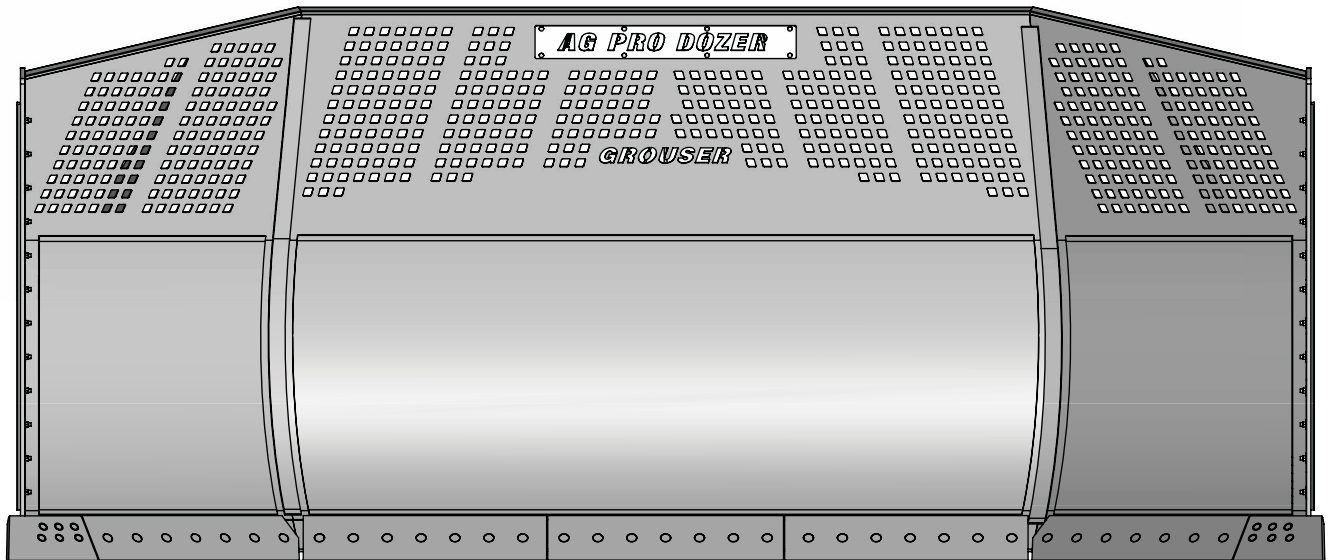




HD 19' U-Blade

Owner's Manual & Parts Book



Grouser Products

755 2nd Ave NW - West Fargo, ND 58078

Phone: 1-800-747-6182

Fax: 1-701-282-8131

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Website: www.grouser.com

Purchase Date
Serial Number
Model Number
Tractor Model
Dealer

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Welcome To The Owner_____	2
Safety Precautions, Torque Specifications & Pre-Installation _____	3
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Thank you for your recent purchase of a Grouser 19' U-Blade. Welcome to the family of satisfied Grouser blade owners. Grouser Products is committed to offering quality products to help professionals in their daily jobs. We are also committed to providing you the highest level of customer satisfaction possible. Again, thank you for your patronage. We look forward to serving you.

This manual contains information concerning the operation, adjustment, safety and maintenance of the 19' U-Blade. You have purchased a dependable, long lasting piece of equipment. You can expect to receive long lasting performance and long service built into our products with proper care and operation. Please have all operators read and understand this manual carefully. Keep the manual available for reference. If, for any reason, you have questions or comments, we would be happy to hear from you. Call our toll-free number, 800-747-6182, or send us an e-mail at info@grouser.com. You can expect us to respond to your e-mail in a timely manner.

NAHT	No Angle - Hydraulic Tilt
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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, please follow all safety and operational instructions of your tractor manufacturer.

The 19' U-Blade:

1. The 19' U-Blade 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 19' U-Blade 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.
6. Lower the blade to the ground when not in use.

Servicing the 19' U-Blade:

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 19' U-Blade:

1. Thoroughly clean the 19' U-Blade before storage. Use paint where necessary to prevent rust.
2. Check the 19' U-Blade for worn or damaged parts. Install new parts as required.
3. Lubricate all pins and joints.

Tighten all bolts to the values listed below unless otherwise noted. Refer to the parts lists for proper length and grade of the bolts.

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

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

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

Install undercarriage per the tractor specific mounting instructions.

HD 19U

PN: 27-41686



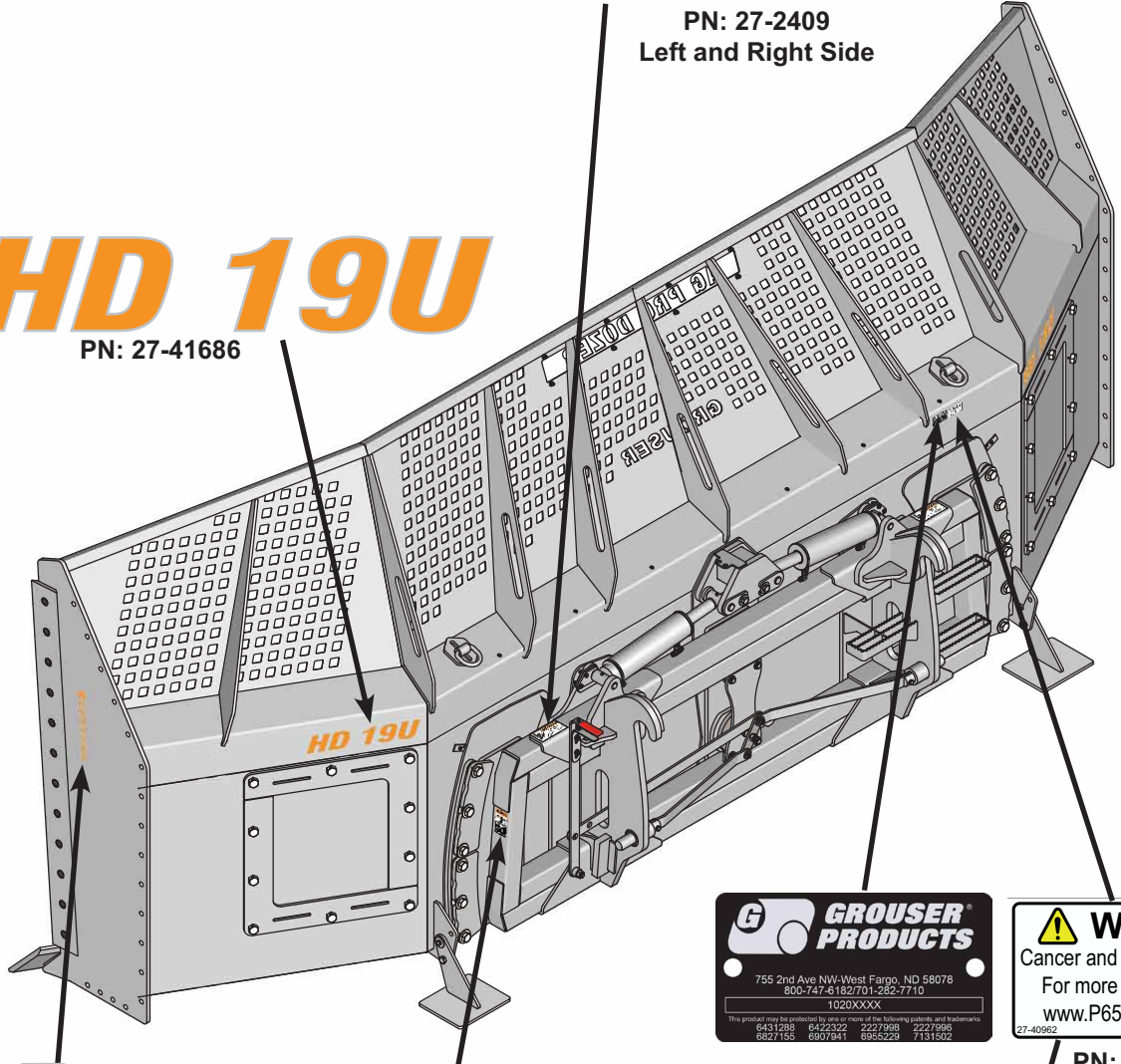
WARNING

PINCH AREA
Keep away

Failure to comply could result in death or serious injury.

