

# 19' U-Blade 770HD Steiger Quad 500 Owner's Manual & Parts Book

### For Models:

Case Steiger Quad - 450, 500, 550, 600

Purchase Date	
Serial Number	
Model Number	
Tractor Model	
Dealer	

PN: 63-12159 Date 7-19-2012

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# 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. 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.

# 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.

SAE G	SAE Grade 5		rade 8
UNC	UNF	UNC	UNF
17	19	24	27
30	35	45	50
50	55	70	80
75	85	110	120
110	120	150	170
150	170	210	240
260	300	380	420
430	470	600	670
640	720	910	1020
	17 30 50 75 110 150 260 430	17     19       30     35       50     55       75     85       110     120       150     170       260     300       430     470	17     19     24       30     35     45       50     55     70       75     85     110       110     120     150       150     170     210       260     300     380       430     470     600

	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

# 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 2.
- 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.
- 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.
- 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:

- Read and follow all safety instructions provided by the tractor manufacturer.
- 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.

# **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 Instructions**

### Caution:

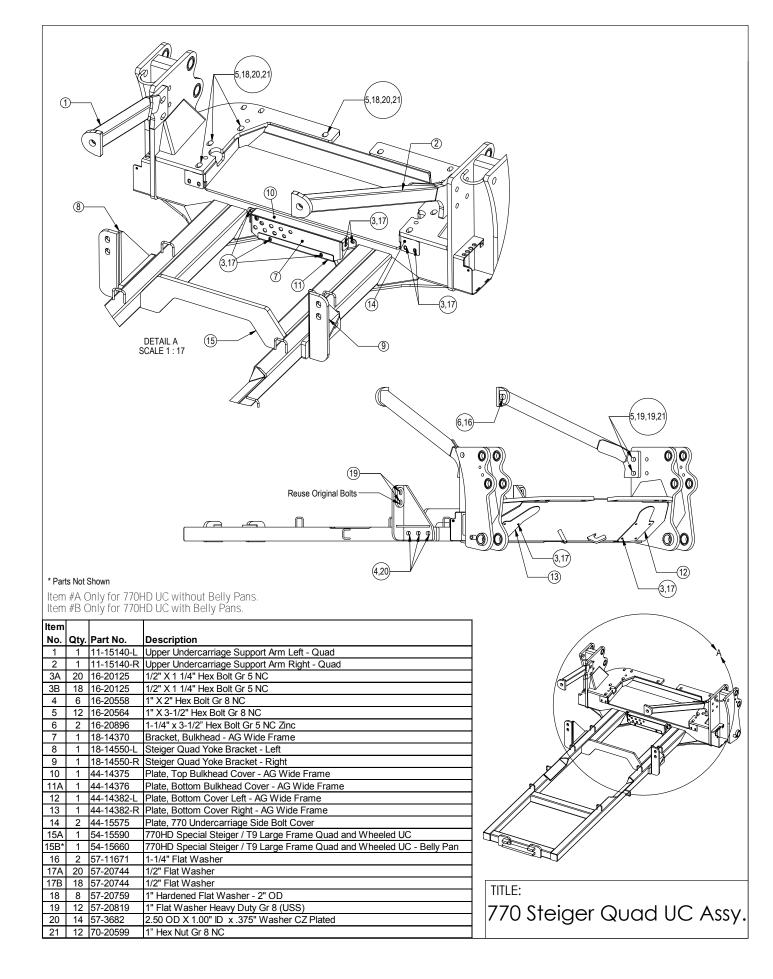
- Always use precaution when working around any equipment.
- · Always wear safety glasses.
- Follow tractor manufacturer's safety guidelines when installing this product.

