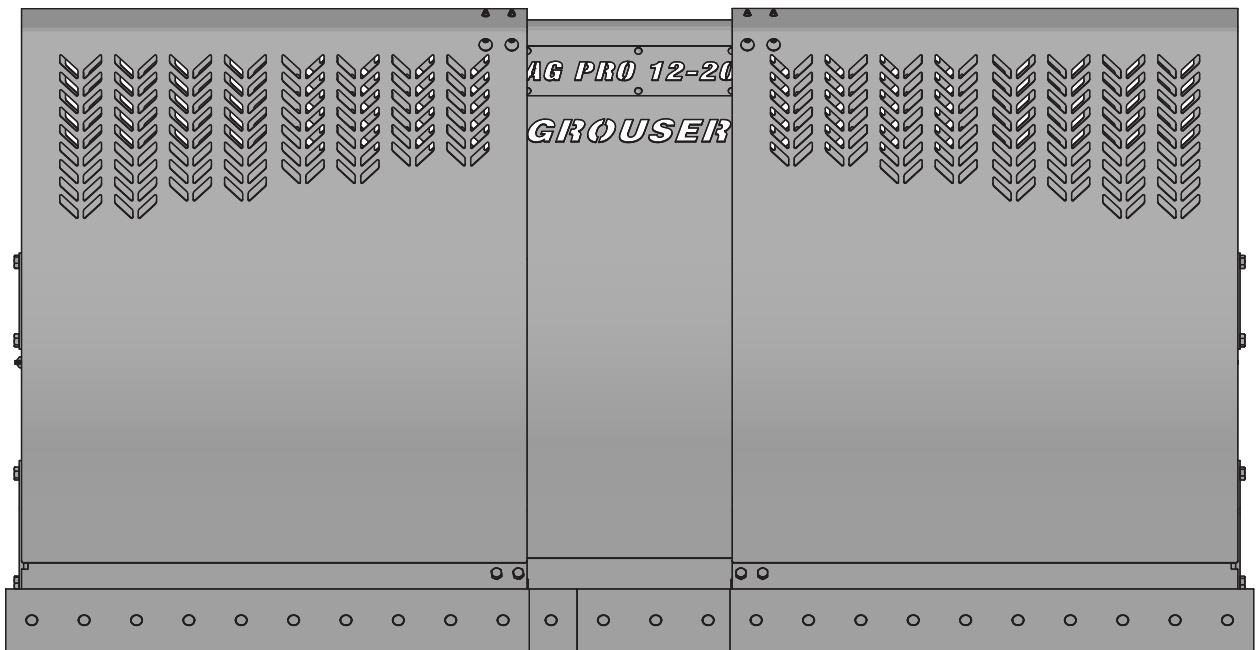




# Ag Pro 12-20

## Owner's Manual & Parts Book



### Grouser Products

755 2nd Ave NW - West Fargo, ND 58078

**Phone:** 1-701-282-7710

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

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

**Website:** www.grouser.com

Purchase Date

Serial Number

Model Number

Tractor Model

Dealer

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Thank you for your recent purchase of a Grouser 12-20 Dozer. 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 12-20 Dozer. 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 number, 701-282-7710, or send us an e-mail at [info@grouser.com](mailto:info@grouser.com). You can expect us to respond to your e-mail in a timely manner.

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 12-20 Dozer:

1. The 12-20 Dozer should be operated only by those who are responsible and instructed to do so.
2. Read the owner's manual carefully before using this equipment. Lack of operating knowledge can lead to accidents.
3. Keep the 12-20 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.
6. Lower the blade to the ground when not in use.

### Servicing the 12-20 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 12-20:

1. Thoroughly clean the 12-20 Dozer before storage. Use paint where necessary to prevent rust.
2. Check the 12-20 Dozer 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.

6 7 8 9 10 10 9 8 7 6

PN: 27-15612-X

**AG PRO**  
**12-20**

PN: 27-15598

**! WARNING**

**PINCH AREA**  
Keep away

Failure to comply could result in death or serious injury.

27-2409

PN: 27-2409

755 2nd Ave NW-West Fargo, ND 58078  
800-747-6182/701-282-7710

1020XXXX

This product may be protected by one or more of the following patents and trademarks:  
6431288 6422322 2271908 2271995  
6827155 6907941 6955229 7131502

**! WARNING**

Cancer and Reproductive Harm

For more information go to  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

27-40962

PN: 27-40962

**STOP**

**PROPER RATCHET STORAGE**

Handle  
Ratchet Handle  
Ratchet Keeper

**Ratchet Handle Must Be Secured Between The Ratchet Keeper And The Handle When Not In Use**

**FAILURE TO FOLLOW MAY RESULT IN DAMAGE**

Parts May Vary Slightly In Appearance From Your Product

27-40917R1

PN: 27-40917

**! WARNING**

**PINCH POINT**

AVOID INJURY FROM FRAME PIVOT AND STOPS.

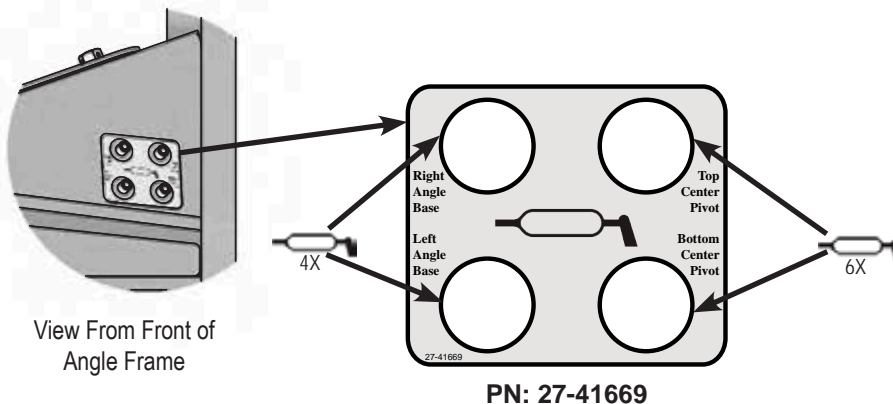
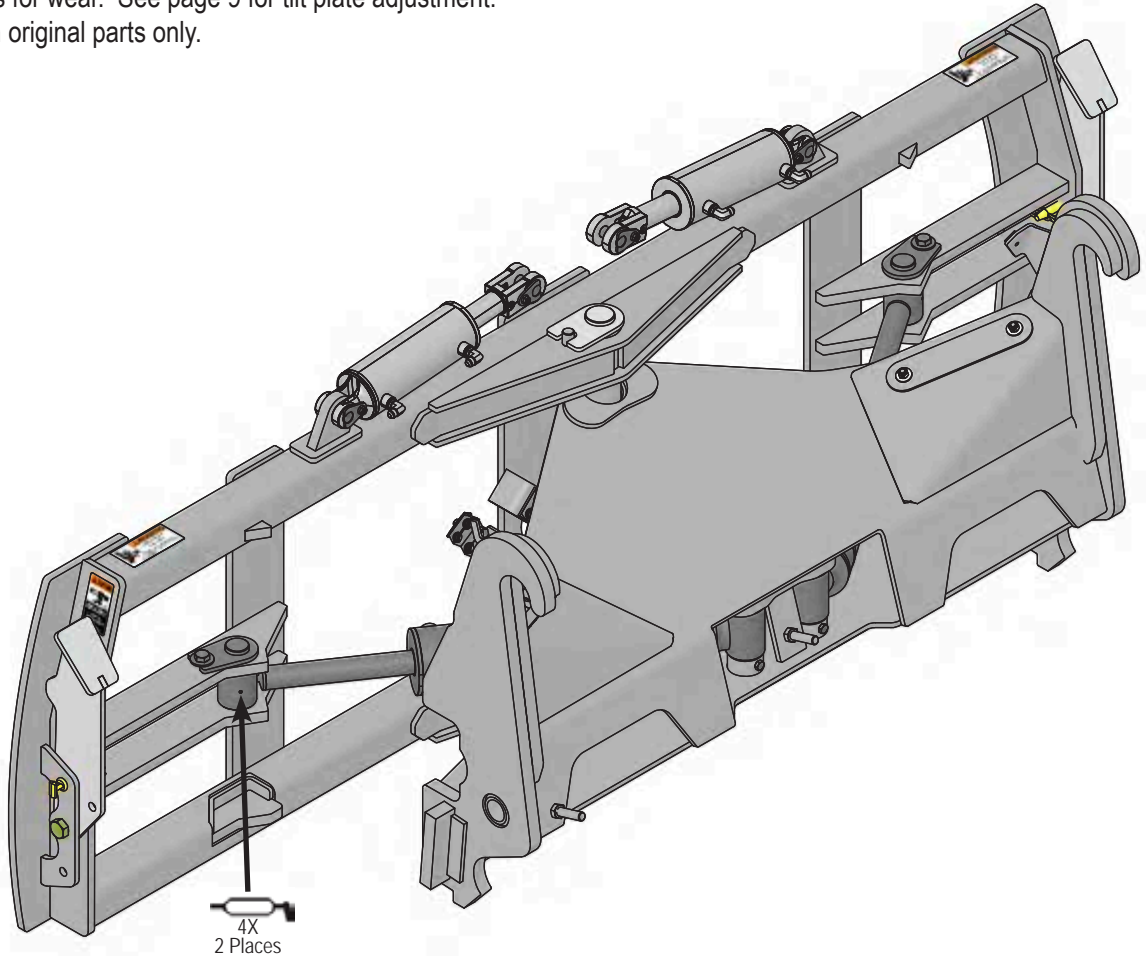
- Keep hands and feet away.

27-9503

PN: 27-9503  
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 Dozer. For cutting edge information, see pages 24-27.
- Check hydraulic cylinders and hoses for damage or leaks. For replacement parts, see hydraulic pages 14-21, 24-25.
- 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 28-29.
- Inspect all tilt-ways for wear. See page 9 for tilt plate adjustment.
- Replace parts with original parts only.



Prior to operating blade system, all air must be purged from hydraulic system. Follow 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 7.

**Blade Width Function:**

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

**Tilt Function:**

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

**Angle Function:**

1. Loosen the fittings on the rod and base end of the left angle cylinder.
2. Actuate the angle function to extend the left angle cylinder and supply oil to the base end of the left cylinder.
3. When oil starts to flow from the fittings, stop oil flow, and tighten the fitting on the base end of the left cylinder.
4. Continue to actuate the left angle function in the same direction until the cylinder is fully extended.
5. Actuate the left angle function in the opposite direction.
6. When oil starts to flow from the rod end fitting, stop oil flow, and tighten the rod end fitting on the left angle cylinder.
7. Continue to actuate the left angle function until cylinder is fully retracted.
8. Loosen the fittings on the rod and base end of the right angle cylinder.
9. Actuate the angle function to extend the right angle cylinder and supply oil to the base end of the right cylinder.
10. When oil starts to flow from the fittings, stop oil flow, and tighten the fitting on the base end of the right cylinder.
11. Continue to actuate the right angle function in the same direction until the cylinder is fully extended.
12. Actuate the right angle function in the opposite direction.
13. When oil starts to flow from the rod end fitting, stop oil flow, and tighten the rod end fitting on the right angle cylinder.
14. Continue to actuate the right angle function until cylinder is fully retracted.
16. Cycle the left cylinder in and out 5 more times and then the right cylinder in and out 5 more times.
16. Check tractor oil level and fill if necessary.

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



**NOTE:** Prior to connecting the blade, clean the fixed and mobile multi-couplers (refer to pages 28-29). Contamination causes leaks and contamination is not warrantable.

### 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 push the quick attach lock handle on the left side of the lift system to open the quick attach system. Refer to Page #12 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. Pull 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 28-29 for cleaning and connecting information.
7. If initial startup, refer to Page 6 before operating any function of the blade.

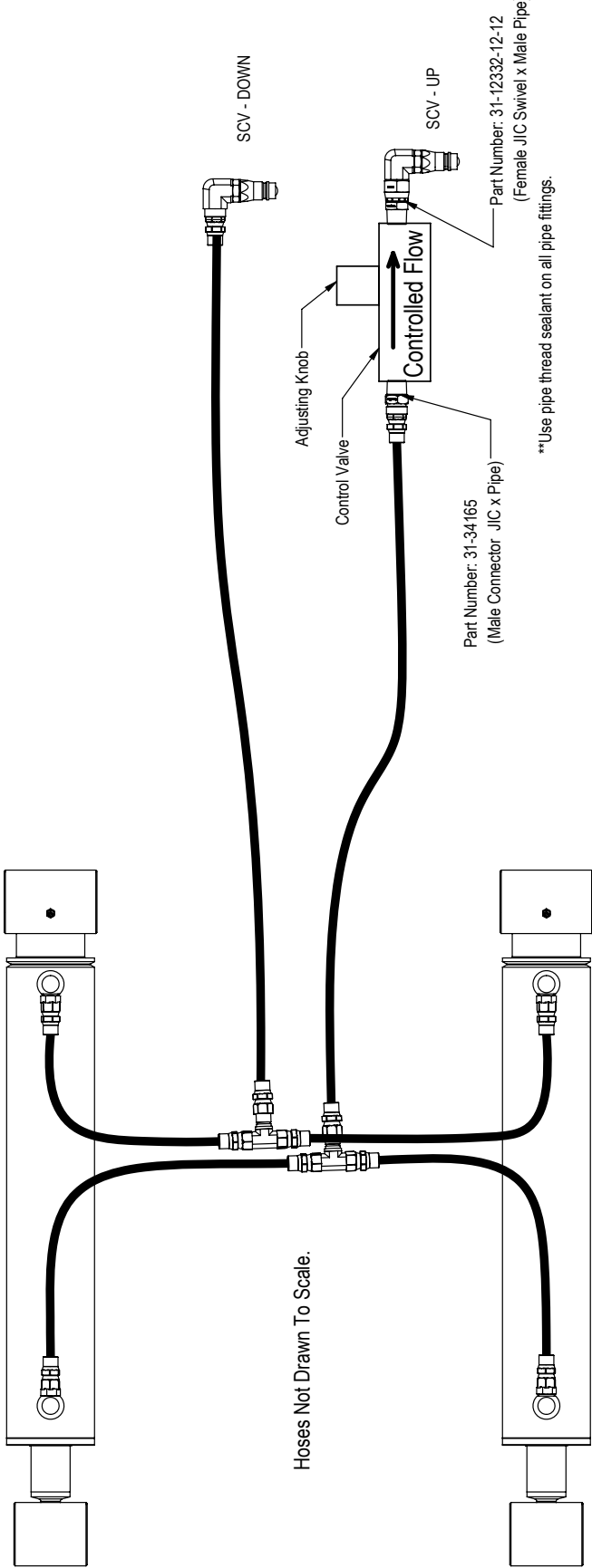
### To Disconnect:

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 push 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.

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. Use pipe thread sealant on pipe fittings.
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. Use pipe thread sealant on pipe fittings.
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 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.

**GROUSER PRODUCTS INC.**  
755 2nd Ave NW  
West Fargo, ND 58078  
WWW.GROUSER.COM

Phone 701.282.7710  
Fax 701.282.8131

TITLE: Lift System Speed Control Kit	
Date: 8/24/2016	DWG. NO.: 19699-INS



## Skid Shoe Adjustment:

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

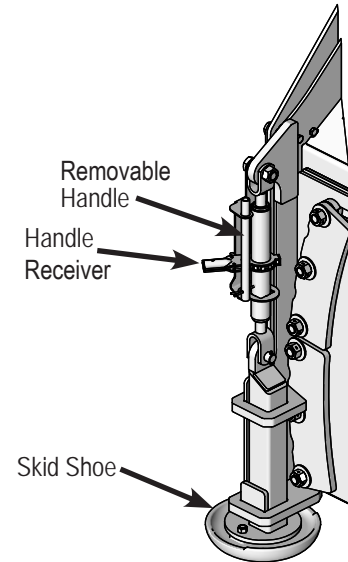


Figure 1

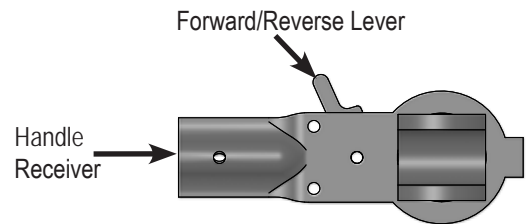


Figure 2

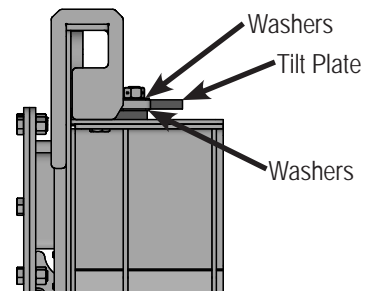
## Preferred Method:

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

## Non-Preferred Method:

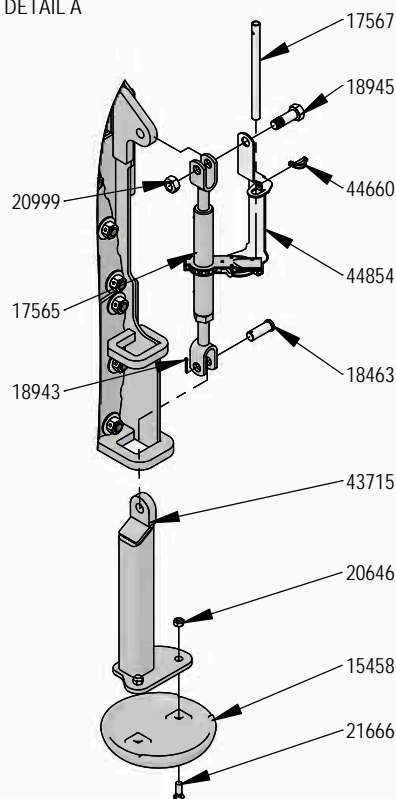
**Note:** Do not remove all of the bolts at the same time if the blade is not laying face down.

