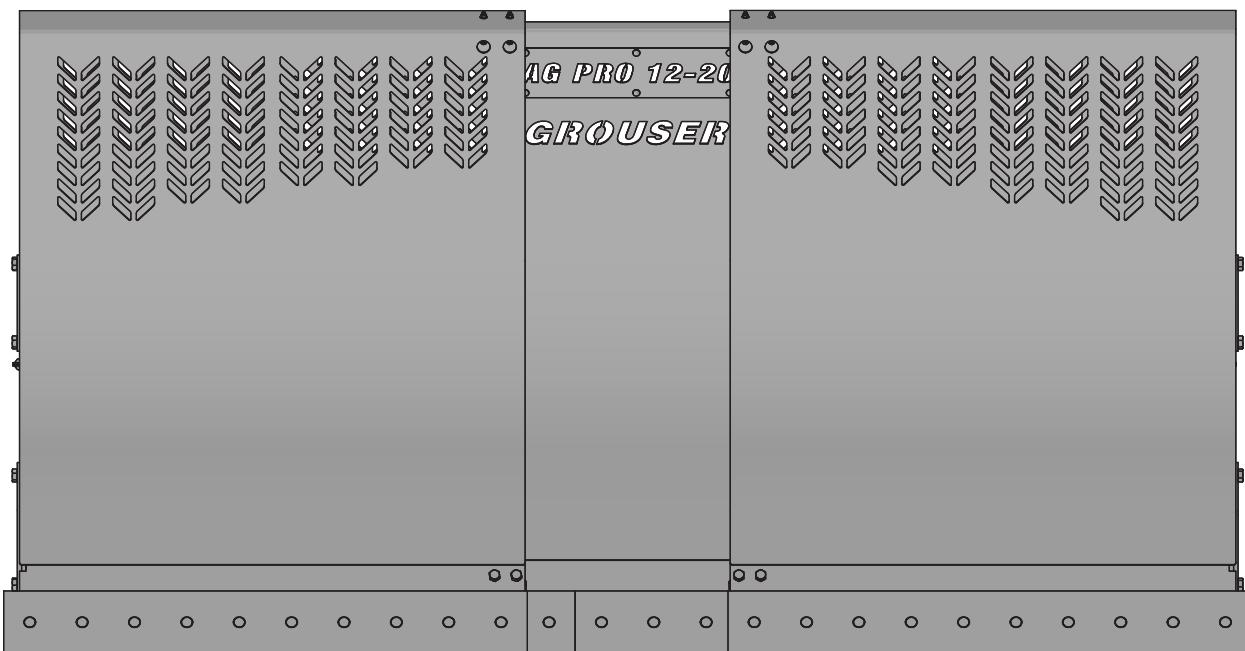




# Ag Pro 12-20

## Single Pivot XWide

### Owner's Manual & Parts Book



#### Grouser Products

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**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.

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 |      |  |
| 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) |
|------------|-----------------------|
| M18 x 2.50 | 284                   |
| M20 x 2.50 | 401                   |
| M22 x 2.50 | 547                   |
| M24 x 3.00 | 694                   |

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.

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.

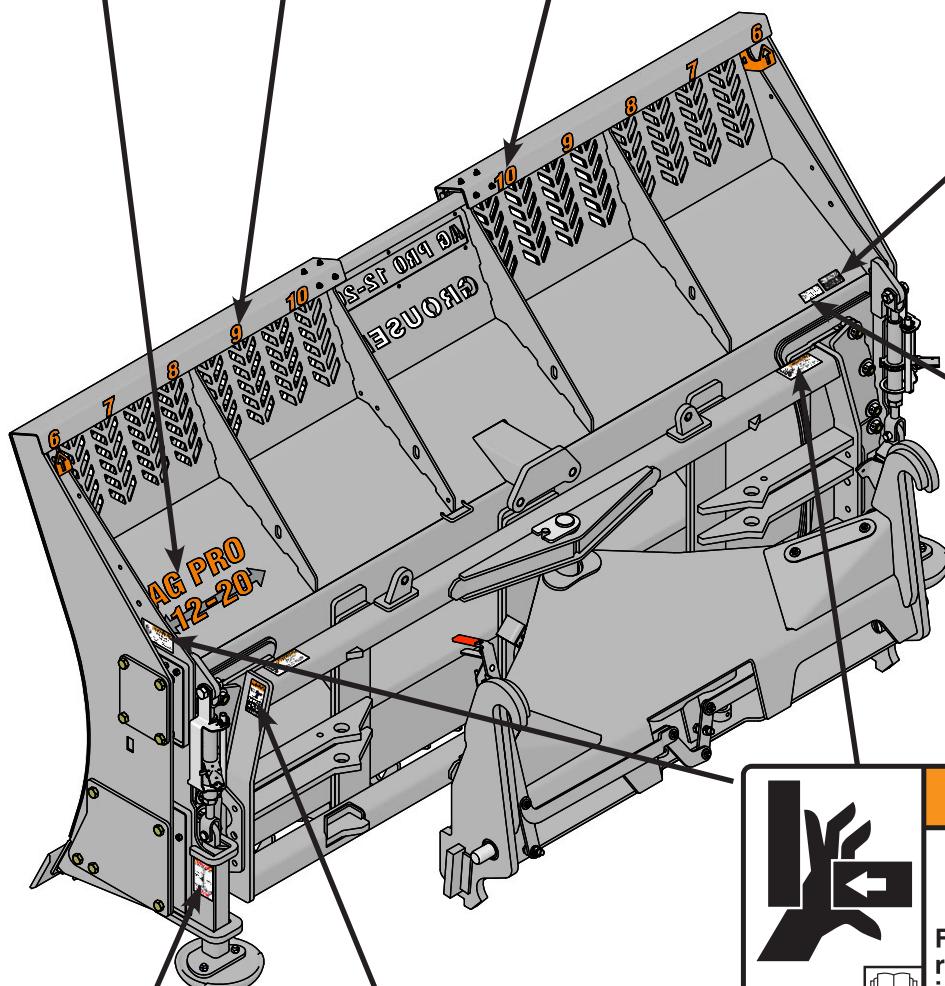
6 7 8 PN: 27-15612-X

9 10 9 8 7 6 PN: 27-15612-X

# AG PRO

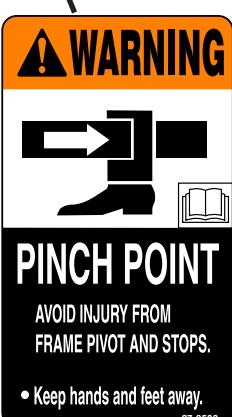
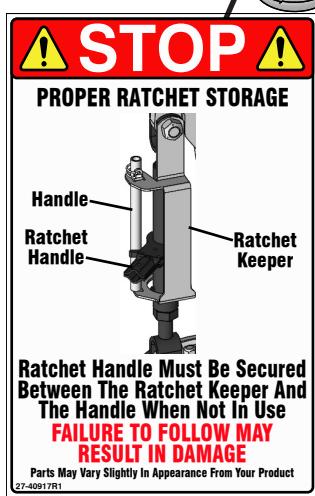
## 12-20

PN: 27-15598



**WARNING**  
Cancer and Reproductive Harm  
For more information go to  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)  
27-40962

PN: 27-40962



PN: 27-9503

Left and Right Side

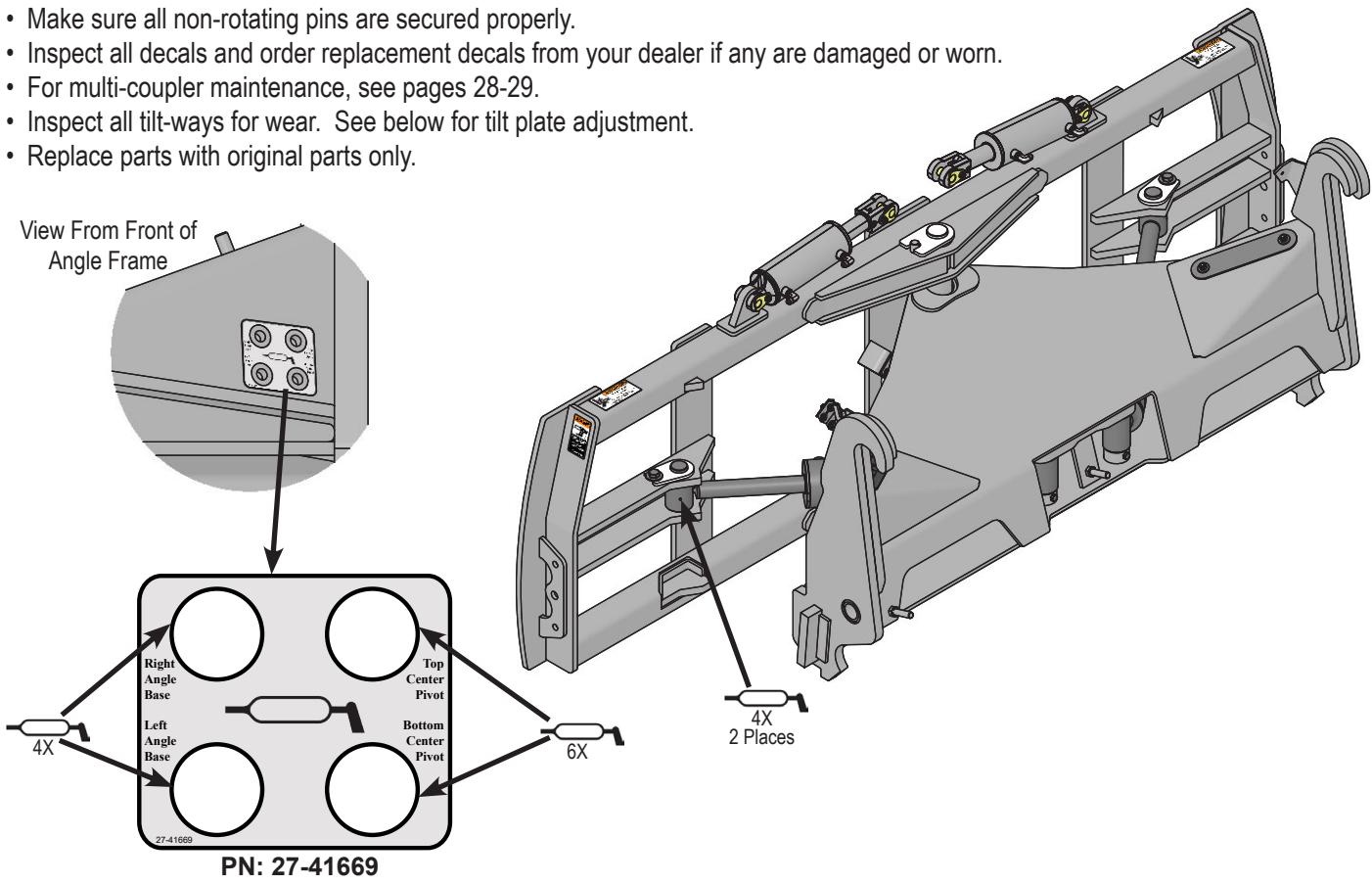


PN: 27-2409

PN: 27-40917

## **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 8-9 and 27.
- Check hydraulic cylinders and hoses for damage or leaks. For replacement parts, see hydraulic pages 12-21, 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 below for tilt plate adjustment.
- Replace parts with original parts only.



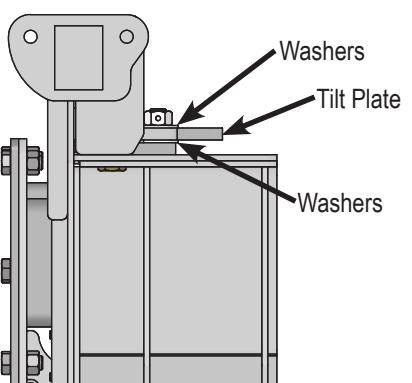
### **Preferred Method:**

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 bolts at same time if blade is not laying face down.**

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



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.
15. 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 Pages 10-11 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.

