



Ag Pro SS Vertical Lift System Owner's Manual & Parts Book

Grouser Products

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| |
|---------------|
| Purchase Date |
| Serial Number |
| Model Number |
| Tractor Model |
| Dealer |

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Thank you for your recent purchase of a Grouser 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 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. 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 Dozer:

1. The Dozer should be operated only by those who are responsible and instructed to do so.
2. Read the owner’s manual carefully before using this equipment. Lack of operating knowledge can lead to accidents.
3. Keep the Dozer maintained in reliable and satisfactory condition to ensure your safety.
4. Make sure the area is clear of people before moving any equipment.
5. Do not modify or permit anyone else to modify or alter the equipment and its components without first consulting Grouser Products.
6. Lower the blade to the ground when not in use.

Servicing the Dozer:

1. Read and follow all safety instructions provided by the tractor manufacturer.
2. Always use proper personal safety gear when performing maintenance on equipment.
3. Before servicing, relieve hydraulic pressure, stop engine and fully engage parking brake.
4. Escaping hydraulic fluid under pressure can penetrate skin causing serious injury. If fluid is injected into skin, obtain medical attention immediately.
 - DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.
 - Stop the engine and relieve pressure before connecting or disconnecting lines.
 - Tighten all connections before starting the engine or pressurizing lines.

Storing the Dozer:

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

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 |

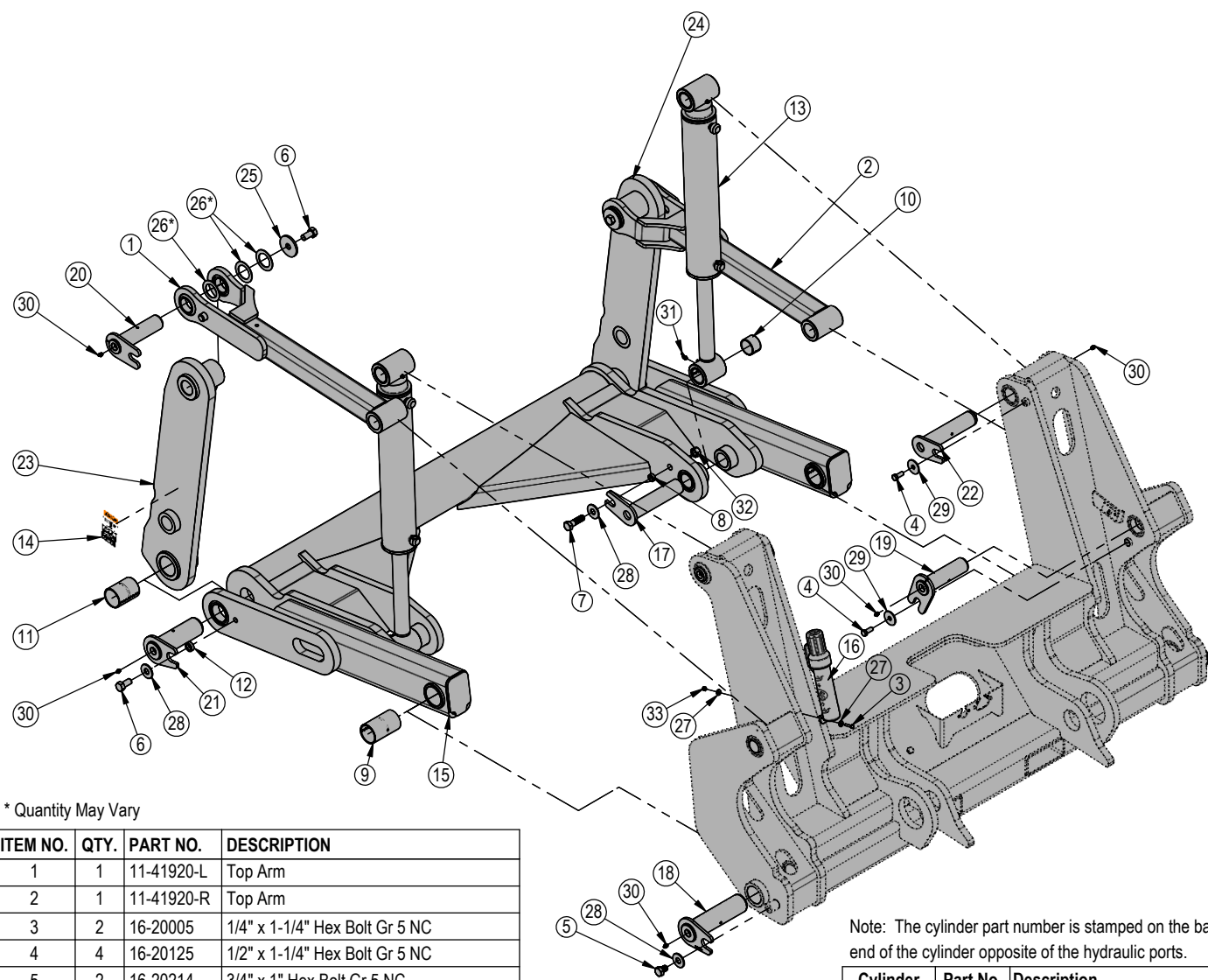
| Size | Torque - Dry (ft-lbs) |
|------------|-----------------------|
| | Grade 10.9 |
| M18 x 2.50 | 284 |
| M20 x 2.50 | 401 |
| M22 x 2.50 | 547 |
| M24 x 3.00 | 694 |

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.

