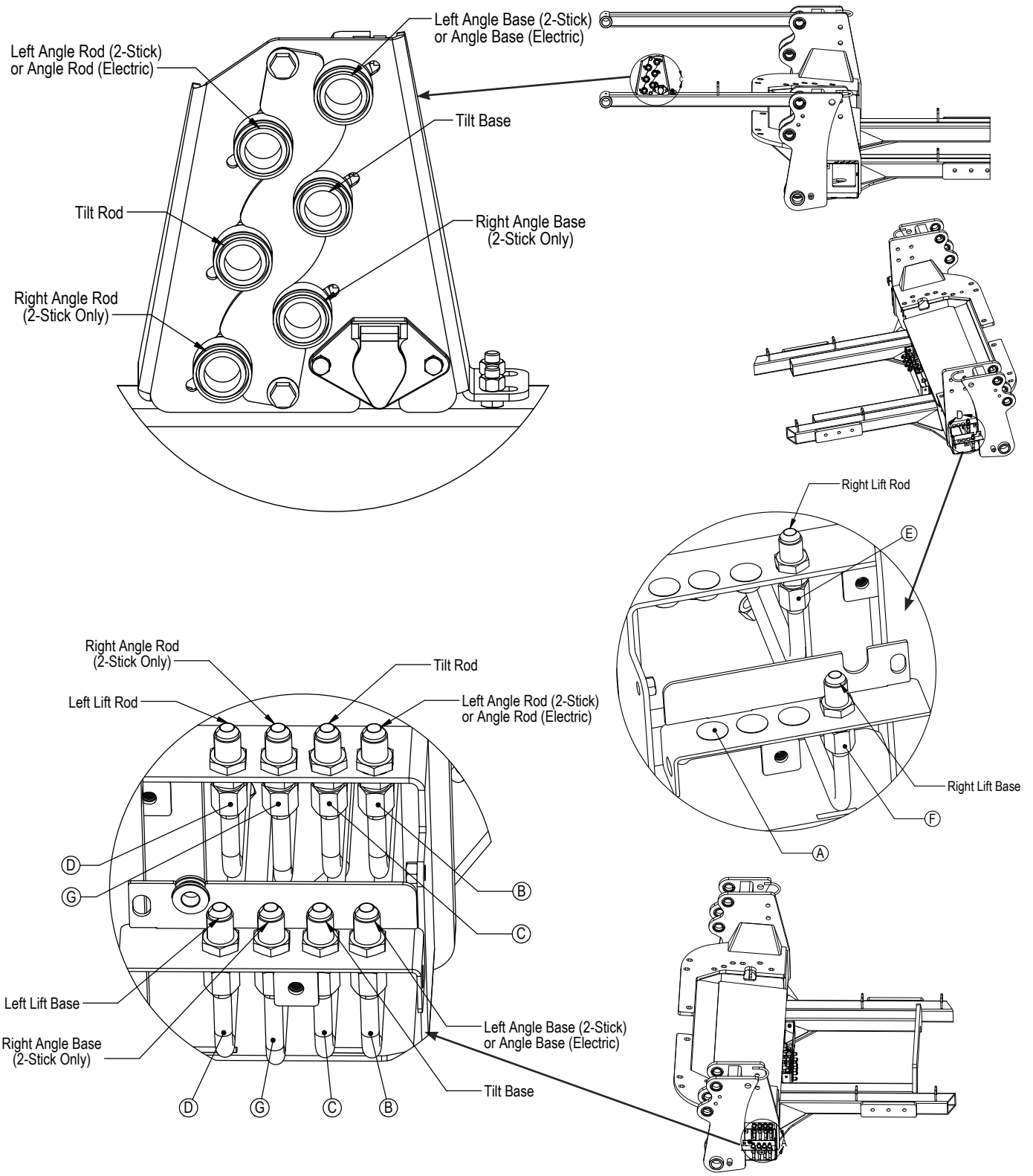
* Parts Not Shown

		Configuration	HAHT - 2 Stick	HAHT	HANT - 2 Stick	HANT	NAHT	NANT
Item No.	Part No.	Description	Qty.	Qty.	Qty.	Qty.	Qty.	Qty.
1	16-35C612	3/8" x 3/4" Flanged Bolt	2	2	2	2	2	-
2	16-35C616	3/8" x 1" Flanged Bolt	6	6	6	6	6	6
3	16-20002	1/4" x 3/4" Hex Bolt Gr 5 NC	2	2	2	2	-	-
4	18-14737	700 Series Female Coupler Mount - Universal	1	1	1	1	1	-
5	18-15580-L	Bracket, Hydraulic Cover - Top Left	1	1	1	1	1	1
6	18-15580-R	Bracket, Hydraulic Cover - Top Right	1	1	1	1	1	1
7	25-34342	Tappet Quick Coupler Male	8	6	6	4	4	2
8	25-34321	Tappet Quick Coupler Female	6	4	4	2	2	-
9*	25-3401	Pioneer Dust Cap Left Angle (Yellow)	2	-	2	-	-	-
10*	25-3453	Pioneer Dust Cap Tilt (Green)	2	2	-	-	2	-
11*	25-3455	Pioneer Dust Cap Right Angle (Red)	2	2	2	2	-	-
12*	25-3457	Pioneer Dust Cap Lift (Orange)	2	2	2	2	2	2
13	31-34000	Bulkhead Union JIC (2700-8-8)	16	12	12	8	8	4
14	31-34030	Bulkhead Run Tee JIC (2704-8-8-8)	2	2	2	2	2	2
15	31-34051	Straight Thread Elbow 90° JIC x O-Ring (6801-8-10)	14	10	10	6	6	2
16	31-34100	Swivel Nut Elbow 90° JIC (6500-8-8)	2	2	2	2	2	2
17	34-14826	1/2" ID Rubber Grommet	2	2	2	2	-	-