27-2409

PN: 27-2409
Left and Right Side




GROUSER PRODUCTS

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This product may be protected by one or more of the following patents and trademarks:

6431288	6422322	2227998	2227996
6827135	6907941	6955229	7131502



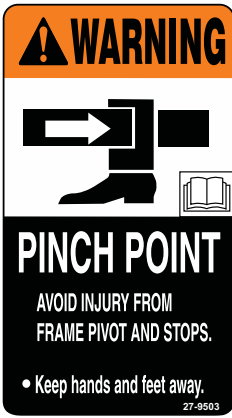
WARNING

Cancer and Reproductive Harm

For more information go to www.P65Warnings.ca.gov

27-40962

PN: 27-40962



WARNING

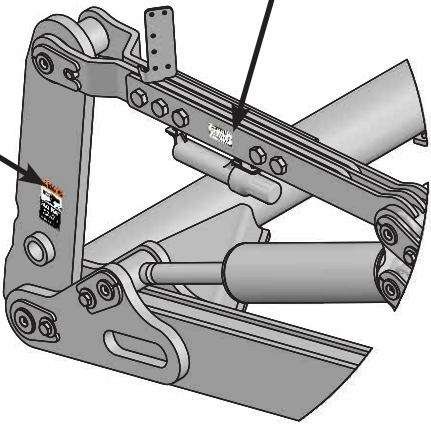
PINCH POINT

AVOID INJURY FROM
FRAME PIVOT AND STOPS.

- Keep hands and feet away.

27-9503

PN: 27-9503
Left and Right Side

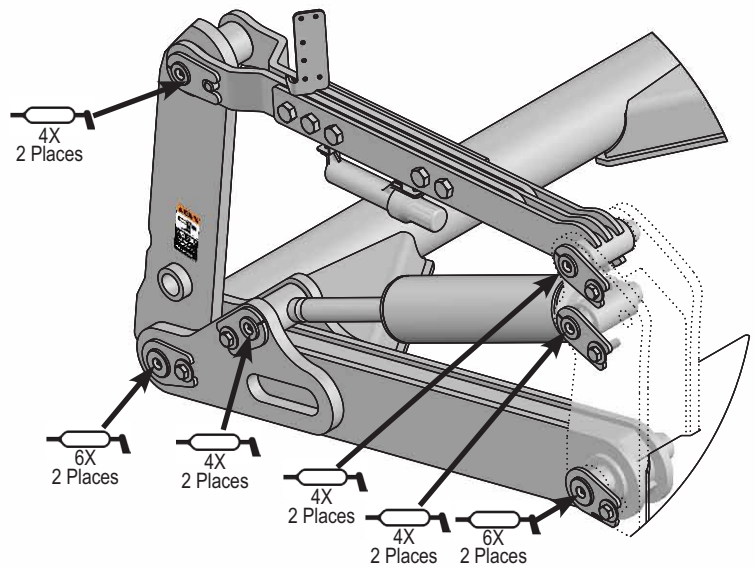
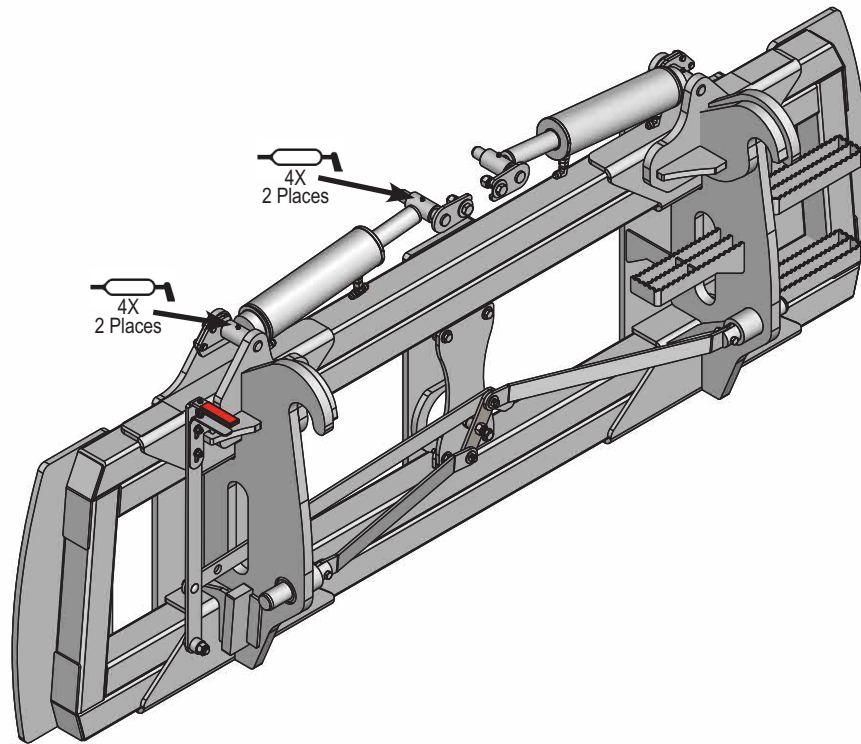


GROUSER

PN: 27-9505
Left and Right Side

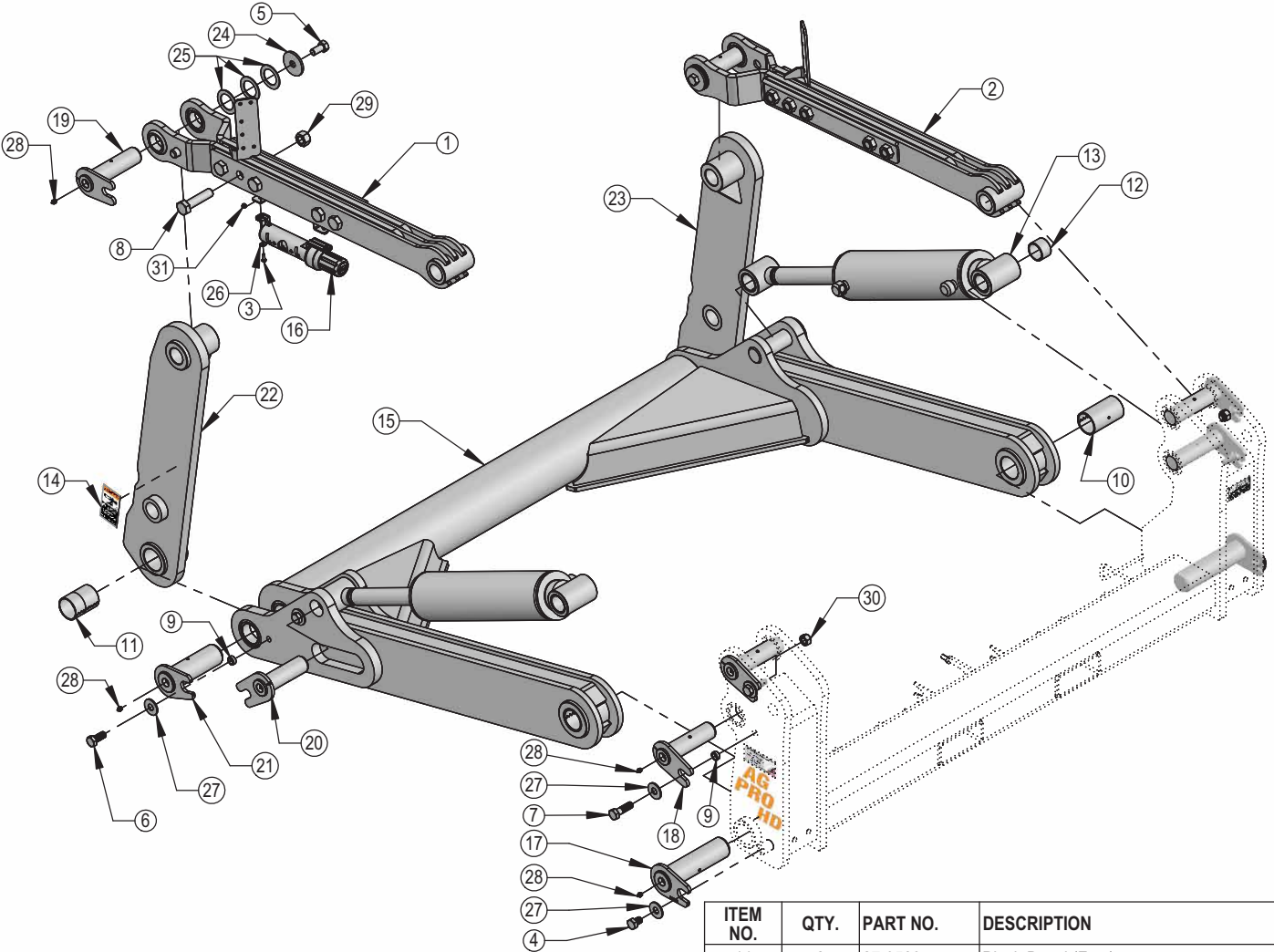
Due to the harsh environment this equipment operates in, the following tasks should be performed every 10 hours or less.