### Skid Shoe Adjustment:

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

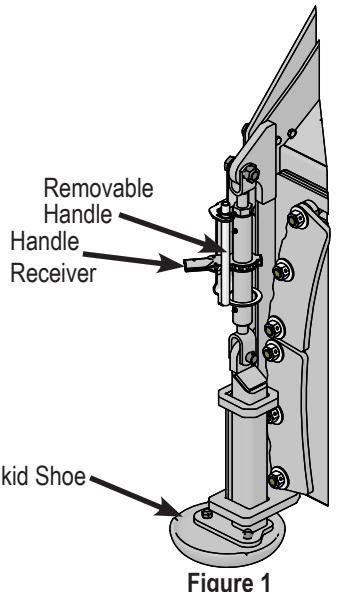


Figure 1

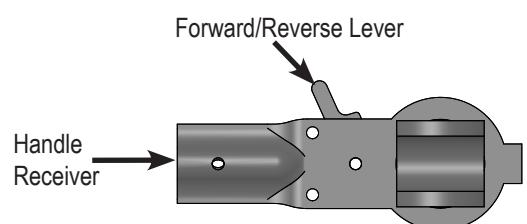
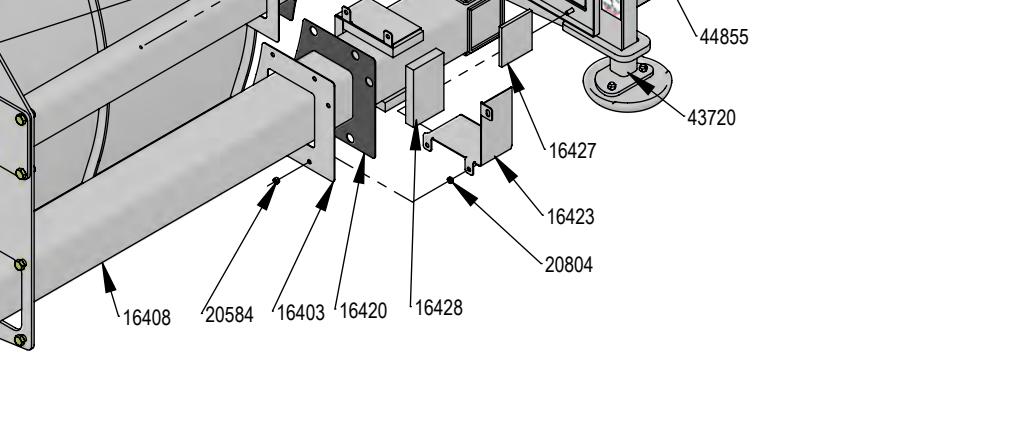
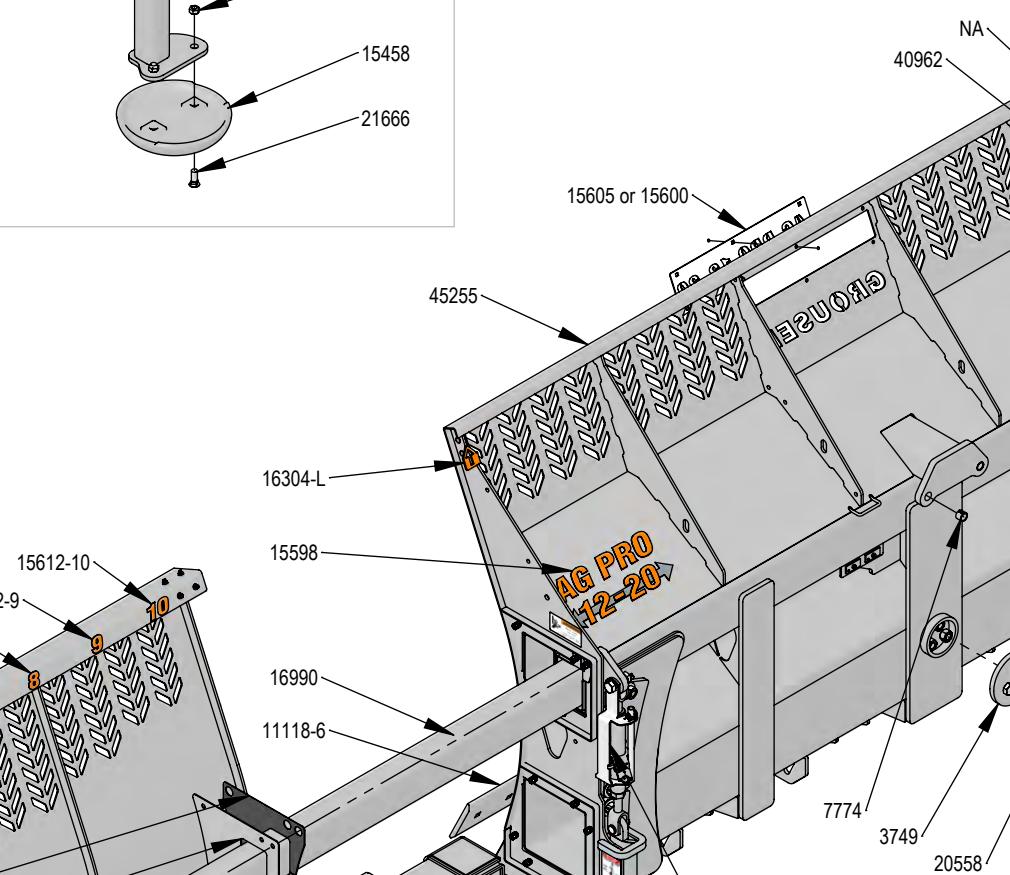
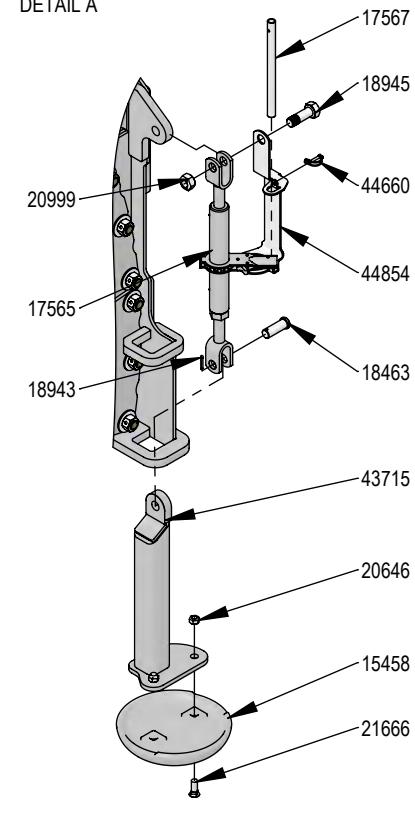
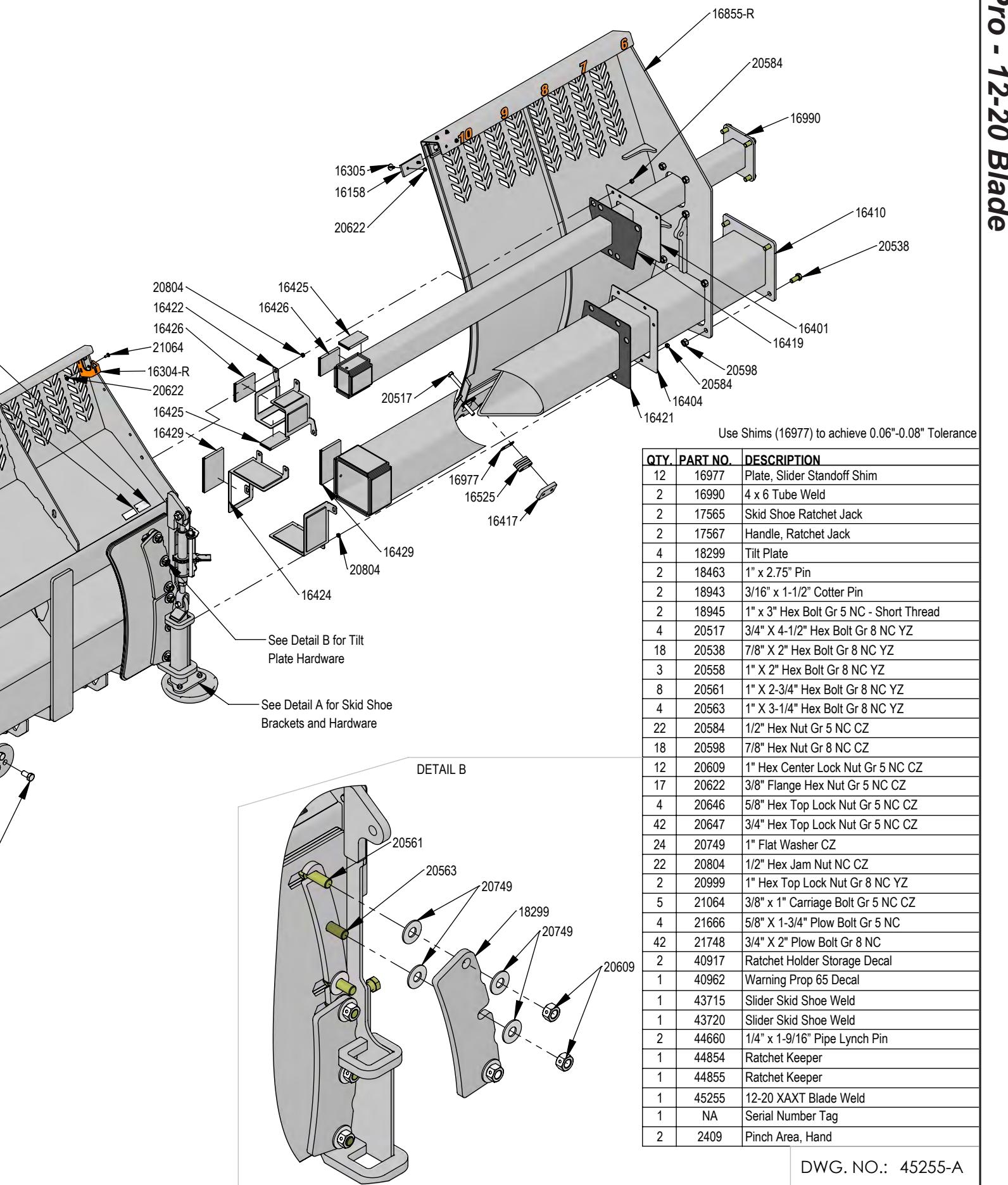


Figure 2

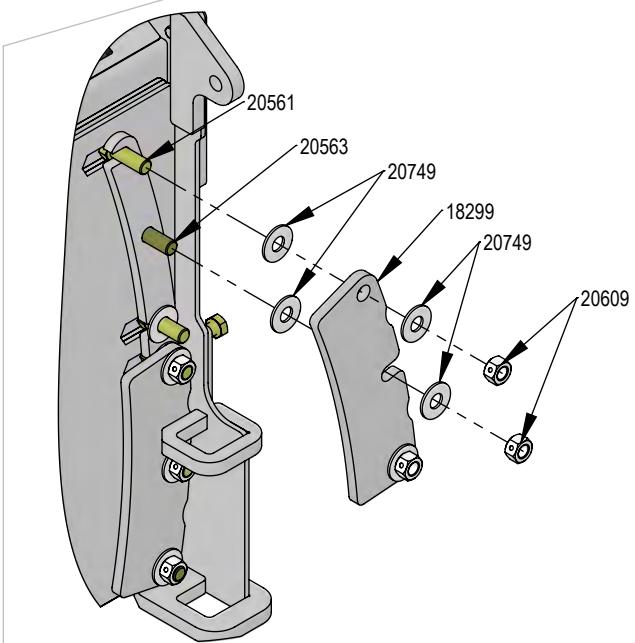
| QTY. | PART NO. | DESCRIPTION                              |
|------|----------|--|
| 1    | 3749     | Backdrag Brace Plate                     |
| 2    | 7774     | 1" x 1" Spring Bushing                   |
| 3    | 11118-5  | 5' - 3/4"x 8' Cutting Edge               |
| 1    | 11118-6  | 6' - 3/4"x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

DETAIL A





## DETAIL B

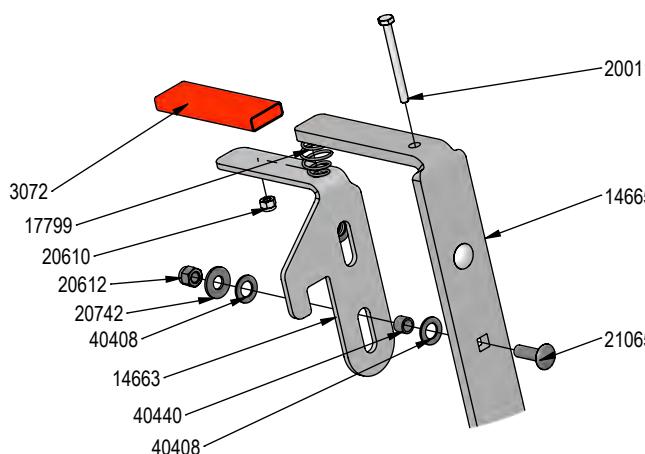
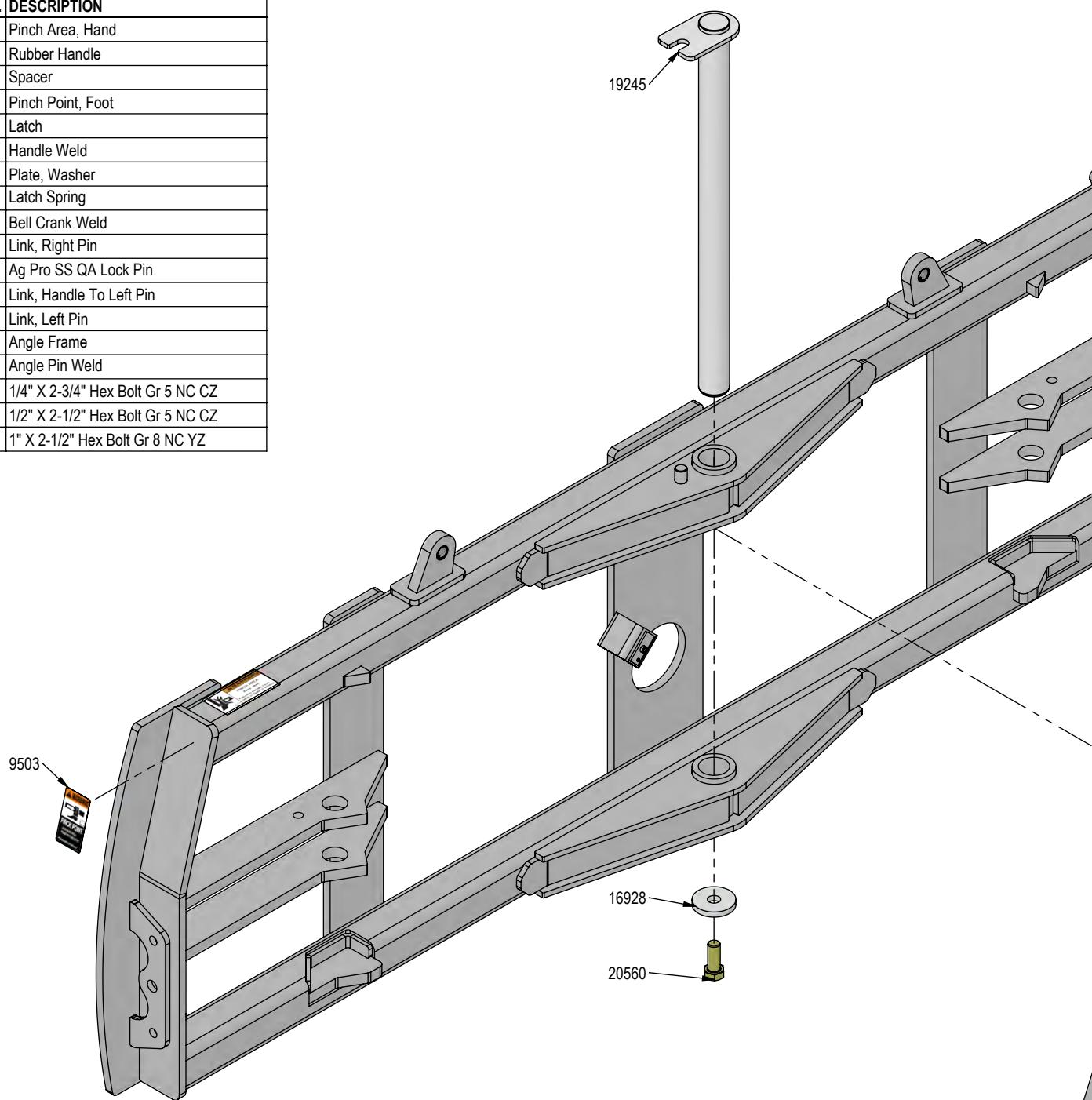


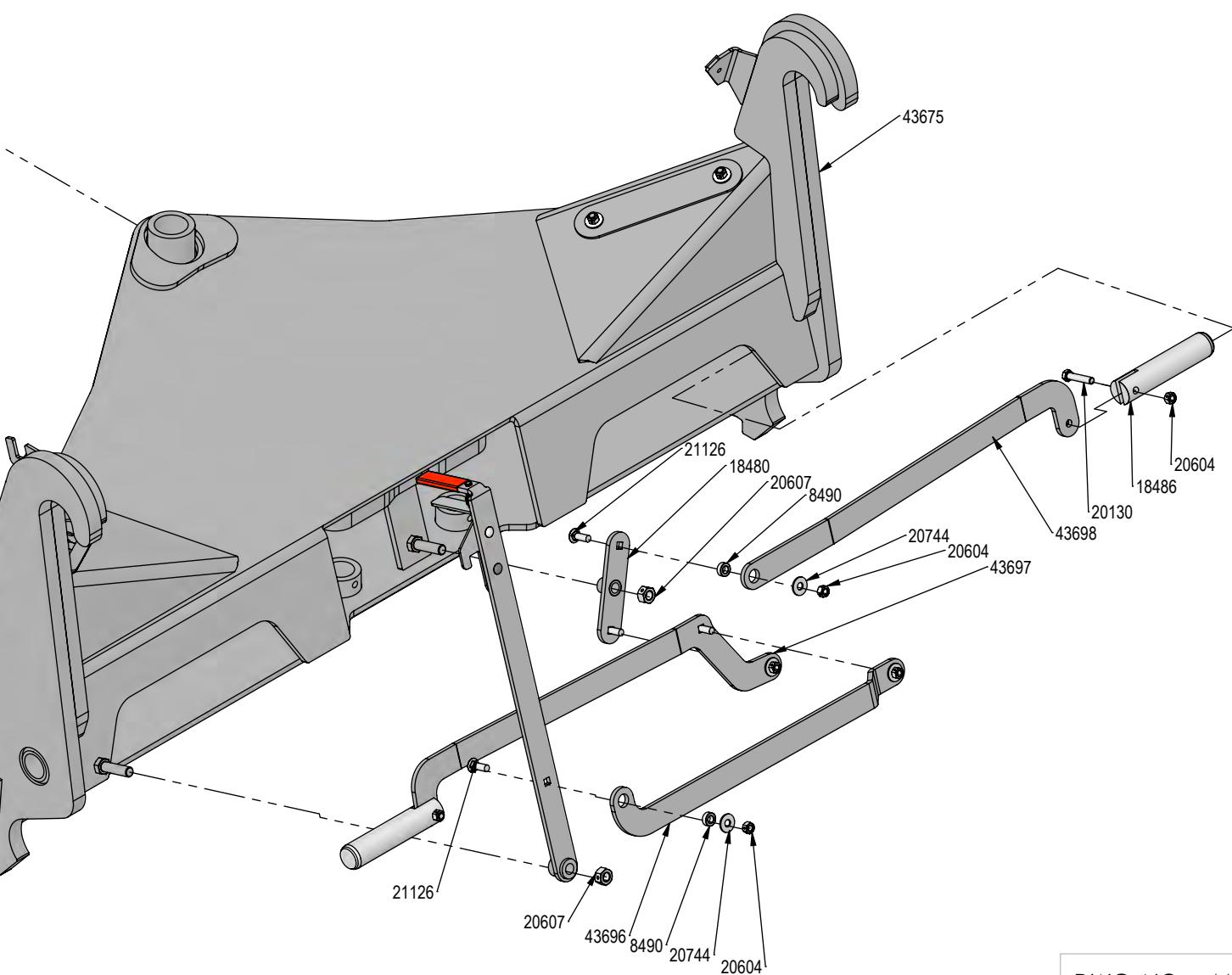
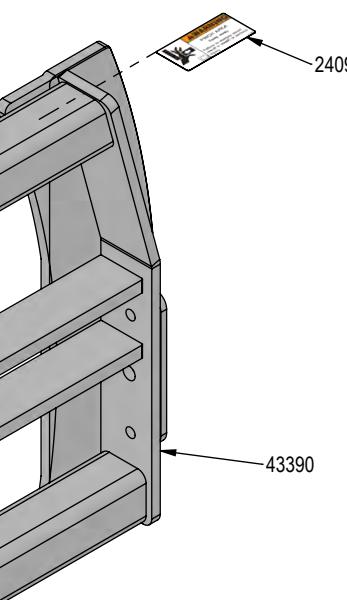
| QTY. | PART NO. | DESCRIPTION                             |
|------|----------|---|
| 12   | 16977    | Plate, Slider Standoff Shim             |
| 2    | 16990    | 4 x 6 Tube Weld                         |
| 2    | 17565    | Skid Shoe Ratchet Jack                  |
| 2    | 17567    | Handle, Ratchet Jack                    |
| 4    | 18299    | Tilt Plate                              |
| 2    | 18463    | 1" x 2.75" Pin                          |
| 2    | 18943    | 3/16" x 1-1/2" Cotter Pin               |
| 2    | 18945    | 1" x 3" Hex Bolt Gr 5 NC - Short Thread |
| 4    | 20517    | 3/4" X 4-1/2" Hex Bolt Gr 8 NC YZ       |
| 18   | 20538    | 7/8" X 2" Hex Bolt Gr 8 NC YZ           |
| 3    | 20558    | 1" X 2" Hex Bolt Gr 8 NC YZ             |
| 8    | 20561    | 1" X 2-3/4" Hex Bolt Gr 8 NC YZ         |
| 4    | 20563    | 1" X 3-1/4" Hex Bolt Gr 8 NC YZ         |
| 22   | 20584    | 1/2" Hex Nut Gr 5 NC CZ                 |
| 18   | 20598    | 7/8" Hex Nut Gr 8 NC CZ                 |
| 12   | 20609    | 1" Hex Center Lock Nut Gr 5 NC CZ       |
| 17   | 20622    | 3/8" Flange Hex Nut Gr 5 NC CZ          |
| 4    | 20646    | 5/8" Hex Top Lock Nut Gr 5 NC CZ        |
| 42   | 20647    | 3/4" Hex Top Lock Nut Gr 5 NC CZ        |
| 24   | 20749    | 1" Flat Washer CZ                       |
| 22   | 20804    | 1/2" Hex Jam Nut NC CZ                  |
| 2    | 20999    | 1" Hex Top Lock Nut Gr 8 NC YZ          |
| 5    | 21064    | 3/8" x 1" Carriage Bolt Gr 5 NC CZ      |
| 4    | 21666    | 5/8" X 1-3/4" Plow Bolt Gr 5 NC         |
| 42   | 21748    | 3/4" X 2" Plow Bolt Gr 8 NC             |
| 2    | 40917    | Ratchet Holder Storage Decal            |
| 1    | 40962    | Warning Prop 65 Decal                   |
| 1    | 43715    | Slider Skid Shoe Weld                   |
| 1    | 43720    | Slider Skid Shoe Weld                   |
| 2    | 44660    | 1/4" x 1-9/16" Pipe Lynch Pin           |
| 1    | 44854    | Ratchet Keeper                          |
| 1    | 44855    | Ratchet Keeper                          |
| 1    | 45255    | 12-20 XAXT Blade Weld                   |
| 1    | NA       | Serial Number Tag                       |
| 2    | 2409     | Pinch Area, Hand                        |