### NOTE: For all steps below, see diagram on Page 5.

- **1.** Read all instructions prior to installation.
- **2.** Remove existing toolboxes, front weights, and tow cable holder if equipped. Tow cable can be reinstalled later if a bracket is purchased from Grouser Products.
- **3.** If the bottom covers (PN: 44-14382-R,L) are not factory installed, attach to U/C with 1/2" x 1-1/4" bolts (PN: 16-20125) and 1/2" flat washers (PN: 57-20744).
- **4.** If the bulkhead bracket (PN: 18-14370) is not factory installed, attach to the U/C with 2 1/2" x 1-1/4" bolts (PN: 16-20125) and 1/2" flat washers (PN: 57-20744). See pages 7 and 16-21 for bulkhead fittings, steel lines, and hose locations.
- **5.** 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).

Note: If belly pans are to be installed, the bottom bulkhead cover (PN: 44-14376) is not needed.

- 6. Drill out holes in the tractor frame that line up with the front holes on the undercarriage to 1".
- 7. Position the undercarriage (U/C) under tractor and center on the frame of the tractor.
- **8.** Lift the rear of the U/C up and set the top plates of the U/C on the cross member. Push the U/C back until the vertical push plates are firmly against the cross member. Lift the U/C to within 3/4" of touching the tractor frame.
- **9.** Insert 8 1" x 3-1/2" bolts (PN: 16-120564) with a 1" hardened flat washer (PN: 57-20759) on each bolt through the front holes of the tractor frame that line up with the front vertical holes of the U/C.
- **10.** After all bolts are through the tractor frame and U/C, attach with a 1" heavy washer (PN: 57-3682) and a 1" nut (PN: 70-20599). Verify that the rear of the U/C is firmly against the cross member. Tighten until frame is tight vertically.
- **11.** For a quad tractor, attach the upper support arms (PN: 11-15140-R,L) to the U/C with 2 1" x 3-1/2" bolts (PN: 16-20564), 4 1" heavy duty flat washer (PN: 57-20819), and 2 1" nuts (PN: 70-20599) on each side of the U/C
- **12.** Attach the upper support arms to the tractor with a 1-1/4" x 3-1/2" bolt (PN: 16-20896) and 1-1/4" flat washer (PN: 57-11671) on each side.
- **13.** Remove the 2 24mm bolts and spacers from front axle on the left and right side of the tractor. Discard the spacers.
- **14.** Attach the quad yoke brackets (PN: 18-14550-R,L) to each side of the U/C with 6 1" x 2" bolts (PN: 16-20558) and a 1" x .375" thick washer (PN: 57-3682) on each bolt.
- **15.** Dip the previously removed 24mm bolts in W30 oil and install the yoke brackets with the 24mm bolt and a heavy flat washer (PN: 57-20819) on each bolt.
- **16.** Once all bolts have been installed, torque the front 1" vertical bolts to 903 ft·lbs., the 1-1/4" bolts to 1,105 ft·lbs, the 24mm bolts (for quad tractor) to 555 ft·lbs, and then the remaining 1" bolts to 903 ft·lbs.
- **17.** Bolt the side bolt cover (PN: 44-15575) to both sides of the undercarriage with 1/2" x 1-1/4" bolts and a 1/2" flat washer on each bolt.
- **18.** After first 8 hours of use, re-torque all bolts.
- **19.** Check all fasteners regularly to ensure proper operation of equipment.