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

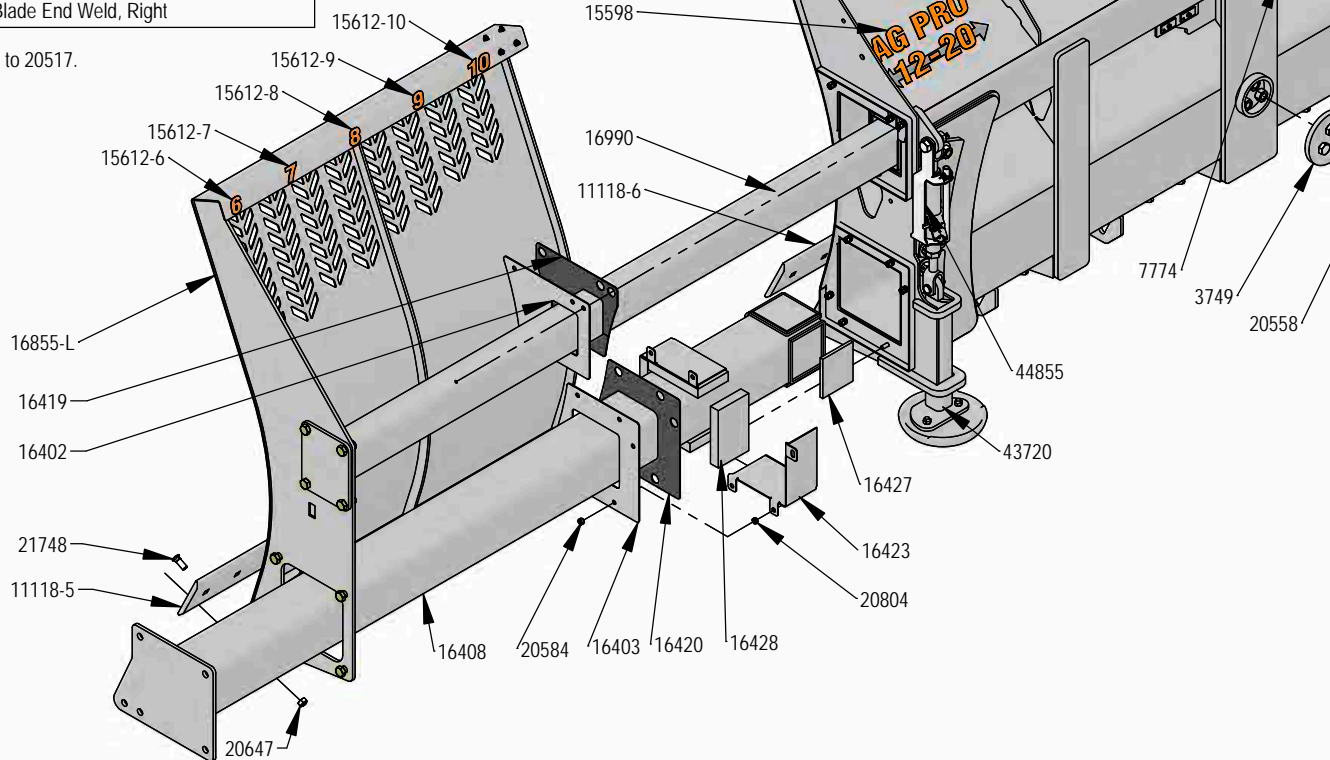


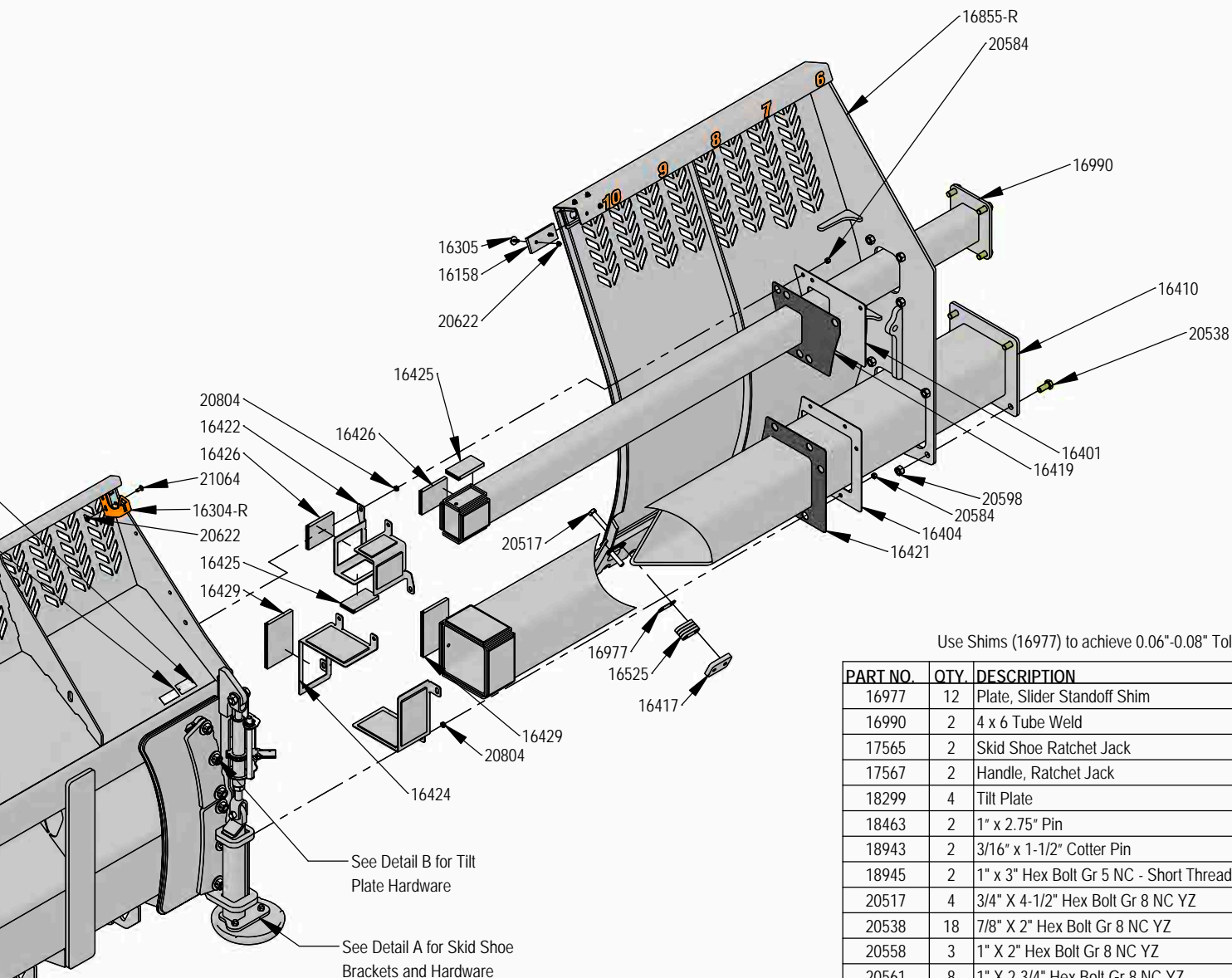
PART NO.	QTY.	DESCRIPTION
3749	1	Backdrag Brace Plate
7774	2	1" x 1" Spring Bushing
11118-5	3	5' - 3/4"x 8" Cutting Edge
11118-6	1	6' - 3/4"x 8" Cutting Edge
15458	2	12" Round Mushroom Skid Shoe
15598	1	Decal, AG PRO 12-20
15600	1	Custom Name Plate
15605	1	Ag Pro 12-20 Name Plate - (6.2" x 25.6")
15612-6	2	Width Decal 6
15612-7	2	Width Decal 7
15612-8	2	Width Decal 8
15612-9	2	Width Decal 9
15612-10	2	Width Decal 10
16158	6	Bearing, 2.625 x 6.00 W/Holes
16304-L	1	Bracket, Left Location
16304-R	1	Bracket, Right Location
16305	12	3/8" x 1.25" Flanged Elevator Bolt
16401	1	Plate, Top Cover Right
16402	1	Plate, Top Cover Left
16403	1	Plate, 8" Cover
16404	1	Plate, 10" Cover
16408	1	8 x 8 Tube Weld
16410	1	10 x 10 Tube Weld
16417	2	Plate, Slider
16419	2	Top Seal
16420	1	8" Tube Seal
16421	1	10" Tube Seal
16422	4	Top Outer Retainer
16423	2	8" Outer Retainer
16424	2	10" Outer Retainer
16425	8	Top Narrow UHMW
16426	8	Top Wide UHMW
16427	4	8" Inner UHMW
16428	4	8" Outer UHMW
16429	8	10" UHMW
16525	2	Standoff
16855-L	1	12-20 Blade End Weld, Left
16855-R	1	12-20 Blade End Weld, Right

DETAIL A



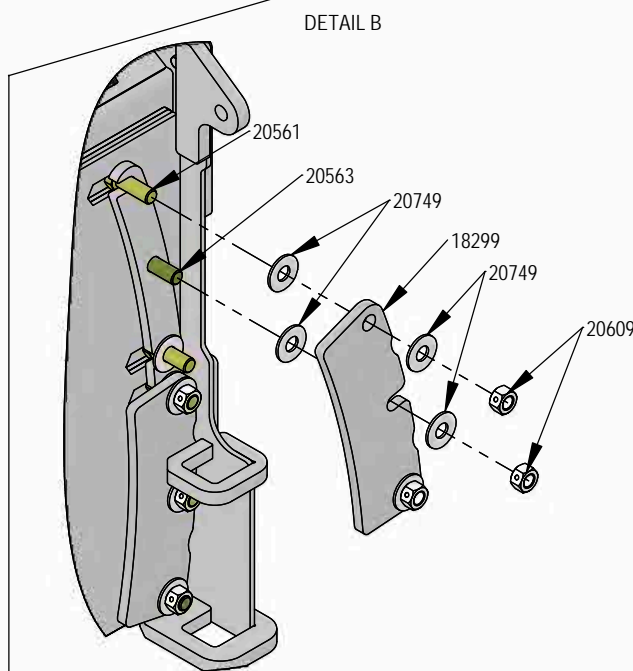
NOTE: Apply Blue Loctite to 20517.





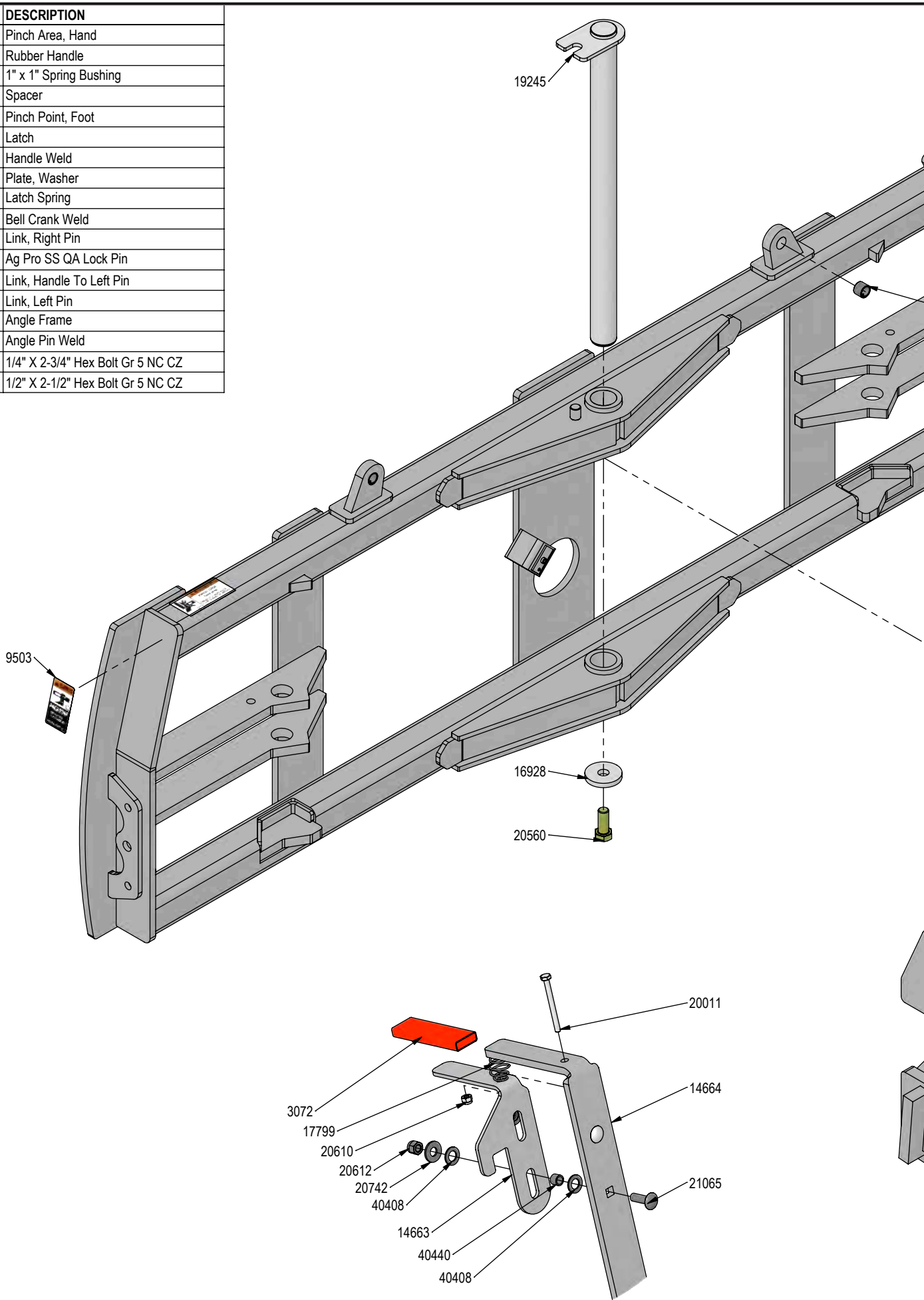
Use Shims (16977) to achieve 0.06"-0.08" Tolerance

PART NO.	QTY.	DESCRIPTION
16977	12	Plate, Slider Standoff Shim
16990	2	4 x 6 Tube Weld
17565	2	Skid Shoe Ratchet Jack
17567	2	Handle, Ratchet Jack
18299	4	Tilt Plate
18463	2	1" x 2.75" Pin
18943	2	3/16" x 1-1/2" Cotter Pin
18945	2	1" x 3" Hex Bolt Gr 5 NC - Short Thread
20517	4	3/4" X 4-1/2" Hex Bolt Gr 8 NC YZ
20538	18	7/8" X 2" Hex Bolt Gr 8 NC YZ
20558	3	1" X 2" Hex Bolt Gr 8 NC YZ
20561	8	1" X 2-3/4" Hex Bolt Gr 8 NC YZ
20563	4	1" X 3-1/4" Hex Bolt Gr 8 NC YZ
20584	22	1/2" Hex Nut Gr 5 NC CZ
20598	18	7/8" Hex Nut Gr 8 NC CZ
20609	12	1" Hex Center Lock Nut Gr 5 NC CZ
20622	22	3/8" Flange Hex Nut Gr 5 NC CZ
20646	4	5/8" Hex Top Lock Nut Gr 5 NC CZ
20647	42	3/4" Hex Top Lock Nut Gr 5 NC CZ
20749	24	1" Flat Washer CZ
20804	22	1/2" Hex Jam Nut NC CZ
20999	2	1" Hex Top Lock Nut Gr 8 NC YZ
21064	10	3/8" x 1" Carriage Bolt Gr 5 NC CZ
21666	4	5/8" X 1-3/4" Plow Bolt Gr 5 NC (#3 Flat Head)
21748	42	3/4" X 2" Plow Bolt Gr 8 NC
40962	1	Warning Prop 65 Decal
43715	1	Slider Skid Shoe Weld
43720	1	Slider Skid Shoe Weld
44660	2	1/4" x 1-9/16" Pipe Lynch Pin
44854	1	Ratchet Keeper - Left
44855	1	Ratchet Keeper
45255	1	12-20 XAXT Blade Weld
NA	1	Serial Number Tag