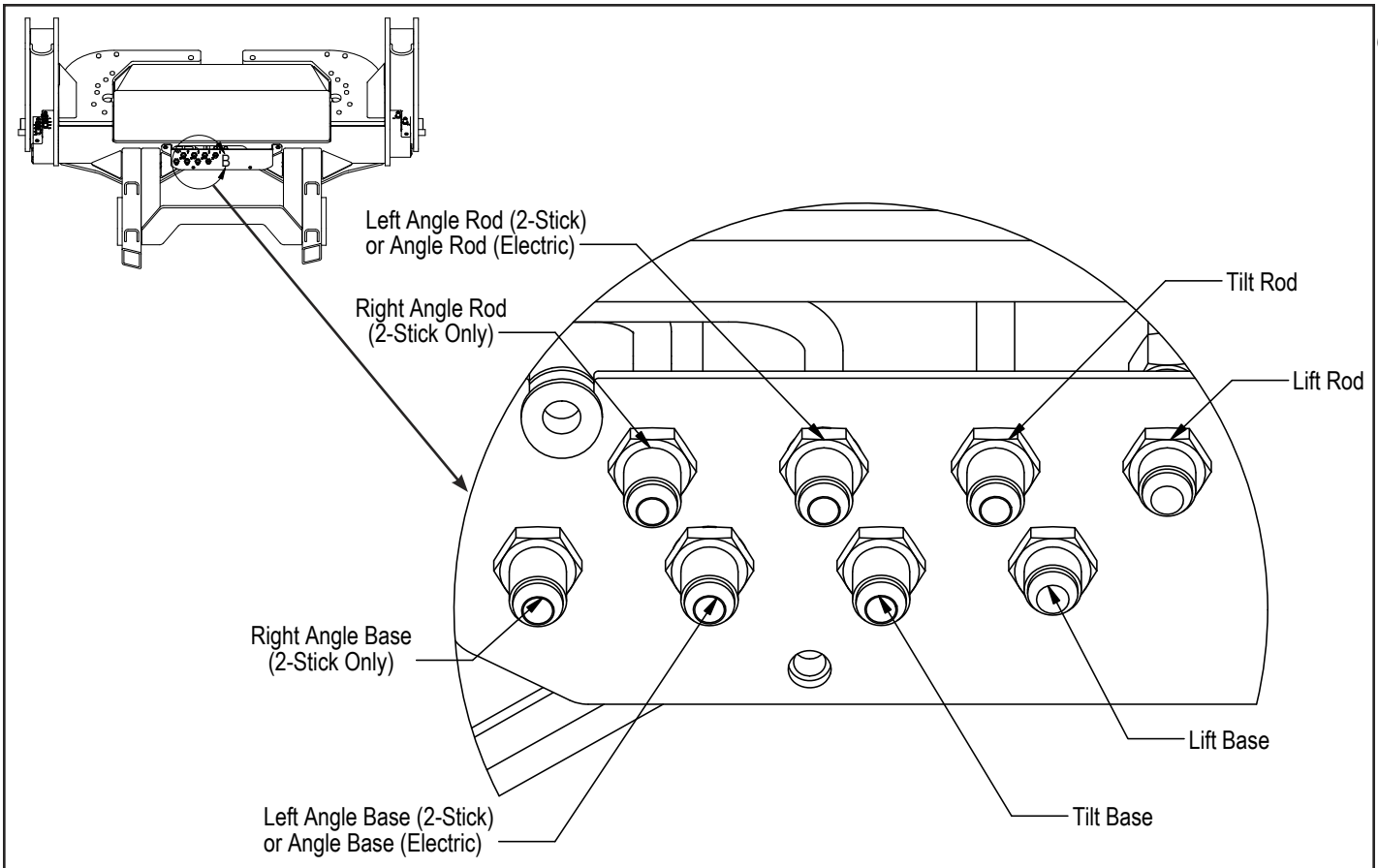


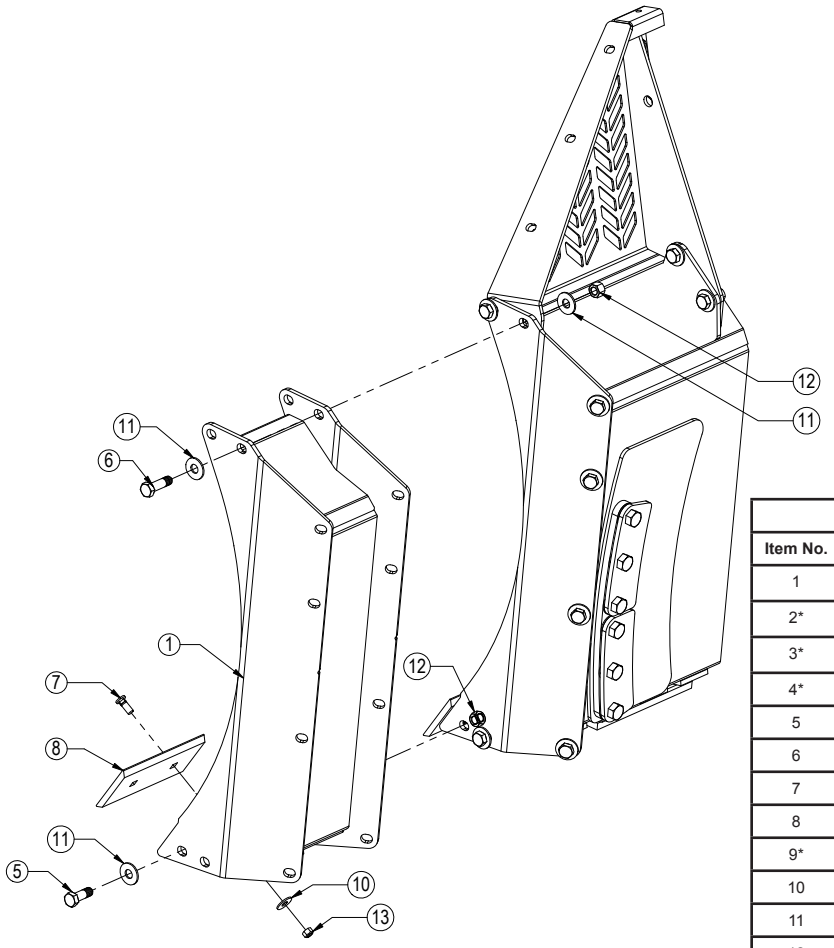
* Parts Not Shown

		Configuration	HAHT - 2 Stick	HAHT	HANT - 2 Stick	HANT	NAHT	NANT
Item No.	Part No.	Description	Qty.	Qty.	Qty.	Qty.	Qty.	Qty.
18	34-14898	Dome Plug (3044)	7	11	11	15	17	21
19	35-14351	31.63” -8 Formed Steel Line (Angle)	2	2	2	2	-	-
20	35-14352	33.88” -8 Formed Steel Line (Tilt)	2	2	-	-	2	-
21	35-14353	36.13” -8 Formed Steel Line (Left Lift)	2	2	2	2	2	2
22	35-14356	36.63” -8 Formed Steel Line (770 Right Lift)	1	1	1	1	1	1
23	35-14357	39.63” -8 Formed Steel Line (770 Right Lift)	1	1	1	1	1	1
24	35-14824	29.38” -8 Formed Steel Line (2-Stick - Left Side)	2	-	2	-	-	-
25	35-31132	69” x 1/2” -8JIC/-8JIC Hose W/ Cordura	6	4	4	2	2	-
26	35-30172	318” (26.5’) x 1/2” -8JIC/-8JIC Hose	8	6	6	4	4	2
27	44-14738	700 Series Female Coupler Retainer-Universal	1	1	1	1	1	-
28	44-15120	700 Series Side Cover Plate - Left	2	2	2	2	2	2