# 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.

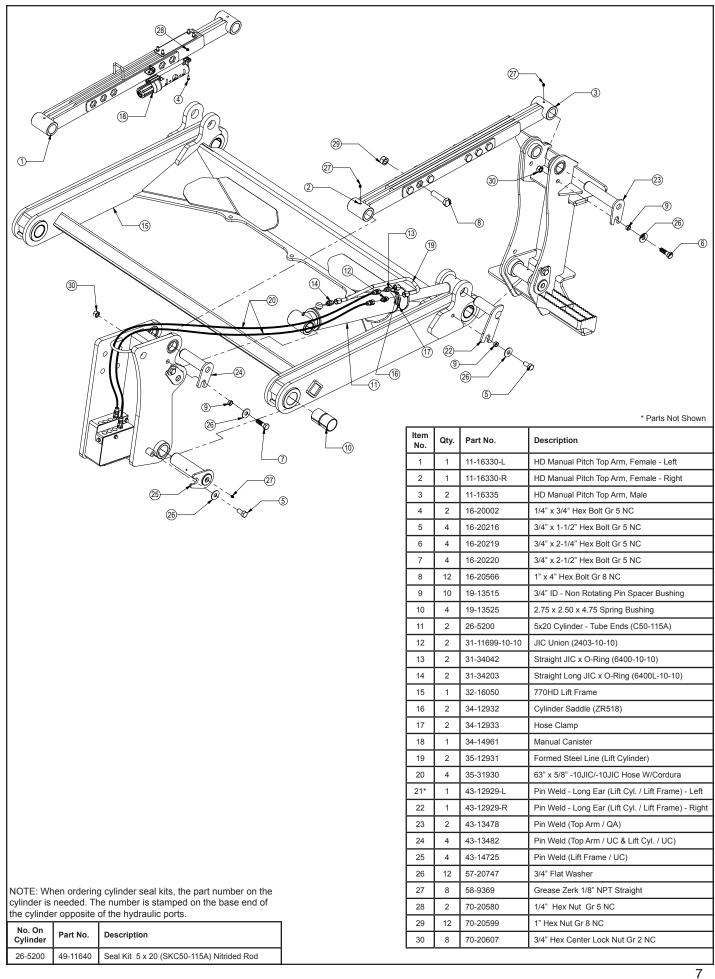
- 1. Remove all pins on each side of the undercarriage.
- 2. Position the lift frame between the two plates on both sides of the undercarriage.
- 3. Align the lift frame to the bottom holes of the undercarriage and attach with the proper pins and hardware.
- 4. Lift the end of the cylinders up and attach 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. Stand the blade up. Use extreme caution when moving blade and when blade is in the upright position.
- 7. Drive the tractor forward till the lift frame fits between the male quick attaches on the back of the blade and tilt frame.
- Attach the male quick on the back of the blade and tilt frame to the lift frame and top arms with the proper pins and hardware.
- 9. 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 12 or 13 for proper orientation.
- 10. 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 #11-16, refer to Page 12-14 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.

- 11. Run the remaining hoses thru the hose loop on the top arm and attach a 90° fitting to all the hoses.
- 12. Install a female quick coupler onto each 90° fitting from the previous step.
- 13. 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.
- 14. Take the 318" hoses and attach each one to their designated fitting at the center of the undercarriage.
- 15. Route the hoses thru the hose loops on the undercarriage.
- 16. Continue to route the hoses thru the tractor. Keep away from all moving parts. Refer to Page 8 for hose routing.
- 17. 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.
- 18. 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.
- 19. Plug the male couplers into the female couplers on the top arm. Refer to Page 14 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.

# **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.

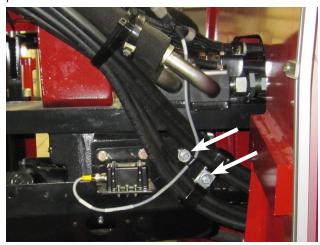


# Hose Routing

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.



1. Route the hoses from the bulkhead fittings at the middle of the undercarriage thru all the hose loops on the undercarriage. Once at the end of the undercarriage route the hoses up along the tractor frame following any of the tractor's hoses while still staying away from any sharp corners and moving parts.



2. Route 1 and/or 2 sets of hoses on the left side of the tractor as shown in the picture. Use a 5/16° x 1" bolt, 2-5/16° washers, and a 5/16 nut to bolt the 2 clamps to the plate on the tractor. Use the 1-1/4° long spacer to space out the wire harness on the tractor. Use a 5/16° x 2" bolt, 2 - 5/16° washers and a 5/16° nut.