DWG. NO.: 45255-A

# Hydraulic Angle-Hydraulic Tilt System

| QTY. | PART NO. | DESCRIPTION                       |
|------|----------|-----------------------------------|
| 2    | 2409     | Pinch Area, Hand                  |
| 1    | 3072     | Rubber Handle                     |
| 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    | 43698    | Link, Right Pin                   |
| 2    | 18486    | Ag Pro SS QA Lock Pin             |
| 1    | 43696    | Link, Handle To Left Pin          |
| 1    | 43697    | Link, Left Pin                    |
| 1    | 43675    | 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 |
| 1    | 20560    | 1" X 2-1/2" Hex Bolt Gr 8 NC YZ   |

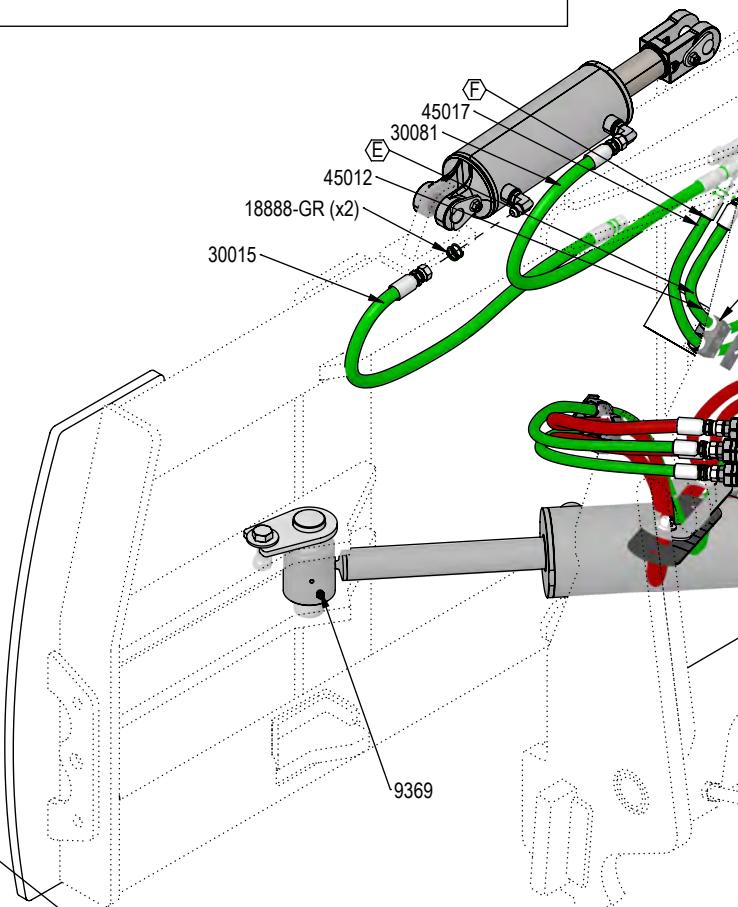
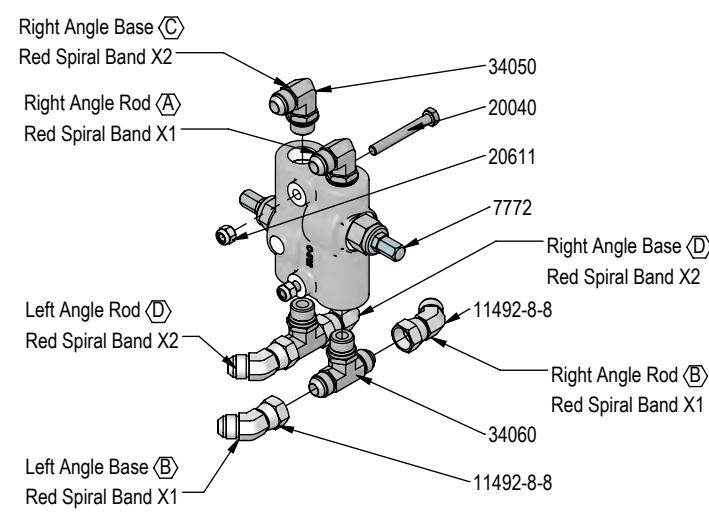




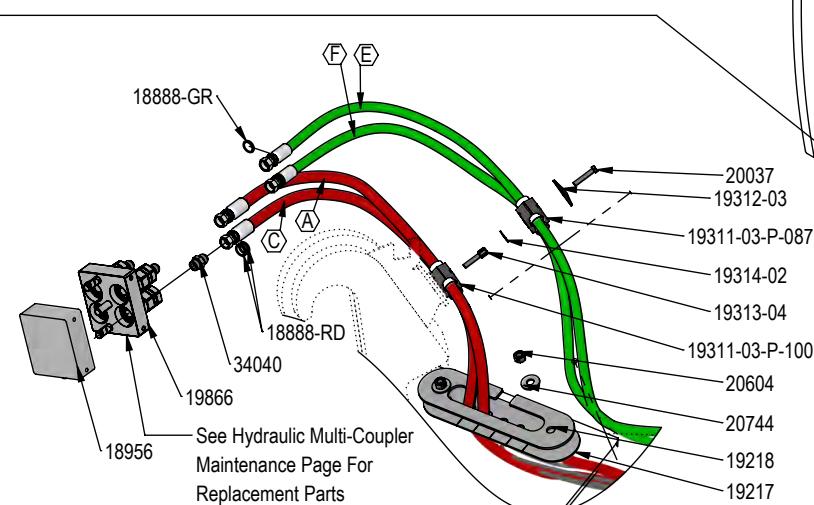
| QTY. | PART NO. | DESCRIPTION                            |
|------|----------|--|
| 6    | 20604    | 1/2" Hex Center Lock Nut Gr 5 NC CZ    |
| 2    | 20607    | 3/4" Hex Center Lock Nut Gr 5 NC CZ    |
| 1    | 20610    | 1/4" Nylock Hex Nut Gr 5 NC CZ         |
| 2    | 20612    | 3/8" Nyloc Hex 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                  |

# Hydraulic Angle-Hydraulic Tilt Hydraulics

| QTY. | PART NO.       | DESCRIPTION                                   |
|------|----------------|---|
| 1    | 7772           | Valve   |
| 2    | 7774           | 1" x 1" Spring Bushing                        |
| 2    | 9369           | Straight 1/8" NPT Grease Zerk                 |
| 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 |
| 1    | 18994-0490     | 49" Grease Hose (w/lock nut and grease zerk)  |
| 1    | 18994-0570     | 57" Grease Hose (w/lock nut and grease zerk)  |
| 2    | 18994-0620     | 62" 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                             |
| 1    | 19866          | Multi-Coupling Plate - 4 Port Mobile          |
| 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           |
| 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                           |

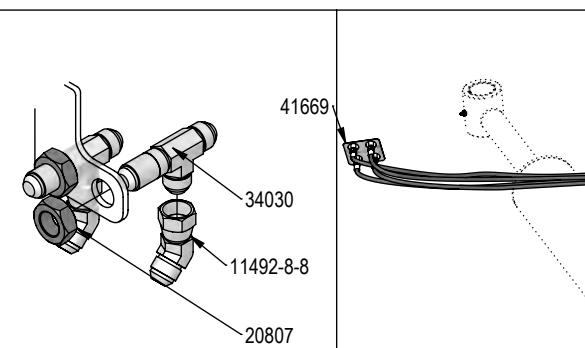


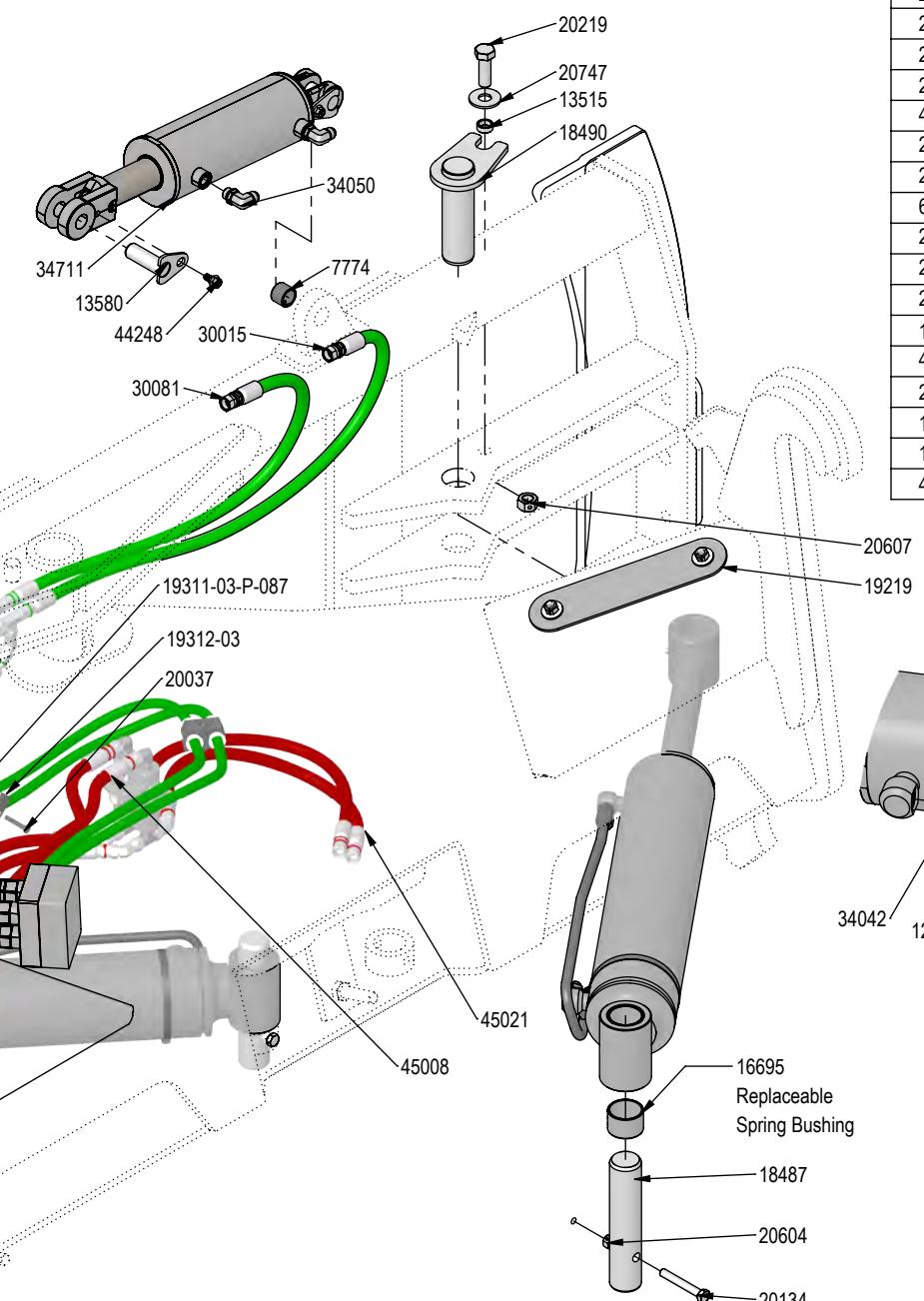
**Note:** Every hydraulic function from the front to the back of the system is designated by a letter and can also be referenced on the Hydraulic Schematic.



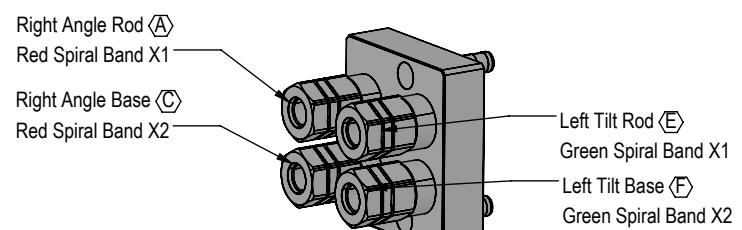
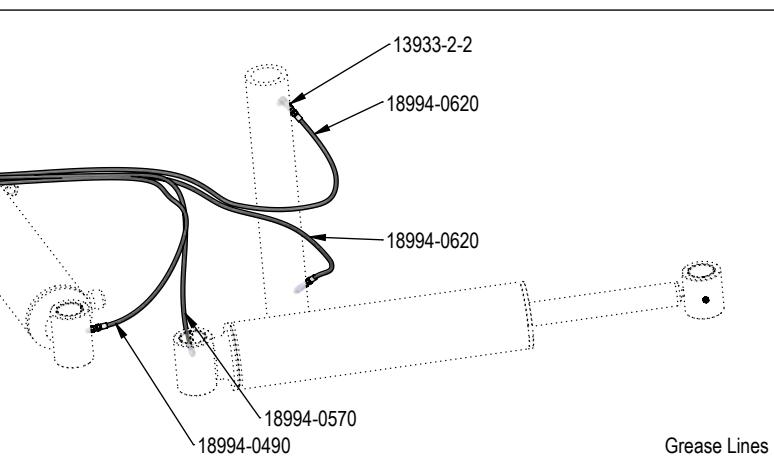
**Note:** The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

| 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    | 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                            |
| 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                     |
| 2    | 45008    | 80.5" x 1/2" -8JIC/-8JIC Hose (w/1 Collar & Cordura)   |
| 1    | 45012    | 127" x 3/8" -8JIC/-8JIC Hose (w/ 3 Collar & Cordura)   |
| 1    | 45017    | 133.5" x 3/8" -8JIC/-8JIC Hose (w/ 3 Collar & Cordura) |
| 4    | 45021    | 32" x 1/2" -8 JIC/-8 JIC Hose w/ Cordura               |