- Inspect all equipment before operation for existing or potential damage.
- Lubricate all joints with high quality grease. See below for grease locations.
- Inspect all bolts, and tighten any loose bolts to torque specifications on page 3.
- Check replaceable cutting edge for wear ensuring there is enough material to prevent permanent damage to the 19' U-Blade. For cutting edge information, see pages 12-13 .
- Check hydraulic cylinders and hoses for damage or leaks. For replacement parts, see hydraulic pages 6, 8-9 and 14-15.
- Make sure all non-rotating pins are secured properly.
- Inspect all decals and order replacement decals from your dealer if any are damaged or worn.
- For multi-coupler maintenance, see pages 16-17.
- Inspect all tilt-ways for wear. See page 10 for tilt plate adjustment.
- Replace parts with original parts only.



Some assembly of Lift System components is necessary. Follow the steps listed below. See diagram below 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. Insert pins and hardware to attach the lift frame, the base end of the lift cylinders, and the top arms to the undercarriage.
4. Insert pins and hardware to attach the male quick attaches to the lift frame, and to the top arms. Use 2" washers as shims to keep top arm pins tight and in place. Only use as many as needed until pin is tight.
5. Torque all fasteners according to the specifications on Page 3.



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	11-40760-L	Ag Pro Plus Manual Pitch Top Arm Assy
2	1	11-40760-R	Ag Pro Plus Manual Pitch Top Arm Assy
3	2	16-20002	1/4" x 3/4 " Hex Bolt Gr 5 NC
4	2	16-20214	3/4" x 1" Hex Bolt Gr 5 NC
5	2	16-20216	3/4" x 1-1/2" Hex Bolt Gr 5 NC
6	4	16-20217	3/4" x 1-3/4" Hex Bolt Gr 5 NC
7	4	16-20220	3/4" x 2-1/2" Hex Bolt Gr 5 NC
8	10	16-20566	1" X 4" Hex Bolt Gr 8 NC
9	8	19-13515	Spacer, NR Pin
10	2	19-13525	2.75 x 2.50 x 4.75 Spring Bushing
11	8	19-16695	2.25 x 2.00 x 1.50 Spring Bushing
12	2	19-18089	2.75 x 2.50 x 3.75 Spring Bushing
13	2	26-34751	5 x 18 Hydraulic Cylinder

ITEM NO.	QTY.	PART NO.	DESCRIPTION
14	2	27-9503	Pinch Decal (Foot)
15	1	32-19120	HD Lift Frame
16	1	34-14961	Manual Canister Small
17	2	43-14725	Lift Frame / UC Pin
18	4	43-18120	Top Pin Weld
19	2	43-18127	Top Arm Pin Weld
20	2	43-18175	Lift Cyl Pin Weld
21	2	43-18635	Ag Pro Plus QA Pin
22	1	45-18110-L	Male Quick Attach, Ag Pro S
23	1	45-18110-R	Male Quick Attach, Ag Pro S
24	2	57-1530	3" OD X .75 ID X .25" HD Flat Washer
25	6	57-1811	2" Washer
26	2	57-20740	1/4" Flat Washer
27	10	57-20747	3/4" Flat Washer
28	12	58-9369	Straight 1/8" NPT Grease Zerk
29	10	70-20599	1" Hex Nut Gr 8 NC
30	2	70-20607	3/4" Center Lock Hex Nut Gr 2 NC
31	2	70-20610	1/4" Nyloc Hex Nut Gr 5 NC

Note: The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

No. On Cylinder	Part No.	Description
26-34751	49-12275	Seal Kit 5" (658457) Nitrided Rod

DWG. NO.: 40912

Note: Refer to Pages 8-9 for the correct hose lengths and hose location.

Note: All connections are identified by spiral bands. 2 bands are from the base end of a cylinder and 1 band is from the rod end of a cylinder. Orange = Lift, Green = Tilt, Red = Angle, and Yellow = Angle 2-Stick.

1. Connect the lift hoses to the lift cylinders.
2. Verify that hoses are not twisted and protected from rubbing on any sharp edges. See Pages 8-9 for proper hose routing.
3. Install the 45° fittings into the multi-couplers on both top arms.
4. 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 45° fitting on the multi-coupler. Refer to Pages 8-9 for proper hose locations.
5. Continue below for 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:

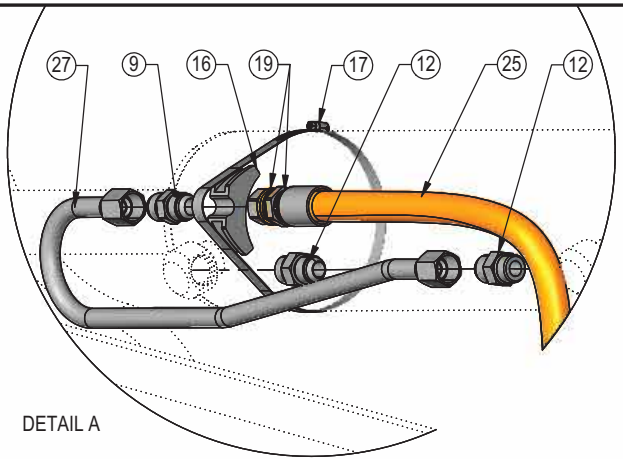
1. With the lift frame down and blocked, loosen the fittings on both ends of the lift cylinders.
2. Actuate the raise function to supply oil to the rod end of the cylinders.
3. When oil starts to flow from the fittings, stop oil flow, and tighten the fitting on the rod end of the lift cylinders.
4. Continue 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 10.

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.

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.

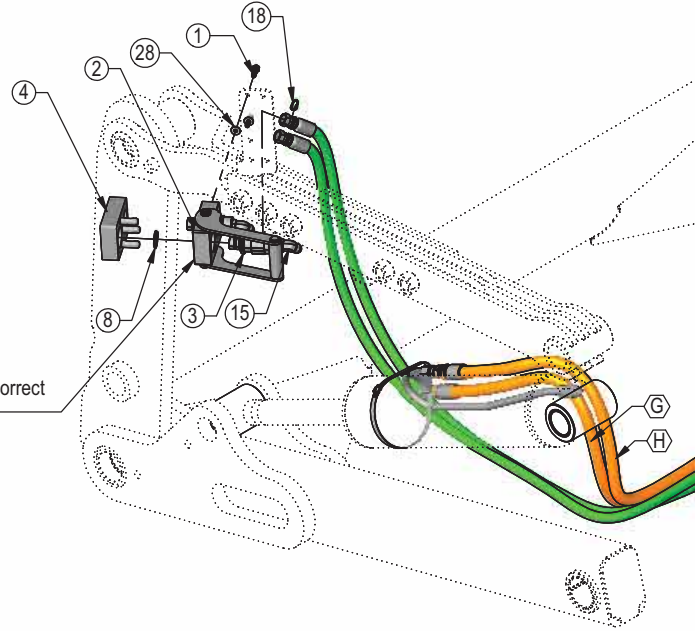
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	16-812525	8mm x 1.25mm x 25mm Metric Hex Bolt Gr 10.9
2	1	25-19868	Multi-Coupling Plate - 2 Port - Fixed
3	2	25-19870	Multi-Coupling Plate - Male Coupler
4	1	25-19871	Multi-Coupling Plate - 2 Port - Cap
5	4	25-34342	Tappet Quick Coupler Male - Poppet Style
6	2	25-3453	Pioneer Dust Cap Tilt (Green)
7	2	25-3457	Pioneer Dust Cap Lift (Orange)
8	2	25-40407	Multi-Coupling Plate - Snap Ring
9	2	31-11699-10-10	JIC Union
10	2	31-15199-8-8	JIC Union Elbow 90°
11	2	31-34032	Bulkhead Run Tee JIC
12	4	31-34042	Straight JIC x O-Ring
13	2	31-34051	Straight Thread Elbow 90° JIC x O-Ring
14	2	31-34059	Straight Thread Elbow 90° JIC x O-Ring
15	2	31-34150	Straight Thread Elbow 45° JIC x O-Ring



