



John Deere 9R Ag Pro Undercarriage Installation Instructions

For Models:

John Deere 9R: 9R 390, 9R 440, 9R 490, 9R 540, 9R 590, 9R 640

Model Year 2022-Current

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

To The Owner

This manual contains information concerning the installation of the undercarriage. You have purchased dependable, long lasting equipment, but only by proper care and operation can you expect to receive the performance and long service built into our products. Please read this manual carefully and keep the manual available for ready reference. If you have any questions or concerns, contact Grouser Products.

Caution:

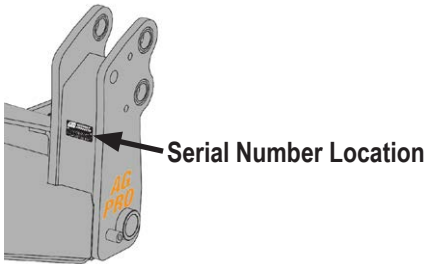
- Always use caution when working around any equipment.
- Always wear safety glasses.
- Follow tractor manufacturer's safety guidelines when installing this product.
- Use paint where necessary to prevent rust.
- Do not modify or permit anyone else to modify or alter the equipment and its components without first consulting Grouser Products.
- Operate within your own capabilities. Recommended operating speed is 3-5 MPH (5-8 km/h).

Note:

- Read all instructions prior to performing installation.
- When installing hardware, only finger tighten until all hardware is in place.
- A full diagram of the assembly with the full list of parts is on pages 8-11.
- Tractor frame not shown in some diagrams for clarity.
- Unstrap and remove any components that are attached for shipping.



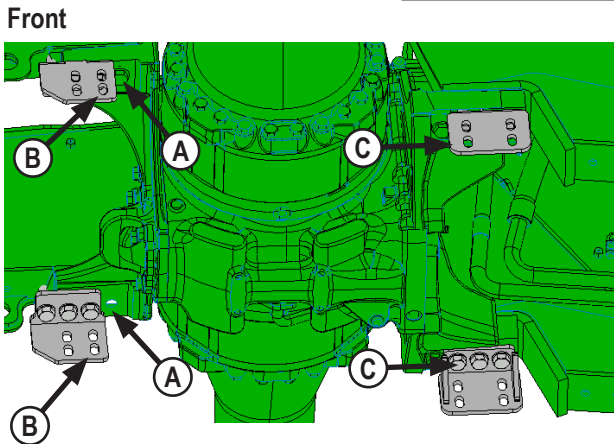
To ensure the safety of those working under and around the machine, apply parking brake, and remove key from ignition before working on the machine.



Pre-Installation

1. If applicable, remove front weights, weight bracket, tow cable, and toolbox from front of tractor.
2. Remove cable holder from behind front axle if applicable. Keep spacer and washer to reinstall later.
3. When preparing tractor for undercarriage installation, verify there is a minimum of 4" between tire and tractor frame.

Double Reduction Axle Installation Only:



NOTE: When removing the front tractor axle frame bolts, always leave the rear bolt in on each side (A).

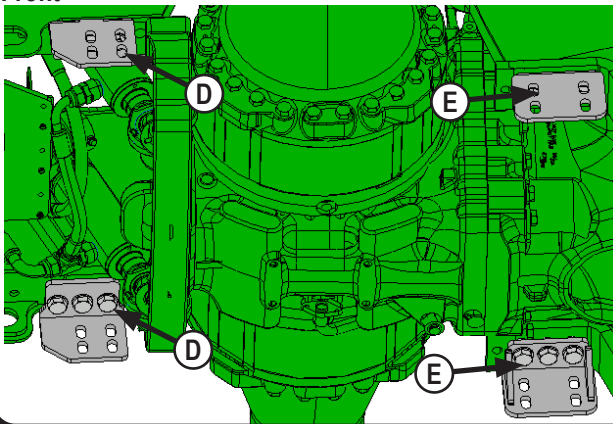
4. Remove front 3 tractor axle frame bolts on each side and loosely attach front brackets to front 3 holes on tractor frame in front of axle with 6 - 24mm x 100mm bolts and 6 - 7/8" hardened washers (B). Note orientation of brackets.

NOTE: When removing the rear tractor axle frame bolts, always leave the front bolt in on each side.

5. Remove rear 3 tractor axle frame bolts on each side and loosely attach rear brackets to rear 3 holes on tractor frame behind axle with 6 - 24mm x 100mm bolts and 6 - 7/8" hardened washers (C).
6. Push brackets towards center of tractor to make room for installing undercarriage.
7. Continue installation with Step #12.