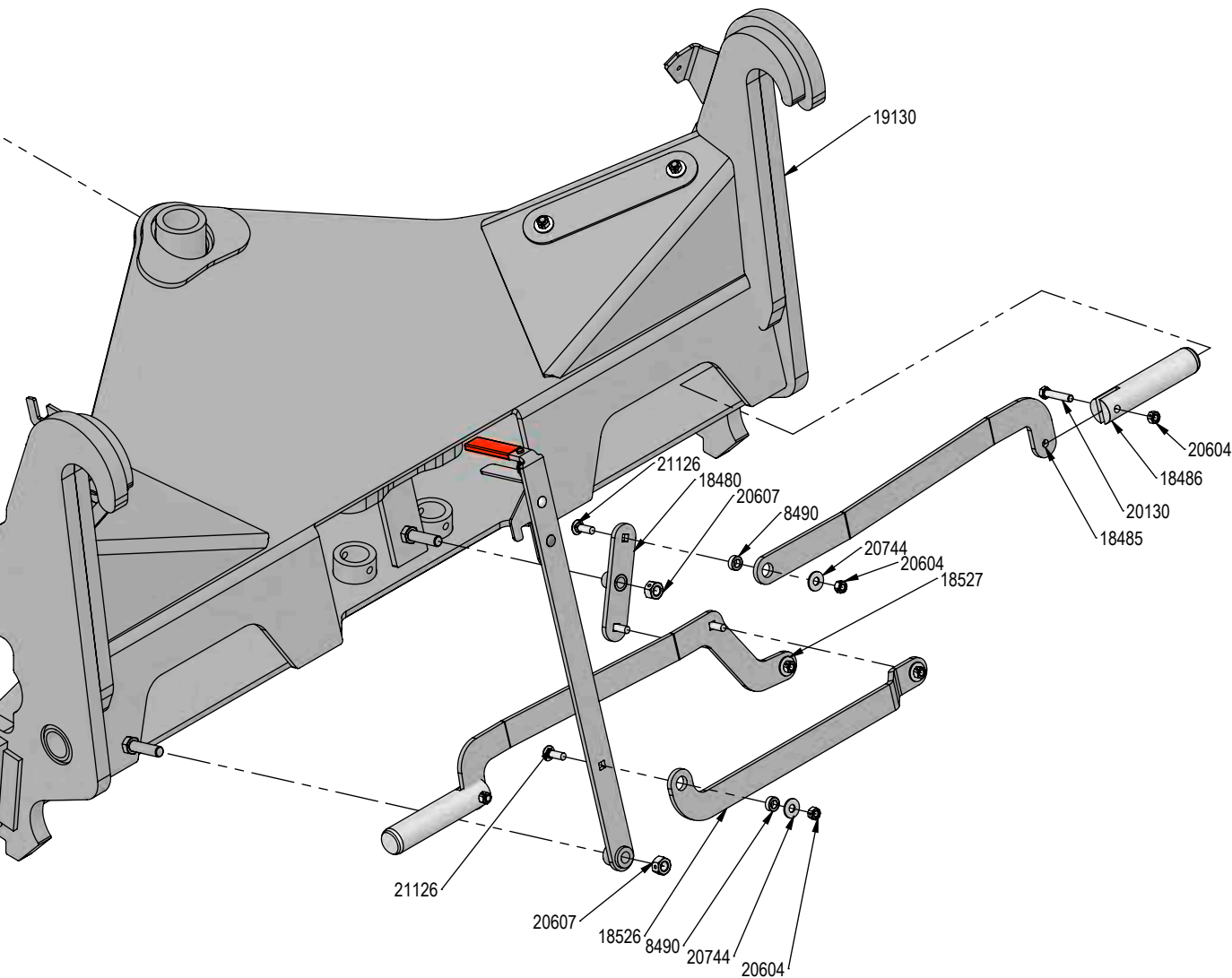
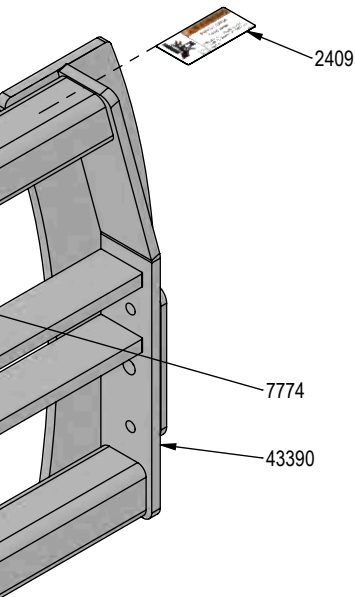


DWG. NO.: 45255-A

QTY.	PART NO.	DESCRIPTION
2	2409	Pinch Area, Hand
1	3072	Rubber Handle
2	7774	1" x 1" Spring Bushing
4	8490	Spacer
2	9503	Pinch Point, Foot
1	14663	Latch
1	14665	Handle Weld
1	16928	Plate, Washer
1	17799	Latch Spring
1	18480	Bell Crank Weld
1	18485	Link, Right Pin
2	18486	Ag Pro SS QA Lock Pin
1	18526	Link, Handle To Left Pin
1	18527	Link, Left Pin
1	19130	Angle Frame
1	19245	Angle Pin Weld
1	20011	1/4" X 2-3/4" Hex Bolt Gr 5 NC CZ
2	20130	1/2" X 2-1/2" Hex Bolt Gr 5 NC CZ



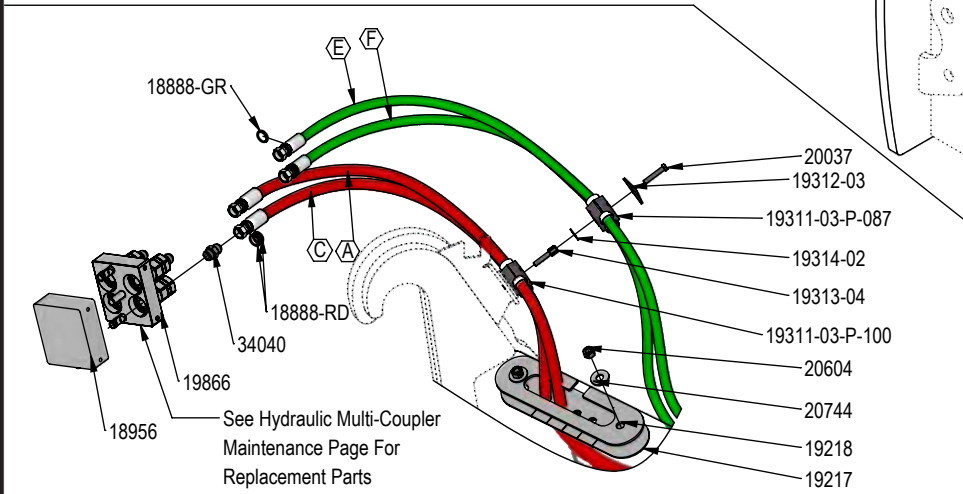
QTY.	PART NO.	DESCRIPTION
1	20560	1" X 2-1/2" Hex Bolt Gr 8 NC YZ
6	20604	1/2" Hex Center Lock Nut Gr 5 NC CZ
2	20607	3/4" Hex Center Lock Nut Gr 5 NC CZ
1	20610	1/4" Nylock Hex Nut Gr 5 NC CZ
2	20612	3/8" Nyloc Hex Nut Gr 5 NC CZ
2	20742	3/8" Flat Washer CZ
4	20744	1/2" Flat Washer CZ
2	21065	3/8" x 1-1/4" Carriage Bolt Gr 5 NC CZ
4	21126	1/2" x 1-1/2" Carriage Bolt Gr 5 NC CZ
4	40408	3/8" Flat Nylon Washer
2	40440	.378" ID x .503" OD x .375" Spacer
1	43390	12-20 Tilt Frame Weld





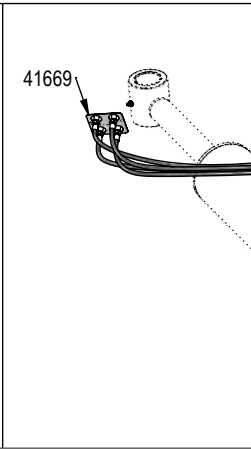
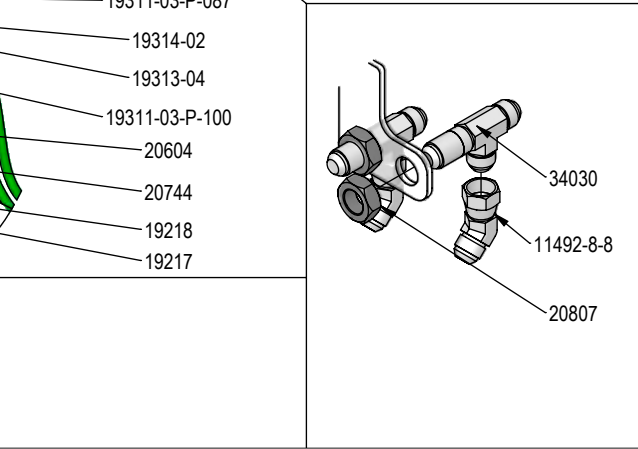
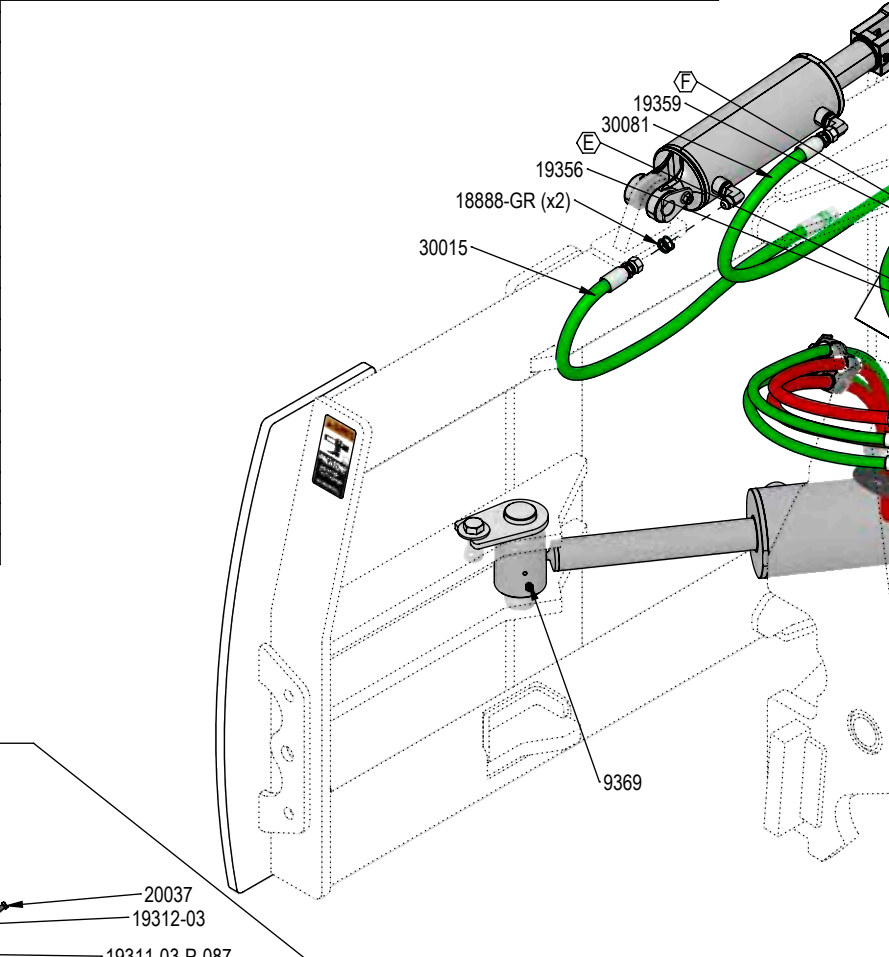
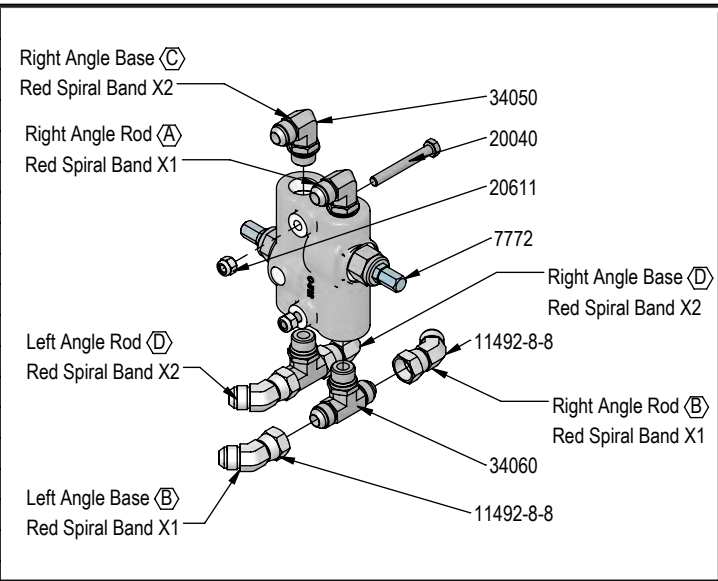
QTY.	PART NO.	DESCRIPTION
1	7772	Valve
2	9369	Straight 1/8" NPT Grease Zerk
2	9503	Pinch Point, Foot
6	11492-8-8	Male JIC x Female JIC Swivel Nut Elbow 45°
2	11699-10-8	JIC Union
2	12931	Formed Steel Line
2	12932	Cylinder Saddle
2	12933	Hose Clamp (worm drive - 5.0)
2	13515	Spacer, NR Pin
4	13580	Pin Weld
2	13933-2-2	1/8" NPT Street Elbow
8	16695	2.25" x 2.00" x 1.50" Spring Bushing
2	18487	Angle Cyl Base Pin
2	18490	Angle Cylinder Rod Pin Weld
18	18888-GR	-12 Green - Spiral Band
18	18888-RD	-12 Red - Spiral Band
1	18956	Multi-Coupling Plate - 4 Port Parking Station
2	18994-0440	44" Grease Hose (w/lock nut and grease zerk)
2	18994-0570	57" Grease Hose (w/lock nut and grease zerk)
1	19217	Rubber Seal
1	19218	Seal Clamp Plate
1	19219	Cover Plate
3	19311-03-P-087	Hose Clamp
1	19311-03-P-100	Hose Clamp
3	19312-03	Twin Cover Plate
1	19313-04	Twin Stacking Bolt
1	19314-02	Twin Safety Plate
2	19355	75.5" x 1/2" -8JIC/-8JIC Hose (w/1 Collar & Cordura)
1	19356	122" x 3/8" -8JIC/-8JIC Hose (w/ 3 Collar & Cordura)
1	19359	128.5" x 3/8" -8JIC/-8JIC Hose (w/ 3 Collar & Cordura)
1	19866	Multi-Coupling Plate - 4 Port Mobile (Includes Couplers)
3	20037	5/16" X 1-3/4" Hex Bolt Gr 5 NC CZ
2	20040	5/16" X 2-1/2" Hex Bolt Gr 5 NC CZ
2	20134	1/2" X 3-1/2" Hex Bolt Gr 5 NC CZ
2	20219	3/4" X 2-1/4" Hex Bolt Gr 5 NC CZ
6	20604	1/2" Hex Center Lock Nut Gr 5 NC CZ

**Note:** Every hydraulic function from the front to the back of the system is designated by a letter and can also be referenced on the Hydraulic Schematic.