NOTE: If there are more than 2 sets of hoses to run to the back of the tractor, continue with Step # 3. If there is only 1 or 2 sets of hoses continue with step #4.

NOTE: These pictures show 4 sets of hydraulic hoses. The same applies for any number of hoses. Hoses should be routed on the left side first and then route the remaining hoses on the right side of the tractor frame.



- 3. Route 2 sets of hoses on the right side of the tractor as shown in the picture. Use the 3/4" long spacer to space out the hose clamps on the tractor. Use a 5/16" x 2" bolt,
- 2 5/16" washers and a 5/16" nut to attach to the tractor.
- 4. After attaching the hoses, enter the rear frame and route the hoses thru the hose loops along the inside of the frame.



- 5. Exit thru the rear frame as shown in the picture. Install a 90° and a male coupler at the end of each hose. Plug each coupler into a rear SCV. As an example, keep both lift hoses together on one section. Refer to hydraulic schematics on Page 27 for further information.
- 6. After all hoses are routed, group hoses together and secure with zip ties. Use the heavy duty zip ties for securing the hoses that are routed thru the tractor frame. See the picture in Step #1 above for an example.
- 7. Check the hoses when the tractor is at full oscillation and fully turned to check for any intererence.
- 8. Return to Page 6 and continue the installation with Step #16.

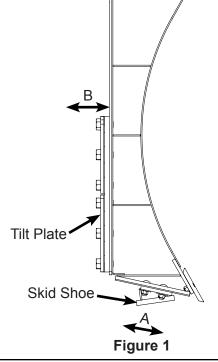
# Tilt Plate Adjustment

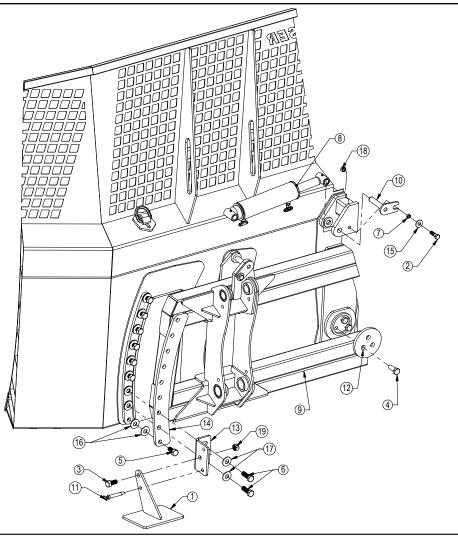
### **Tilt Plate Adjustment:**

1. Remove bolts and tilt plates.

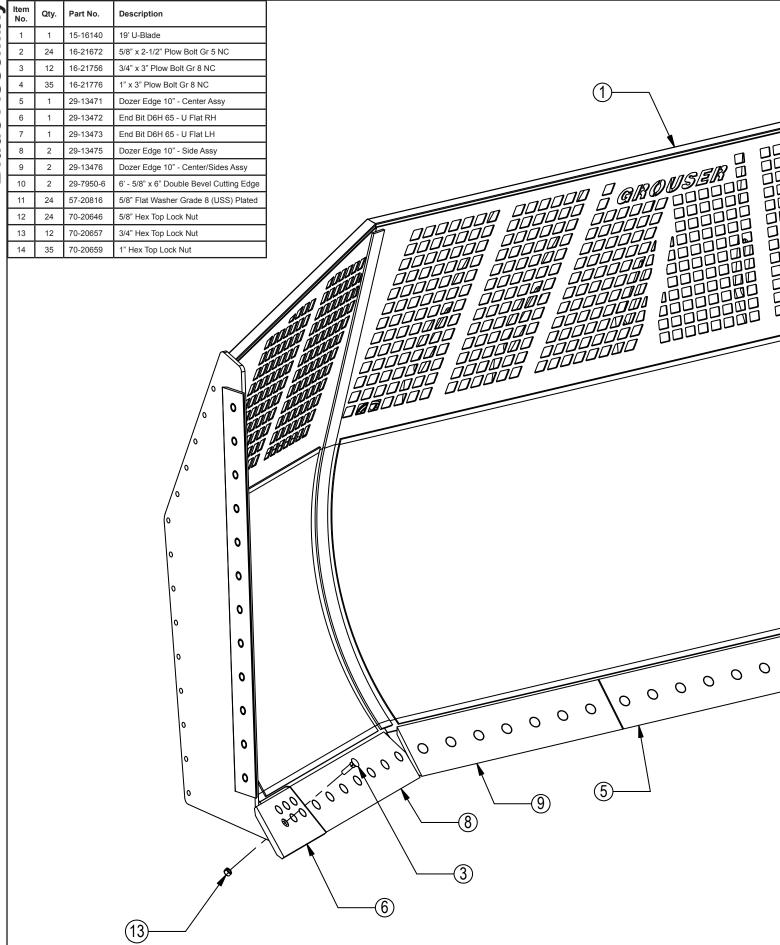
Note: Don't remove all of the bolts at the same time.