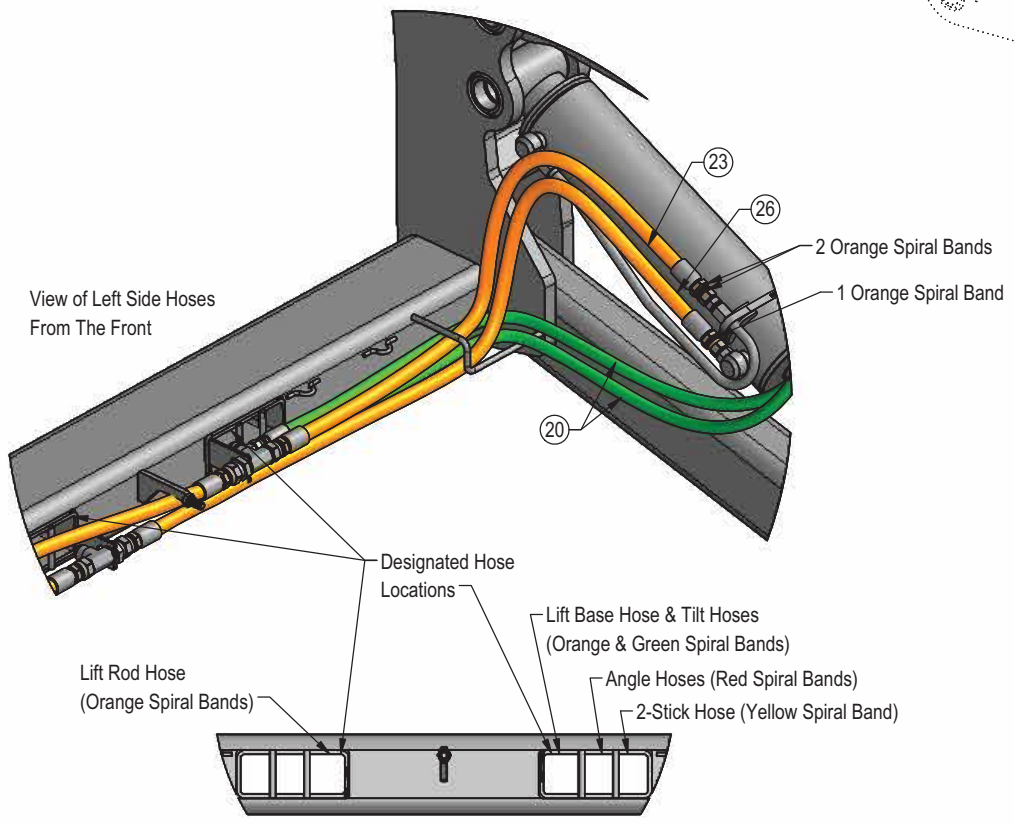
DETAIL A

Hoses Not Drawn to Scale

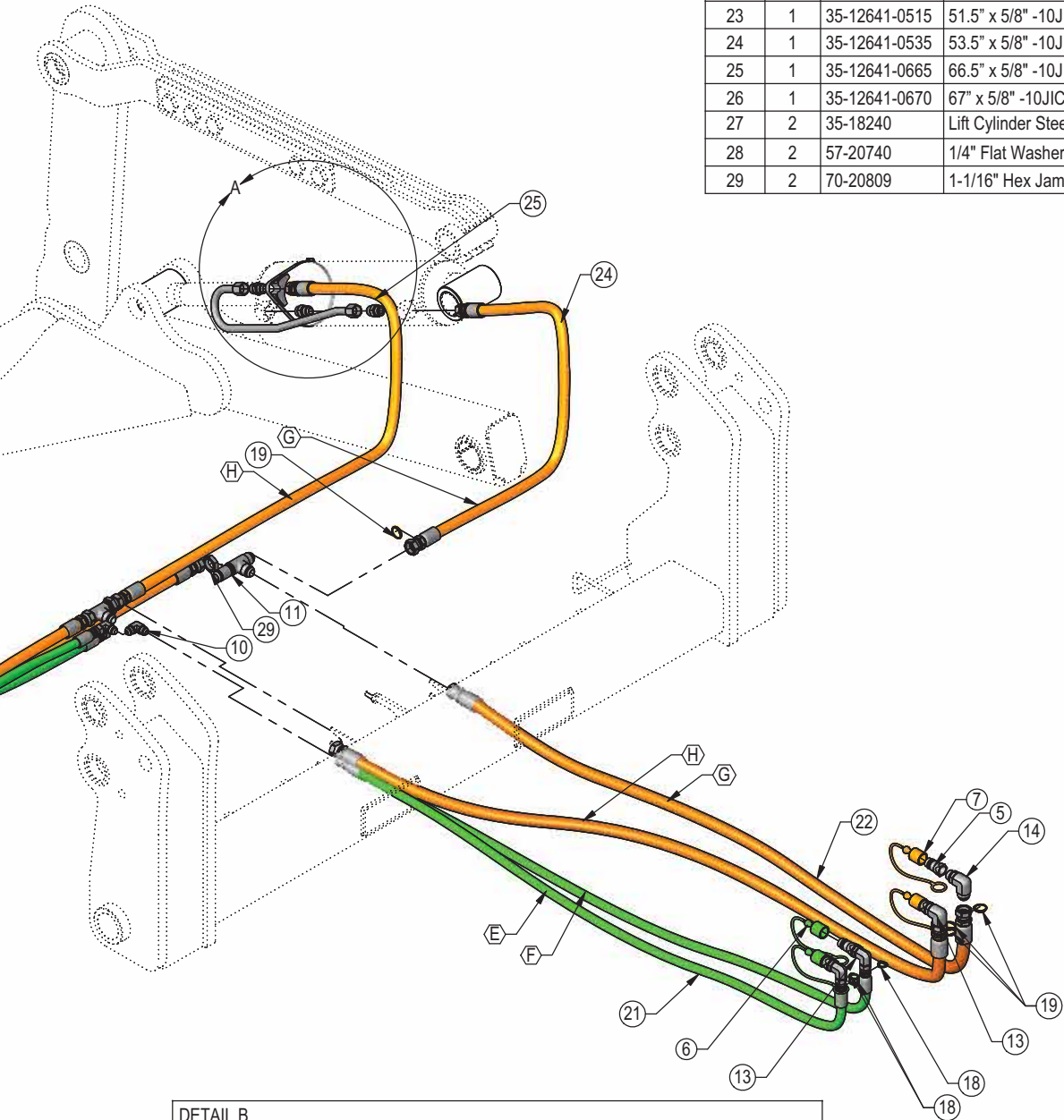
Every hydraulic function from the front to the back of the system is designated by a ○ and a letter and can also be referenced on the Hydraulic Schematics on Page 18.



See Detail B for correct hose locations



ITEM NO.	QTY.	PART NO.	DESCRIPTION
16	2	34-12932	Cylinder Saddle
17	2	34-12933	Hose Clamp (worm drive - 4.5)
18	9	34-18888-GR	-12 Green - Spiral Band
19	15	34-19494-OR	-16 Orange - Spiral Band
20	2	35-12631-0810	81" x 1/2" -8JIC/-8JIC Abrasion Resistant Hose
21	2	35-12631-2930	293" (24.42") x 1/2" -8JIC/-8JIC Abrasion Resistant Hose
22	2	35-12637-3000	300" (25") x 3/4" -12JIC/-12JIC Abrasion Resistant Hose
23	1	35-12641-0515	51.5" x 5/8" -10JIC/-12JIC Abrasion Resistant Hose
24	1	35-12641-0535	53.5" x 5/8" -10JIC/-12JIC Abrasion Resistant Hose
25	1	35-12641-0665	66.5" x 5/8" -10JIC/-12JIC Abrasion Resistant Hose
26	1	35-12641-0670	67" x 5/8" -10JIC/-12JIC Abrasion Resistant Hose
27	2	35-18240	Lift Cylinder Steel Line
28	2	57-20740	1/4" Flat Washer
29	2	70-20809	1-1/16" Hex Jam Nut



DETAIL B

Tilt Rod (E)
Green Spiral Band (X1)

Tilt Base (F)
Green Spiral Band (X2)

NOTE: All hoses are marked with colored spiral bands and should be attached to designated ports on the Multi-Coupler.