29*	69-14681	Logic Angle Valve Wire Harness	1	1	1	1	-	-
30*	69-14679	Electric Angle Switch	-	1	-	1	-	-
31*	69-14683	2-Stick Wire Harness Cap	1	-	1	-	-	-
32	57-20740	1/4” Flat Washer	2	2	2	2	-	-
33	70-20580	1/4” Hex Nut Gr 5 NC	2	2	2	2	-	-
34	70-20622	3/8” Flange Hex Nut NC	6	6	6	6	6	-
35	70-20807	3/4” Hex Jam Nut	18	14	14	10	10	6



		Configuration	HAHT - 2 Stick	HAHT	HANT - 2 Stick	HANT	NAHT	NANT
Item	Part No.	Description	Qty.	Qty.	Qty.	Qty.	Qty.	Qty.
A	34-14898	Dome Plug (3044)	7	11	11	15	17	21
B	35-14351	31.63" -8 Formed Steel Line (Angle)	2	2	2	2	-	-
C	35-14352	33.88" -8 Formed Steel Line (Tilt)	2	2	-	-	2	-
D	35-14353	36.13" -8 Formed Steel Line (Left Lift)	2	2	2	2	2	2
E	35-14356	36.63" -8 Formed Steel Line (770 Right Lift)	1	1	1	1	1	1
F	35-14357	39.63" -8 Formed Steel Line (770 Right Lift)	1	1	1	1	1	1
G	35-14824	29.38" -8 Formed Steel Line (2-Stick - Left Side)	2	-	2	-	-	-