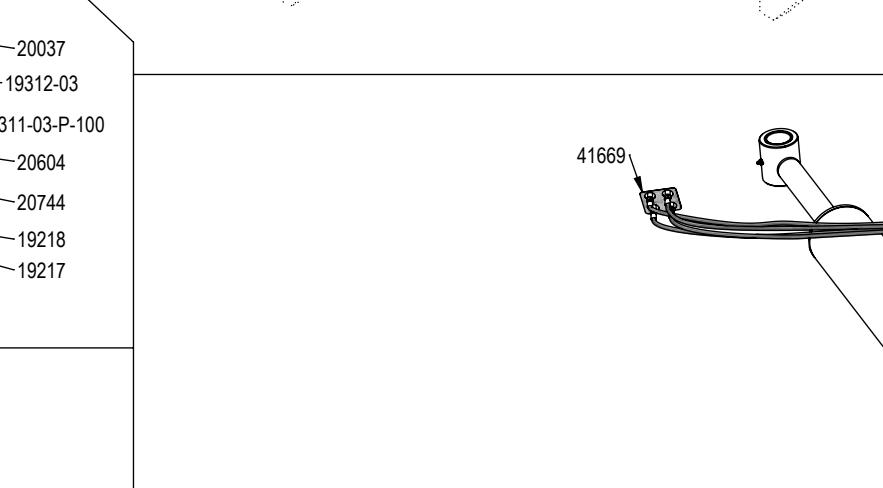
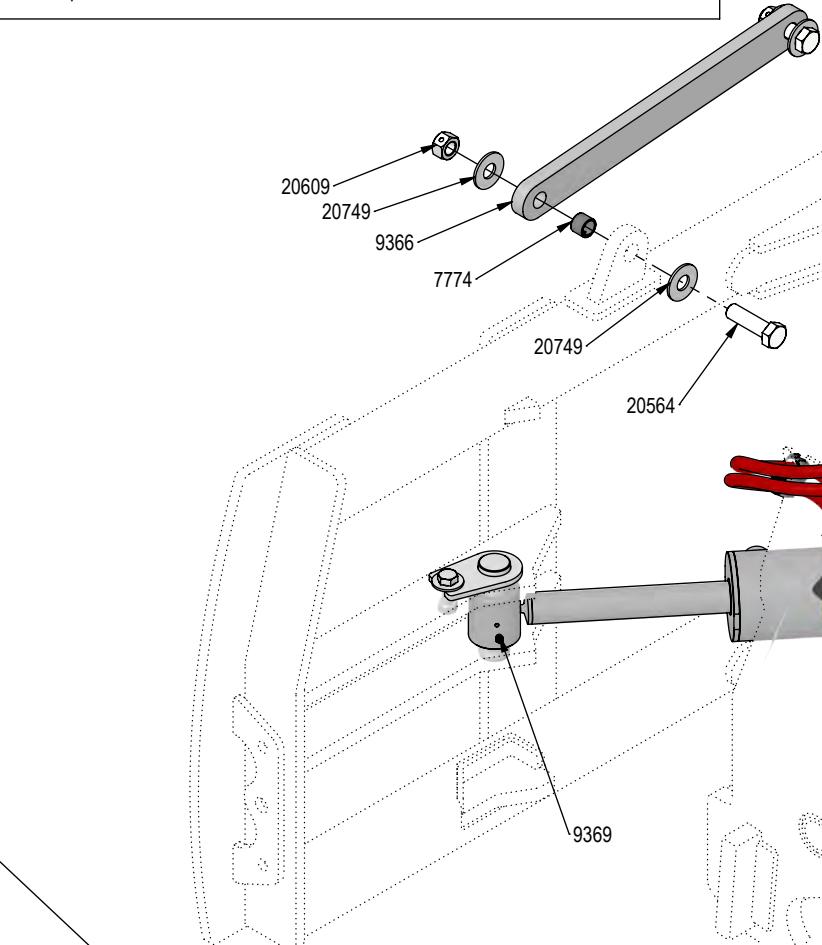
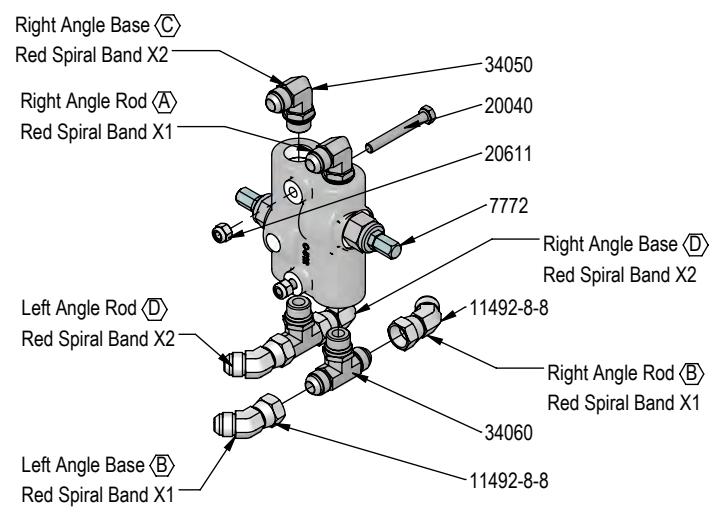


**Note:** View is from Multi-Coupler Installed on Top Arm.  
All hoses are marked with colored spiral bands and should be attached to designated ports on the Multi-Coupler.

DWG. NO.: 44790

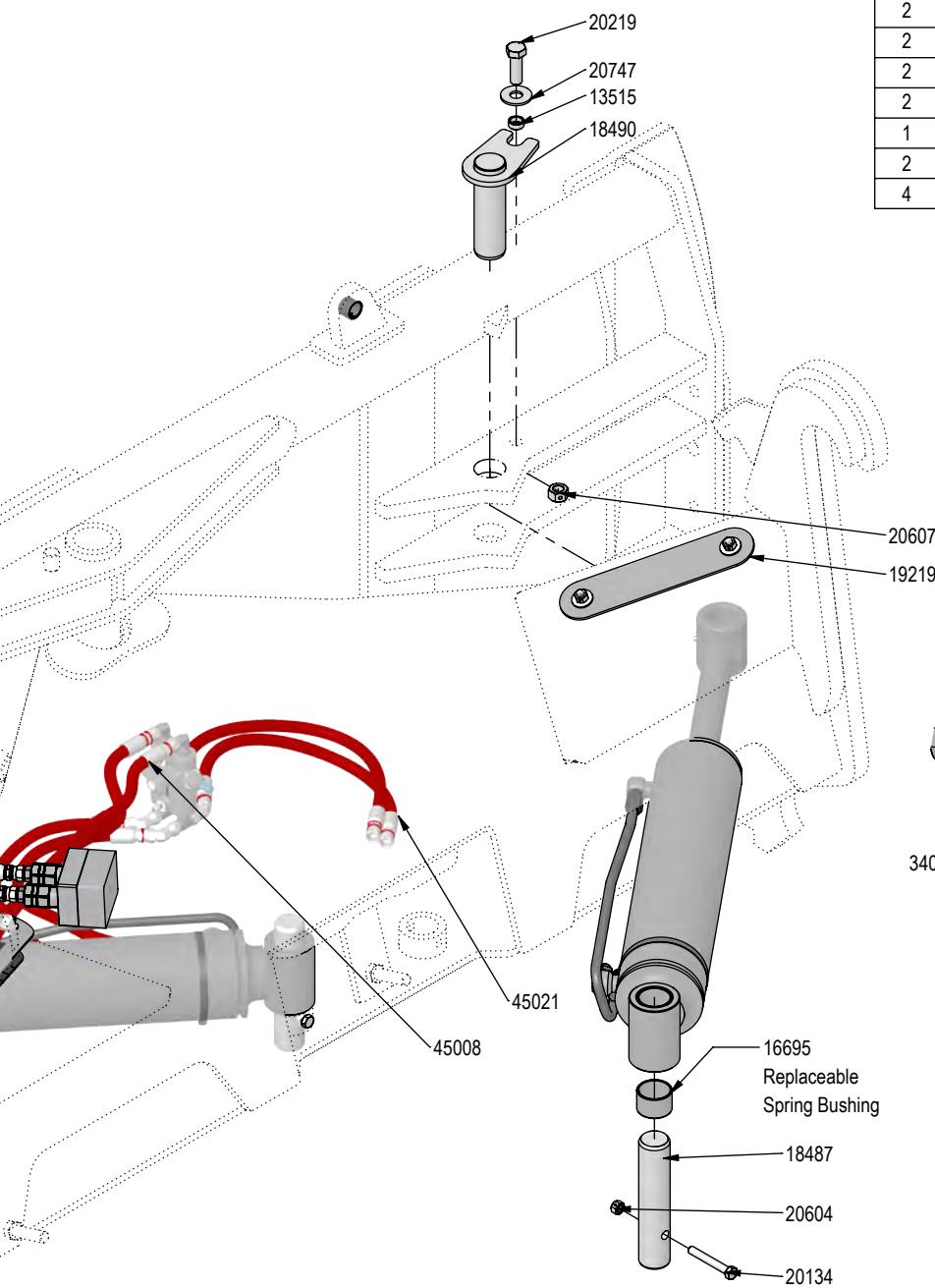
# Hydraulic Angle-No Tilt Hydraulics

| QTY. | PART NO.       | DESCRIPTION                                   |
|------|----------------|---|
| 1    | 7772           | Valve   |
| 2    | 7774           | 1" x 1" Spring Bushing                        |
| 1    | 9366           | Ag Pro Non Tilt Bar                           |
| 2    | 9369           | Straight 1/8" NPT Grease Zerk                 |
| 4    | 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                                |
| 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-RD       | -12 Red - Spiral Band                         |
| 1    | 18994-0490     | 49" Grease Hose (w/lock nut and grease zerk)  |
| 1    | 18994-0570     | 57" Grease Hose (w/lock nut and grease zerk)  |
| 2    | 18994-0620     | 62" Grease Hose (w/lock nut and grease zerk)  |
| 1    | 19217          | Rubber Seal                                   |
| 1    | 19218          | Seal Clamp Plate                              |
| 1    | 19219          | Cover Plate                                   |
| 1    | 19311-03-P-100 | Hose Clamp                                    |
| 1    | 19312-03       | Twin Cover Plate                              |
| 1    | 19657          | Multi-Coupling Plate - 2 Port Parking Station |
| 1    | 19869          | Multi-Coupling Plate - 2 Port - Mobile        |
| 1    | 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             |
| 2    | 20564          | 1" X 3-1/2" 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           |
| 2    | 20609          | 1" 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                           |
| 4    | 20749          | 1" Flat Washer CZ                             |

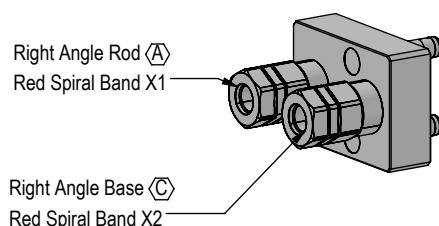
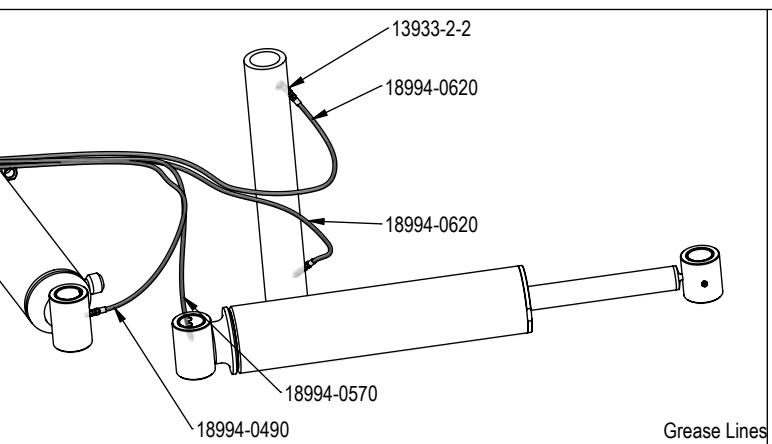
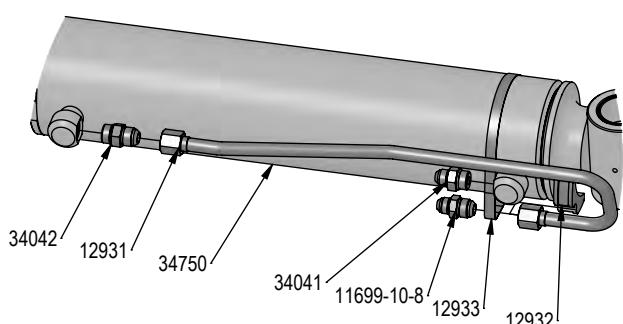


Note: The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

| 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    | 34040    | Straight JIC x O-Ring                                |
| 2    | 34041    | Straight JIC x O-Ring                                |
| 2    | 34042    | Straight JIC x O-Ring                                |
| 2    | 34050    | Straight Thread Elbow 90° JIC x O-Ring               |
| 2    | 34060    | Branch Tee JIC x O-Ring                              |
| 2    | 34750    | 5 x 20 Cylinder Bushed Tube Ends                     |
| 1    | 41669    | Grease Location Decal                                |
| 2    | 45008    | 80.5" x 1/2" -8JIC/-8JIC Hose (w/1 Collar & Cordura) |
| 4    | 45021    | 32" x 1/2" -8 JIC-8 JIC Hose w/ Cordura              |



**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.: 44788

## No Angle -Hydraulic Tilt System

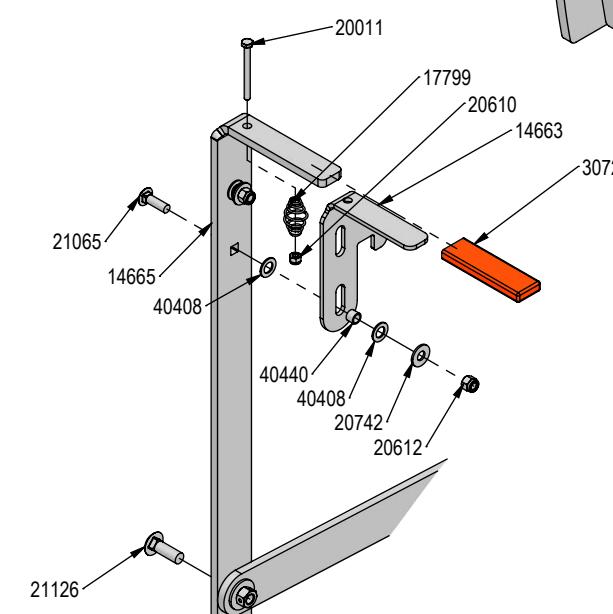
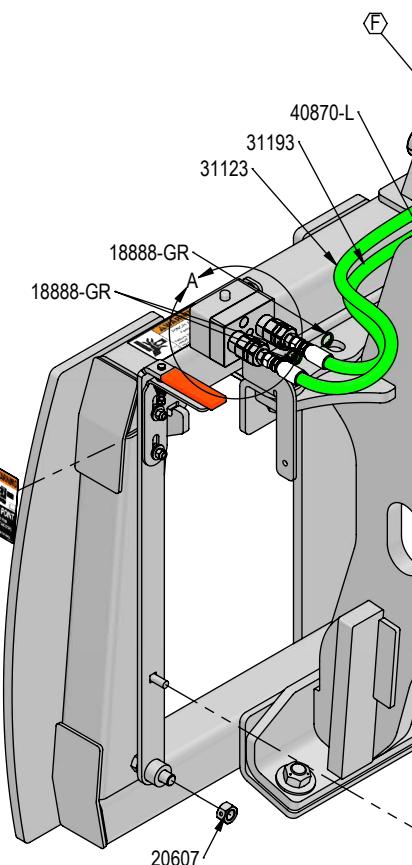
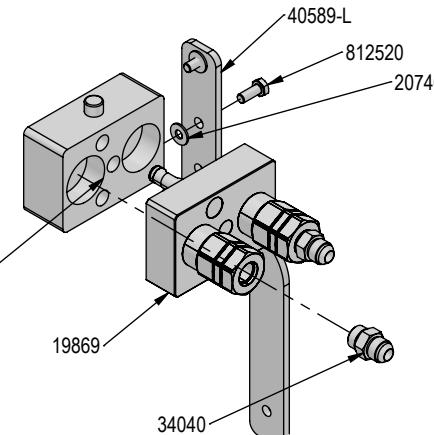
| QTY. | PART NO. | DESCRIPTION                                   |
|------|----------|---|
| 2    | 2409     | Pinch Area, Hand                              |
| 1    | 3072     | Rubber Handle                                 |
| 2    | 7774     | 1" x 1" Spring Bushing                        |
| 4    | 8490     | Spacer  |
| 2    | 9503     | Pinch Point, Foot                             |
| 4    | 13580    | Pin Weld                                      |
| 1    | 14658    | Bracket, Center                               |
| 1    | 14663    | Latch   |
| 1    | 14665    | Handle Weld                                   |
| 1    | 16980    | Tilt Frame Weld                               |
| 1    | 17799    | Latch Spring                                  |
| 2    | 18486    | Ag Pro SS QA Lock Pin                         |
| 6    | 18888-GR | -12 Green - Spiral Band                       |
| 1    | 19657    | Multi-Coupling Plate - 2 Port Parking Station |
| 1    | 19869    | Multi-Coupling Plate - 2 Port - Mobile        |
| 1    | 20011    | 1/4" X 2-3/4" Hex Bolt Gr 5 NC CZ             |
| 4    | 20128    | 1/2" X 2" Hex Bolt Gr 5 NC CZ                 |
| 2    | 20130    | 1/2" X 2-1/2" Hex Bolt Gr 5 NC CZ             |
| 6    | 20560    | 1" X 2-1/2" Hex Bolt Gr 8 NC YZ               |
| 2    | 20561    | 1" X 2-3/4" Hex Bolt Gr 8 NC YZ               |
| 10   | 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    | 20740    | 1/4" Flat Washer CZ                           |
| 2    | 20742    | 3/8" Flat Washer CZ                           |
| 12   | 20744    | 1/2" Flat Washer CZ                           |
| 16   | 20819    | 1" Flat Washer Heavy Duty Gr 8 (USS) YZ       |
| 8    | 20999    | 1" Hex Top Lock Nut Gr 8 NC YZ                |
| 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        |
| 2    | 30022    | 39" x 3/8" -8JIC/-8JIC Hose                   |
| 1    | 31123    | 42" x 1/2" -8 JIC/-8 JIC Hose W/ Cordura      |
| 1    | 31193    | 52" x 1/2" -8 JIC/-8 JIC Hose W/ Cordura      |
| 2    | 34040    | Straight JIC x O-Ring                         |
| 2    | 34050    | Straight Thread Elbow 90° JIC x O-Ring        |
| 2    | 34060    | Branch Tee JIC x O-Ring                       |
| 2    | 34711    | 4 x 8 Hydraulic Cylinder                      |
| 4    | 40408    | 3/8" Flat Nylon Washer                        |
| 2    | 40440    | .378" ID x .503" OD x .375" Spacer            |
| 1    | 40589-L  | Multi-Coupler Bracket                         |
| 1    | 40866    | Bell Crank                                    |
| 1    | 40870-L  | SS Bolt in Quick Attach - Left                |
| 1    | 40870-R  | SS Bolt in Quick Attach - Right               |
| 1    | 41874    | Plate, Link                                   |
| 2    | 44178    | Link, Bell Crank To Pin                       |
| 4    | 44248    | 3/8 Flanged Hex Head Shoulder Bolt            |
| 2    | 812520   | M8.1 25 x 20mm Class 10.9 Hex Bolt C7         |