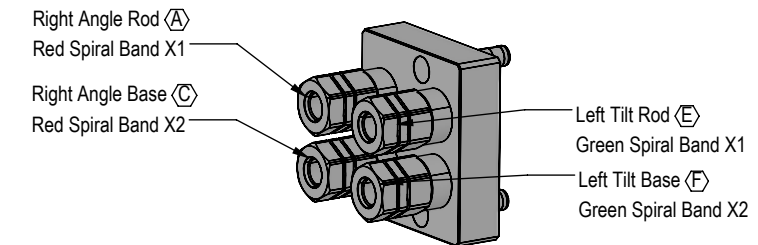
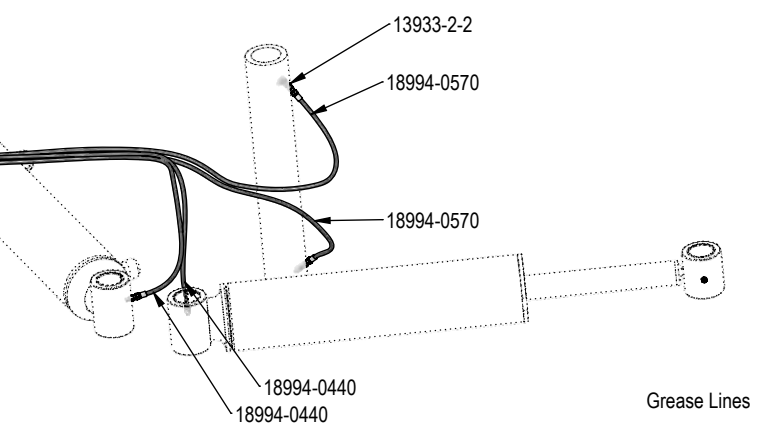
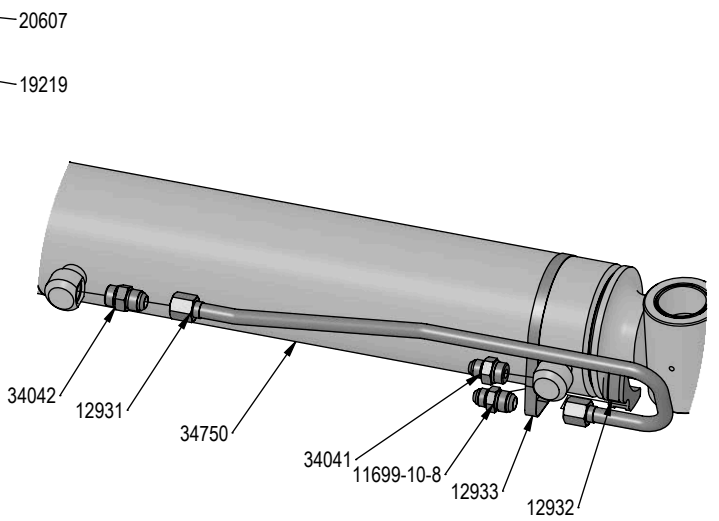
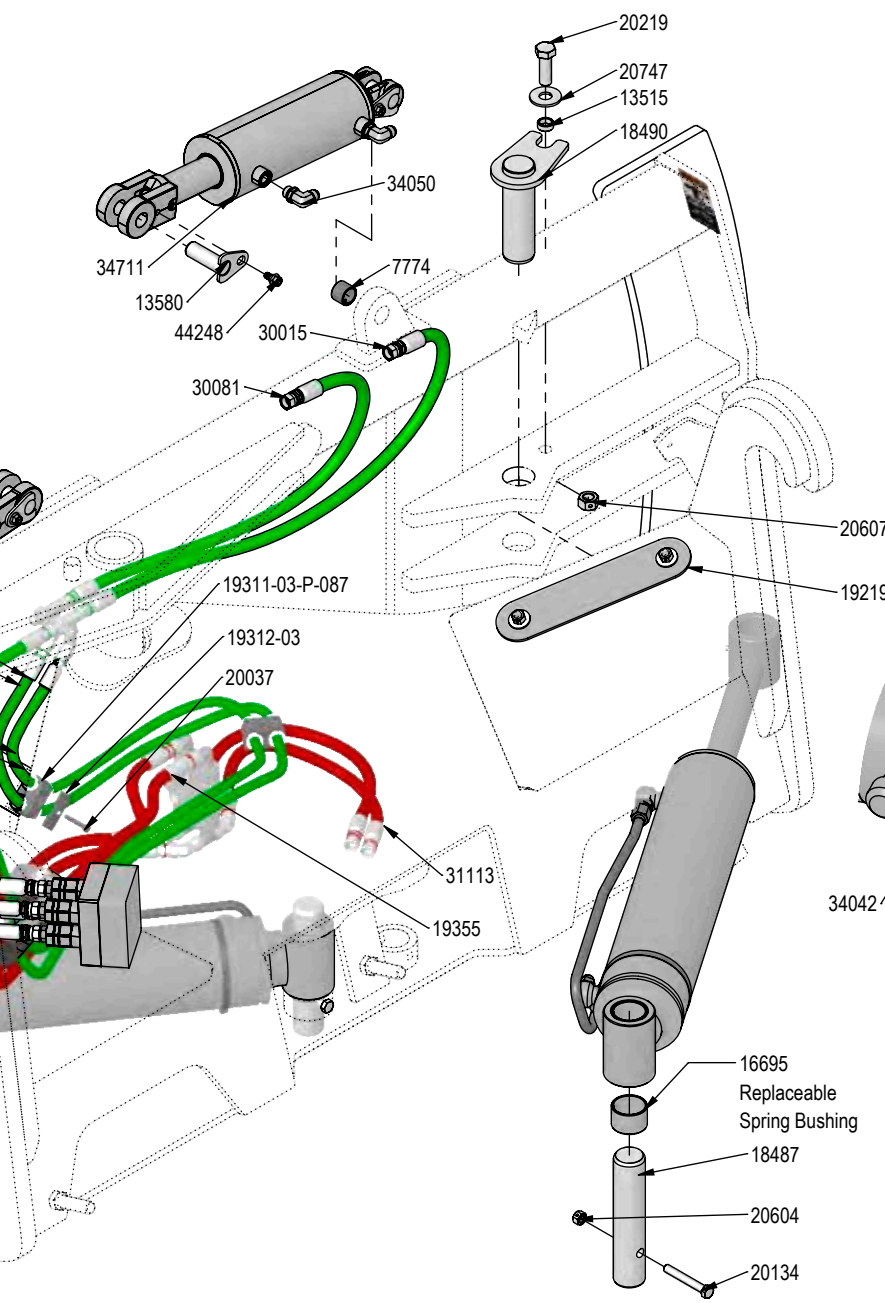
**Note:** The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

Cylinder	Part No.	Description
26-34711	49-12271	Seal Kit 4x8 Nitrided Rod, Clevis Ends
26-34750	49-12275	Seal Kit 5 x 20 Nitrided Rod





QTY.	PART NO.	DESCRIPTION
2	20607	3/4" Hex Center Lock Nut Gr 5 NC CZ
2	20611	5/16" Nyloc Hex Nut Gr 5 NC CZ
4	20744	1/2" Flat Washer CZ
2	20747	3/4" Flat Washer CZ
2	20807	3/4" Hex Jam Nut NF CZ
2	30015	30" x 3/8" -8JIC/-8JIC Hose
2	30081	37" x 3/8" -8JIC/-8JIC Hose
4	31113	28" x 1/2" -8 JIC/-8 JIC Hose w/ Cordura
2	34030	Bulkhead Run Tee JIC
4	34040	Straight JIC x O-Ring
2	34041	Straight JIC x O-Ring
2	34042	Straight JIC x O-Ring
6	34050	Straight Thread Elbow 90° JIC x O-Ring
2	34060	Branch Tee JIC x O-Ring
2	34711	4 x 8 Hydraulic Cylinder
2	34750	5 x 20 Cylinder Bushed Tube Ends
1	41669	Grease Location Decal
4	44248	3/8 Flanged Hex Head Shoulder Bolt



**Note:** View is from Multi-Coupler Installed on Top Arm.  
 All hoses are marked with colored spiral bands and should be attached to designated ports on the Multi-Coupler.

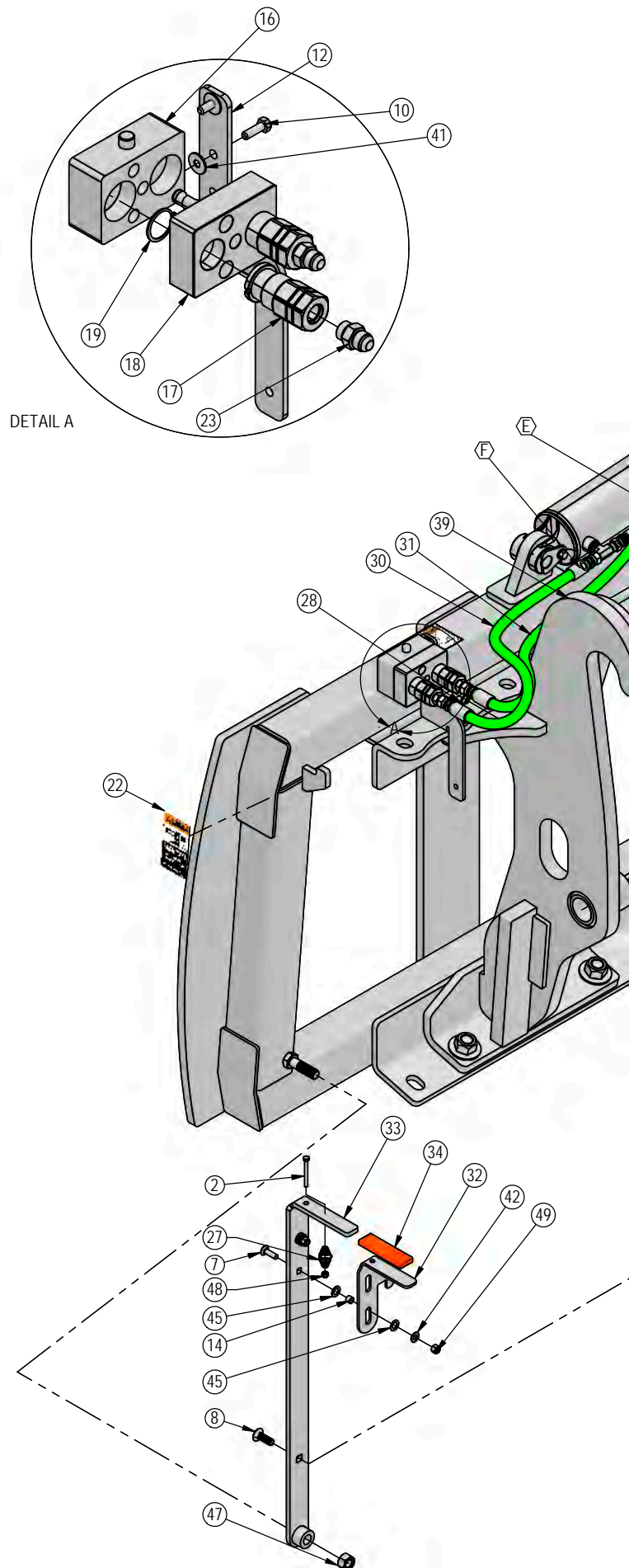
DWG. NO.: 45409

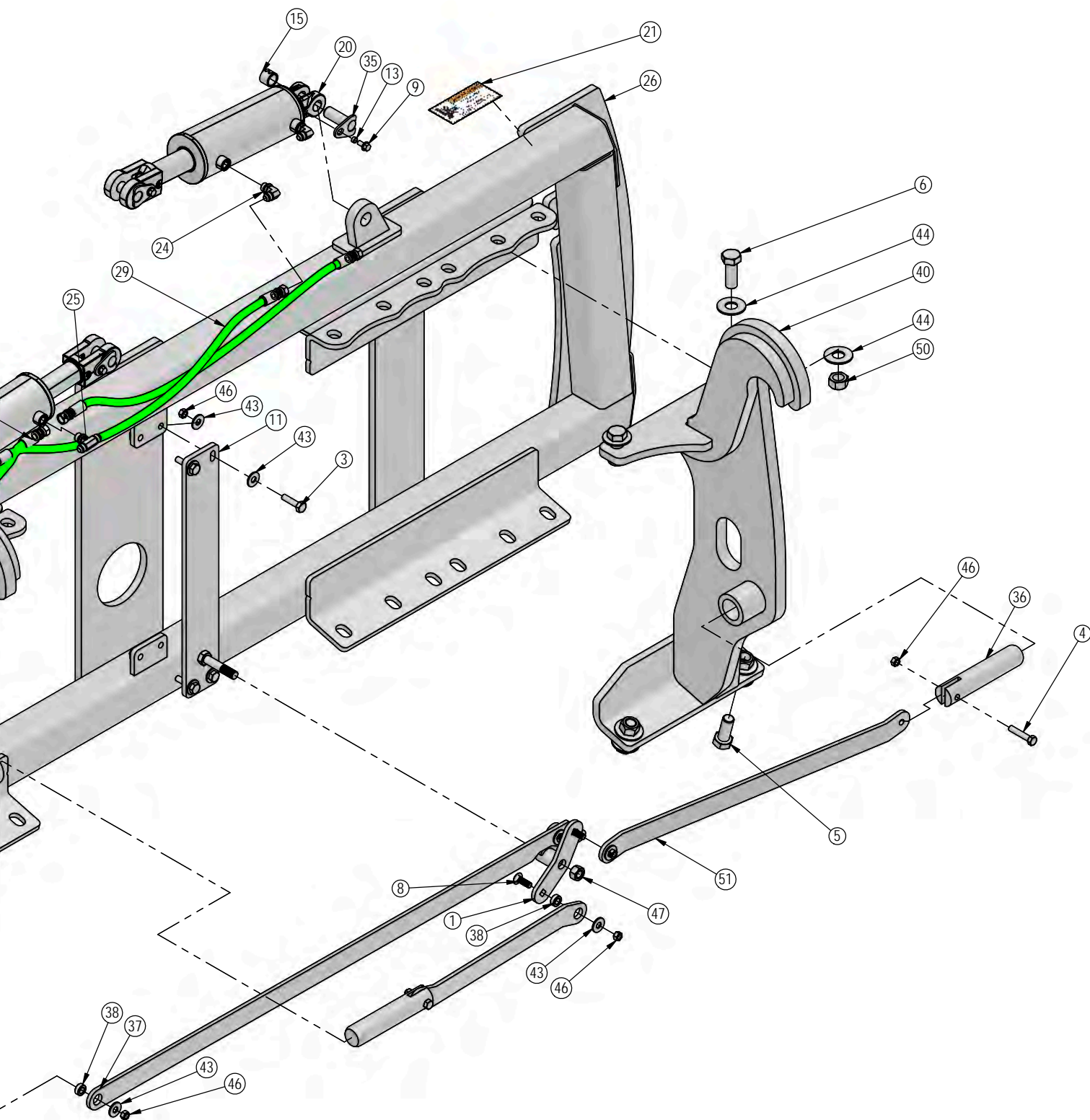
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	11-40866	Bell Crank
2	1	16-20011	1/4" x 2-3/4" Hex Bolt Gr 5 NC
3	4	16-20128	1/2" x 2" NC Hex Bolt Gr. 5"
4	2	16-20130	1/2" x 2-1/2" Hex Bolt Gr 5 NC
5	6	16-20560	1" x 2-1/2" Hex Bolt Gr 8 NC
6	2	16-20561	1" x 2-3/4" Hex Bolt Gr 8 NC
7	2	16-21065	3/8" x 1-1/4" Carriage Bolt Gr 5 NC
8	4	16-21126	1/2" x 1-1/2" Carriage Bolt Gr 5 NC
9	4	16-35C612	3/8" x 3/4" Flange Bolt
10	2	16-812525	8mm x 1.25mm x 25mm Metric Hex Bolt Gr 10.9
11	1	18-14658	Bracket, Center
12	1	18-40589-L	Multi-Coupler Bracket
13	4	19-13577	NR Pin Spacer Clevis End
14	2	19-40440	.378" ID x .503" OD x .375" Spacer
15	2	19-7774	1" x 1" Spring Bushing
16	1	25-19657	Multi-Coupling Plate - 2 Port Parking Station
17	2	25-19865	Multi-Coupling - Female Coupler
18	1	25-19869	Multi-Coupling Plate - 2 Port - Mobile
19	2	25-40407	Multi-Coupling - Snap Ring
20	2	26-34711	4 x 8 Hydraulic Cylinder
21	2	27-2409	Pinch Decal (Hand)
22	2	27-9503	Pinch Decal (Foot)
23	2	31-34040	Straight JIC x O-Ring
24	2	31-34050	Straight Thread Elbow 90° JIC x O-Ring
25	2	31-34060	Branch Tee JIC x O-Ring
26	1	32-16980 R3	Tilt Frame Weld
27	1	34-17799	Latch Spring
28	6	34-18888-GR	-12 Green - Spiral Band
29	2	35-30022	39" x 3/8" -8JIC/-8JIC Hose
30	1	35-31184	37" x 1/2" -8 JIC/-8 JIC Hose W/ Cordura
31	1	35-31185	47" x 1/2" -8 JIC/-8 JIC Hose W/ Cordura
32	1	39-14663	Latch
33	1	39-14665	Handle Weld
34	1	39-3072	Rubber Handle
35	4	43-13580	Pin Weld
36	2	43-18486	Ag Pro SS QA Lock Pin
37	1	44-41874	Plate, Link
38	4	44-8490	Spacer
39	1	45-40870-L	SS Bolt in Quick Attach - Left
40	1	45-40870-R	SS Bolt in Quick Attach - Right
41	2	57-20740	5/16" Flat Washer
42	2	57-20742	3/8" Flat Washer
43	12	57-20744	1/2" Flat Washer
44	16	57-20819	1" Flat Washer Heavy Duty Gr 8
45	4	57-40408	3/8" Flat Nylon Washer
46	10	70-20604	1/2" Center Lock Hex Nut
47	2	70-20607	3/4" Center Lock Hex Nut Gr 2 NC
48	1	70-20610	1/4" Nyloc Hex Nut Gr 5 NC
49	2	70-20612	3/8" Nyloc Hex Nut Gr 5 NC
50	8	70-20999	1" Hex Top Lock Nut Gr 8 NC
51	2	75-40869	Link, Bell Crank To Pin

**Note:** 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 Schematic on Page 30-31.

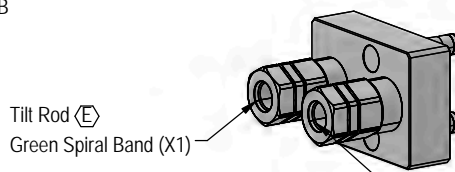
**Note:** The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