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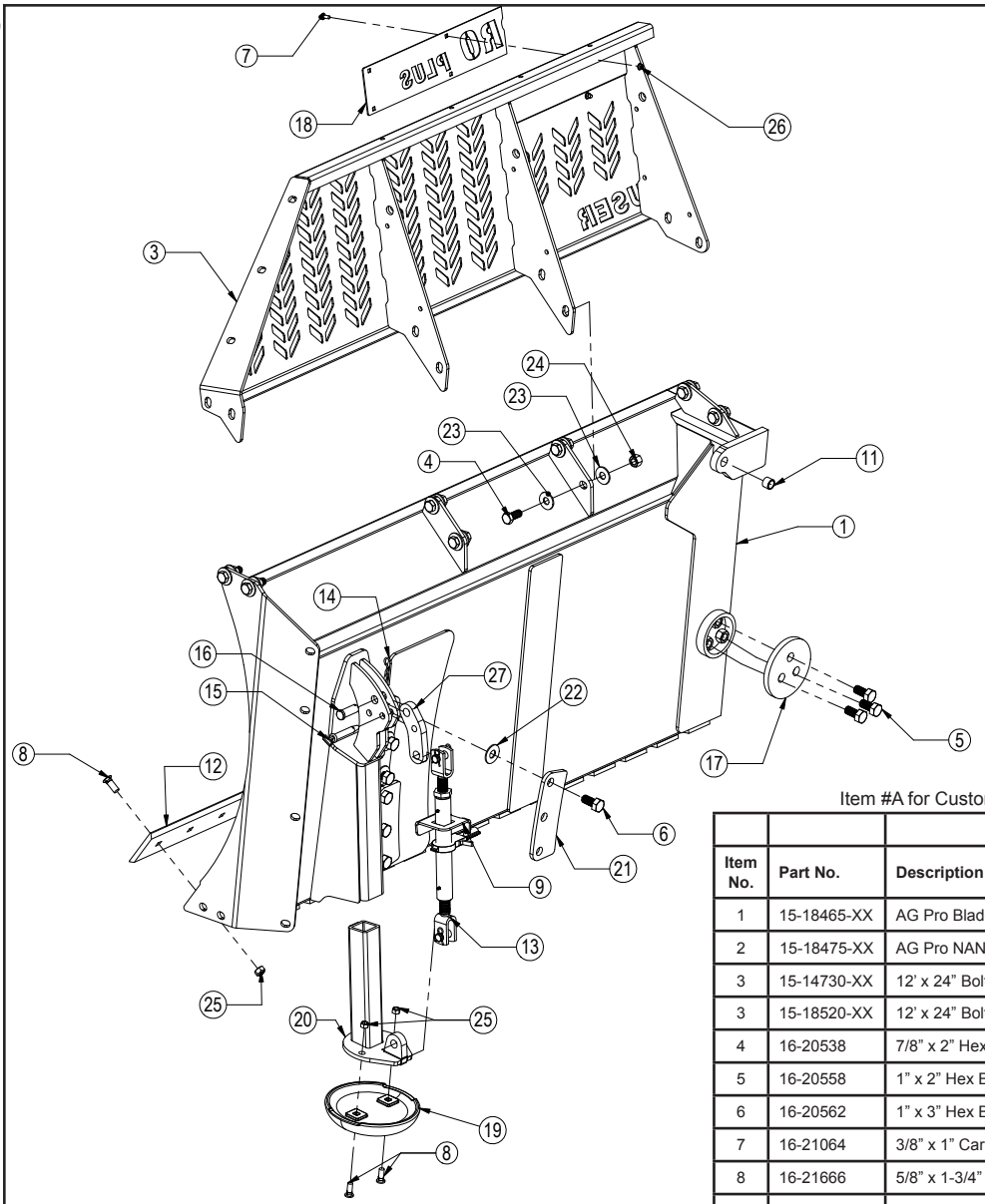
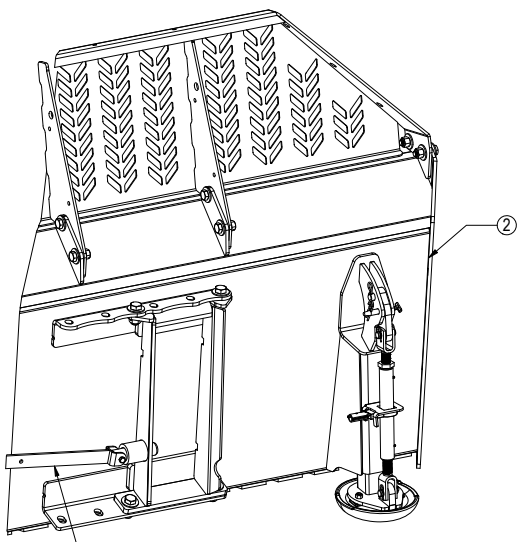
* Parts Not Shown

		End Extension Length	1'	2'
Item No.	Part No.	Description	Qty.	Qty.
1	15-13990-1-L	Slant Top 1' End Extension cmb - Left	1	-
2*	15-13990-1-R	Slant Top 1' End Extension cmb - Right	1	-
3*	15-13990-2-L	Slant Top 2' End Extension cmb - Left	-	1
4*	15-13990-2-R	Slant Top 2' End Extension cmb - Right	-	1
5	16-20538	7/8" x 2" Hex Bolt Gr 8 NC	12	12
6	16-20540	7/8" x 2-1/2" Hex Bolt Gr 8 NC	4	4
7	16-21666	5/8" x 1-3/4" Plow Bolt Gr 5 NC	4	8
8	29-7950-1	1'- 5/8" x 6" Double Bevel Cutting Edge	2	-
9*	29-7950-2	2'- 5/8" x 6" Double Bevel Cutting Edge	-	2
10	57-20816	5/8" Flat Washer Grade 8 (USS)	4	8
11	57-20818	7/8" Flat Washer Heavy Duty Grade 8 (USS)	20	20
12	70-20598	7/8" Hex Nut Gr 8 NC	16	16
13	70-20646	5/8" Hex Top Lock Nut Gr 5 NC	4	8





Refer to Page 12-13 for Quick Attach System.

Item #A for Custom Name Plate and Item #B for AG Pro Name Plate

		Blade Length	14'	16'	18'	20'
Item No.	Part No.	Description	Qty.	Qty.	Qty.	Qty.
1	15-18465-XX	AG Pro Blade XX' - Slant Top	1	1	1	1
2	15-18475-XX	AG Pro NANT Blade XX' - Slant Top	1	1	1	1
3	15-14730-XX	12' x 24" Bolt on Top Extension	1	1	1	1
3	15-18520-XX	12' x 24" Bolt on Top Extension	1	1	1	1
4	16-20538	7/8" x 2" Hex Bolt Gr 8 NC	14	18	18	22
5	16-20558	1" x 2" Hex Bolt Gr 8 NC	3	3	3	3
6	16-20562	1" x 3" Hex Bolt Gr 8 NC	12	12	12	12
7	16-21064	3/8" x 1" Carriage Bolt Gr 5 NC	8	8	8	8
8	16-21666	5/8" x 1-3/4" Plow Bolt Gr 5 NC	32	36	40	44
9	18-18596-L	Ratchet Keeper - Left	1	1	1	1
10*	18-18596-R	Ratchet Keeper - Right	1	1	1	1
11	19-7774	1" x 1" Spring Bushing	2	2	2	2
12	29-7950-6	6'- 5/8" x 6" Double Bevel Cutting Edge	-	-	3	2
12	29-7950-7	7'- 5/8" x 6" Double Bevel Cutting Edge	2	-	-	-
12	29-7950-8	8'- 5/8" x 6" Double Bevel Cutting Edge	-	2	-	1
13	34-17565	Ratchet Jack with Pins	2	2	2	2
14	43-7767	Hitch Clip Pin	2	2	2	2
15	43-15712	3/4" x 3-1/4" Safety Hitch Pin w/ Clip Pin	2	2	2	2
16	43-18463	1" x 2.75" Pin	2	2	2	2
17	44-3749	Backdrag Brace Plate	1	1	1	1
18A	44-14830	Custom Name Plate	1	1	1	1
18B	44-15150	AG Pro Name Plate	1	1	1	1
19	50-15458	12" Round Mushroom Skid Shoe	2	2	2	2
20	50-18470	Mushroom Skid Shoe Mount	2	2	2	2
21	52-8204	Tilt Plate	4	4	4	4
22	57-20749	1" Flat Washer	12	12	12	12
23	57-20818	7/8" Flat Washer Heavy Duty Gr. 8 (USS)	28	36	36	44
24	70-20598	7/8" Hex Nut Gr 8 NC	14	18	18	22
25	70-20646	5/8" Hex Top Lock Nut Gr 5 NC	32	36	40	44
26	70-20622	3/8" Flange Nut	8	8	8	8
27	75-18479	Mushroom Skid Shoe Link	2	2	2	2