To Connect:

Note: If necessary, use a spotter to help center the blade on the lift system.

1. If necessary, lift the locking latch and pull the quick attach lock handle on the left side of the lift system to open the quick attach system. Refer to Page #14-15 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 on the blade assembly.
3. Raise the lift system until the male quick attach engages the female hook. If both sides don't fully engage, reposition. 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 to engage the quick attach pins and lift the locking latch to lock the handle in place.
6. Clean and connect hydraulic multi-coupler on the top arm. Refer to Pages 16-17 for cleaning and connecting information.
7. If initial startup, refer to Page 7 before operating any function of the blade.

To Disconnect:

1. Lower the blade until the cutting edge is off the ground a few inches.
2. Shut off the tractor engine and set the parking brake.
3. Unhook the multi-coupler on the top arm.
4. Remove the multi-coupler covers from the parking stations on the blade assembly and install on the multi-couplers on the top arms.
5. Plug the blade side multi-couplers into the parking station.
6. Lift the locking latch and pull the quick attach lock handle to disengage the quick attach pins.
7. Start tractor, disengage the parking brake, and lower the blade until cutting edge is on the ground.
8. Continue to slowly lower the lift system to disengage the blade.
9. Slowly back away from the blade. When lift system is clear from the blade, raise the lift system.
10. Shut off the tractor engine and set the parking brake.

Preferred Method:

1. The preferred blade position for adjusting the tilt plates is laying face down on blocks.
2. Remove bolts and tilt plates from the right side.
3. Add or remove washers as needed to adjust tilt-way clearance to 1/16" - 1/8".
4. Reinstall the bolts on the right tilt plates.
5. Follow Steps #2-4 for the left tilt plates.
6. Once the tilt-way clearance is set, torque bolts to 640 ft-lbs.

Non-Preferred Method:

Note: Do not remove all of the bolts at the same time if the blade is not laying face down.

1. The non-preferred blade position for adjusting the tilt plates is the blade in the upright position.
2. Remove the 3 bolts from the top right tilt plate and the bottom left tilt plate.
3. Add or remove washers as needed to adjust tilt-way clearance to 1/16" - 1/8".
4. Reinstall the bolts in the top right tilt plate and the bottom left tilt plate.
5. Follow Steps #2-4 for the bottom right tilt plate and the top left tilt plate.
6. Once the tilt-way clearance is set, torque bolts to 640 ft-lbs.

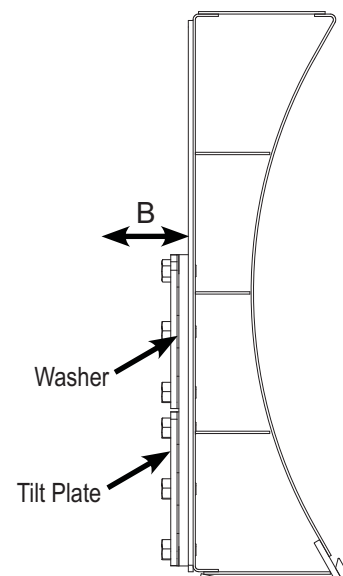
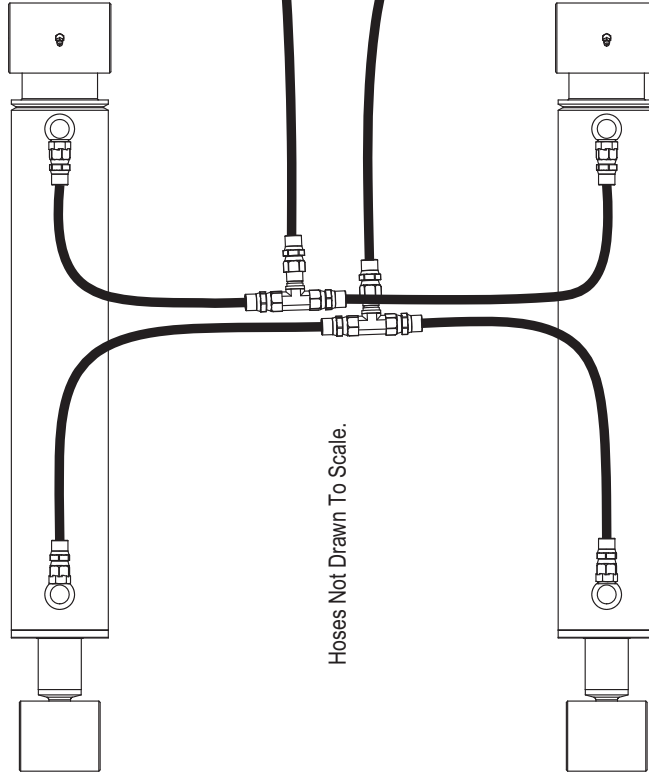


Figure 1

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF GROUSER PRODUCTS INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF GROUSER PRODUCTS INC. IS PROHIBITED.

Instructions:

1. Remove the male quick coupler from the SCV - UP which should be from the Rod End of the Lift Cylinder.
2. Remove the hose from the 90° fitting installed into the male quick coupler removed in Step #1.
3. Install the -12 male pipe x -12 female JIC Swivel fitting into the end of the control valve on the side the arrow is pointing to.
4. Attach the 90° fitting with the male quick coupler still attached to the JIC Swivel fitting that was installed in Step #3.
5. Install the -12 male pipe x -12 male JIC Straight fitting into the end of the control valve on the side opposite that the arrow is pointing to.
6. Attach the end of the original hose to the fitting attached in Step #5. See diagram below for further clarification on orientation of the control valve.
7. Plug male quick coupler back into the tractor
8. To adjust the control valve, unscrew the adjusting knob at the top of the valve. Run the lift cylinders up and down.
9. Adjust the lift speed by turning the adjusting knob back in with 1/2 turn increments.
10. After each 1/2 turn, run the lift cylinders up and down. Continue to do this until the desired speed is achieved and there is no chatter or cavitation.
11. After the control valve is adjusted, lock the adjusting knob with the lock screw.



Note:

Your system may look slightly different from the diagram shown above but all lift systems are plumbed so that the rod end of both cylinders come to a t-fitting and then run to the back of the tractor and hook up to the SCV - UP.

The base end of both cylinders come to a t-fitting and then run to the back of the tractor and hook up to the SCV - DOWN.