Some assembly of Lift System components is necessary. Follow the steps listed below. See diagram below for the correct hardware and orientation of parts.

1. Remove all pins and fasteners on each side of the undercarriage and set aside for later installation.
2. Position the lift frame between the two plates on both sides of the undercarriage and align to the bottom holes.
3. Insert pins and hardware to attach the lift frame, the base end of the lift cylinders, and the top arms to the undercarriage.
4. Insert pins and hardware to attach the male quick attaches to the lift frame, and to the top arms. Use 2" washers as shims to keep top arm pins tight and in place. Only use as many as needed until pin is tight while still allowing top arm to rotate.
5. Torque all fasteners according to the specifications on Page 3.



* Quantity May Vary

| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|------------|-----------------------------------|
| 1 | 1 | 11-41920-L | Top Arm |
| 2 | 1 | 11-41920-R | Top Arm |
| 3 | 2 | 16-20005 | 1/4" x 1-1/4" Hex Bolt Gr 5 NC |
| 4 | 4 | 16-20125 | 1/2" x 1-1/4" Hex Bolt Gr 5 NC |
| 5 | 2 | 16-20214 | 3/4" x 1" Hex Bolt Gr 5 NC |
| 6 | 4 | 16-20216 | 3/4" x 1-1/2" Hex Bolt Gr 5 NC |
| 7 | 2 | 16-20220 | 3/4" x 2-1/2" Hex Bolt Gr 5 NC |
| 8 | 2 | 19-13515 | Spacer, NR Pin |
| 9 | 2 | 19-13525 | 2.75 x 2.50 x 4.75 Spring Bushing |
| 10 | 8 | 19-16695 | 2.25 x 2.00 x 1.50 Spring Bushing |
| 11 | 2 | 19-18089 | 2.75 x 2.50 x 3.75 Spring Bushing |
| 12 | 2 | 19-43989 | .75 x 1.25 NR Pin Bushing |
| 13 | 2 | 26-34738 | 4 x 20 Hydraulic Cylinder |
| 14 | 2 | 27-9503 | Pinch Decal (Foot) |
| 15 | 1 | 32-43745 | Lift Frame, Claas |
| 16 | 1 | 34-14961 | Manual Canister Small |
| 17 | 2 | 43-13478 | Pin Weld |
| 18 | 2 | 43-14725 | Lift Frame / UC Pin |
| 19 | 2 | 43-18120 | Top Pin Weld |
| 20 | 2 | 43-18127 | Top Arm Pin Weld |

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

| Cylinder | Part No. | Description |
|----------|----------|-------------------------------|
| 26-34738 | 49-12272 | Seal Kit 4" x 2" Nitrided Rod |

| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|------------|--------------------------------------|
| 21 | 2 | 43-18635 | Ag Pro Plus QA Pin |
| 22 | 2 | 43-42416 | Pin Weld |
| 23 | 1 | 45-18110-L | Male Quick Attach, Ag Pro S |
| 24 | 1 | 45-18110-R | Male Quick Attach, Ag Pro S |
| 25 | 2 | 57-1530 | 3" OD X .75 ID X .25" HD Flat Washer |
| 26* | 6 | 57-1811 | 2" Washer |
| 27 | 4 | 57-20740 | 1/4" Flat Washer |
| 28 | 6 | 57-20747 | 3/4" Flat Washer |
| 29 | 4 | 57-20794 | 1/2" Fender Washer |
| 30 | 10 | 58-9369 | Straight 1/8" NPT Grease Zerk |
| 31 | 2 | 58-9371 | 45° 1/8" NPT Grease Fitting |
| 32 | 2 | 70-20607 | 3/4" Center Lock Hex Nut |
| 33 | 2 | 70-20610 | 1/4" Nyloc Hex Nut Gr 5 NC |

Note: Refer to Pages 6-8 for the correct hose lengths and hose location.