C3 - Blade Break Away

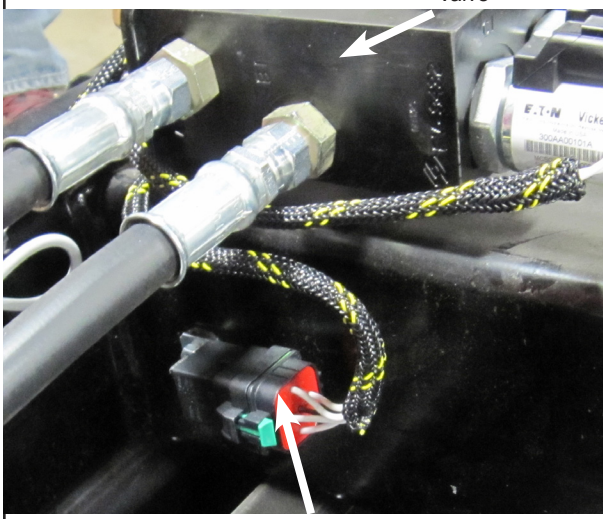
C6 & C7 - Left and Right Relay

C8 & C9 - Coil

Part Number: 69-14676

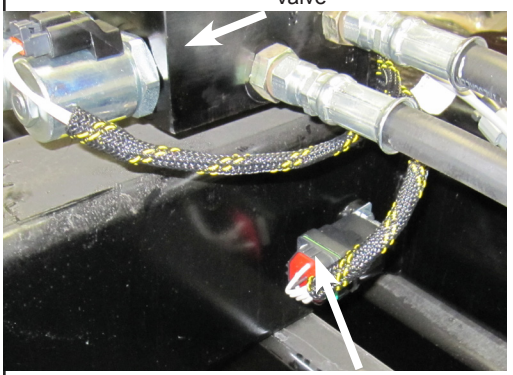
C4 & C5 - Left and Right Proximity

Valve

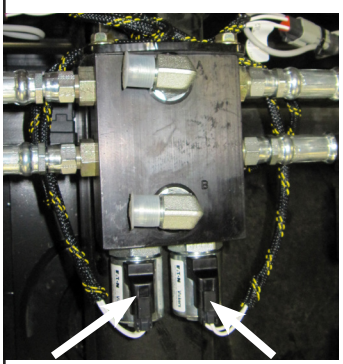


C6 - Left Relay

Valve



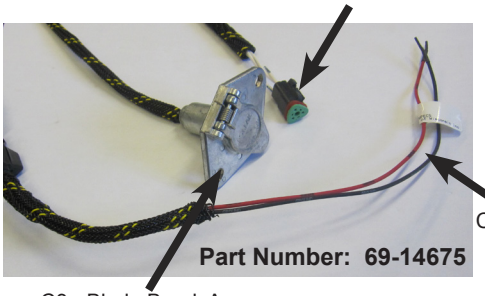
C7 - Right Relay



C9 - Coil

C8 - Coil

C2 - Selector Switch



C1 - Power Supply

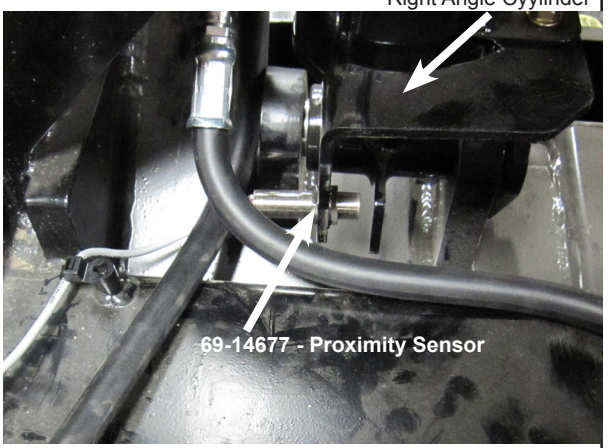
Part Number: 69-14675

C3 - Blade Break Away

See Page 20 for Attaching to Bracket

Part Number: 69-14677

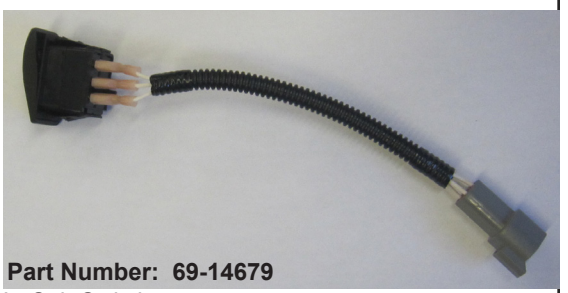