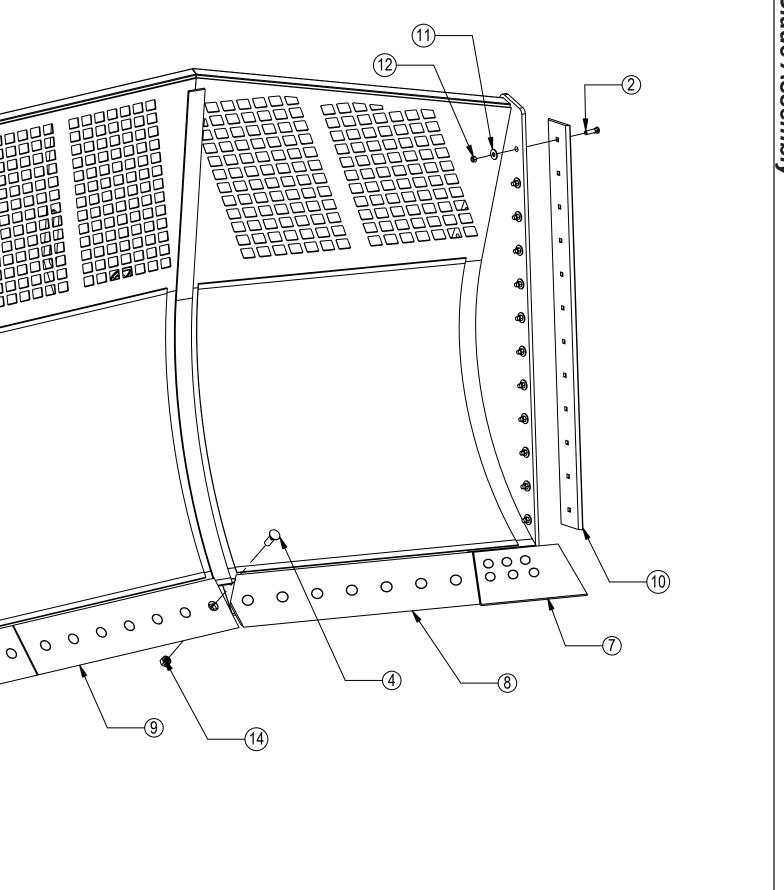
- 2. Add or remove washers as needed to adjust tiltway clearance to have 1/16" - 1/8" of clearance in direction 'B' shown in Figure 1.
- 3. Once the tilt-way clearance is set, tighten bolts to 640 ft-lbs.