**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.

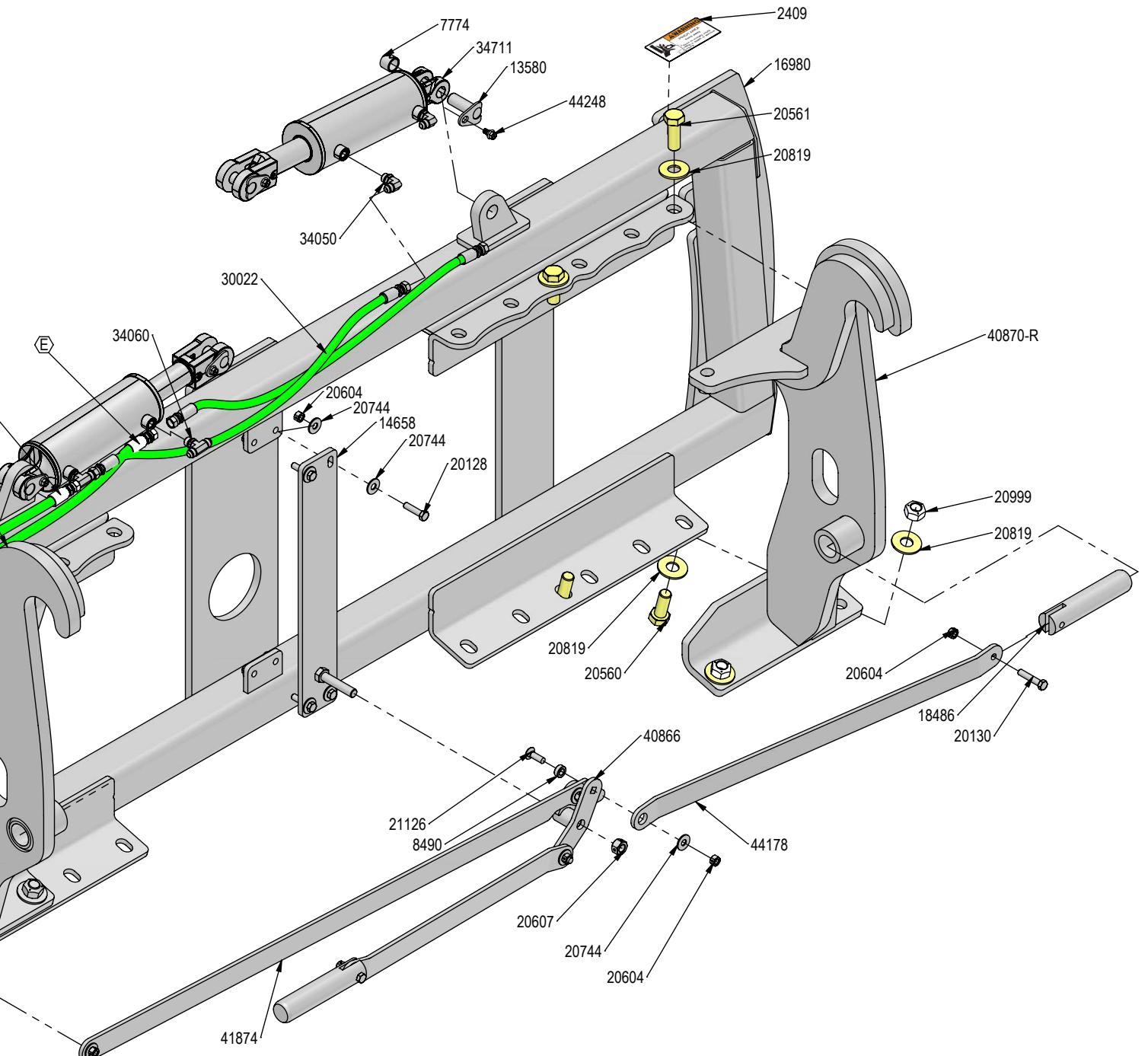
**Note:** The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

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

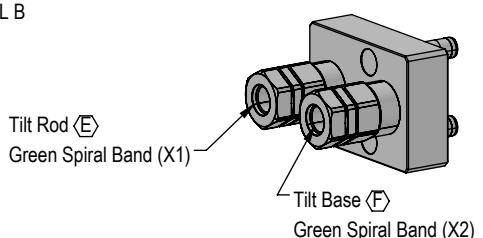
## DETAIL A



# No Angle-Hydraulic Tilt System



DETAIL B



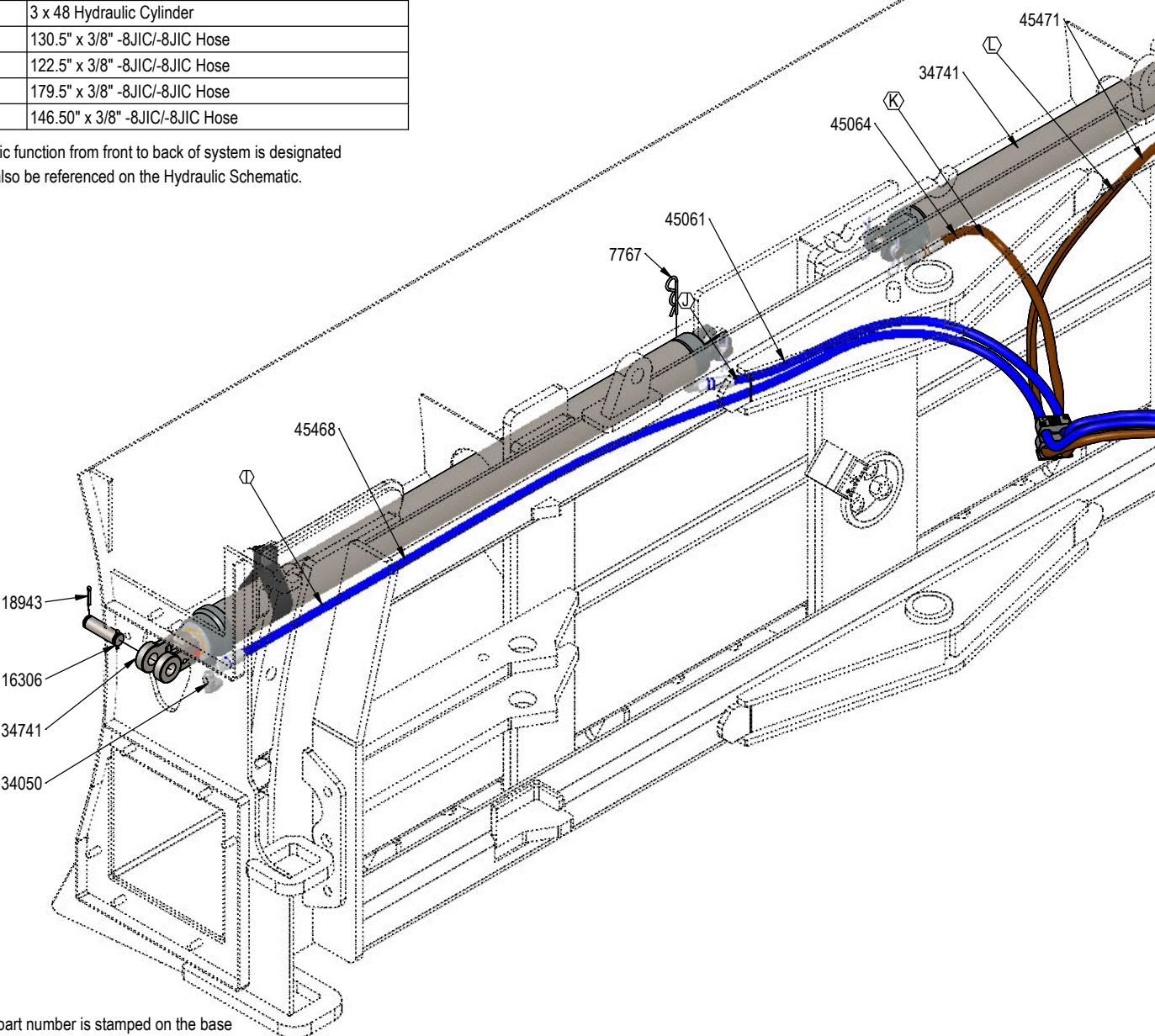
Note: View is from Multi-Coupler Installed on Top Arm.  
All hoses are marked with colored spiral bands and should be attached to designated ports on the Multi-Coupler.

DWG. NO.: 44786

# Hydraulic Angle Blade Hydraulics

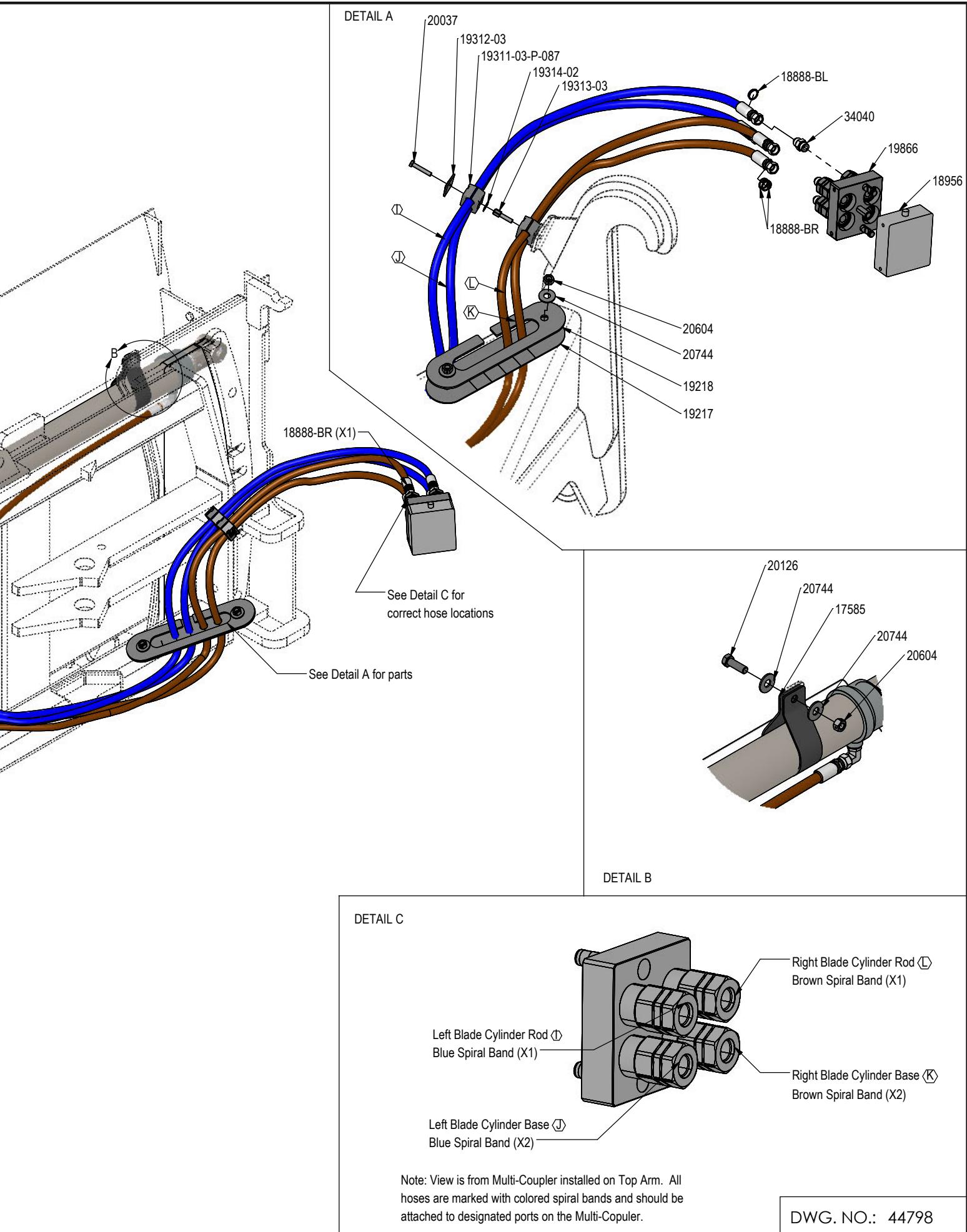
| QTY. | PART NO.       | DESCRIPTION                                   |
|------|----------------|---|
| 4    | 7767           | Cylinder Pin Clip                             |
| 4    | 16306          | Cylinder Pin w/ Cotter Pins                   |
| 2    | 17585          | Cylinder Strap                                |
| 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    | 18956          | Multi-Coupling Plate - 4 Port Parking Station |
| 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    | 19866          | Multi-Coupling Plate - 4 Port Mobile          |
| 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    | 45061          | 130.5" x 3/8" -8JIC/-8JIC Hose                |
| 1    | 45064          | 122.5" x 3/8" -8JIC/-8JIC Hose                |
| 1    | 45468          | 179.5" x 3/8" -8JIC/-8JIC Hose                |
| 1    | 45471          | 146.50" 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.



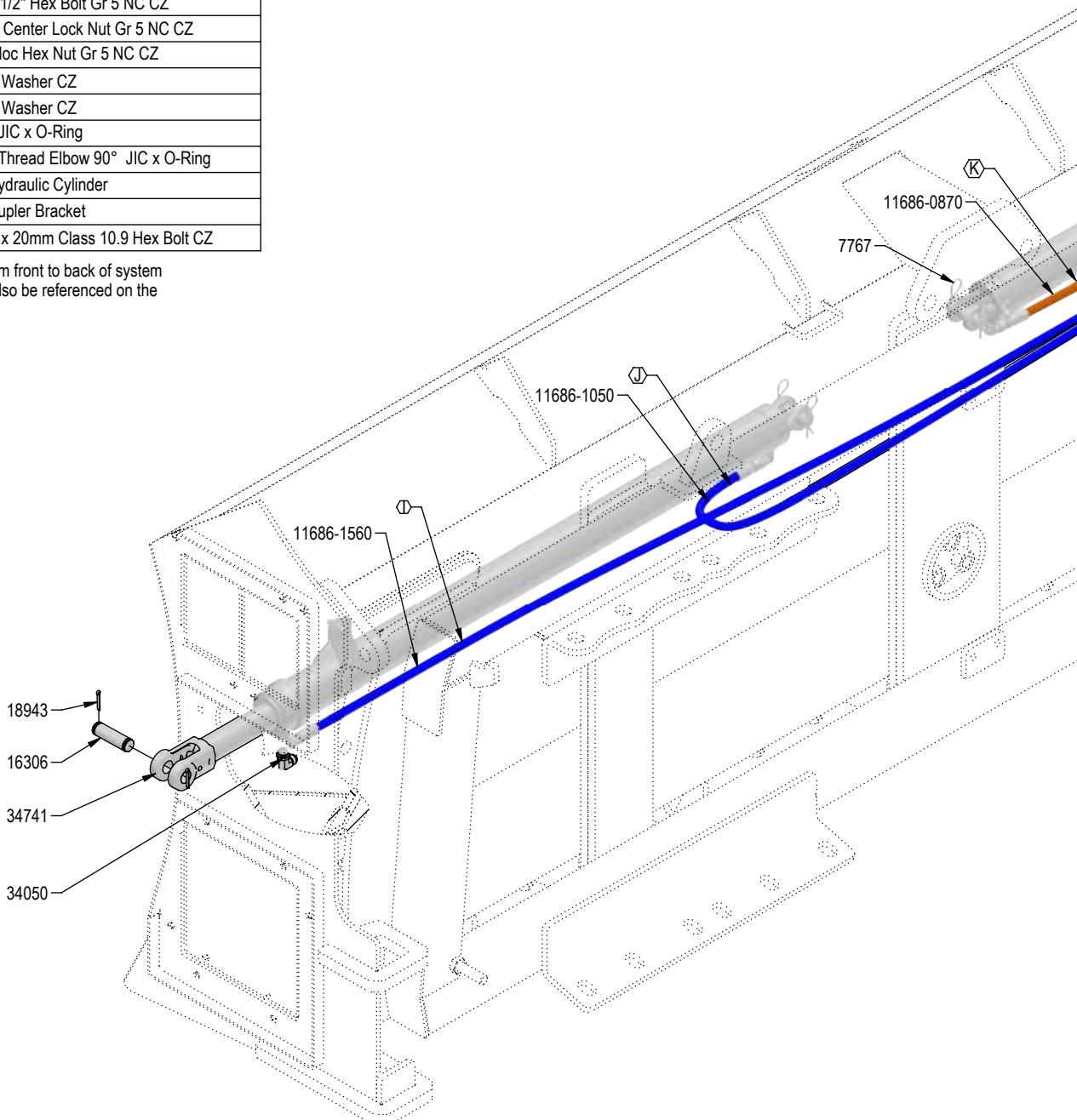
**Note:** The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