No. On Cylinder	Part No.	Description
26-34711	49-12271	Seal Kit 4" (647135) Nitrided Rod - Clevis Ends





DETAIL B

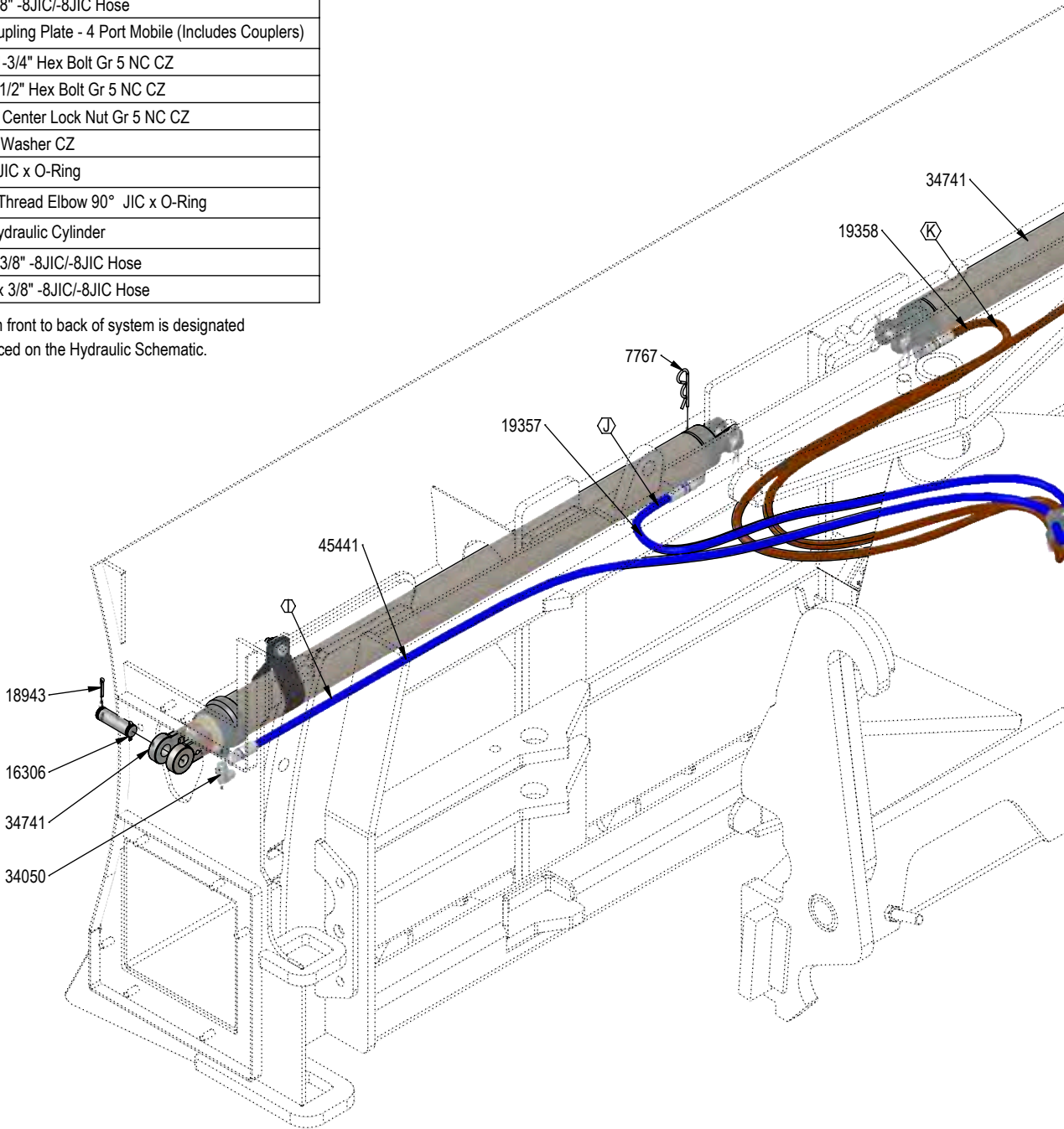


Note: View is from Multi-Coupler Installed on Top Arm.  
All hoses are marked with colored spiral bands and should be attached to designated ports on the Multi-Coupler.

DWG. NO.: 40984

QTY.	PART NO.	DESCRIPTION
4	7767	Cylinder Pin Clip
4	16306	Cylinder Pin w/ Cotter Pins
2	17585	Cylinder Strap
6	18888-BL	-12 Blue - Spiral Band
6	18888-BR	-12 Brown - Spiral Band
4	18943	3/16" x 1-1/2" Cotter Pin
1	19217	Rubber Seal
1	19218	Seal Clamp Plate
4	19311-03-P-087	Hose Clamp
2	19312-03	Twin Cover Plate
2	19313-03	Twin Stacking Bolt
2	19314-02	Twin Safety Plate
1	19357	121" x 3/8" -8JIC/-8JIC Hose
1	19358	113" x 3/8" -8JIC/-8JIC Hose
1	19866	Multi-Coupling Plate - 4 Port Mobile (Includes Couplers)
2	20037	5/16" X 1-3/4" Hex Bolt Gr 5 NC CZ
2	20126	1/2" X 1-1/2" Hex Bolt Gr 5 NC CZ
4	20604	1/2" Hex Center Lock Nut Gr 5 NC CZ
6	20744	1/2" Flat Washer CZ
4	34040	Straight JIC x O-Ring
4	34050	Straight Thread Elbow 90° JIC x O-Ring
2	34741	3 x 48 Hydraulic Cylinder
1	45441	174.5" x 3/8" -8JIC/-8JIC Hose
1	45444	141.50" x 3/8" -8JIC/-8JIC Hose

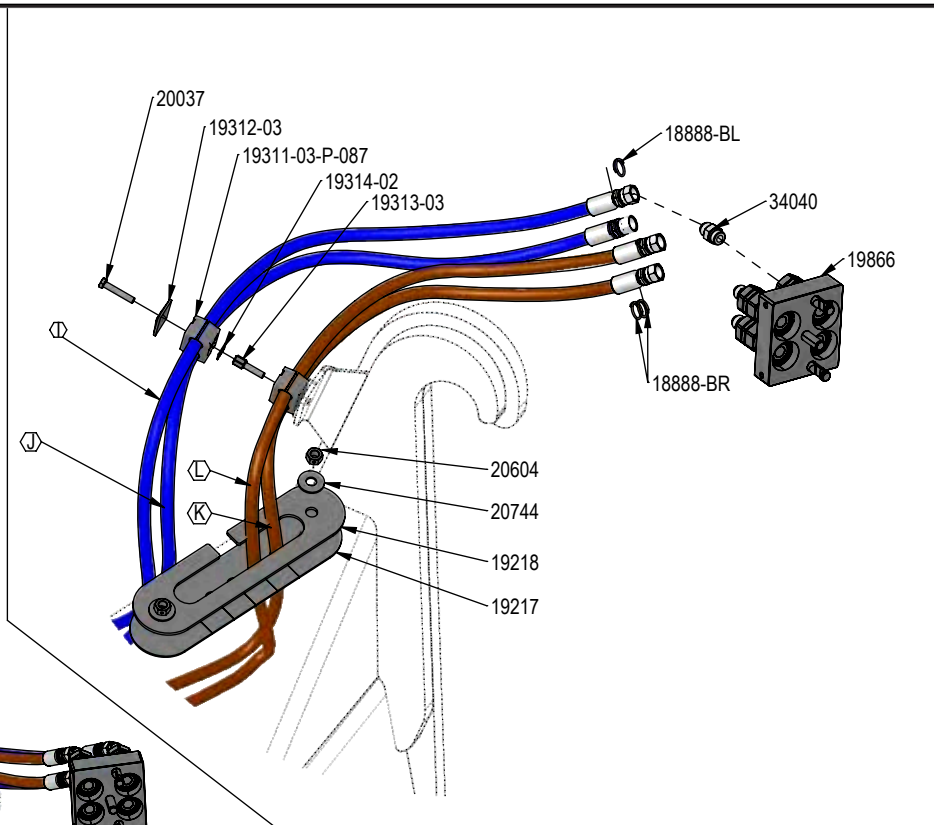
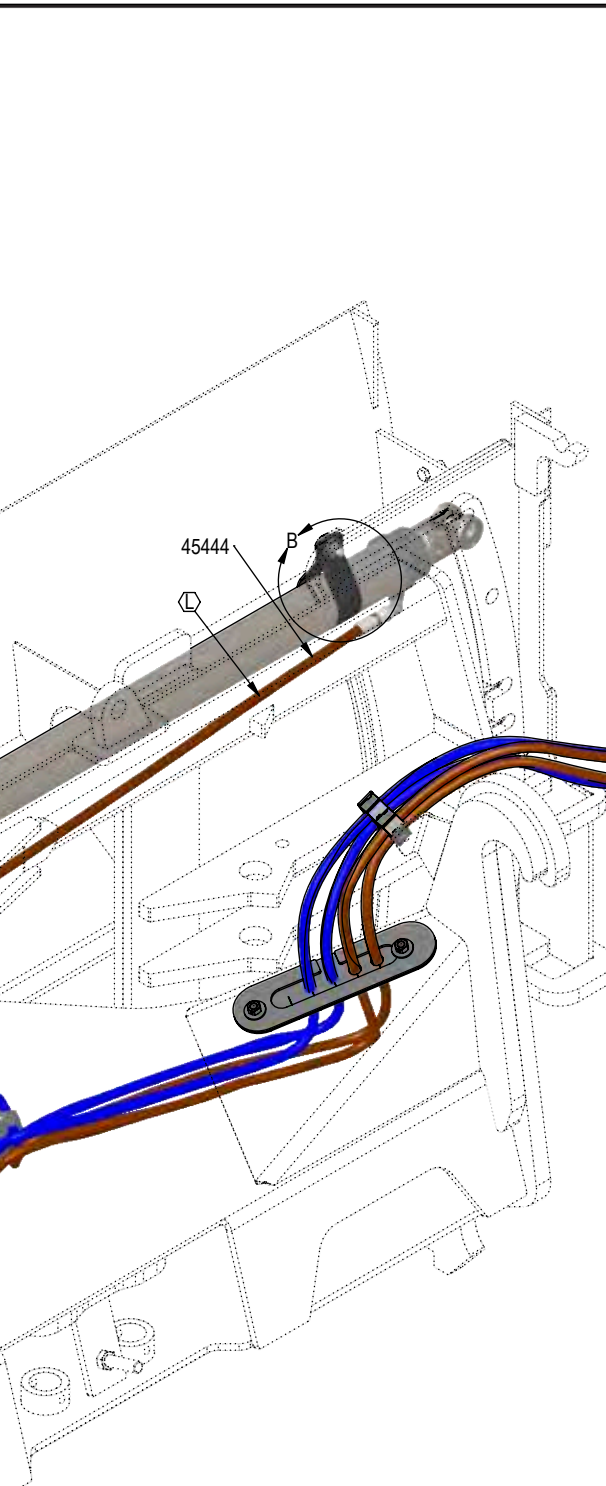
Note: Every hydraulic function from front to back of system is designated by a letter and can also be referenced on the Hydraulic Schematic.



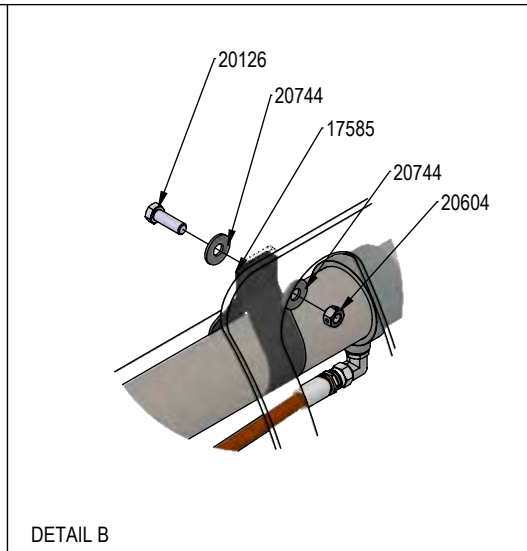
Note: The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

Cylinder	Part No.	Description
26-34741	49-19997	Seal Kit 3"

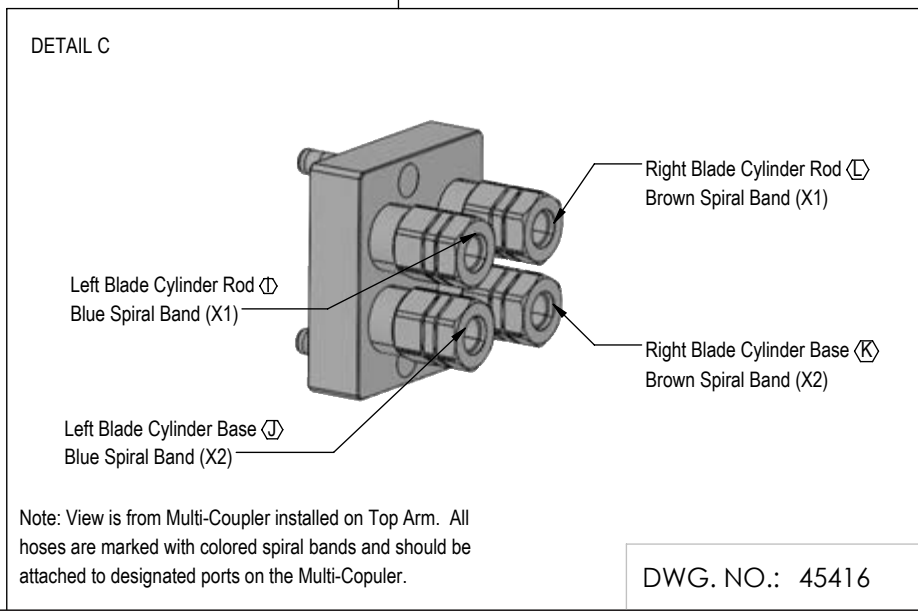




See Detail C for correct hose locations



DETAIL B



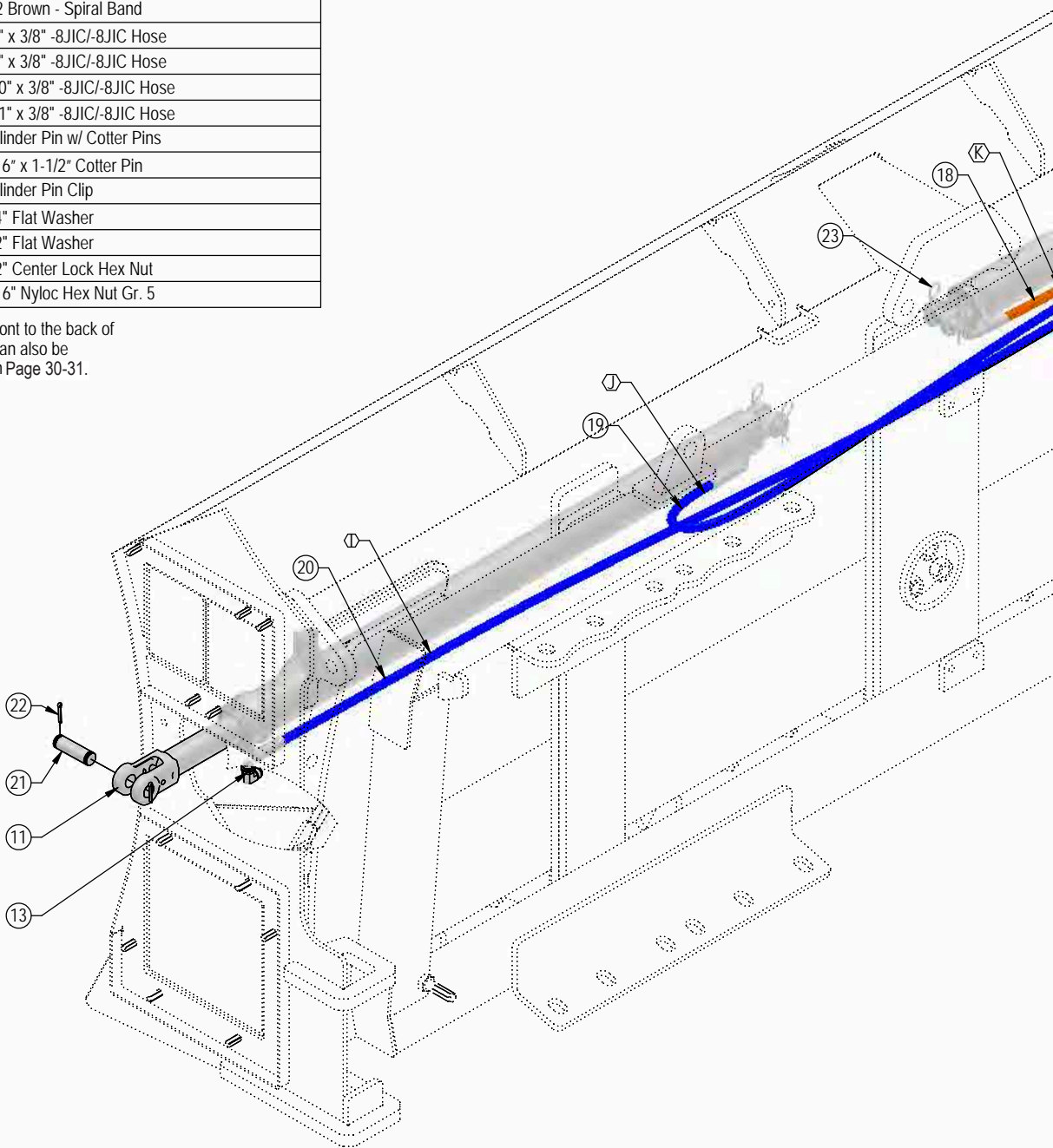
DETAIL C

Note: View is from Multi-Coupler installed on Top Arm. All hoses are marked with colored spiral bands and should be attached to designated ports on the Multi-Coupler.