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

1. Connect the lift hoses to the lift cylinders.
2. Verify that hoses are not twisted and protected from rubbing on any sharp edges. See Pages 6-8 for proper hose routing.
3. Attach the multi-coupler to the top arm mount and install the 45° fittings.
4. Identify each remaining hose at the front of the undercarriage by the colored bands on the end of the hose and connect the hose to the corresponding 45° fitting on the multi-coupler. Refer to Pages 6-8 for proper hose locations.
5. Continue on Page 8 for initial startup instructions.

| | |
|------|----------------------------------|
| HAHT | Hydraulic Angle - Hydraulic Tilt |
| HANT | Hydraulic Angle - No Tilt |
| NAHT | No Angle - Hydraulic Tilt |
| NANT | No Angle - No Tilt |

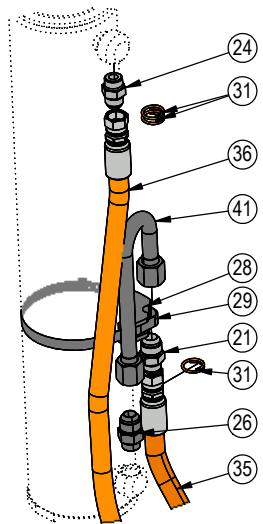
| ITEM NO. | PART NO. | HAHT QTY. | HANT QTY. | NAHT QTY. | NANT QTY. | DESCRIPTION |
|----------|-------------------|-----------|-----------|-----------|-----------|----------------------------------------------|
| 1 | 16-20004 | 1 | 1 | 1 | - | 1/4" X 1" Hex Bolt Gr 5 NC CZ |
| 2 | 16-20005 | 1 | 1 | 1 | - | 1/4" x 1-1/4" Hex Bolt Gr 5 NC |
| 3 | 16-20037 | 1 | 1 | 1 | - | 5/16" x 1-3/4" Hex Bolt Gr 5 NC |
| 4 | 16-20124 | 2 | 2 | 2 | - | 1/2" x 1" Hex Bolt Gr 5 NC |
| 5 | 16-812525 | 2 | 2 | 2 | - | 8mm x 1.25mm x 25mm Metric Hex Bolt Gr 10.9 |
| 6 | 18-19311-03-P-087 | 2 | 1 | 1 | - | Hose Clamp |
| 7 | 18-19312-03 | 1 | 1 | 1 | - | Twin Cover Plate |
| 8 | 18-19313-03 | 1 | - | - | - | Twin Stacking Bolt |
| 9 | 18-19314-02 | 1 | - | - | - | Twin Safety Plate |
| 10 | 18-19995-L | 1 | 1 | 1 | - | Multi-Coupler Mount |
| 11 | 25-19864 | 1 | - | - | - | Multi-Coupling Plate - 4 Port Fixed |
| 12 | 25-19867 | 1 | - | - | - | Multi-Coupling Plate - 4 Port - Cap |
| 13* | 25-19868 | - | 1 | 1 | - | Multi-Coupling Plate - 2 Port - Fixed |
| 14 | 25-19870 | - | - | - | - | Multi-Coupling Plate - Male Coupler |
| 15* | 25-19871 | - | 1 | 1 | - | Multi-Coupling Plate - 2 Port - Cap |
| 16 | 25-34342 | 6 | 4 | 4 | 2 | Tappet Quick Coupler Male - Poppet Style |
| 17 | 25-3453 | 2 | - | 2 | - | Pioneer Dust Cap Tilt (Green) |
| 18 | 25-3455 | 2 | 2 | - | - | Pioneer Dust Cap Angle (Red) |
| 19 | 25-3457 | 2 | 2 | 2 | 2 | Pioneer Dust Cap Lift (Orange) |
| 20 | 25-40407 | - | - | - | - | Multi-Coupling Plate - Snap Ring |
| 21 | 31-11699-10-8 | 2 | 2 | 2 | 2 | JIC Union |
| 22 | 31-15199-8-8 | 4 | 2 | 2 | - | JIC Union Elbow 90° |
| 23 | 31-34030 | 2 | 2 | 2 | 2 | Bulkhead Run Tee JIC |
| 24 | 31-34040 | 2 | 2 | 2 | 2 | Straight JIC x O-Ring |
| 25 | 31-34150 | 4 | 2 | 2 | - | Straight Thread Elbow 45° JIC x O-Ring |
| 26 | 31-6400-10-08 | 2 | 2 | 2 | 2 | Straight JIC x O-Ring |
| 27 | 31-6802-08-10 | 6 | 4 | 4 | 2 | Straight Thread Elbow 45° JIC x O-Ring |
| 28 | 34-12932 | 2 | 2 | 2 | 2 | Cylinder Saddle |
| 29 | 34-12994 | 2 | 2 | 2 | 2 | Hose Clamp |
| 30 | 34-18888-GR | 9 | - | 9 | - | -12 Green - Spiral Band |
| 31 | 34-18888-OR | 15 | 15 | 15 | 15 | -12 Orange - Spiral Band |
| 32 | 34-18888-RD | 9 | 9 | - | - | -12 Red - Spiral Band |
| 33 | 34-41684 | 1 | 1 | 1 | - | Rubber Strap |
| 34 | 35-12633-0410 | 1 | 1 | 1 | 1 | 41" x 1/2" -8 FJIC x -8 FJIC Hose w/ Cordura |
| 35 | 35-12633-0520 | 1 | 1 | 1 | 1 | 52" x 1/2" -8 FJIC x -8 FJIC Hose w/ Cordura |
| 36 | 35-12633-0540 | 1 | 1 | 1 | 1 | 54" x 1/2" -8 FJIC x -8 FJIC Hose w/ Cordura |
| 37 | 35-12633-0680 | 1 | 1 | 1 | 1 | 68" x 1/2" -8 FJIC x -8 FJIC Hose w/ Cordura |