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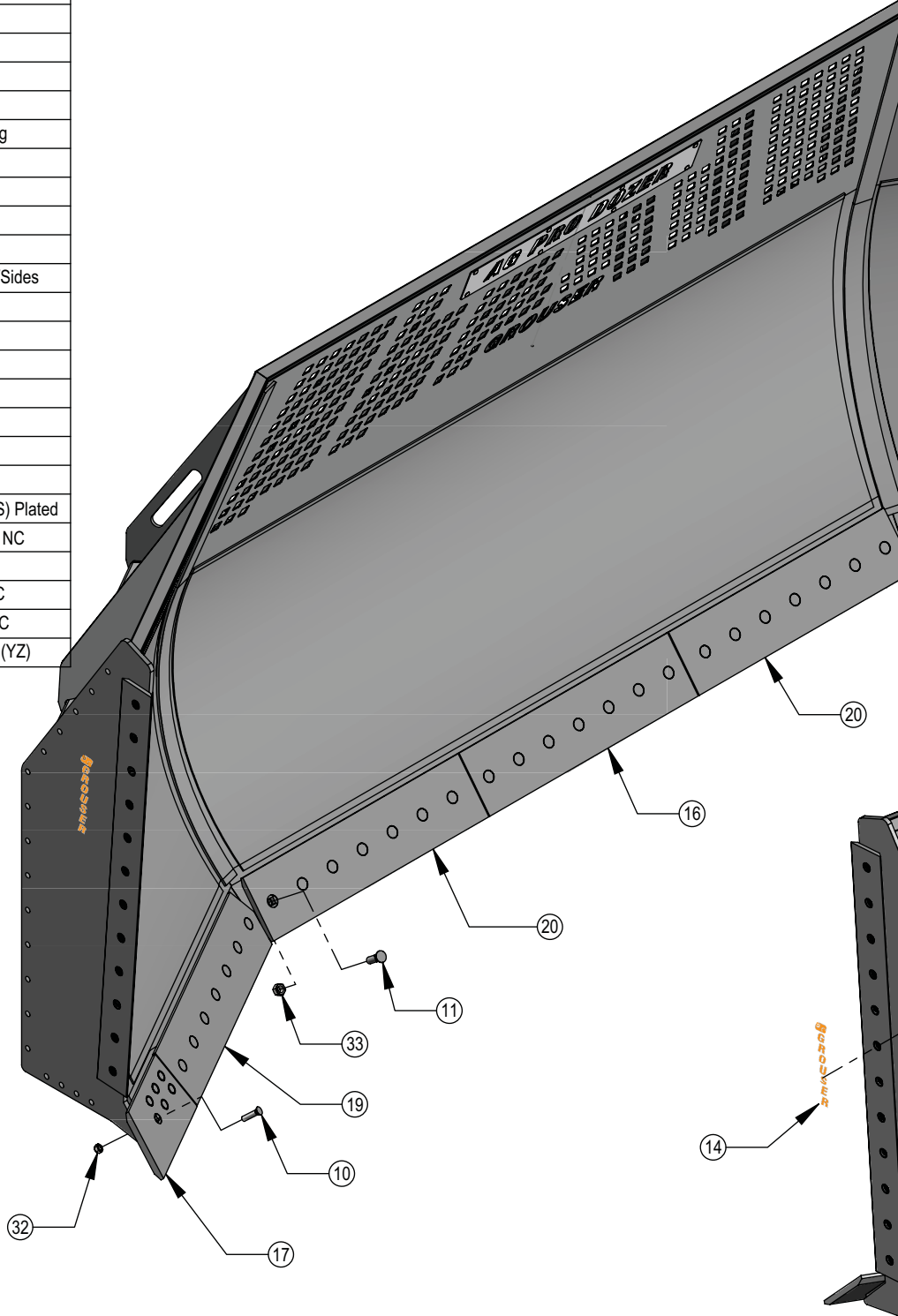
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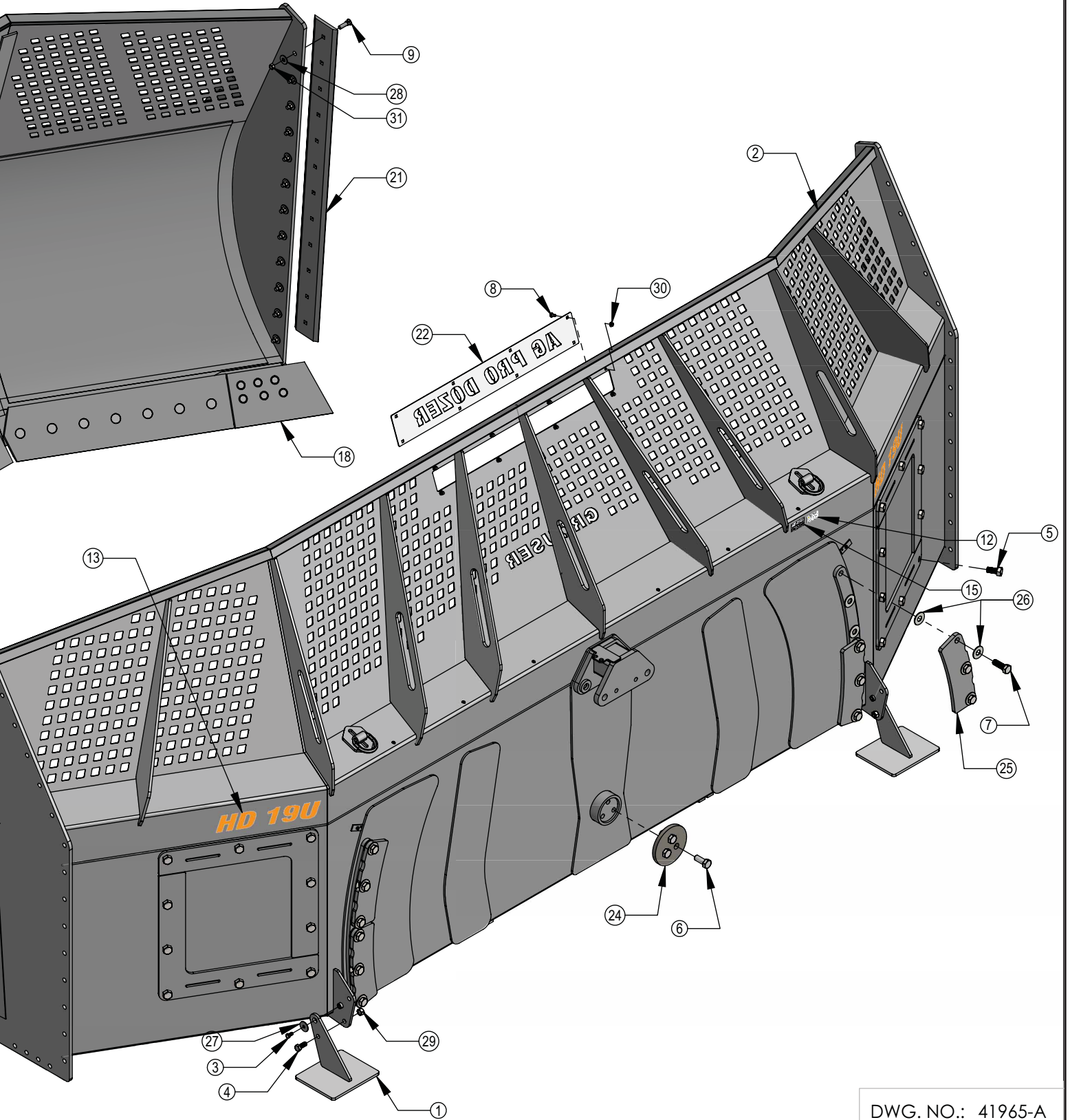
Date: 8/24/2016 DWG. NO.: 19699-INS

19' U-Blade

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	11-13485	Blade Stand
2	1	15-41965	19' U - Blade Weld
3	2	16-20124	1/2" x 1" Hex Bolt Gr.5 NC
4	2	16-20217	3/4" x 1-3/4" Hex Bolt Gr 5 NC
5	20	16-20558	1" x 2" Hex Bolt Gr. 8 NC
6	3	16-20560	1" x 2-1/2" Hex Bolt Gr 8 NC
7	12	16-20562	1" x 3" Hex Bolt Gr.8 NC
8	8	16-21064	3/8" x 1" Carriage Bolt Gr 5 NC
9	24	16-21672	5/8" X 1 3/4" Plow Bolt Gr 5 NC
10	12	16-21756	3/4" x 3" Plow Bolt Gr 8 NC
11	35	16-21776	1" x 3" Plow Bolt Gr 8 NC
12	1	27-40962	Warning Prop 65 Decal
13	2	27-41686	HD 19'U Decal
14	2	27-9505	Grouser Vertical Decal
15	1	NA	Grouser Dozer Metal Serial Tag
16	1	29-13471	1" x 10" Cutting Edge - Center
17	1	29-13472	End Bit - Right
18	1	29-13473	End Bit - Left
19	2	29-13475	1" x 10" Cutting Edge - Side
20	2	29-13476	1" x 10" Cutting Edge - Center/Sides
21	2	29-7950-6	Cutting Edge
22	1	44-15150	Ag Pro Dozer Name Plate
23*	1	44-14830	Custom Name Plate
24	1	44-3749	Backdrag Brace Plate
25	4	52-18299	Tilt Plate
26	24	57-20749	1" Flat Washer
27	2	57-20794	1/2" Fender Washer
28	24	57-20816	5/8" Flat Washer Grade 8 (USS) Plated
29	2	70-20607	3/4" Center Lock Hex Nut Gr 2 NC
30	8	70-20622	3/8" Flange Hex Nut Gr 5 NC
31	24	70-20646	5/8" Hex Top Lock Nut Gr 5 NC
32	12	70-20657	3/4" Hex Top Lock Nut Gr 5 NC
33	35	70-20999	1" Hex Top Lock Nut Gr 8 NC (YZ)