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



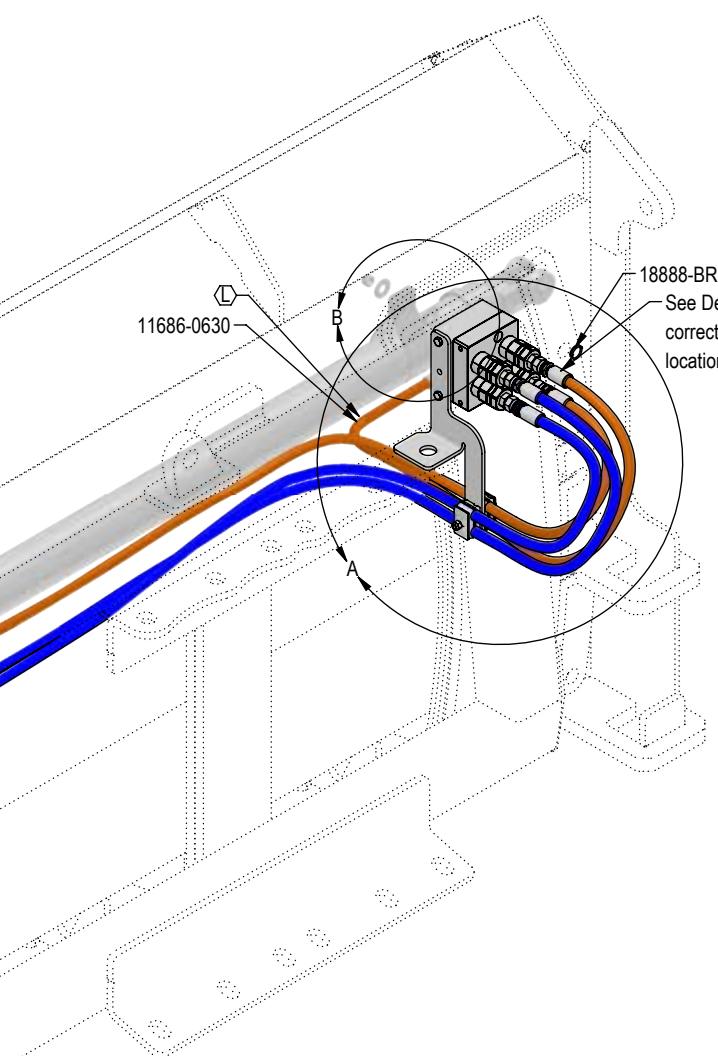
| QTY. | PART NO.       | DESCRIPTION                                   |
|------|----------------|---|
| 4    | 7767           | Cylinder Pin Clip                             |
| 1    | 11686-0630     | 63" x 3/8" -8JIC/-8JIC Hose                   |
| 1    | 11686-0870     | 87" x 3/8" -8JIC/-8JIC Hose                   |
| 1    | 11686-1050     | 105" x 3/8" -8JIC/-8JIC Hose                  |
| 1    | 11686-1560     | 156" x 3/8" -8JIC/-8JIC Hose                  |
| 4    | 16306          | Cylinder Pin w/ Cotter Pins                   |
| 2    | 17585          | Cylinder Strap                                |
| 3    | 18888-BL       | -12 Blue - Spiral Band                        |
| 3    | 18888-BR       | -12 Brown - Spiral Band                       |
| 4    | 18943          | 3/16" x 1-1/2" Cotter Pin                     |
| 1    | 18956          | Multi-Coupling Plate - 4 Port Parking Station |
| 2    | 19311-02-P-062 | Hose Clamp                                    |
| 2    | 19312-02       | Twin Cover Plate                              |
| 1    | 19866          | Multi-Coupling Plate - 4 Port Mobile          |
| 1    | 20043          | 5/16" X 3-1/4" Hex Bolt Gr 5 NC CZ            |
| 2    | 20126          | 1/2" X 1-1/2" Hex Bolt Gr 5 NC CZ             |
| 2    | 20604          | 1/2" Hex Center Lock Nut Gr 5 NC CZ           |
| 1    | 20611          | 5/16" Nyloc Hex Nut Gr 5 NC CZ                |
| 2    | 20740          | 1/4" Flat Washer CZ                           |
| 4    | 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    | 40589-R        | Multi-Coupler Bracket                         |
| 2    | 812520         | M8-1.25 x 20mm Class 10.9 Hex Bolt CZ         |

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

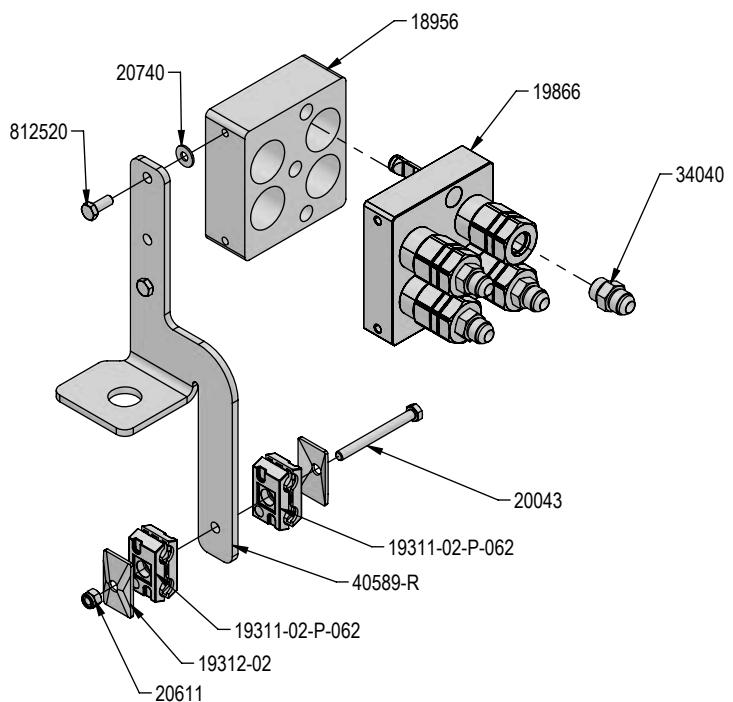


**Note:** The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

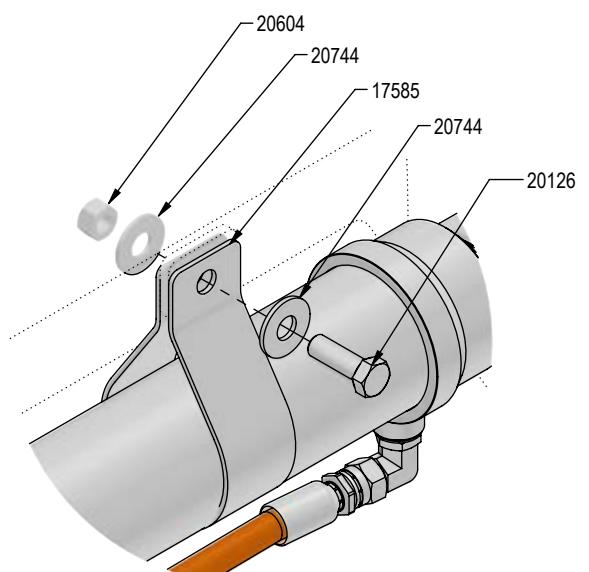
| No. On Cylinder | Part No. | Description          |
|-----------------|----------|----------------------|
| 26-34741        | 49-17797 | Seal Kit 3" (649210) |



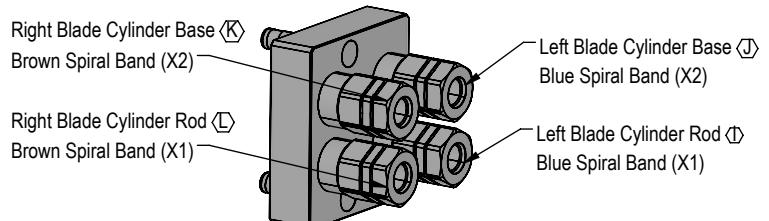
DETAIL A



DETAIL B



DETAIL C

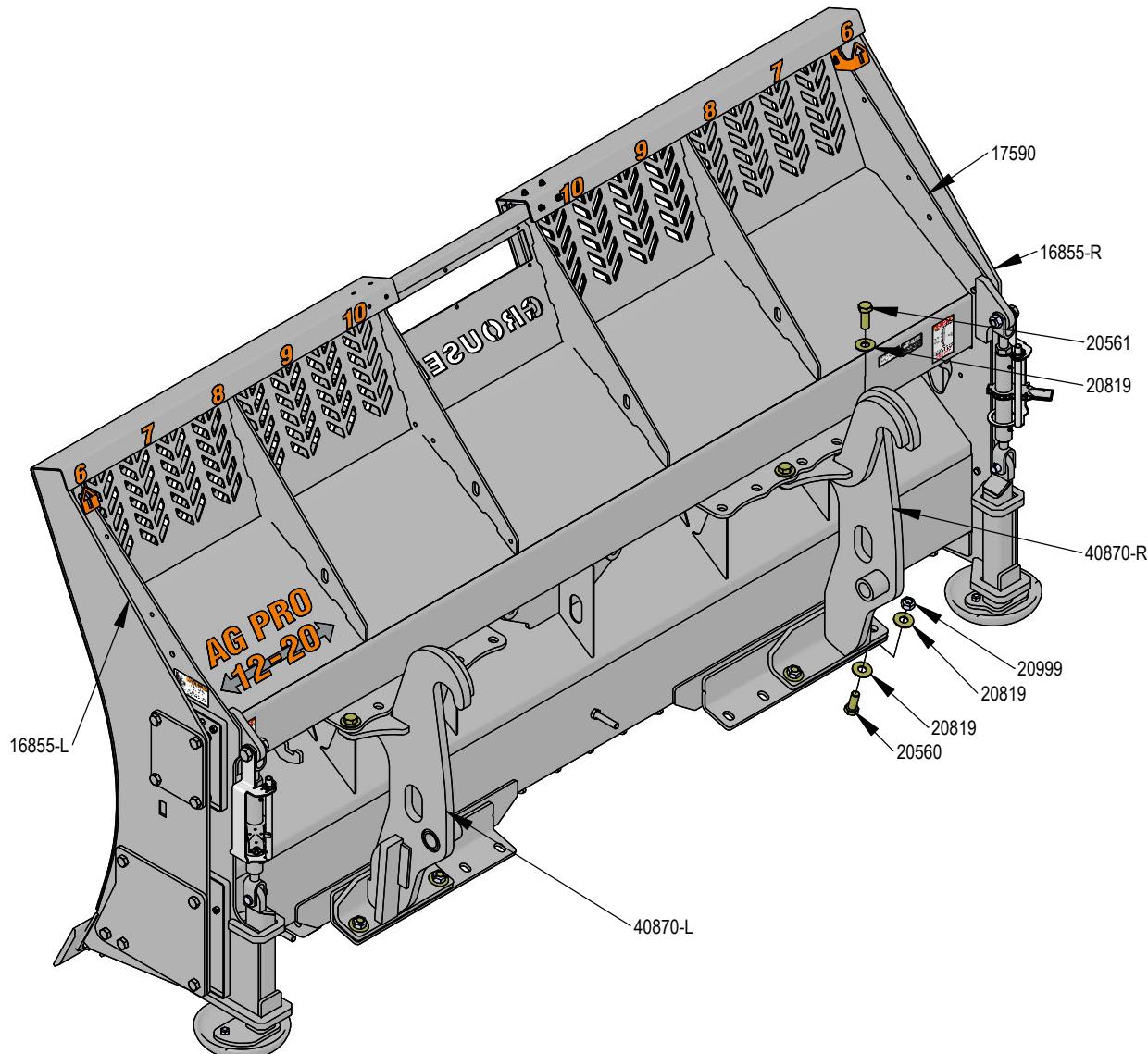


**Note:** View is from Multi-Coupler Installed on Top Arm.  
All hoses are marked with colored spiral bands and should be attached to designated ports on the Multi-Coupler.

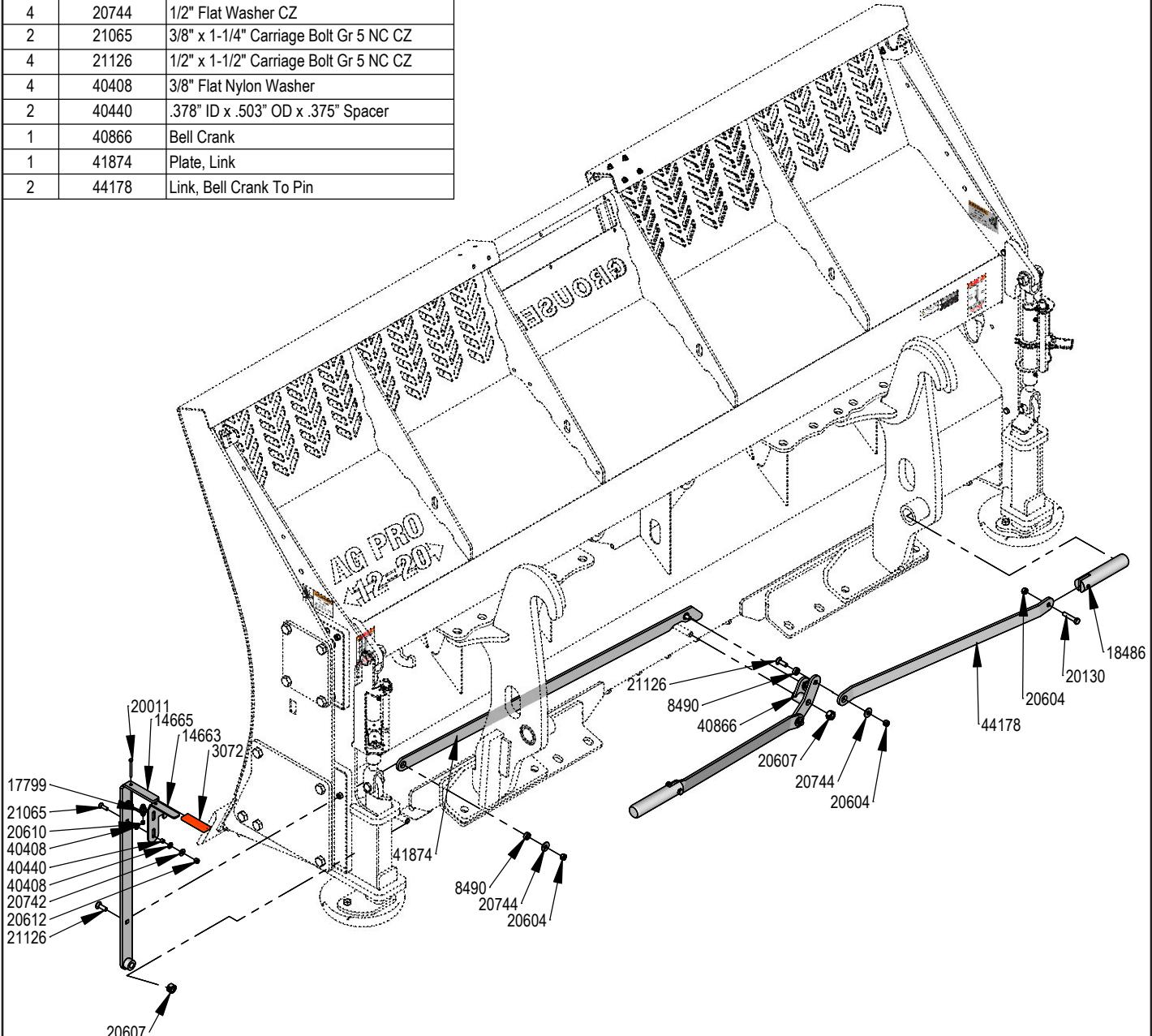
## No Angle - No Tilt Blade

| QTY. | PART NO. | DESCRIPTION                             |
|------|----------|---|
| 1    | 16855-L  | 12-20 Blade End Weld, Left              |
| 1    | 16855-R  | 12-20 Blade End Weld, Right             |
| 1    | 17590    | NANT Blade Weld                         |
| 7    | 20560    | 1" X 2-1/2" Hex Bolt Gr 8 NC YZ         |
| 1    | 20561    | 1" X 2-3/4" Hex Bolt Gr 8 NC YZ         |
| 1    | 40870-L  | SS Bolt in Quick Attach - Left          |
| 1    | 40870-R  | SS Bolt in Quick Attach - Right         |
| 16   | 20819    | 1" Flat Washer Heavy Duty Gr 8 (USS) YZ |
| 8    | 20999    | 1" Hex Top Lock Nut Gr 8 NC YZ          |