Right Angle Cyylinder



69-14677 - Proximity Sensor

Part Number: 69-14683

In Cab Connector
USED ONLY WITH
2 LEVER ANGLE SYSTEMS

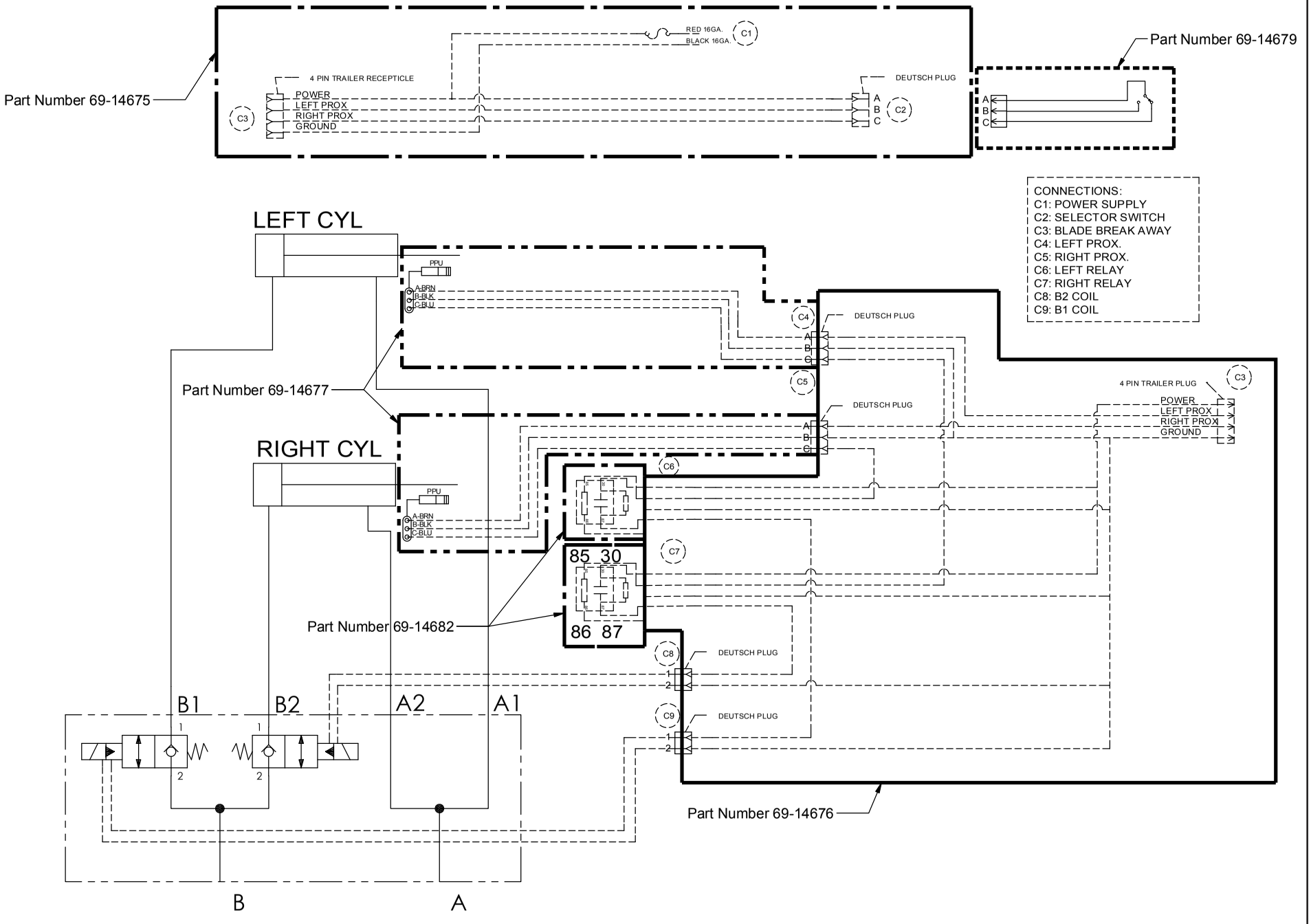


Part Number: 69-14679

In Cab Switch
USED ONLY WITH
ELECTRIC ANGLE SYSTEMS

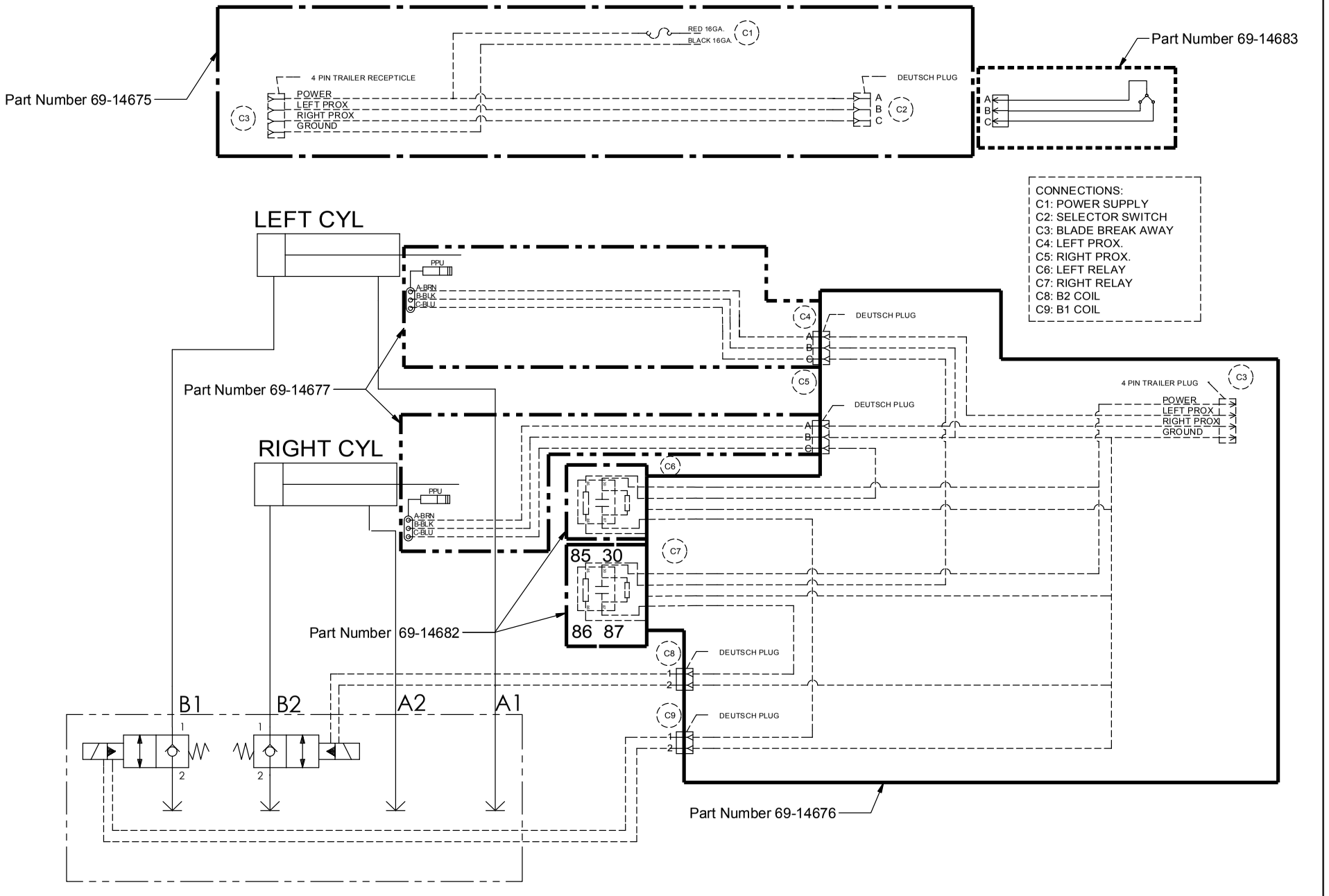
See Pages 26 or 28 for full system wire harness schematic

Angle Wire Harness



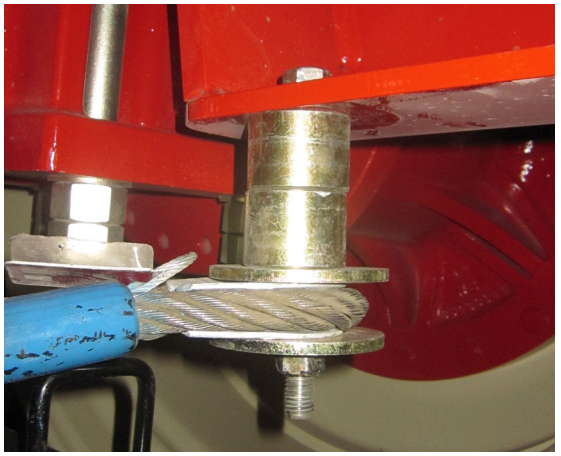
Tilt Cylinders
A
A1
A2
Valve
B1
B2
B
Angle Cylinder Left
Angle Cylinder Right
Left Lift Cylinder
Right Lift Cylinder
Angle Quick Connects
#5 Red Cap
#6 Red Cap
#5 Red Plug
#6 Red Plug
Tilt Quick Connects
#4 Green Cap