* Parts Not Shown

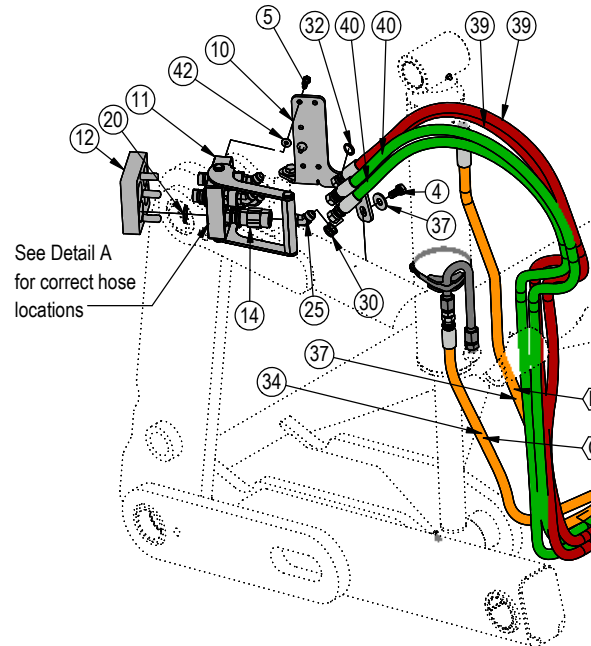
Hoses Not Drawn to Scale

HAHT Shown. See Page 8 for remaining Multi-Coupler Configurations

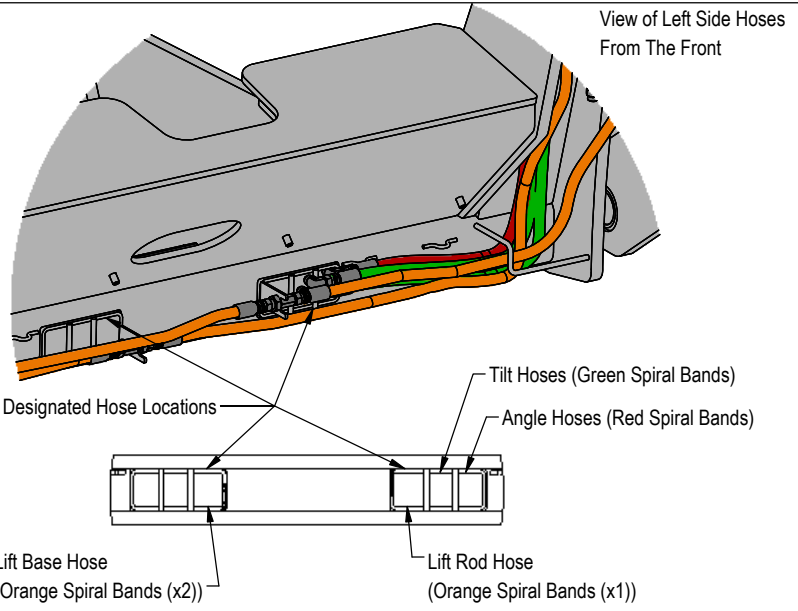
Every hydraulic function from the front to the back of the system is designated by a \odot and a letter and can also be referenced on the Hydraulic Schematics on Page 9.