See Pages 8-9 for Blade Components



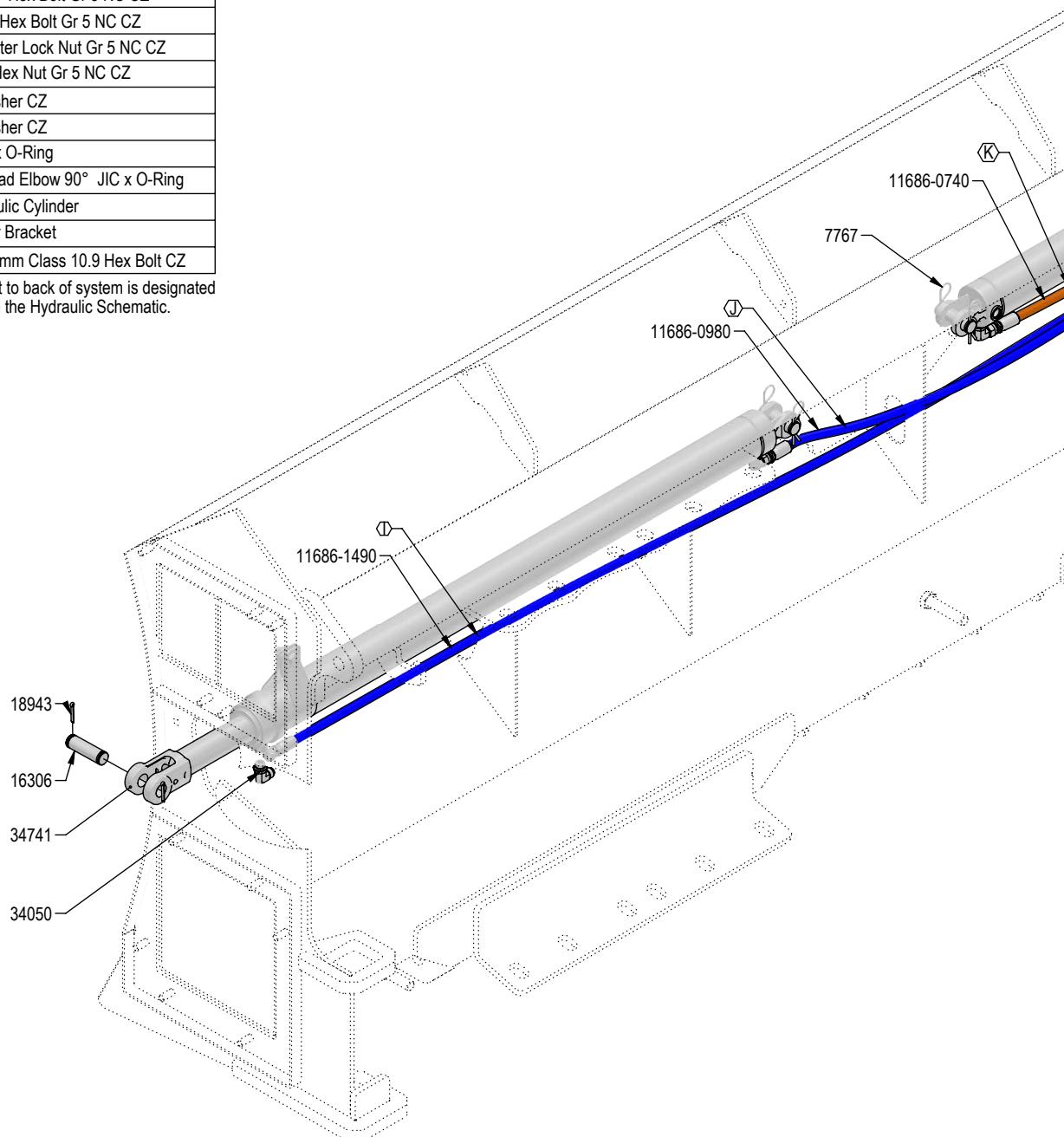
| QTY. | PART NO. | DESCRIPTION                            |
|------|----------|--|
| 1    | 3072     | Rubber Handle                          |
| 4    | 8490     | Spacer                                 |
| 1    | 14663    | Latch                                  |
| 1    | 14665    | Handle Weld                            |
| 1    | 17799    | Latch Spring                           |
| 2    | 18486    | Ag Pro SS QA Lock Pin                  |
| 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      |
| 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    | 40866    | Bell Crank                             |
| 1    | 41874    | Plate, Link                            |
| 2    | 44178    | Link, Bell Crank To Pin                |



# No Angle - No Tilt Blade Hydraulics

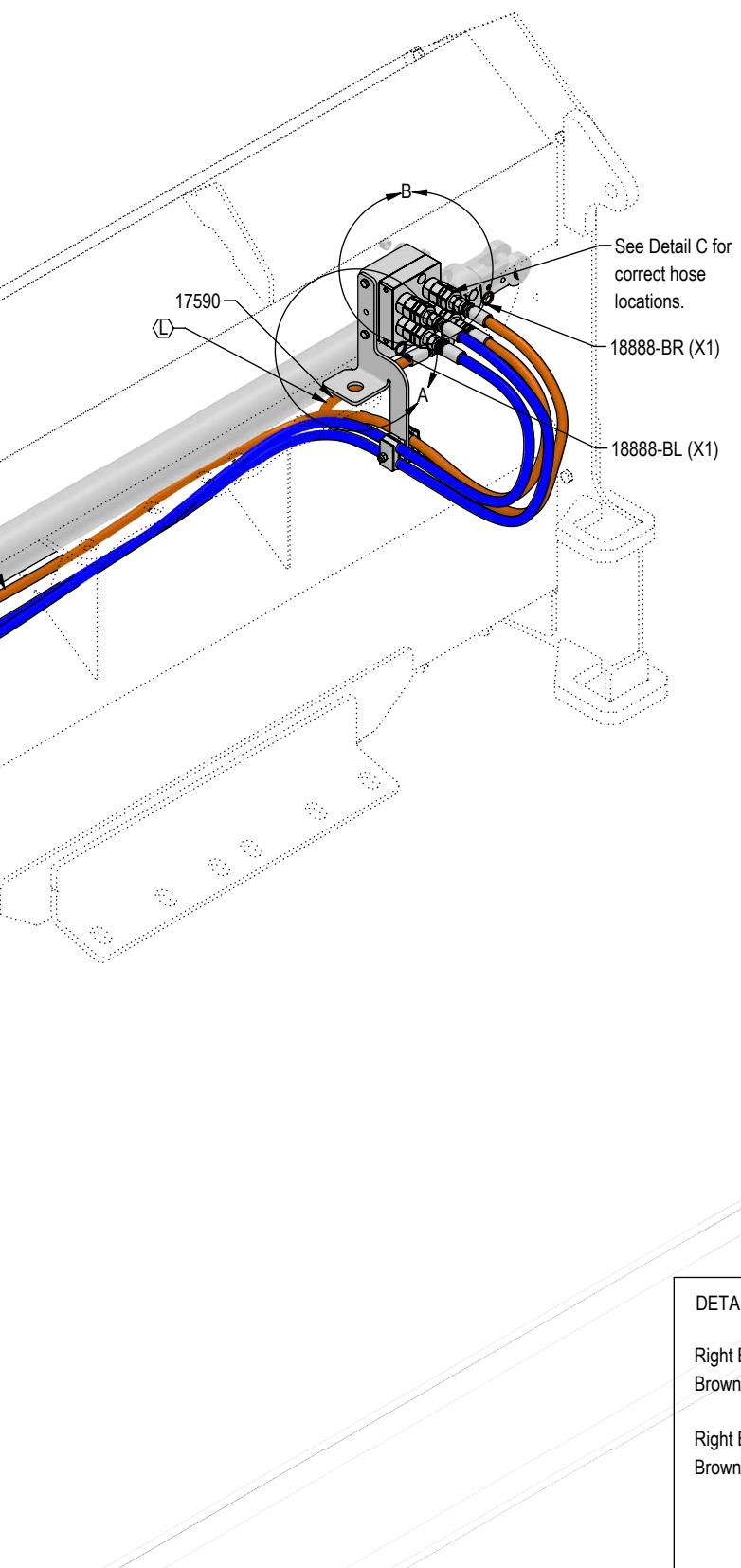
| QTY. | PART NO.       | DESCRIPTION                                   |
|------|----------------|---|
| 4    | 7767           | Cylinder Pin Clip                             |
| 1    | 11686-0650     | 65" x 3/8" -8JIC/-8JIC Hose                   |
| 1    | 11686-0740     | 74" x 3/8" -8JIC/-8JIC Hose                   |
| 1    | 11686-0980     | 98" x 3/8" -8JIC/-8JIC Hose                   |
| 1    | 11686-1490     | 149" x 3/8" -8JIC/-8JIC Hose                  |
| 4    | 16306          | Cylinder Pin w/ Cotter Pins                   |
| 2    | 17585          | Cylinder Strap                                |
| 3    | 18888-BL       | -12 Blue - Spiral Band                        |
| 3    | 18888-BR       | -12 Brown - Spiral Band                       |
| 4    | 18943          | 3/16" x 1-1/2" Cotter Pin                     |
| 1    | 18956          | Multi-Coupling Plate - 4 Port Parking Station |
| 2    | 19311-02-P-062 | Hose Clamp                                    |
| 2    | 19312-02       | Twin Cover Plate                              |
| 1    | 19866          | Multi-Coupling Plate - 4 Port Mobile          |
| 1    | 20043          | 5/16" X 3-1/4" Hex Bolt Gr 5 NC CZ            |
| 2    | 20126          | 1/2" X 1-1/2" Hex Bolt Gr 5 NC CZ             |
| 2    | 20604          | 1/2" Hex Center Lock Nut Gr 5 NC CZ           |
| 1    | 20611          | 5/16" Nyloc Hex Nut Gr 5 NC CZ                |
| 2    | 20740          | 1/4" Flat Washer CZ                           |
| 4    | 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    | 40589-R        | Multi-Coupler Bracket                         |
| 2    | 812520         | M8-1.25 x 20mm Class 10.9 Hex Bolt CZ         |

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

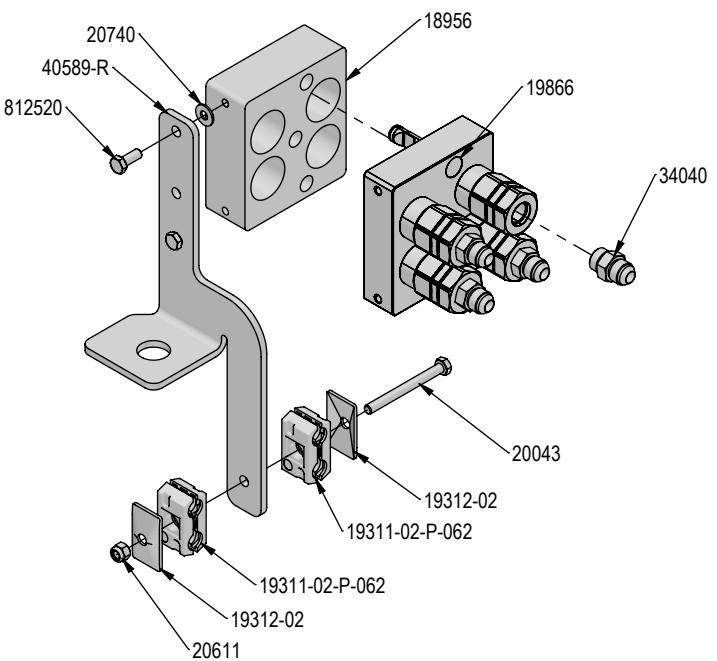


**Note:** The cylinder part number is stamped on the base end of the cylinder opposite of the hydraulic ports.

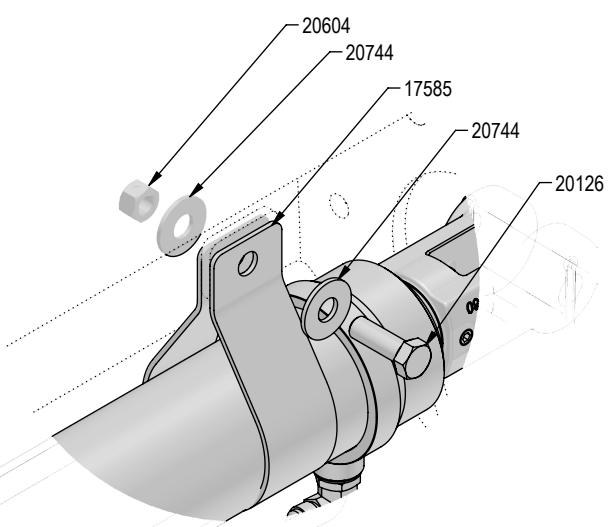
| No. On Cylinder | Part No. | Description          |
|-----------------|----------|----------------------|
| 26-34741        | 49-17797 | Seal Kit 3" (649210) |