#3 Green Cap
#4 Green Plug
#3 Green Plug
#5 Red Cap
#6 Red Cap
Angle Retract
Angle Extend
#1 Orange Cap
#2 Orange Cap
Lift Up
Lift Down
#4 Green Cap
#3 Green Cap
Tilt to Right
Tilt to Left
Female Quick Connects
At Rear Of Tractor

Angle - 2 Lever Wire Harness

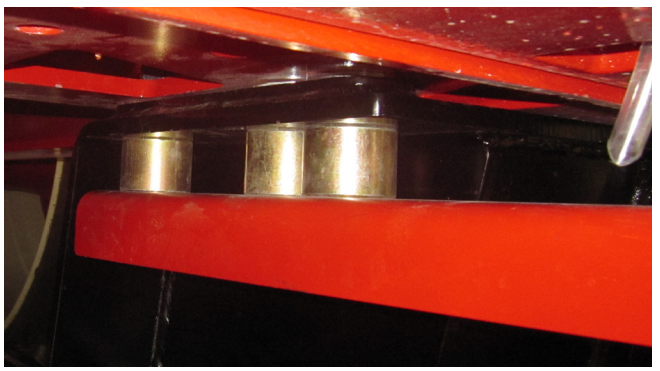


2 Lever Hydraulic Schematic

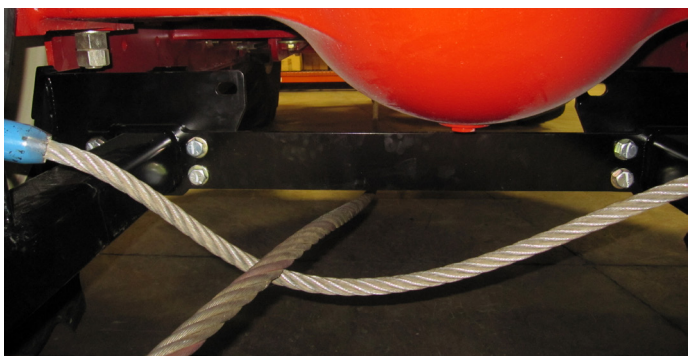
Tow Cable Installation



1. Add 2 spacers in between the cable holder and the tractor frame by the front tires. Use a 5/8” x 6” bolt (PN: 16-20200), 2 - 5/8” washers (PN: 57-20746) and a 5/8” top lock nut (PN: 70-20646) on each side.