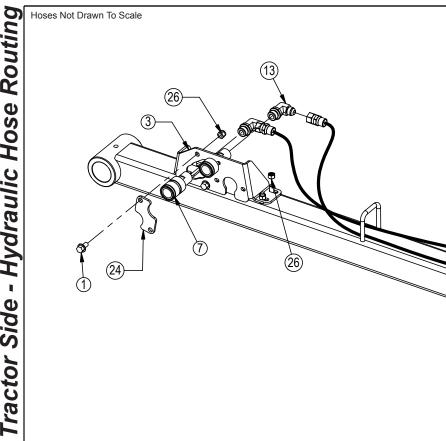




Item No.	Qty. Part No.		Description
1	2	11-13485	Blade Stand - Arm
2	4	16-20220	3/4" x 2-1/2" Hex Bolt Gr 5 NC
3	2	16-20558	1" x 2" Hex Bolt Gr 8 NC
4	3	16-20560	1" x 2-1/2" Hex Bolt Gr 8 NC
5	14	16-20562	1" x 3" Hex Bolt Gr 8 NC
6	4	16-20564	1" x 3-1/2" Hex Bolt Gr 8 NC
7	4	19-13515	3/4" ID - NR Pin Spacer Bushing
8	2	26-34728	4 x 12 Cylinder w/ Tube Ends
9	1	32-16310	770HD NAHT Tilt Frame (w/o QA)
10	4	43-16116	1-1/4" Pin Weld - HD Tilt
11	2	43-15712	3/4" x 3-1/4" Saftey Hitch Pin
12	1	44-3749	Backdrag Brace Plate
13	2	44-13487	Blade Stand - Plate
14	2	52-16030	770HD Tilt Plate Covers
15	4	57-20747	3/4" Flat Washer
16	36	57-20749	1" Flat Washer
17	4	57-20819	1" Flat Washer Heavy Duty Gr 8
18	4	70-20607	3/4" Hex Center Lock Nut Gr 2 NC
19	2	70-20609	1" Hex Center Lock Nut Gr 2 NC