Detail B

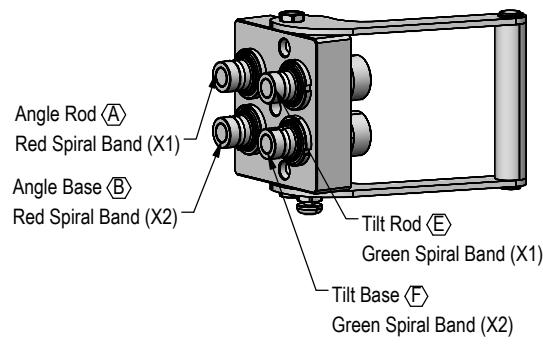


See Detail A for correct hose locations



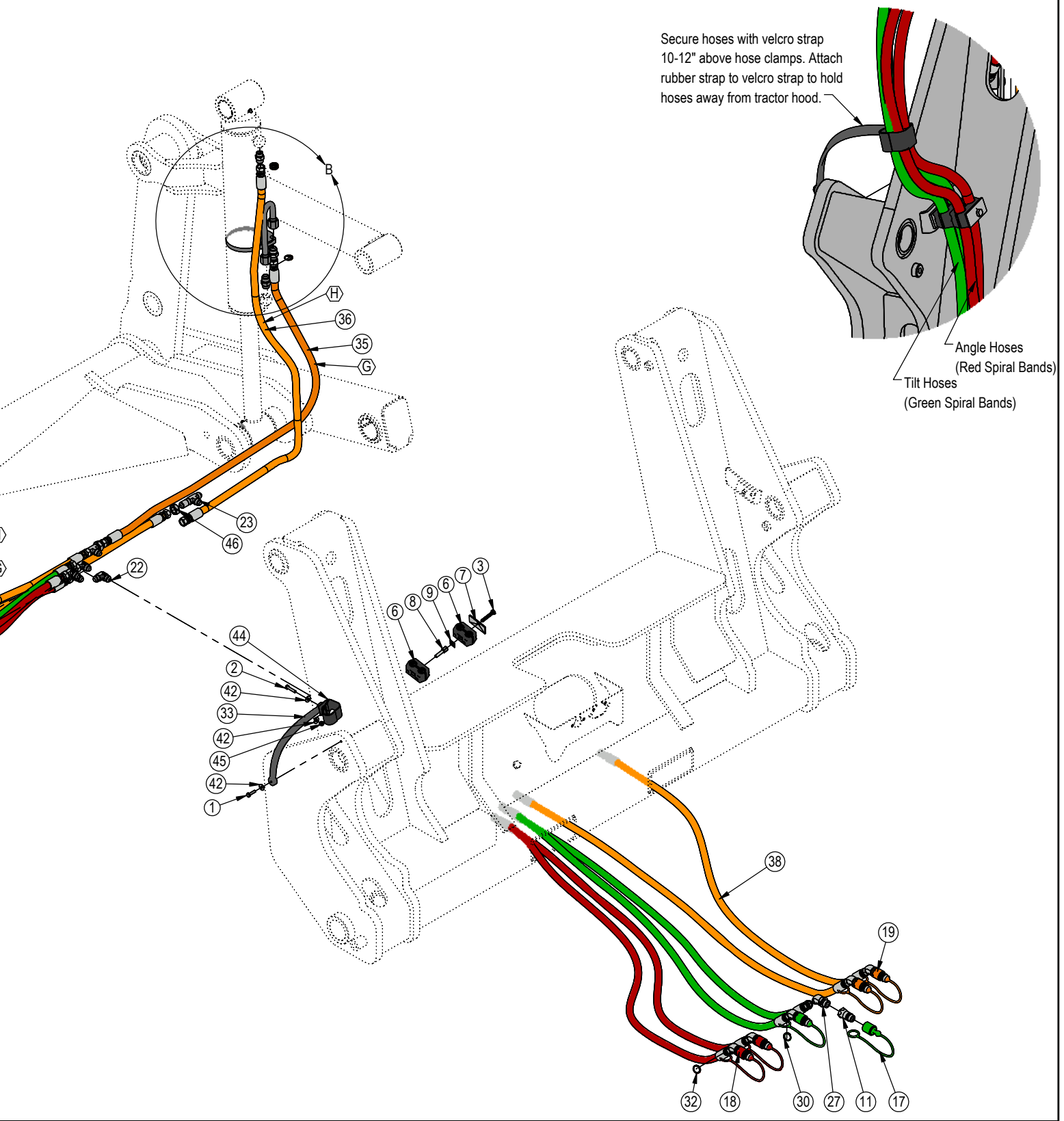
View of Left Side Hoses From The Front

Detail A



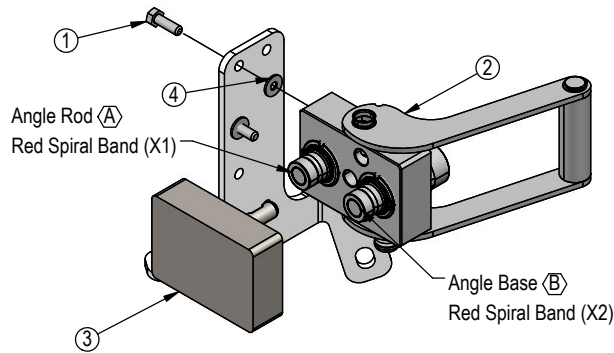
NOTE: All hoses are marked with colored spiral bands and should be attached to designated ports on the Multi-Coupler.

| ITEM NO. | PART NO. | HAHT QTY. | HANT QTY. | NAHT QTY. | NANT QTY. | DESCRIPTION |
|----------|------------|-----------|-----------|-----------|-----------|--------------------------------------------------|
| 38 | 35-30183 | 6 | 4 | 4 | 2 | 293" (24.42") x 1/2" -8JIC/-8JIC Hose w/ Cordura |
| 39 | 35-31137 | 2 | 2 | - | - | 84" x 1/2" -8JIC/-8JIC Hose w/Cordura |
| 40 | 35-31192 | 2 | - | 2 | - | 88" x 1/2" -8JIC/-8JIC Hose w/Cordura |
| 41 | 35-41940 | 2 | 2 | 2 | 2 | Lift Cylinder Steel Line |
| 42 | 57-20740 | 5 | 5 | 5 | - | 1/4" Flat Washer |
| 43 | 57-20744 | 2 | 2 | 2 | - | 1/2" Flat Washer |
| 44 | 59-16899-6 | 1 | 1 | 1 | - | 6" Heavy Duty Velcro Strap (HS406H) |
| 45 | 70-20610 | 1 | 1 | 1 | - | 1/4" Nyloc Hex Nut Gr 5 NC |
| 46 | 70-20807 | 2 | 2 | 2 | 2 | 3/4" Hex Jam Nut NF |