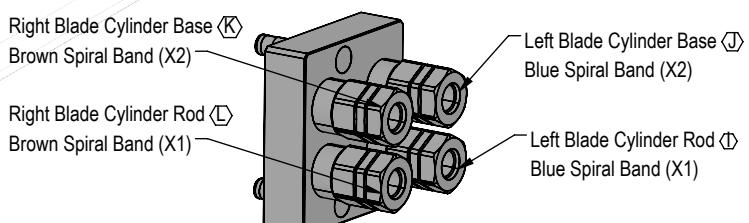
DETAIL A  
SCALE 1 : 6



DETAIL B  
SCALE 1 : 4



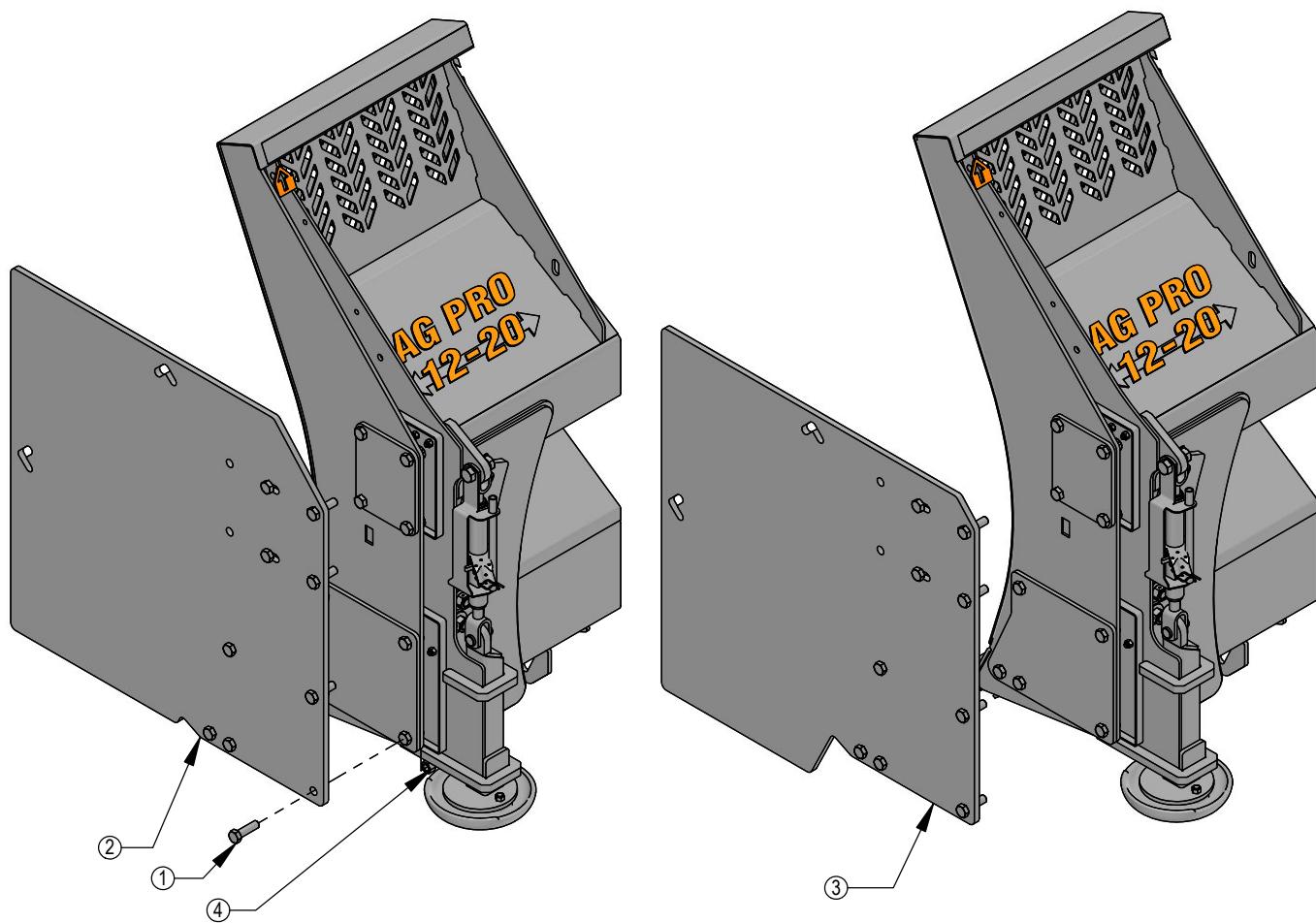
DETAIL C



**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.

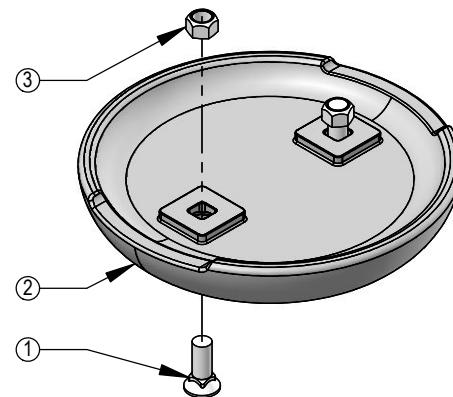
## Blade Attachments

| 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       |

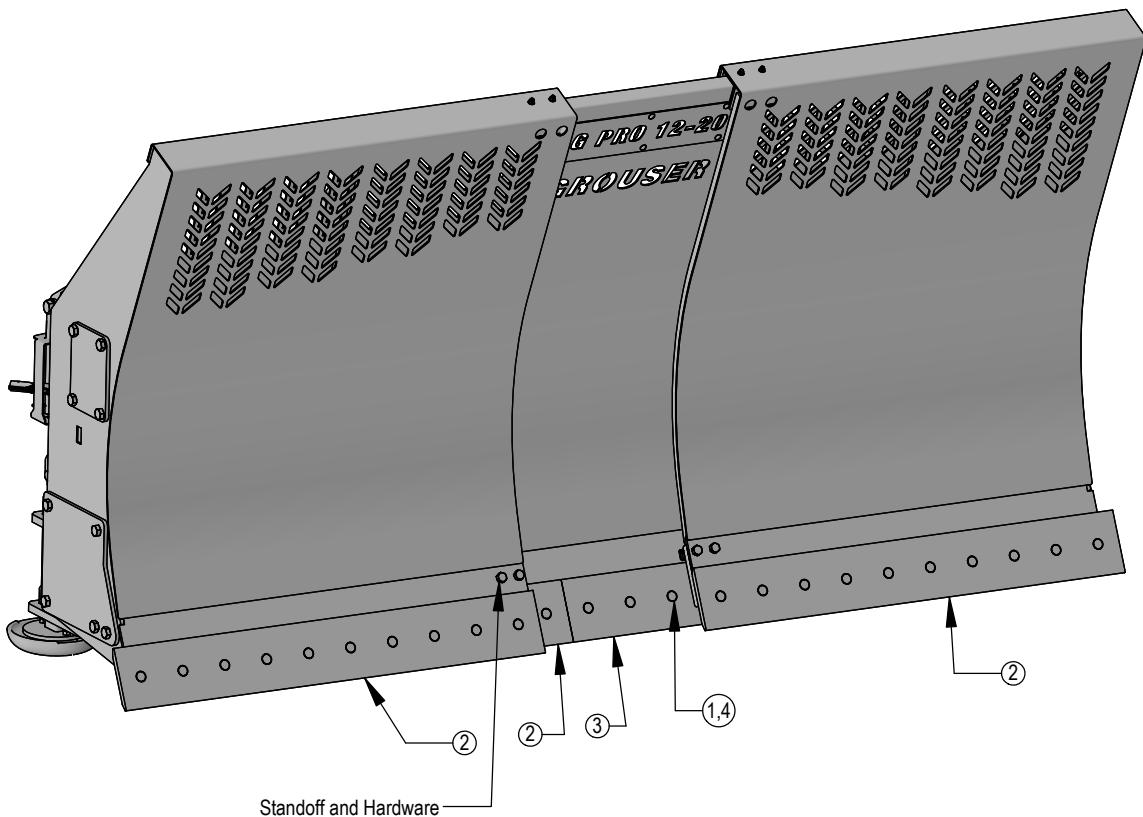


## Replacement Wear Parts

| 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 cutting 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.

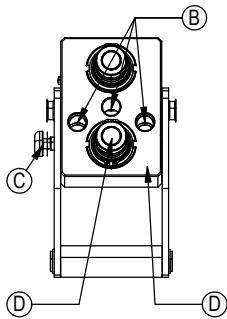


| ITEM NO. | QTY. | PART NO.   | DESCRIPTION                   |
|----------|------|------------|-------------------------------|
| 1        | 42   | 16-21748   | 3/4" X 2" Plow Bolt Gr 8 NC   |
| 2        | 3    | 29-11118-5 | 5' - 3/4"x 8" Cutting Edge    |
| 3        | 1    | 29-11118-6 | 6' - 3/4"x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

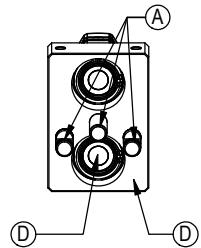
## Before Each Use:

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.

## Fixed Half

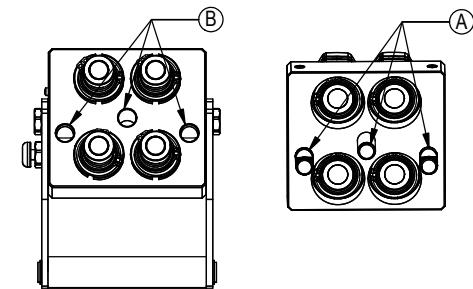


## Mobile Half



## 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.
3. \*Use a cloth or compressed air. It is advised to not use water to clean these surfaces
4. 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.
5. Connect the cap to the fixed half and the mobile half to the parking station.

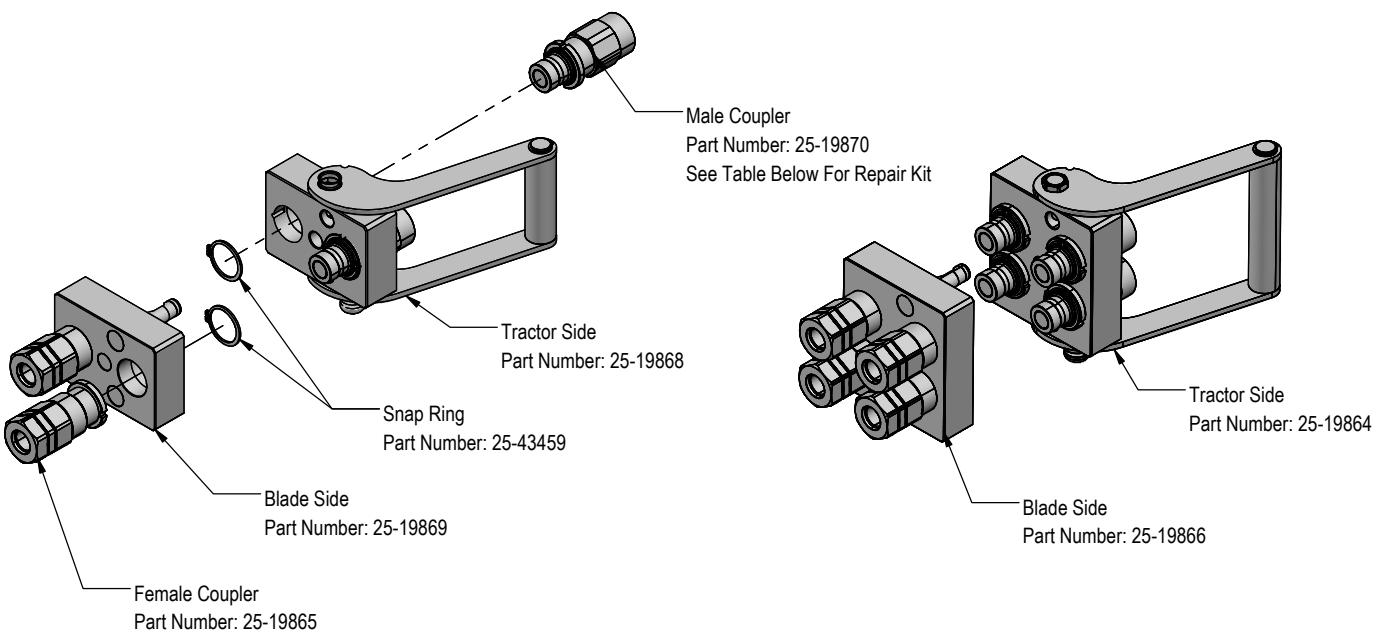


## Note 1:

When sand and salt are present, or the plates undergo 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.



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

## Cleaning The Male Interface Seal:

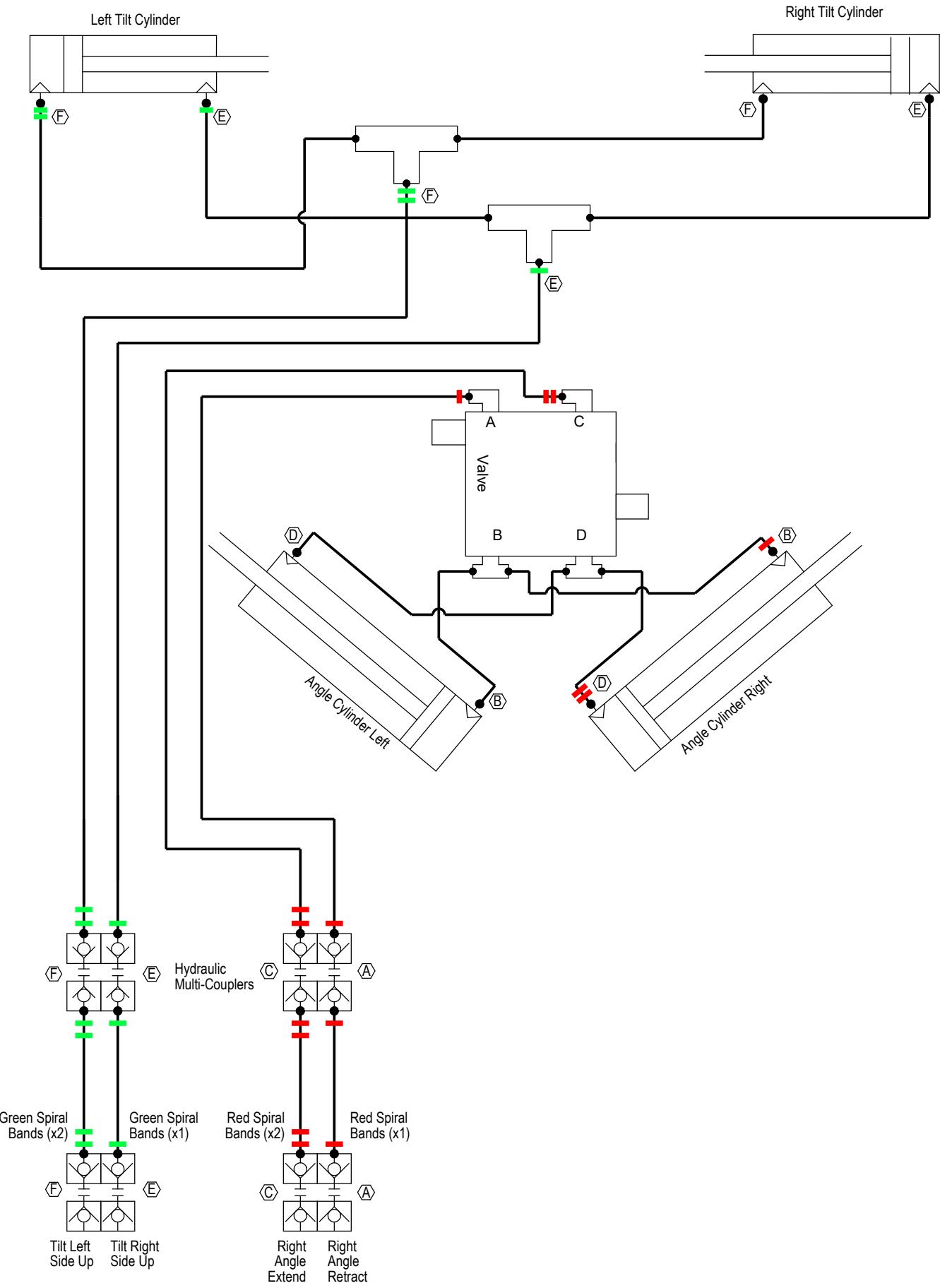


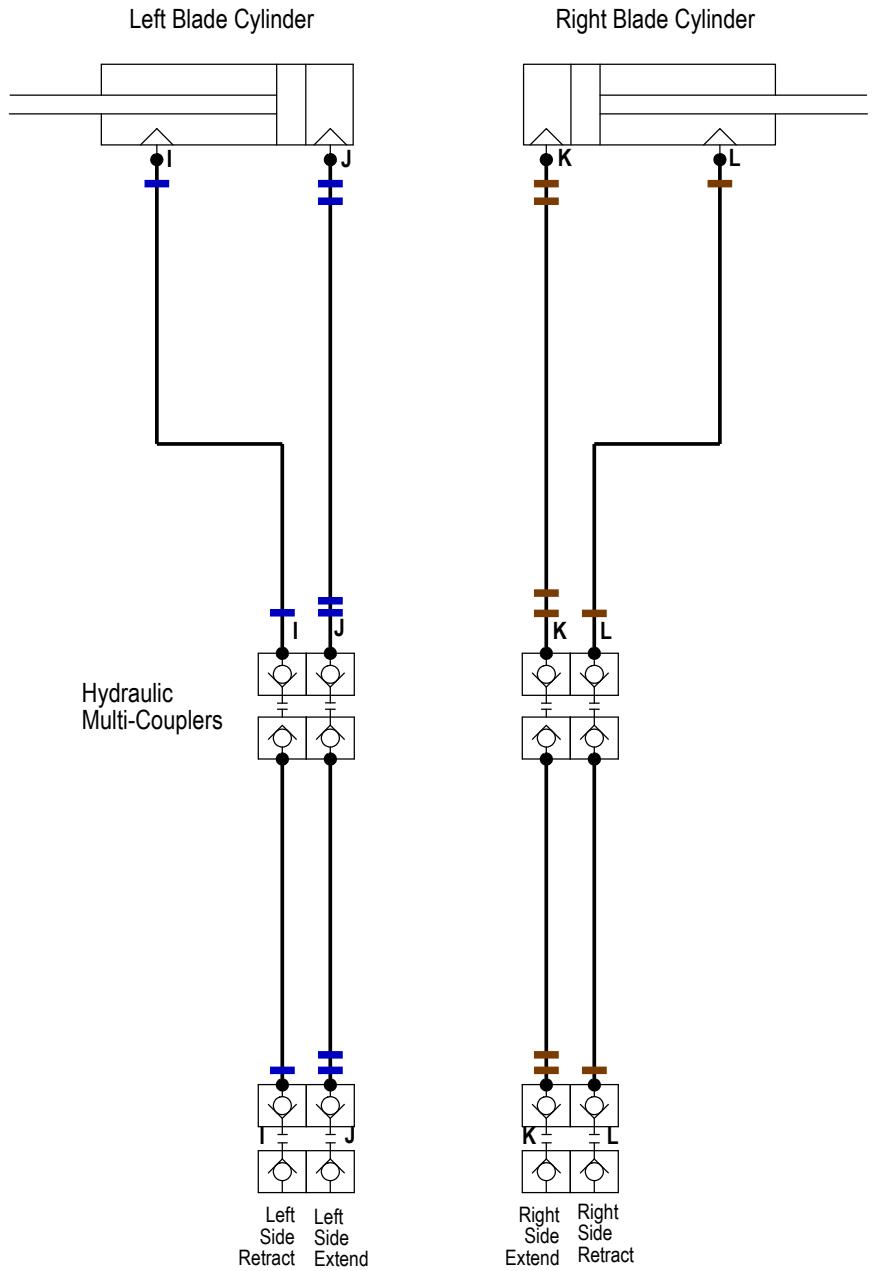
1. Make sure the coupling is securely fastened into the plate or place in a vice.
2. Using a blunt, non-marring tool, depress the valve face until the seal is exposed. Insert a bent metal wire between the valve face and the body of the coupling. Use caution not to damage or scratch the seal when inserting 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.





# 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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