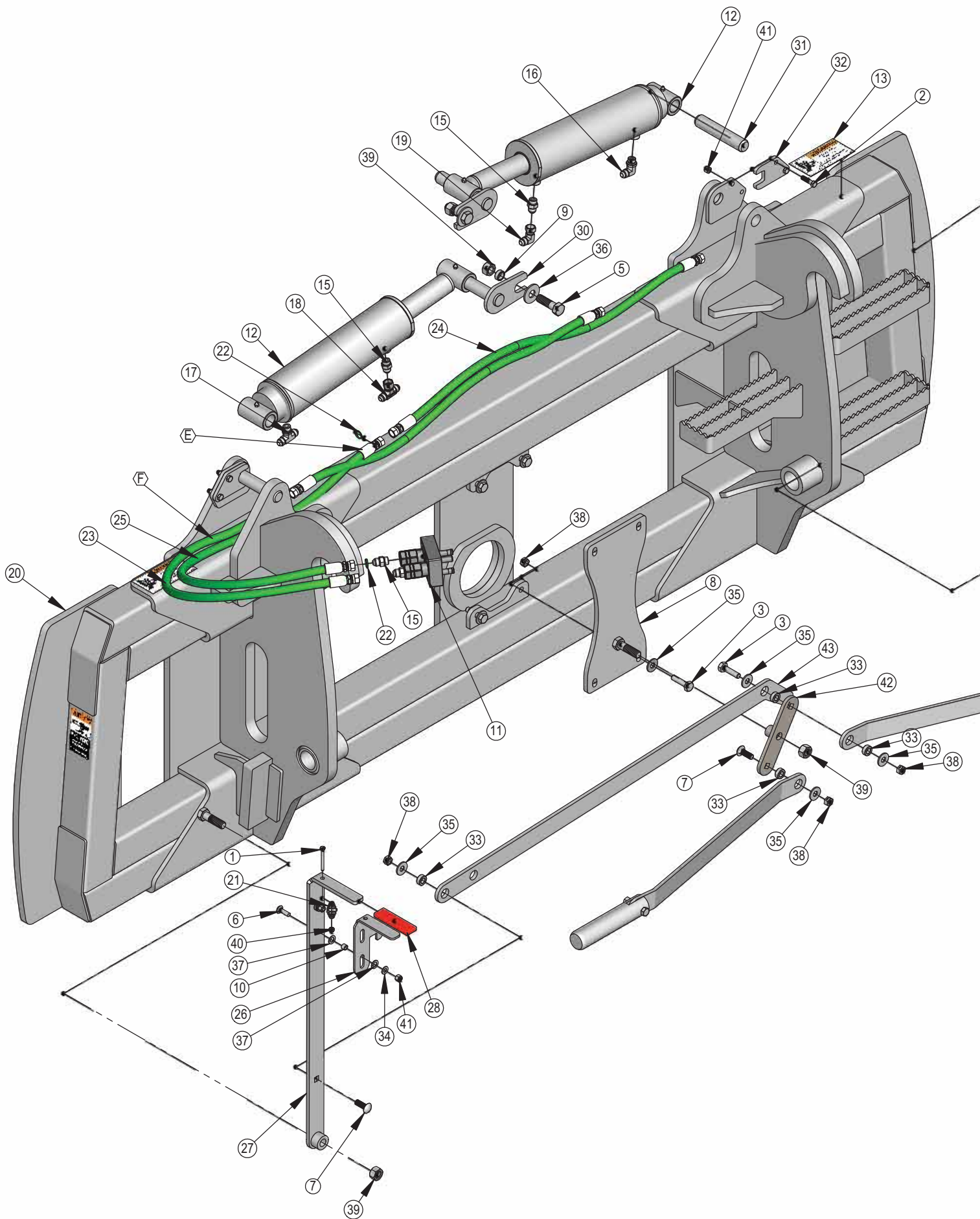
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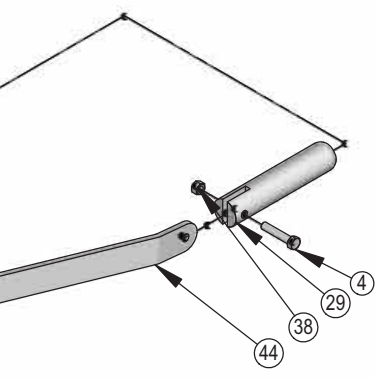
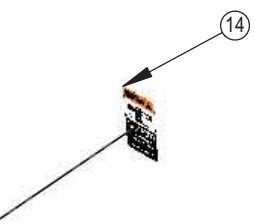




DWG. NO.: 41965-A

No Angle-Hydraulic Tilt System





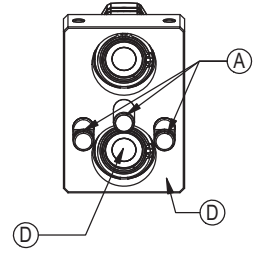
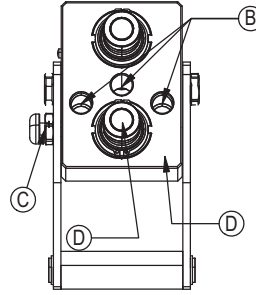
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	16-20011	1/4" x 2-3/4" Hex Bolt Gr 5 NC
2	4	16-20066	3/8" X 1-1/2" Hex Cap Screw Gr 5 NC
3	5	16-20128	1/2" x 2" NC Hex Bolt Gr. 5"
4	2	16-20130	1/2" x 2-1/2" Hex Bolt Gr 5 NC
5	2	16-20220	3/4" x 2-1/2" Hex Bolt Gr 5 NC
6	2	16-21065	3/8" x 1-1/4" Carriage Bolt Gr 5 NC
7	2	16-21126	1/2" x 1-1/2" Carriage Bolt Gr 5 NC
8	1	18-41984	Bracket, Center
9	2	19-13515	Spacer, NR Pin
10	2	19-40440	.378" ID x .503" OD x .375" Spacer
11	1	25-19869	Multi-Coupling Plate - 2 Port - Mobile
12	2	26-34728	4 x 12 Cylinder Tube Ends
13	2	27-2409	Pinch Decal (Hand)
14	2	27-9503	Pinch Decal (Foot)
15	4	31-34040	Straight JIC x O-Ring
16	1	31-34050	Straight Thread Elbow 90° JIC x O-Ring
17	1	31-34060	Branch Tee JIC x O-Ring
18	1	31-34080	Swivel Nut Branch Tee JIC
19	1	31-34100	Swivel Nut Elbow 90° JIC
20	1	32-41990	Tilt Frame Weld
21	1	34-17799	Latch Spring
22	6	34-18888-GR	-12 Green - Spiral Band
23	1	35-12631-0400	40" x 1/2" -8JIC/-8JIC Abrasion Resistant Hose
24	2	35-12631-0450	45" x 1/2" -8JIC/-8JIC Abrasion Resistant Hose
25	1	35-12631-0500	50" x 1/2" -8JIC/-8JIC Abrasion Resistant Hose
26	1	39-14663	Latch
27	1	39-14665	Handle Weld
28	1	39-3072	Rubber Handle
29	2	43-18486	AG Pro SS QA Lock Pin
30	2	43-41638	Pin Weld
31	2	43-42019	1-1/4" x 6-3/8" Tilt Cylinder Pin
32	2	44-42024	Retaining Plate, HD Tilt Pin
33	4	44-8490	Spacer
34	2	57-20742	3/8" Flat Washer
35	8	57-20744	1/2" Washer
36	2	57-20747	3/4" Flat Washer
37	4	57-40408	3/8" Flat Nylon Washer
38	9	70-20604	1/2" Hex Center Lock Nut Gr 2 NC
39	4	70-20607	3/4" Center Lock Hex Nut Gr 2 NC
40	1	70-20610	1/4" Nyloc Hex Nut Gr 5 NC
41	6	70-20612	3/8" Nyloc Hex Nut Gr 5 NC
42	1	75-18480	Bell Crank Weld
43	1	75-19575	Plate, Link
44	2	75-19576	Link, Bell Crank To Pin

Before Each Use:

1. Disconnect the mobile half from the parking station and the cap from the fixed half.
2. Check that there is no contamination (salt, sand, dirt, etc.):
 - A. On the pins.
 - B. Inside the cam.
 - C. In the locking mechanism area.
 - D. On the face of the plates and couplings.
3. In case of contamination, remove it with a cloth and/or compressed air.
4. Check that there is still a lubricant/anti-corrosion (grease or silicone - see Note 1):
 - A. On the pins.
 - B. Inside the cam.
 - C. In the locking mechanism area.
5. Connect the mobile and fixed halves together.