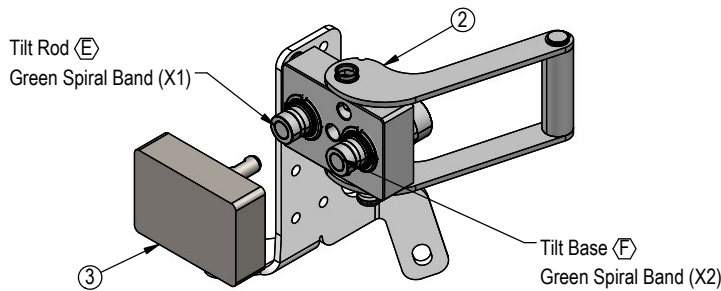


| ITEM NO. | PART NO. | HANT QTY. | NAHT QTY. | DESCRIPTION |
|----------|-----------|-----------|-----------|---------------------------------------------|
| 1 | 16-812525 | 2 | 2 | 8mm x 1.25mm x 25mm Metric Hex Bolt Gr 10.9 |
| 2 | 25-19868 | 1 | 1 | Multi-Coupling Plate - 2 Port - Fixed |
| 3 | 25-19871 | 1 | 1 | Multi-Coupling Plate - 2 Port - Cap |
| 4 | 57-20740 | 2 | 2 | 1/4" Flat Washer |

HANT



NAHT



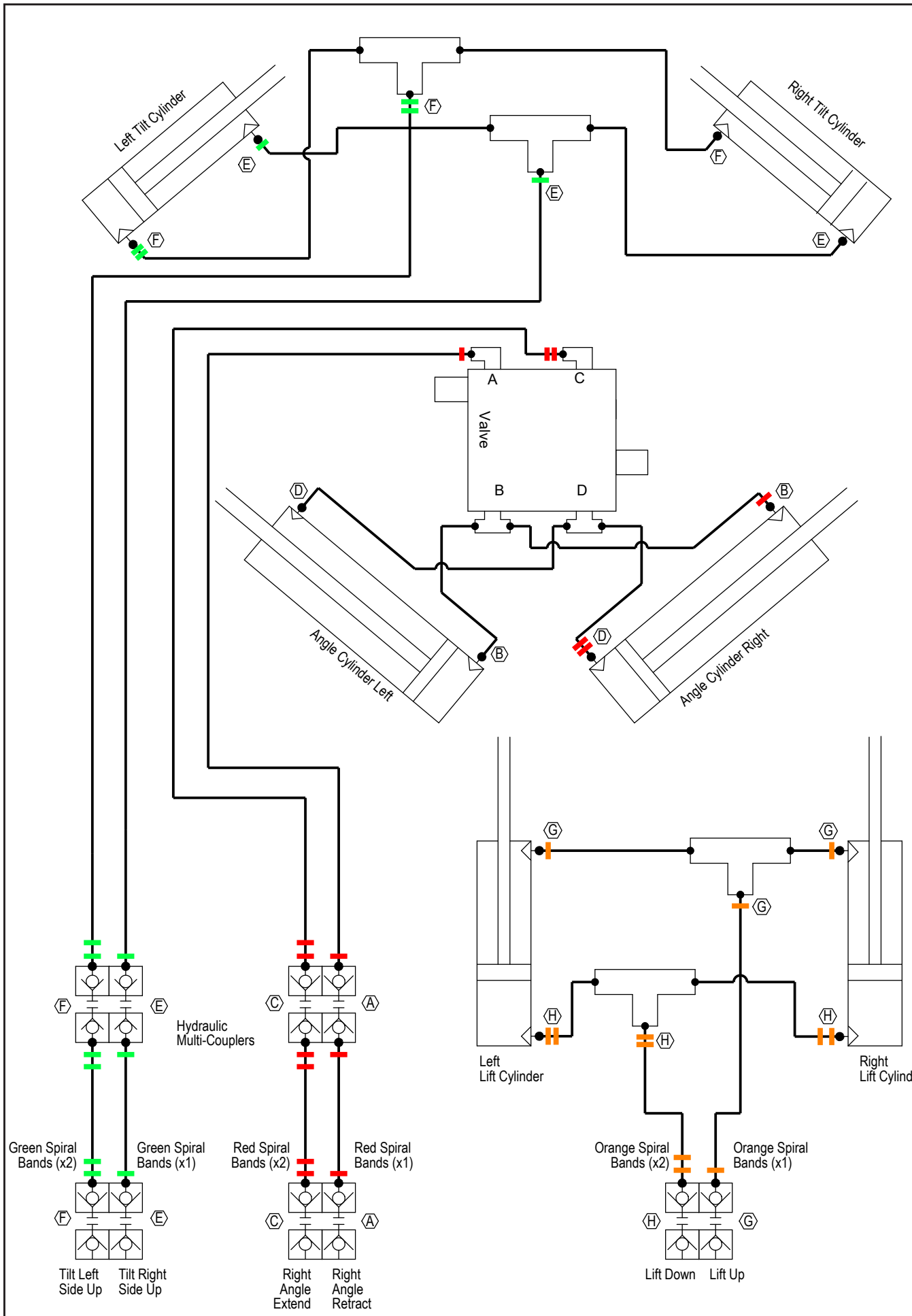
Prior to operating the blade system, all air must be purged from the hydraulic system. Follow the steps below for each function on your blade.