DWG. NO.: 45416

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	16-20043	5/16" x 3-1/4" Hex Bolt Gr. 5 NC
2	2	16-20126	1/2" x 1-1/2" Hex Bolt Gr 5 NC
3	2	16-812525	8mm x 1.25mm x 25mm Metric Hex Bolt Gr 10.9
4	2	18-19311-02-P-062	Hose Clamp
5	2	18-19312-02	Twin Cover Plate
6	1	18-40589-R	Multi-Coupler Bracket
7	1	25-18956	Multi-Coupling Plate - 4 Port Parking Station
8	4	25-19865	Multi-Coupling - Female Coupler
9	1	25-19866	Multi-Coupling Plate - 4 Port Mobile
10	4	25-40407	Multi-Coupling - Snap Ring
11	2	26-34741	3 x 48 Hydraulic Cylinder
12	4	31-34040	Straight JIC x O-Ring
13	4	31-34050	Straight Thread Elbow 90° JIC x O-Ring
14	2	34-17585	Cylinder Strap
15	3	34-18888-BL	-12 Blue - Spiral Band
16	3	34-18888-BR	-12 Brown - Spiral Band
17	1	35-11686-0670	67" x 3/8" -8JIC/-8JIC Hose
18	1	35-11686-0820	82" x 3/8" -8JIC/-8JIC Hose
19	1	35-11686-1000	100" x 3/8" -8JIC/-8JIC Hose
20	1	35-11686-1510	151" x 3/8" -8JIC/-8JIC Hose
21	4	43-16306	Cylinder Pin w/ Cotter Pins
22	4	43-18943	3/16" x 1-1/2" Cotter Pin
23	4	43-7767	Cylinder Pin Clip
24	2	57-20740	1/4" Flat Washer
25	4	57-20744	1/2" Flat Washer
26	2	70-20604	1/2" Center Lock Hex Nut
27	1	70-20611	5/16" Nyloc Hex Nut Gr. 5

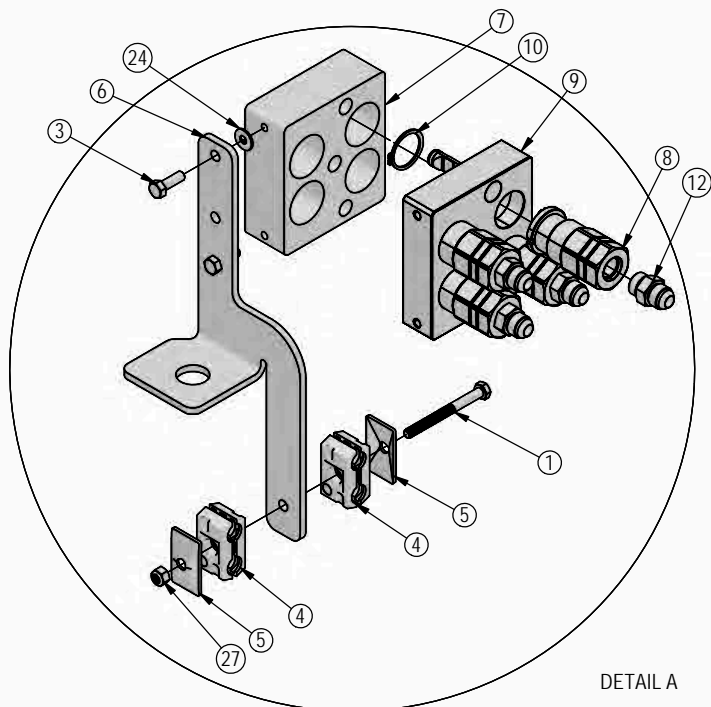
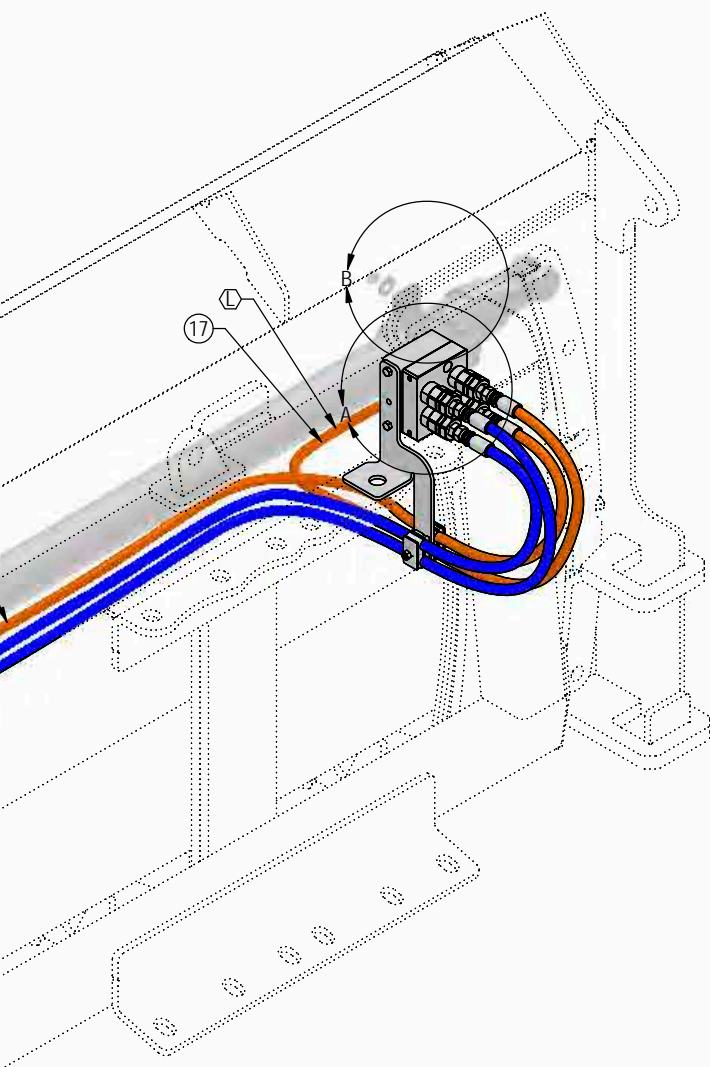
Note: Every hydraulic function from the front to the back of the system is designated by a letter and can also be referenced on the Hydraulic Schematic on Page 30-31.



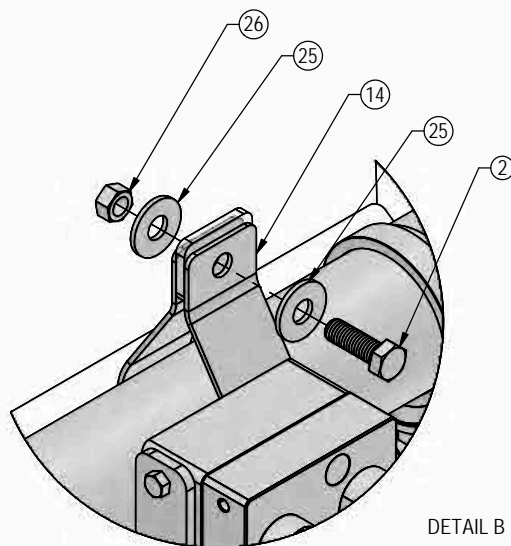
Note: The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

No. On Cylinder	Part No.	Description
26-34741	49-17797	Seal Kit 3" (649210)



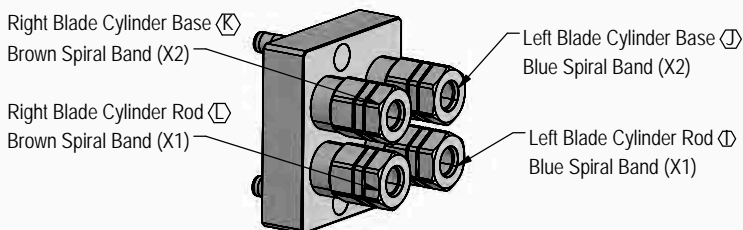


DETAIL A



DETAIL B

DETAIL C

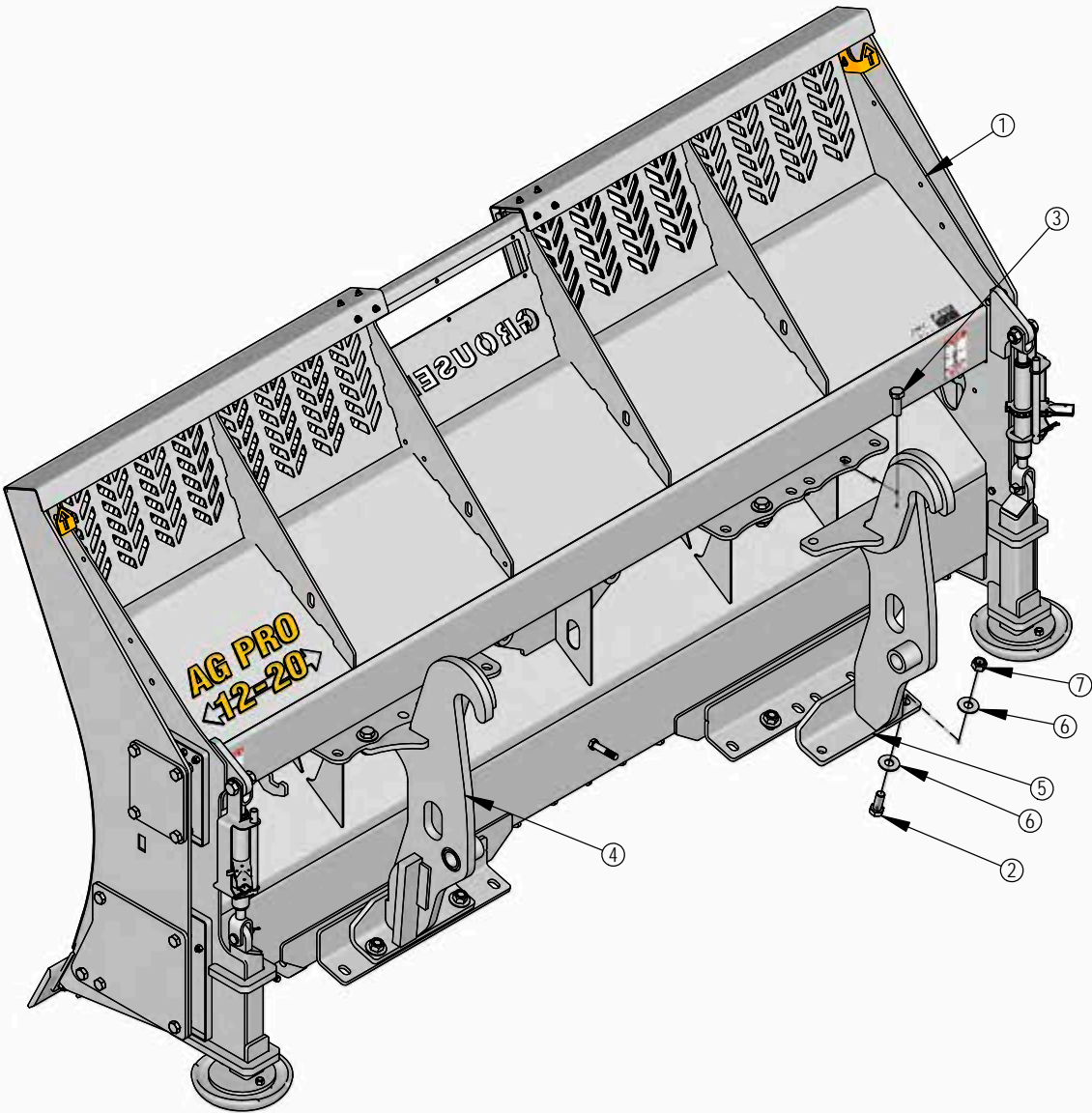


**Note:** View is from Multi-Coupler Installed on Top Arm.  
All hoses are marked with colored spiral bands and should be attached to designated ports on the Multi-Coupler.

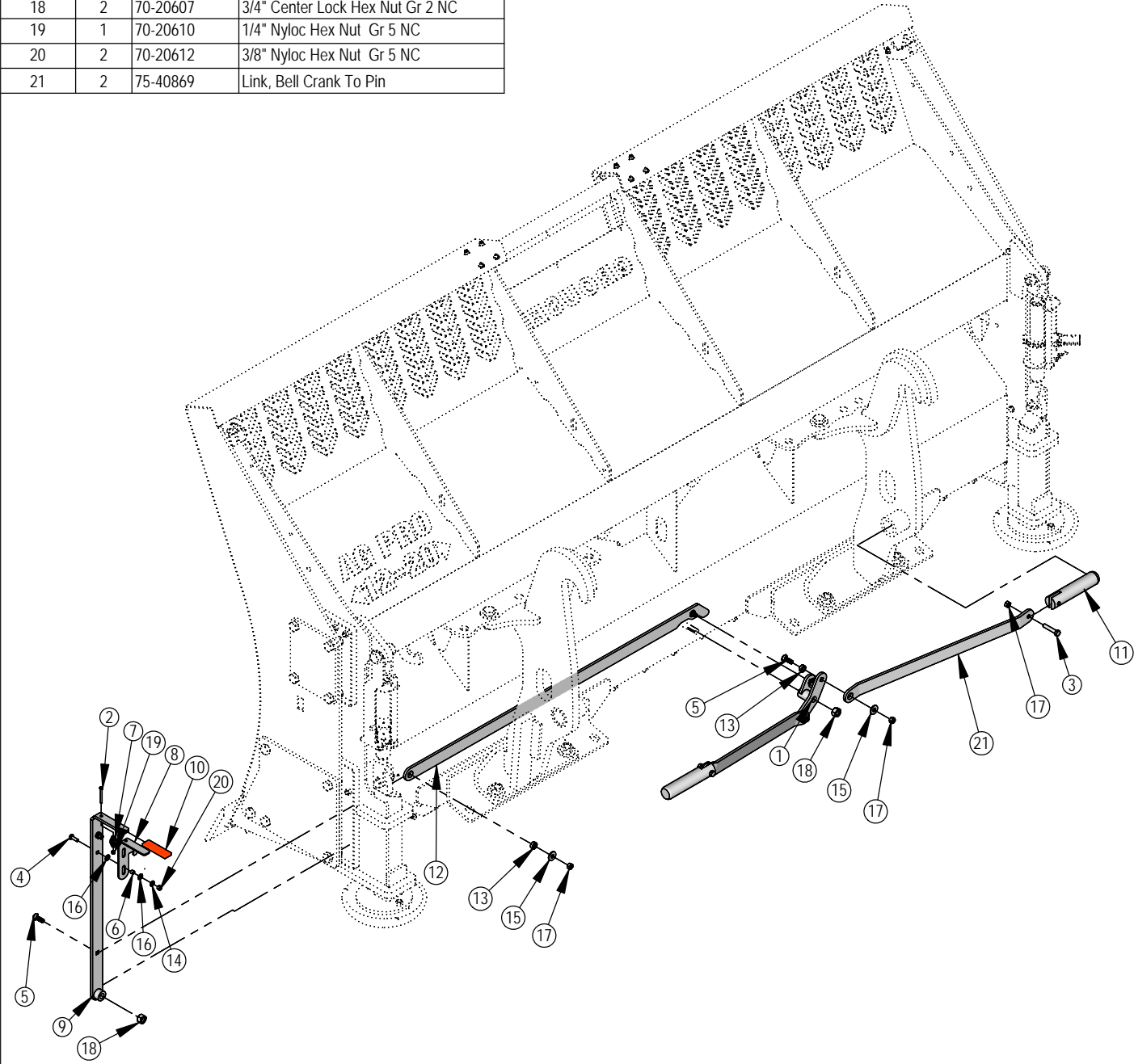
DWG. NO.: 40488

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	15-17590	12-20 NANT Blade Weld
2	7	16-20560	1" x 2-1/2" Hex Bolt Gr 8 NC
3	1	16-20561	1" x 2-3/4" Hex Bolt Gr.8 NC
4	1	45-40870-L	SS Bolt in Quick Attach - Left
5	1	45-40870-R	SS Bolt in Quick Attach - Right
6	16	57-20819	1" Flat Washer Heavy Duty Gr 8 (USS)
7	8	70-20999	1" Hex Top Lock Nut Gr 8 NC (YZ)