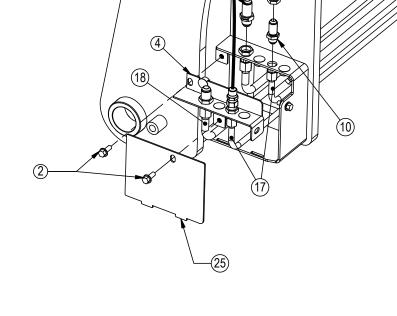


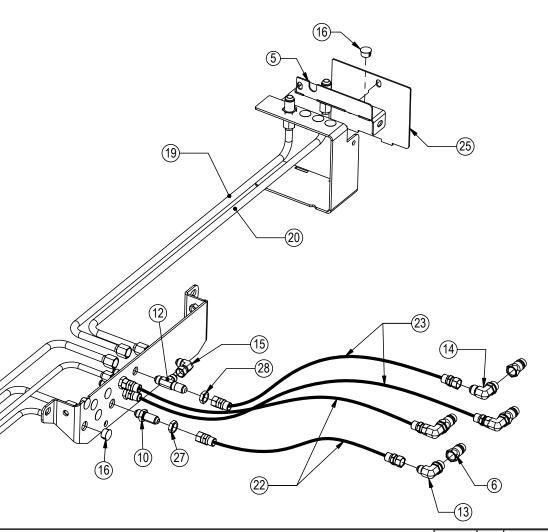


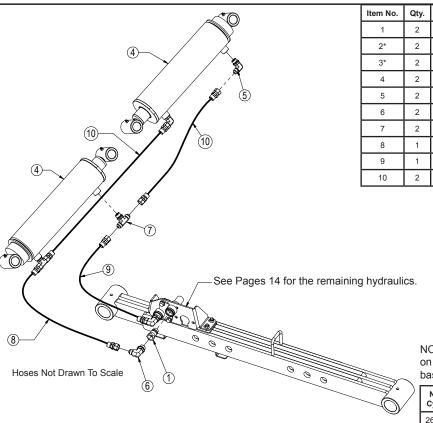


### \* Parts Not Shown

I all	ants Not Onown					
Item No.	Qty.	Part No.	Description			
1	2	16-35C612	3/8" x 3/4" Flanged Bolt			
2	6	16-35C616	3/8" x 1" Flanged Bolt			
3	1	18-14733	700 Series Female Coupler Mount - NAHT			
4	1	18-15580-L	Bracket, Hydraulic Cover - Top Left			
5	1	18-15580-R	Bracket, Hydraulic Cover - Top Right			
6	4	25-34322	Tappet Quick Coupler Male			
7	2	25-34321	Tappet Quick Coupler Female			
8*	2	25-3453	Pioneer Dust Cap Tilt (Green)			
9*	2	25-3457	Pioneer Dust Cap Lift (Orange)			
10	4	31-34000	Bulkhead Union JIC (2700-8-8)			
11	4	31-2700-10-10	Bulkhead Union JIC (2700-10-10)			
12	2	31-34031	Bulkhead Run Tee JIC (2704-10-10-10)			
13	4	31-34051	Straight Thread Elbow 90° JIC x O-Ring (6801-8-10)			
14	2	31-34052	Straight Thread Elbow 90° JIC x O-Ring (6801-10-10)			
15	2	31-34101	Swivel Nut Elbow 90° JIC (6500-10-10)			
16	17	34-14898	Dome Plug (3044)			
17	2	35-14352	33.88" -8 Formed Steel Line (Tilt)			
18	2	35-15556	36.19" -10 Formed Steel Line (HD Left Lift)			
19	1	35-15557	36.22" -10 Formed Steel Line (770HD Right Lift)			
20	1	35-15558	39.22" -10 Formed Steel Line (770HD Right Lift)			
21	2	35-31132	69" x 1/2" -8JIC/-8JIC Hose W/ Cordura			
22	2	35-30172	318" (26.5') x 1/2" -8JIC/-8JIC Hose			
23	2	35-30963	318" (26.5') x 5/8" -10JIC/-10JIC Hose			
24	1	44-14734	700 Series Female Coupler Retainer - NAHT			
25	2	44-15120	700 Series Side Cover Plate - Left			
26	6	70-20622	3/8" Flange Hex Nut NC			
27	4	70-20807	3/4" Hex Jam Nut			
28	6	70-20808	7/8" Hex Jam Nut			