Fixed Half

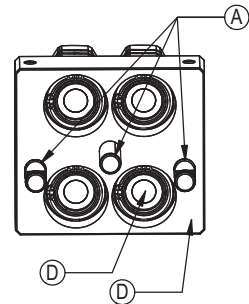
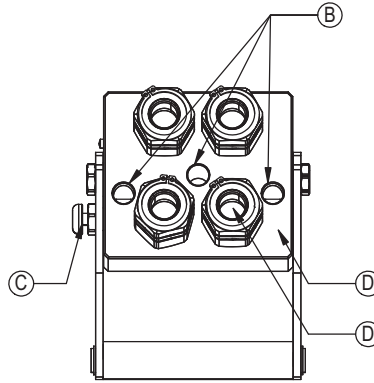
Mobile Half



After Each Use:

1. Disconnect the mobile half from the fixed half.
2. Clean all contamination (salt, sand, dirt, etc.) from the following areas:
 - A. On the pins.
 - B. Inside the cam.
 - C. In the locking mechanism area.
 - D. On the face of the plates and couplings.

*Use a cloth or compressed air. It is advised to not use water to clean these surfaces
3. Apply a lubricant/anti-corrosion (grease or silicone - see Note 1):
 - A. On the pins.
 - B. Inside the cam.
 - C. In the locking mechanism area.
4. Connect the cap to the fixed half and the mobile half to the parking station.

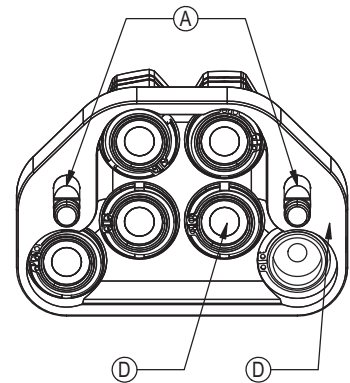
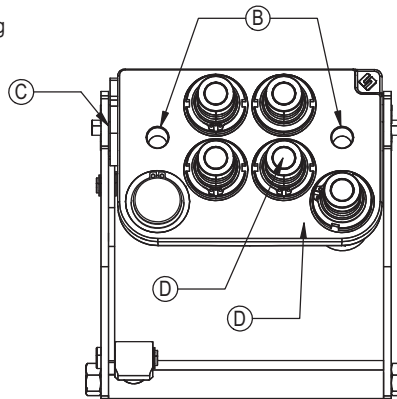


Note 1:

When sand and salt are present, or the plates under go a washdown, a heavy duty silicone spray lubricant should be used to replace grease from the factory. The lubricant should help protect from corrosion without collecting dust and contaminants, and will resist washing off when exposed to water.

Recommended Lubricant Brands:

Fluid Film (Aerosol or Non-Aerosol), LPS-2 Heavy Duty Lubricant, or CRC 3-36.



Cleaning The Male Interface Seal:



1. Make sure the coupling is securely fastened into the plate or place in a vice.



2. Using a blunt, non-marring tool, depress the valve face until the seal is exposed. Insert a bent metal wire between the valve face and the body of the coupling. Use caution not to damage or scratch the seal when inserting the wire.



3. Inspect the seal and interior surfaces for contamination.



4. In case of contamination, carefully wipe surfaces with a soft cloth, or use compressed air to blow the contamination out. Do Not press hard on the seal as contamination can scratch the seal surface.



5. Using a non-marring tool, depress the valve face and remove the metal wire. Release the valve to the flush position.

Cleaning The Female Bushing:



1. Make sure the coupling is securely fastened into the plate or place in a vice.



2. Using a non-marring tool, depress the outer ring to expose the bushing. There is no need to expose the valve seal, so stop pressing before the valve is opened.



3. Inspect the interior body and bushing surfaces for contamination.

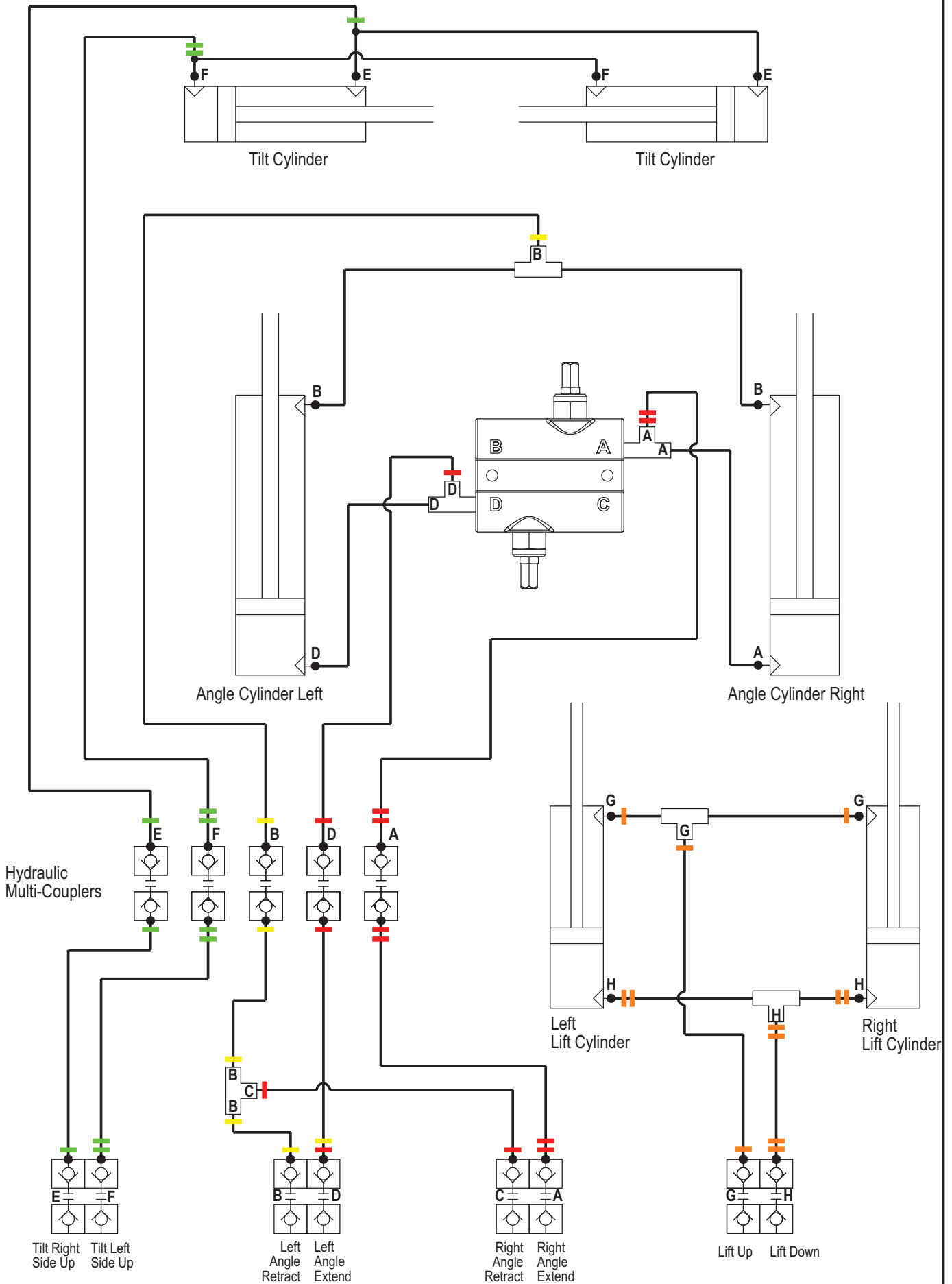


4. In case of contamination, carefully wipe surfaces with a soft cloth, or use compressed air to blow the contamination out.



5. Release the outer ring so that it returns to the flush position.

Colored Lines = Quantity of Colored Spiral Bands



Contact Us

As always, if you have any questions about your 19' U-Blade or other products made by Grouser, feel free to contact us.

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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. 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.