See Pages 10-11 for Blade Components

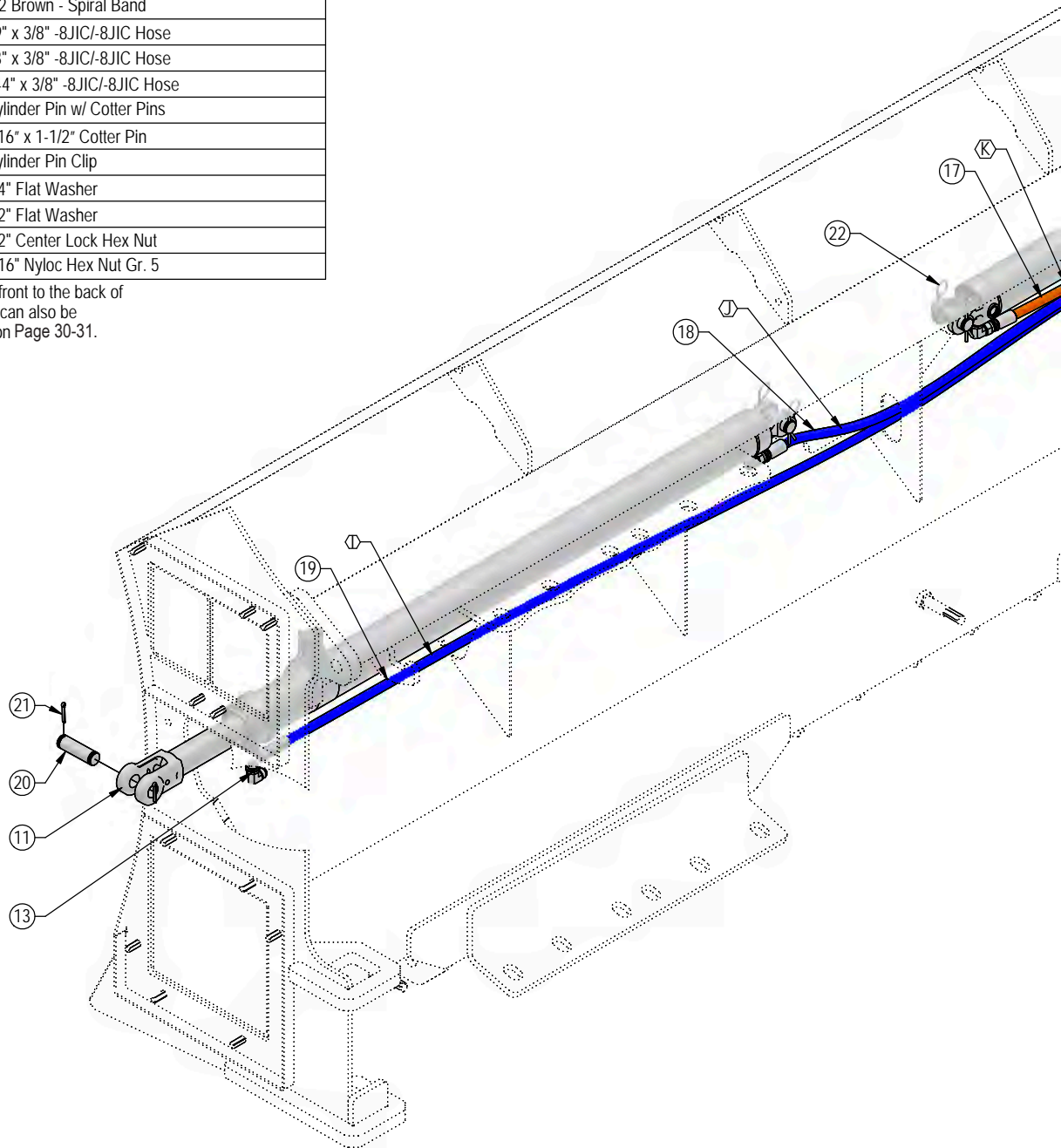


ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	11-40866	Bell Crank
2	1	16-20011	1/4" x 2-3/4" Hex Bolt Gr 5 NC
3	2	16-20130	1/2" x 2-1/2" Hex Bolt Gr 5 NC
4	2	16-21065	3/8" x 1-1/4" Carriage Bolt Gr 5 NC
5	4	16-21126	1/2" x 1-1/2" Carriage Bolt Gr 5 NC
6	2	19-40440	.378" ID x .503" OD x .375" Spacer
7	1	34-17799	Latch Spring
8	1	39-14663	Latch
9	1	39-14665	Handle Weld
10	1	39-3072	Rubber Handle
11	2	43-18486	AG Pro SS QA Lock Pin
12	1	44-41874	Plate, Link
13	4	44-8490	Spacer
14	2	57-20742	3/8" Flat Washer
15	4	57-20744	1/2" Washer
16	4	57-40408	3/8" Flat Nylon Washer
17	6	70-20604	1/2" Hex Center Lock Nut Gr 2 NC
18	2	70-20607	3/4" Center Lock Hex Nut Gr 2 NC
19	1	70-20610	1/4" Nyloc Hex Nut Gr 5 NC
20	2	70-20612	3/8" Nyloc Hex Nut Gr 5 NC
21	2	75-40869	Link, Bell Crank To Pin



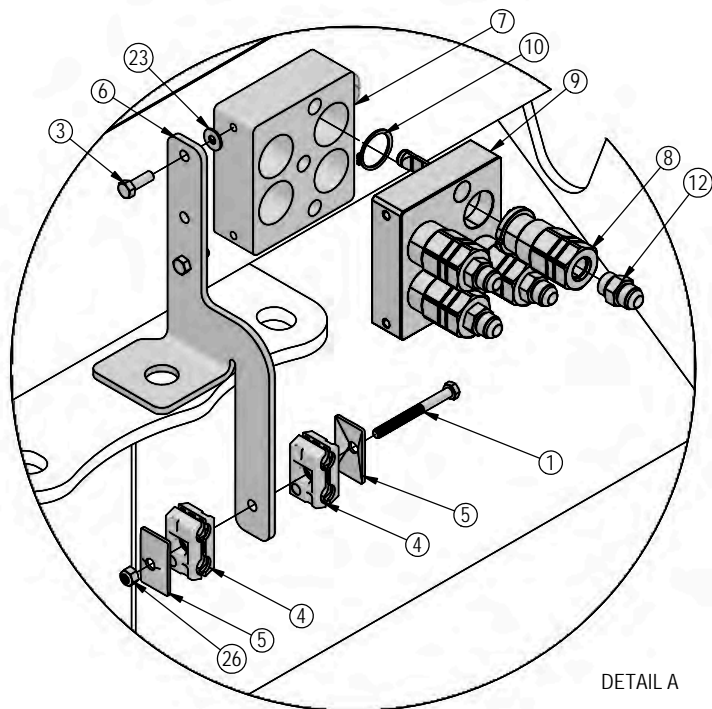
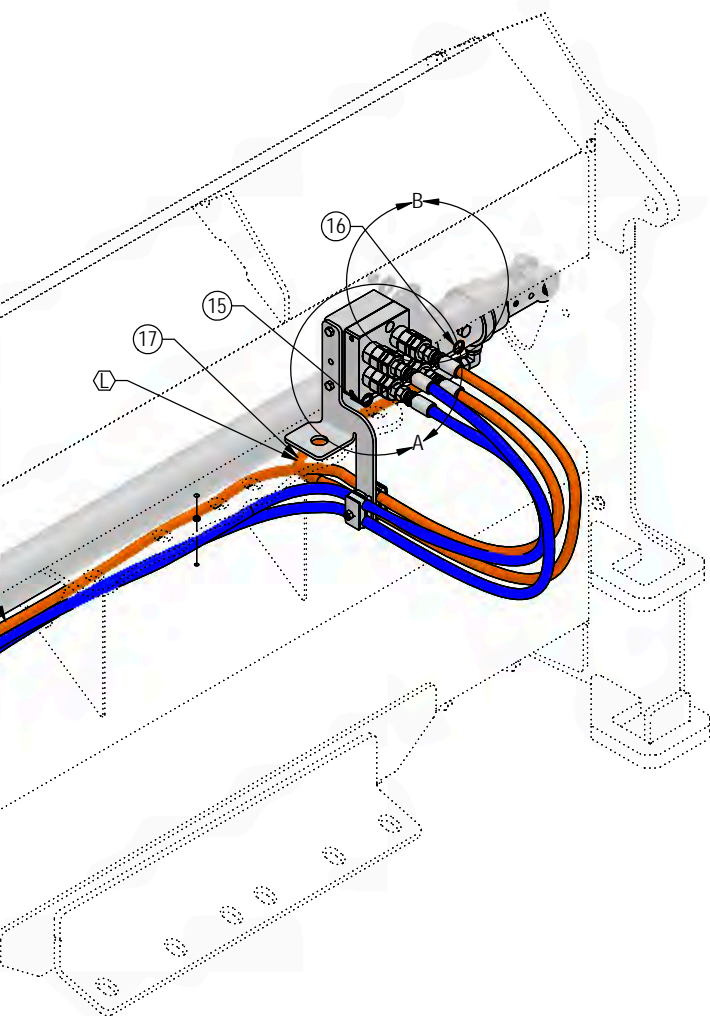
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	16-20043	5/16" x 3-1/4" Hex Bolt Gr. 5 NC
2	2	16-20126	1/2" x 1-1/2" Hex Bolt Gr 5 NC
3	2	16-812525	8mm x 1.25mm x 25mm Metric Hex Bolt Gr 10.9
4	2	18-19311-02-P-062	Hose Clamp
5	2	18-19312-02	Twin Cover Plate
6	1	18-40589-R	Multi-Coupler Bracket
7	1	25-18956	Multi-Coupling Plate - 4 Port Parking Station
8	4	25-19865	Multi-Coupling - Female Coupler
9	1	25-19866	Multi-Coupling Plate - 4 Port Mobile
10	4	25-40407	Multi-Coupling - Snap Ring
11	2	26-34741	3 x 48 Hydraulic Cylinder
12	4	31-34040	Straight JIC x O-Ring
13	4	31-34050	Straight Thread Elbow 90° JIC x O-Ring
14	2	34-17585	Cylinder Strap
15	3	34-18888-BL	-12 Blue - Spiral Band
16	3	34-18888-BR	-12 Brown - Spiral Band
17	2	35-11686-0690	69" x 3/8" -8JIC/-8JIC Hose
18	1	35-11686-0930	93" x 3/8" -8JIC/-8JIC Hose
19	1	35-11686-1440	144" x 3/8" -8JIC/-8JIC Hose
20	4	43-16306	Cylinder Pin w/ Cotter Pins
21	4	43-18943	3/16" x 1-1/2" Cotter Pin
22	4	43-7767	Cylinder Pin Clip
23	2	57-20740	1/4" Flat Washer
24	4	57-20744	1/2" Flat Washer
25	2	70-20604	1/2" Center Lock Hex Nut
26	1	70-20611	5/16" Nyloc Hex Nut Gr. 5

Note: Every hydraulic function from the front to the back of the system is designated by a letter and can also be referenced on the Hydraulic Schematic on Page 30-31.

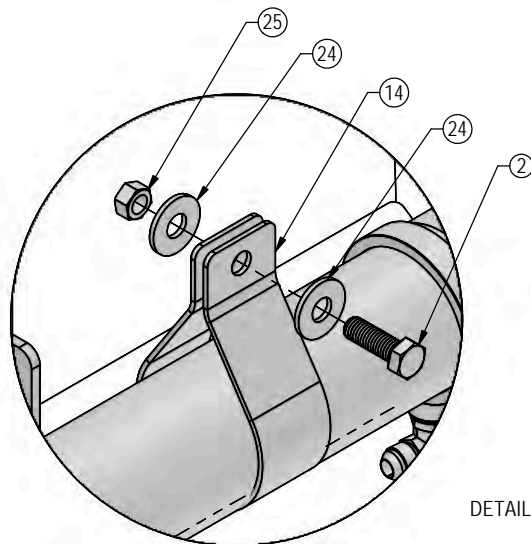


Note: The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

No. On Cylinder	Part No.	Description
26-34741	49-17797	Seal Kit 3" (649210)

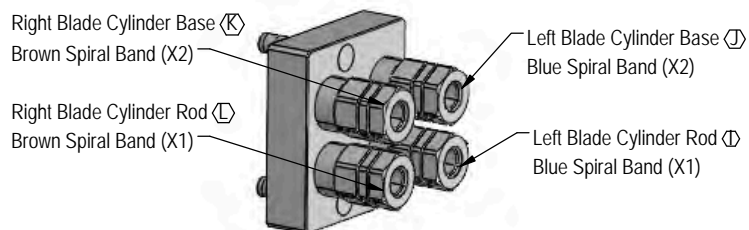


DETAIL A



DETAIL B

DETAIL C

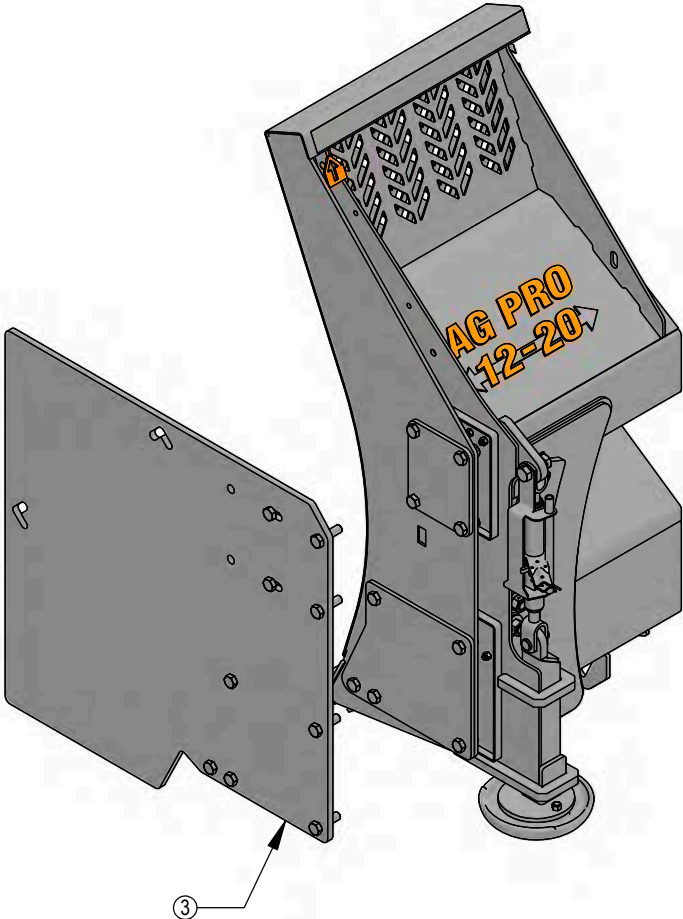
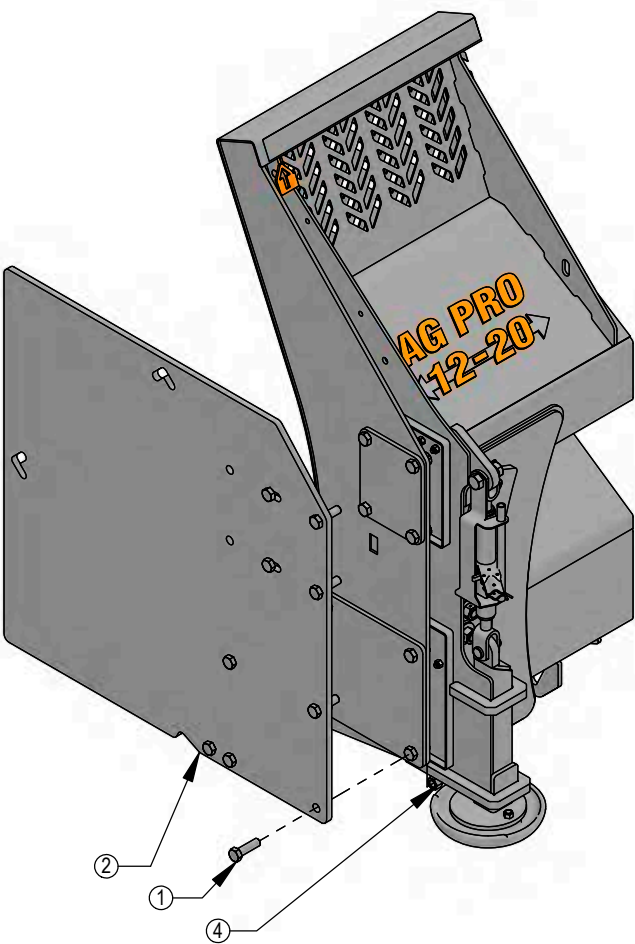


**Note:** View is from Multi-Coupler Installed on Top Arm.  
All hoses are marked with colored spiral bands and should be attached to designated ports on the Multi-Coupler.