Lift Function:

1. With the lift frame down and blocked, loosen the fittings on both ends of the lift cylinders.
2. Actuate the raise function to supply oil to the rod end of the cylinders.
3. When oil starts to flow from the fittings, stop oil flow, and tighten the fitting on the rod end of the lift cylinders.
4. Continue to flow oil until the system is fully raised and then block the lift frame.
5. Actuate the function in the opposite direction to supply oil to the base end of the lift cylinders.
6. When all air is removed from the lift system, stop oil flow and tighten the fittings on the base end of the lift cylinders.
7. Raise lift system and remove blocks. Cycle up and down 5 more times.
8. Check tractor oil level and fill if necessary.
9. Continue with connecting the blade.

NOTE: Prior to connecting the blade, clean the fixed and mobile multi-couplers (refer to pages 10-11). Contamination causes leaks and contamination is not warrantable.

See Ag Pro Silage Special Owner's Manual and Parts book for initial setup of blade functions. If any function does not operate correctly, refer to corresponding section above and re-bleed. If problem still persists, call Grouser Products.



Tractor Service Valve

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:

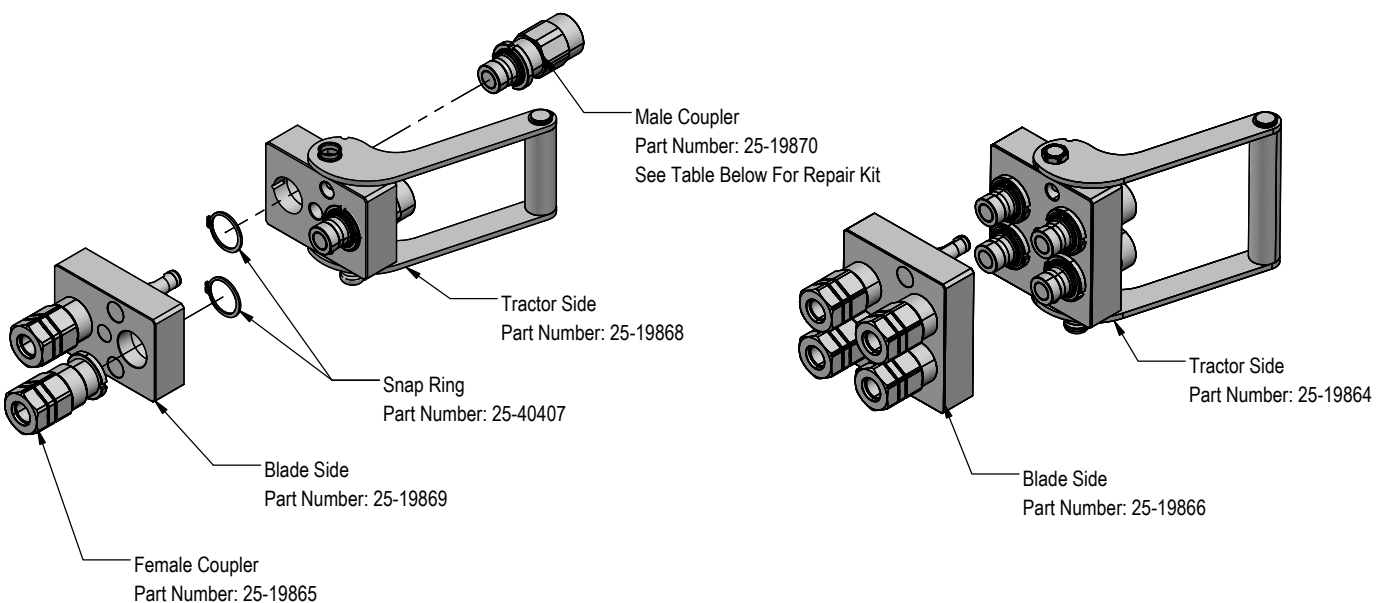
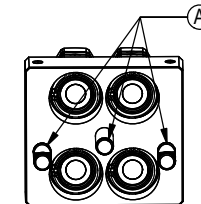
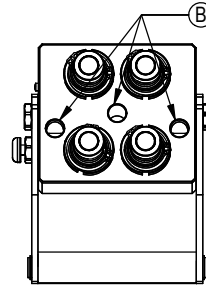
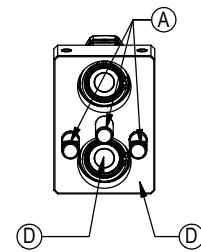
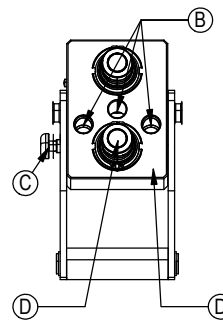
When sand and salt are present, or the plates under go a washdown, a heavy duty silicone spray lubricant should be used to replace grease from the factory. The lubricant should help protect from corrosion without collecting dust and contaminants, and will resist washing off when exposed to water.