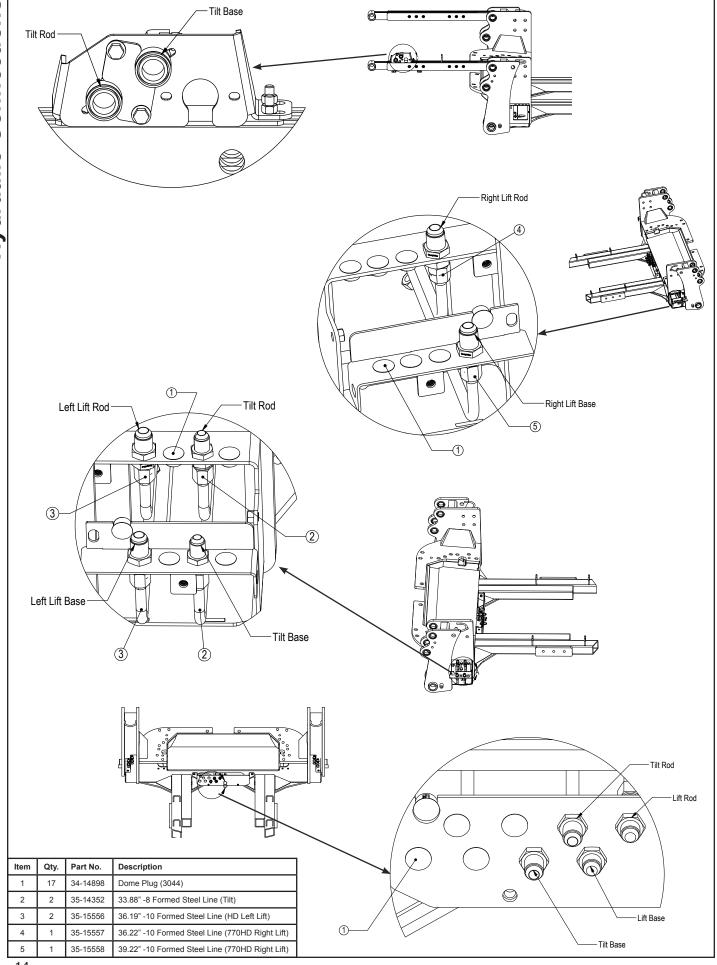


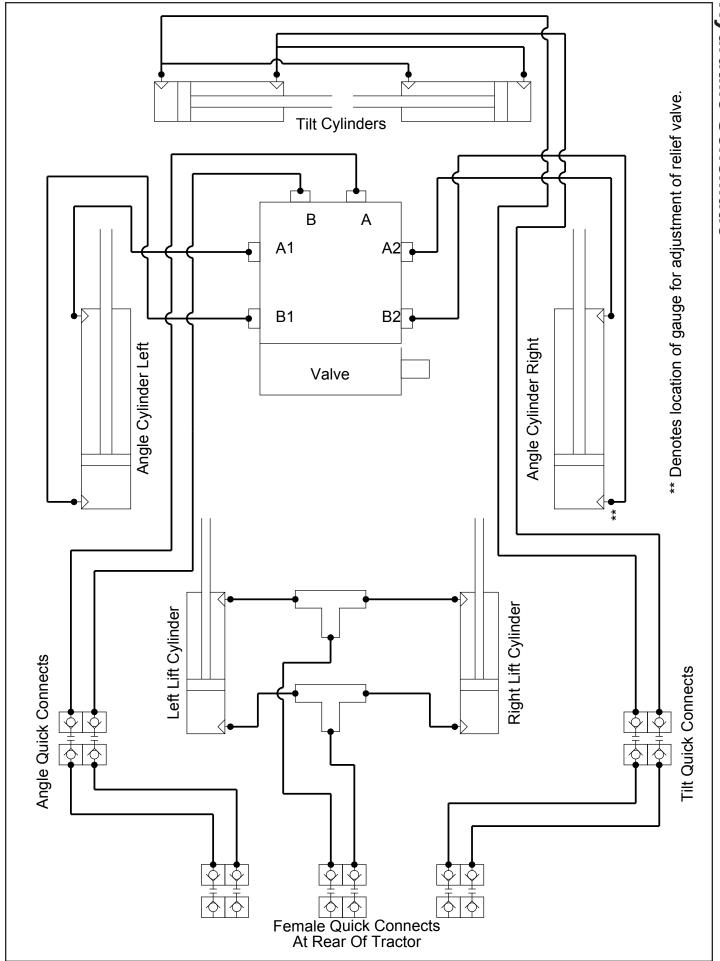
Item No.	Qty.	Part No.	Description
1	2	25-34322	Tappet Quick Coupler Male
2*	2	25-3453	Pioneer Dust Cap Tilt (Green)
3*	2	25-3454	Pioneer Dust Plug Tilt (Green)
4	2	26-34728	4 x 12 Cylinder W/ Tube Ends
5	2	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)
6	2	31-34051	Straight Thread Elbow 90° JIC x O-Ring (6801-8-10)
7	2	31-34060	Branch Tee JIC x O-Ring (6803-8-8-8)
8	1	35-30122	40" x 1/2" -8JIC/-8JIC Hose
9	1	35-30126	50" x 1/2" -8JIC/-8JIC Hose
10	2	35-30177	44" x 1/2" -8JIC/-8JIC Hose

<sup>\*</sup> Parts Not Shown

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

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





### Contact Us

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

### **Grouser Products**

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Fax: 1-701-282-8131

**E-mail:** grouser@grouser.com **Website:** www.grouser.com



# **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 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.