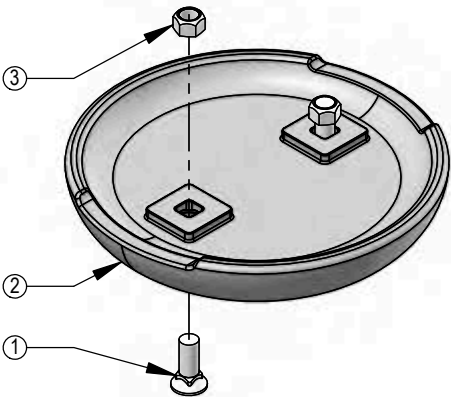
DWG. NO.: 40421



ITEM NO.	16480-K QTY.	16470-K/QTY.	PART NO.	DESCRIPTION
1	18	18	16-20542	7/8" x 3" Hex Bolt Gr 8 NC
2	2	-	44-16480	Silage Box End Plate
3	-	2	44-16470	Box End Plate
4	18	18	70-20598	7/8" Hex Nut Gr 8 NC

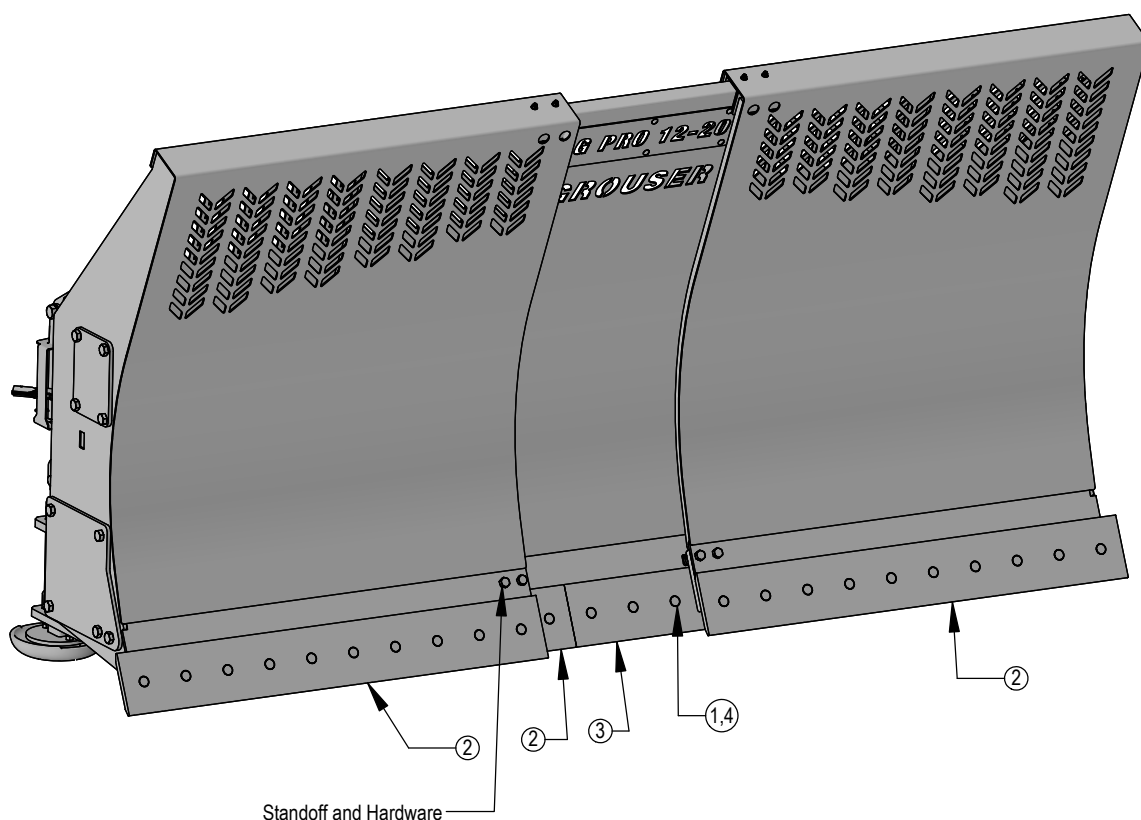


ITEM NO.	PART NO.	DESCRIPTION	15458-1K QTY.	15458-K QTY.
1	16-21666	5/8" x 1-3/4" Plow Bolt Gr 5 NC	2	4
2	50-15458	12" Round Mushroom Skid Shoe	1	2
3	70-20646	5/8" Hex Top Lock Nut Gr 5 NC	2	4





1. Lift the blade a comfortable distance off the ground for working on removing the cuttings edges. Block the lift system to prevent the blade from lowering while working on the blade.
2. Extend the ends out to gain access to the nuts.
3. Set parking bracket and shut off the engine.
4. Remove standoffs and hardware to allow the ends to be pulled away from the center blade section to gain access to the last 2 nuts on the blade ends
5. Remove all cutting edge hardware for the center section and both ends. The cutting edges on the ends need to be removed to gain access to the outer most hardware of the center section's cutting edges.
6. Either turn the cutting edges around, if it's the first time, or replace the cutting edges.
7. Reinstall all cutting edge hardware for the center section first and then reinstall hardware for the ends.
8. Reinstall the standoffs and hardware that were removed in Step #4.



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	42	16-21748	3/4" X 2" Plow Bolt Gr 8 NC
2	3	29-11118-5	5' - 3/4"x 8" Cutting Edge
3	1	29-11118-6	6' - 3/4"x 8" Cutting Edge
4	42	70-20647	3/4" Hex Top Lock Nut Gr 5 NC

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.

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.

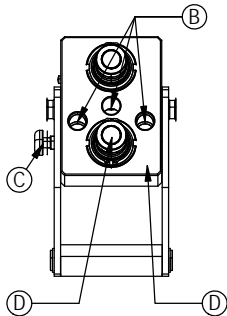
Note 1:

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.

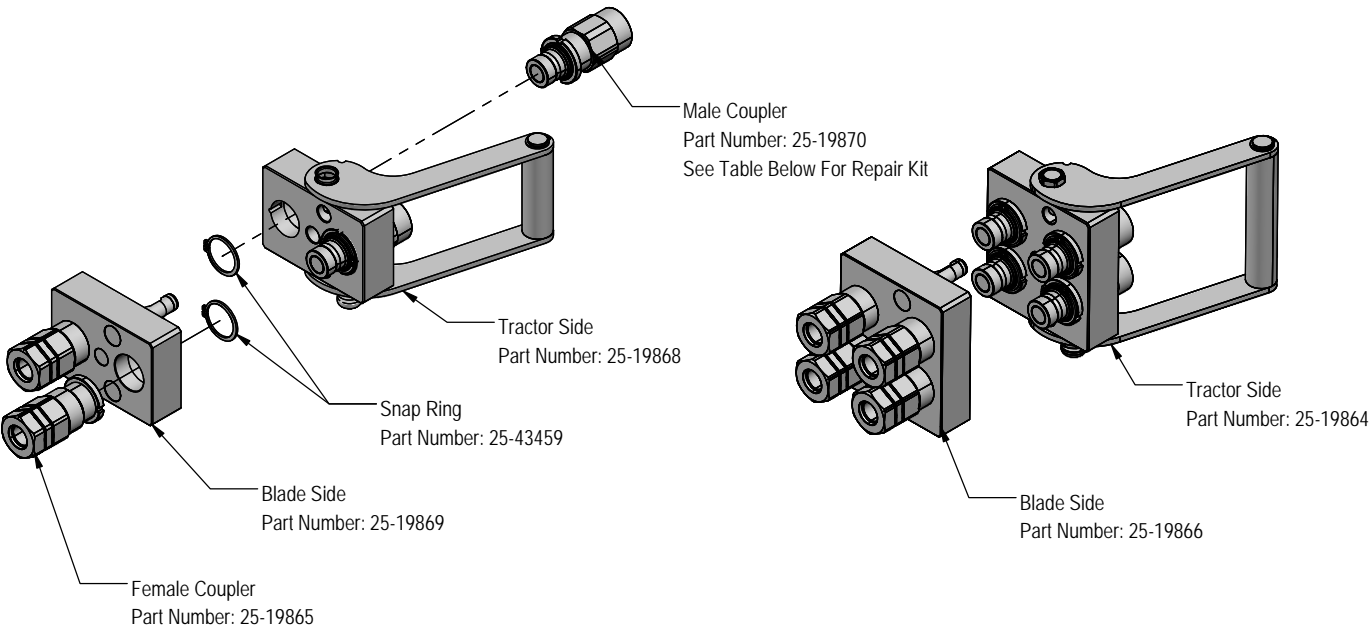
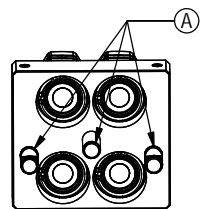
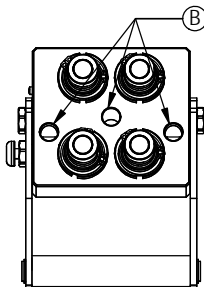
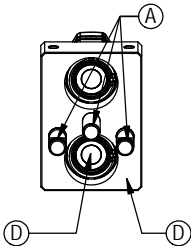
Recommended Lubricant Brands:

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

Fixed Half



Mobile Half



PN	Description
25-43425	Male Coupler O-Ring Repair Kit

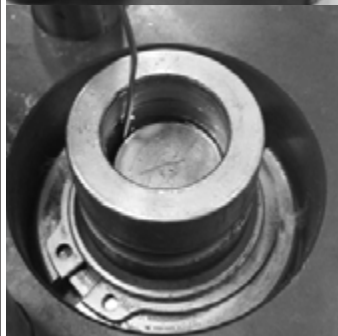
## Cleaning The Male Interface Seal:



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.

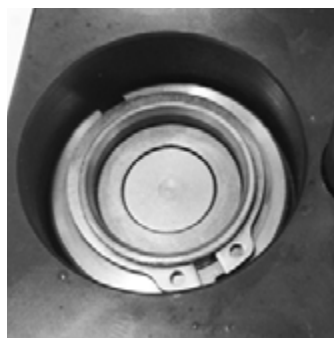


4. In case of contamination, carefully wipe surfaces with a soft cloth, or use compressed air to blow the contamination out. Do Not press hard on the seal as contamination can scratch the seal surface.



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:



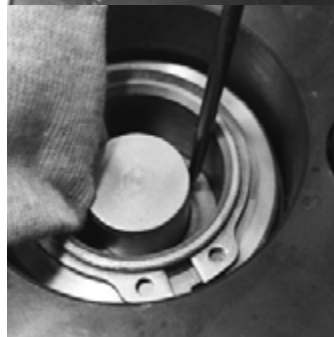
1. Make sure the coupling is securely fastened into the plate or place in a vice.



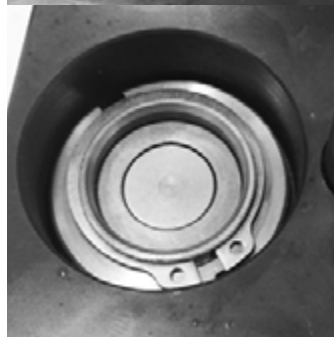
2. Using a non-marring tool, depress the outer ring to expose the bushing. There is no need to expose the valve seal, so stop pressing before the valve is opened.



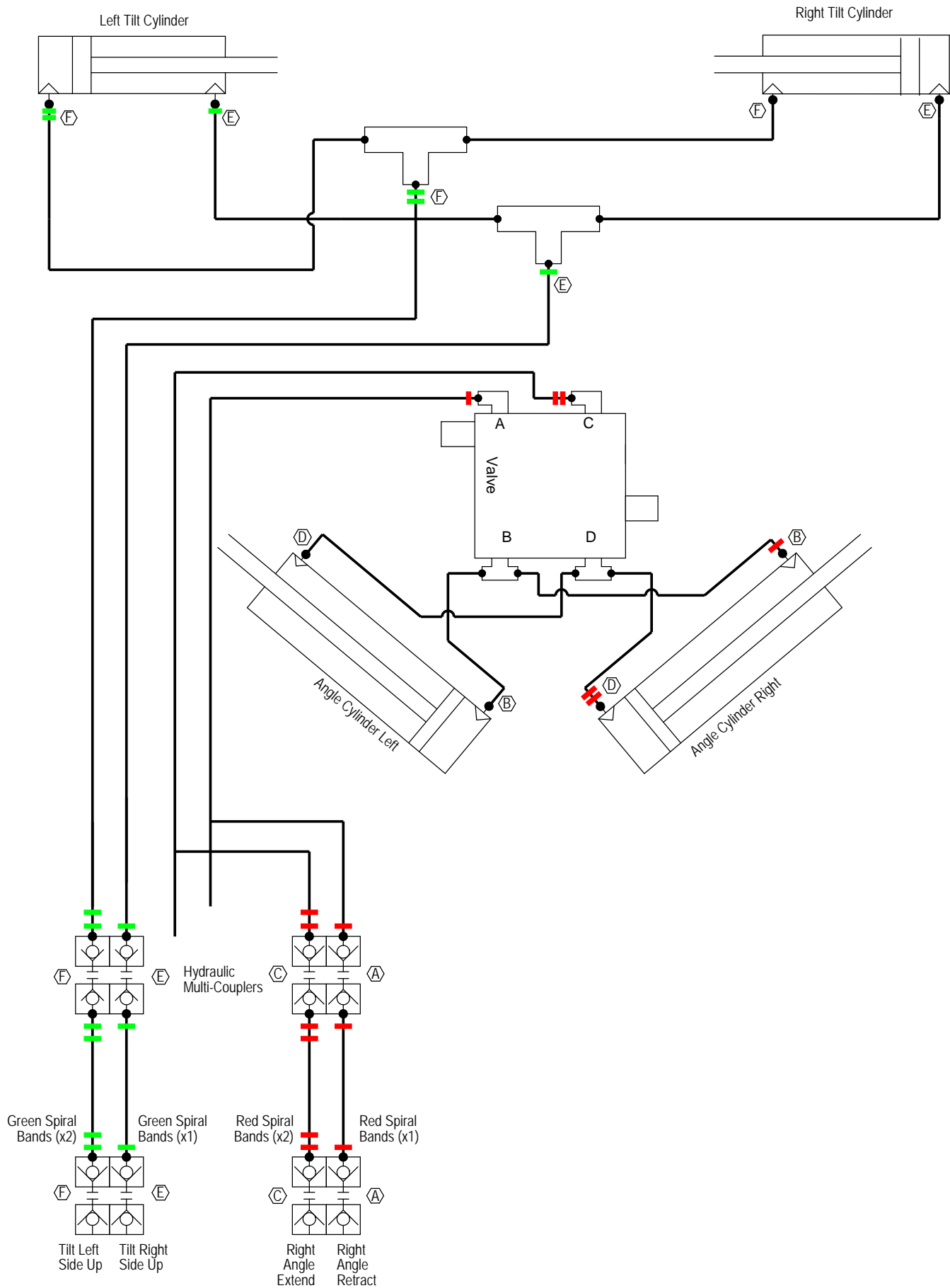
3. Inspect the interior body and bushing surfaces for contamination.



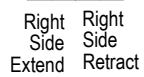
4. In case of contamination, carefully wipe surfaces with a soft cloth, or use compressed air to blow the contamination out.



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



Tractor Service Valve





# Improvements

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Grouser Products Inc. is continually striving to improve its products. We reserve the right to change prices, specification, or equipment at any time without notice. We also reserve the right to make improvements or changes when it becomes practical and possible to do so without incurring any obligation to make changes or additions to the equipment sold previously.

## Warranty

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Grouser Products warrants to the original purchaser of each item that the product be free from defects in material and workmanship under normal use and service for a period of two (2) years for Agriculture Series Blades and one (1) year for Heavy Duty Series from date of original retail delivery.

The obligation of the consumer under this warranty:

1. To read the operators manual and to operate, lubricate, maintain and store equipment in accordance with the instructions listed in the operators manual.
2. To inspect equipment and if any part needs repair or replacement when continued use would cause damage or wear to other parts or safety.
3. 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.

The obligation of the dealer under this warranty:

1. Complete warranty registration form and submit within 30 days of sale.
2. Contact Grouser Products for authorization prior to performing any warranty repairs or part replacement.
3. Complete warranty request form and submit with photos and supporting documentation.

The obligation of Grouser Products under this warranty:

1. Repair or replace, any equipment or parts, in the judgment of Grouser Products to be defective in material or workmanship.
2. Grouser Products will cover the cost of parts and ground shipping at dealer invoice only.
3. 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.

This warranty does not cover:

1. Depreciation or damage caused by normal wear, accident, improper assembly, improper adjustments.
2. Improper maintenance including lack of proper lubrication, or improper use. Including loose bolts, nuts, or fitting due to over tightening or vibration after 20 hours of operation.
3. Repairs or alterations without authorization from a Grouser Products representative.
4. 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.

**NO EMPLOYEE OR REPRESENTATIVE OF GROUSER PRODUCTS IS AUTHORIZED TO CHANGE THE WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY.**

## Contact Us

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



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