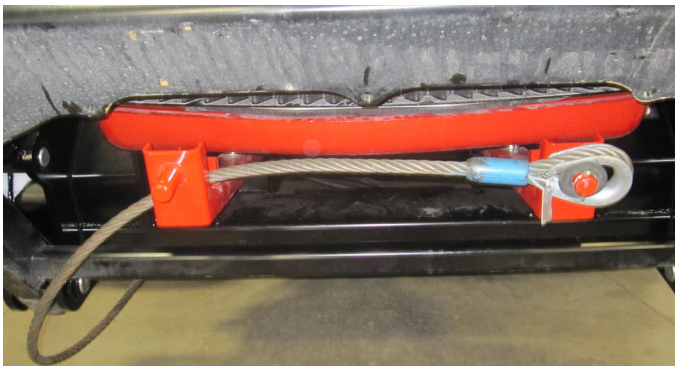


2. Install the front cable support bracket at the front of the undercarriage. Install with 3 spacers on each side in between the undercarriage and the bracket. Use 3 - 20mm x 120mm (PN: 16-2489) to install the bracket and undercarriage. Use the same washers and nuts that were used in the mounting instructions on Pages 4-5.



3. Route the cable underneath the undercarriage, then over the cable support and under the undercarriage on the right side.

4. Install the original bracket to the undercarriage with 2 - 3/4” x 2” bolts (PN: 16-20218) and 2 - 3/4” nuts (PN: 70-20607). Cable clamp is installed in Step #6.

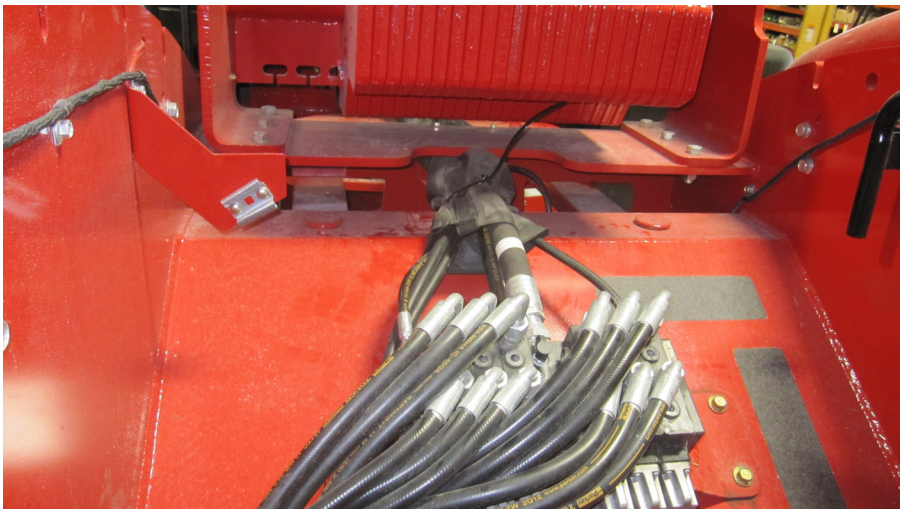


5. Finish routing the cable under the lift frame and up over the cable bracket. Attach to the bracket with the original hardware.

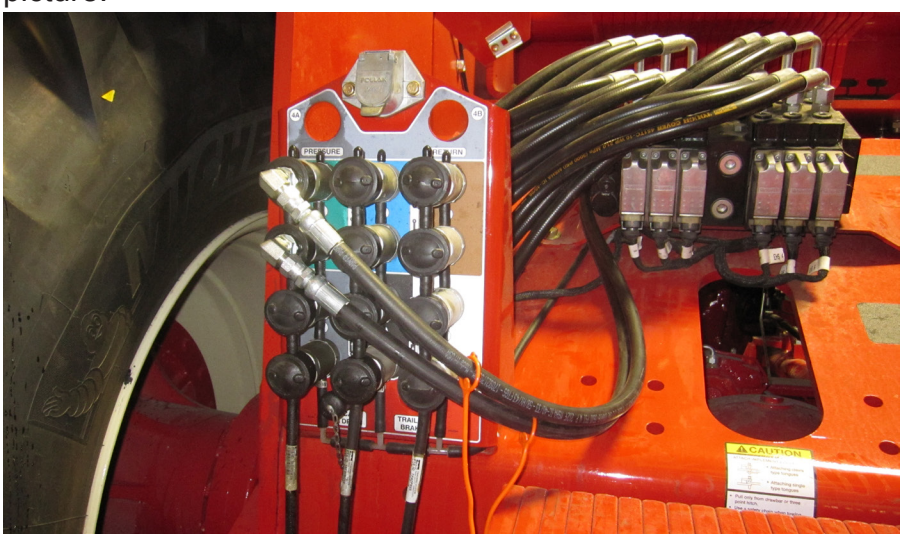
6. Pull the cable so there is some slack at the front under the lift frame as shown in the picture above. Then put a cable clamp up by the side bracket as shown in the picture from Step #4 to keep the cable in place.

Hose Routing Pictures

Route Hoses in the same location as the tractor's hoses. Replace zip ties if you run the hoses in the the tractor's original hose cordura.



Exit the frame at the center of the rear frame as shown in the picture.



After installing the male couplers, plug each set into a set of rear SCV's

Contact Us

As always, if you have any questions about your 770 Dozer or other products made by Grouser, feel free to contact us.

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Improvements

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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 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.

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