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:



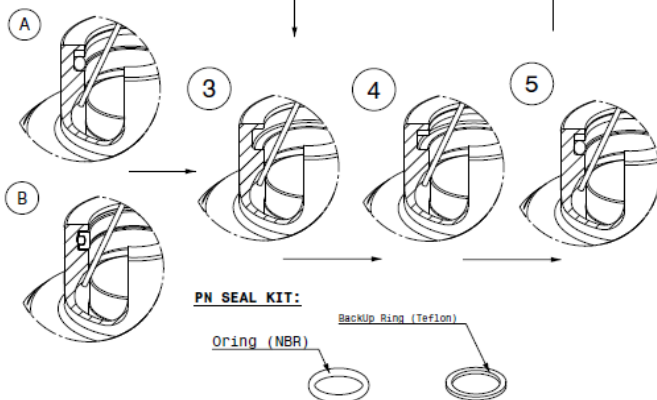
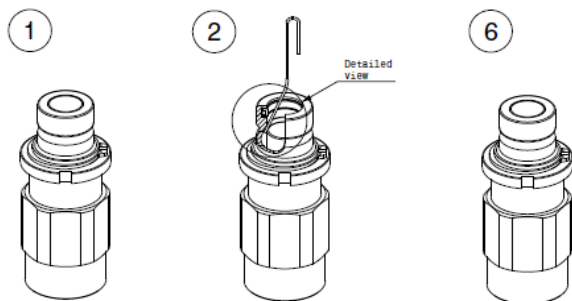
1. Make sure the coupling is securely fastened into the plate or place in a vice.
2. Using a blunt, non-marring tool, depress the valve face until the seal is exposed. Insert a bent metal wire between the valve face and the body of the coupling. Use caution not to damage or scratch the seal when inserting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

MALE FAP - REPAIR KIT INSTRUCTIONS



DISASSEMBLING STEPS (see figures)

1. Place the coupling in a vice.
2. Bend positioning clip as shown. Using a blunt, non marring object, depress valve face until seals are exposed. Insert the positioning clip between valve face and body, captivating the valve face.
3. Using an O-ring pick or similar device, remove the seal from retaining groove. Clean properly the retaining groove with a clean cloth.

Note: Some M FAP are originally assembled with different seal technologies (see figures A and B) but both used O-ring and backUp ring as replacement kit.

ASSEMBLING STEPS (see figures)

4. Insert the backup ring (4) in the seat and even with the use of a non sharpen tool. Place the BackUp ring on the superior shoulder of the seat in order to leave space for the O-ring (see figure 4).
5. Lubricate the O-ring with a fluid compatible with the seals compound. **Warning: using non compatible fluid would compromise the efficiency of the coupling.**
6. Push the piston with a blunt, non marring tool and take the metal clip out. Release the piston.

FUNCTIONING CHECK

Assemble the male coupling with the female in order to check the functioning and check for leaks.

BY REPLACING THE SEALS, YOU REMOVE THE WARRANTY AND BECOME RESPONSIBLE FOR THE SAFETY AND THE EFFICIENCY OF THE COUPLING!

Contact Us

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

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Improvements

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

Warranty

Grouser Products warrants to the original purchaser of each item that the product be free from defects in material and workmanship under normal use and service for a period of two years. If such equipment is found to be defective within two years, it is the obligation of Grouser Products under this warranty to repair or replace (exclusive of the cost of labor and transportation), any equipment or parts, in the judgment of Grouser Products to be defective in material or workmanship.

All equipment or parts claimed to be defective in material or workmanship must be made available for inspection at the place of business of a dealer authorized to handle the equipment covered by this warranty, or, upon request by Grouser Products, shipped to the Grouser Products factory in West Fargo, North Dakota. Grouser Products shall have no obligation to bear the cost of labor or transportation in connection with replacement or repair of any such defective parts in the setup process.

This warranty covers only defects in material and workmanship. It does not cover depreciation or damage caused by normal wear, accident, improper assembly, improper adjustments, improper maintenance including lack of proper lubrication, or improper use. Therefore, Grouser Products liability under this warranty shall not be effective or actionable unless the equipment is assembled, maintained and operated in accordance with the operating instructions accompanying the equipment. Grouser Products shall have no liability if the equipment has been altered or reworked without the written authorization of Grouser Products.

Grouser Products' parts, which are furnished under this warranty and properly installed, shall be warranted to the same extent as the original parts under this warranty if, and only if, such parts are found to be defective within the original warranty period covering the original equipment.