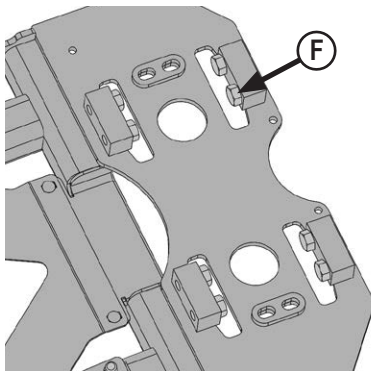
Double Reduction Axle with HydraCushion™ Suspension Installation Only:

Front

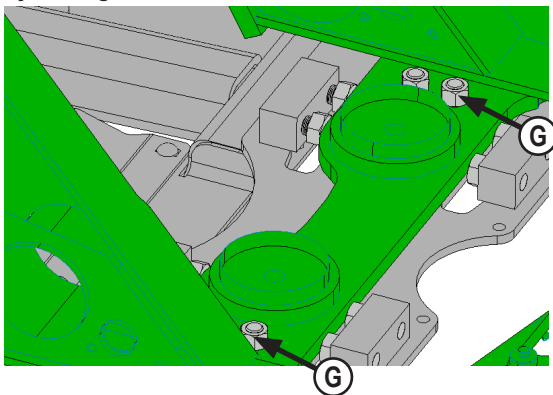


- Loosely attach front brackets to front 3 holes on tractor frame in front of axle with 6 - 24mm x 50mm bolts and 6 - 7/8" hardened washers (D). Note orientation of the brackets.
- Loosely attach each of rear brackets to rear 3 holes on tractor frame behind axle with 6 - 24mm x 50mm bolts and 6 - 7/8" hardened washers (E).
- Push brackets towards center of tractor to make room for installing undercarriage.
- Continue installation with Step #12.

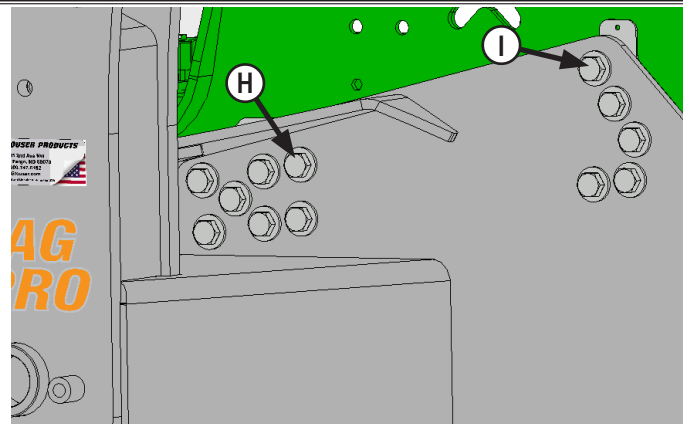
Undercarriage Installation



- Completely thread 8 - 1" x 2" adjustment bolts (F) at rear of undercarriage with heads facing towards each other. The bolts will be adjusted after undercarriage is installed.
 - Position undercarriage under tractor and center on frame of tractor. Lift undercarriage until holes of undercarriage line up with holes in side of tractor frame.
- NOTE:** When lifting undercarriage, watch for any potential pinching of hoses or any other components to prevent any damage.

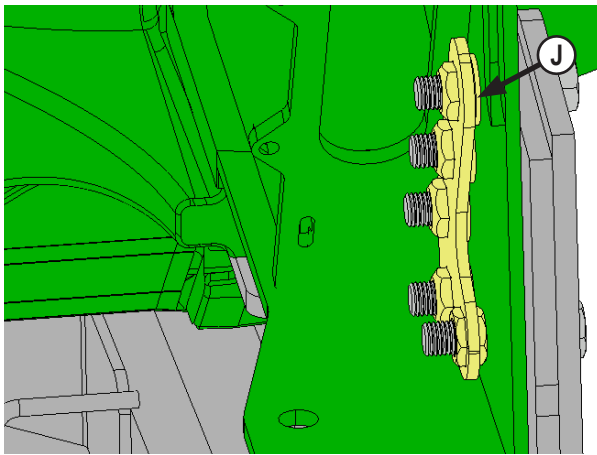


- Attach rear of undercarriage vertically to cross member on tractor frame behind front axle with 4 - 7/8" x 3" bolts, 8 - 7/8" hardened flat washers, and 4 - 7/8" nuts (G).



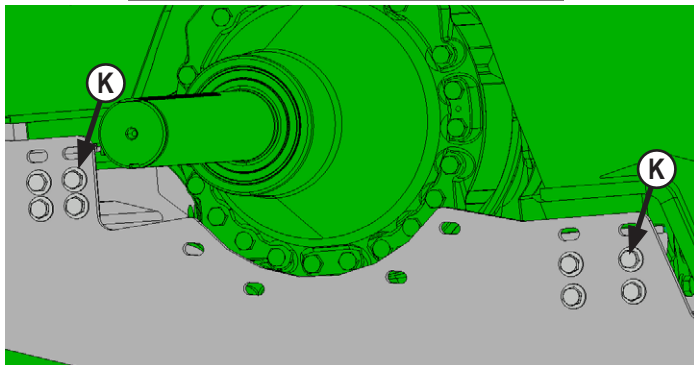
NOTE: Add shims between undercarriage and tractor frame to reduce any gap if necessary. Do Not put all of shims on one side of undercarriage. See attached diagrams on Pages 8-11 for the proper location and orientation of each shim. Follow Steps #15-18 for left side. After Step #18, tighten bolts until they are snug. If necessary, add more shims on right side until a gap of 1/16" or less is on right side. Proceed with Step #15-18 for the right side.

- Install 7 - 3/4" x 3-1/2" bolts and 7 - 3/4" hardened HD flat washers (H) through front holes on each side of undercarriage, shims, and tractor frame.
- Thread each bolt into front threaded plate. See full assembly diagrams on Pages 8-11 for correct orientation of plate. The side with the notch should be towards the front.
- Install 5 - 3/4" x 3" bolts and 5 - 3/4" hardened HD flat washers (I) through slots on each side of undercarriage, shims, and tractor frame.



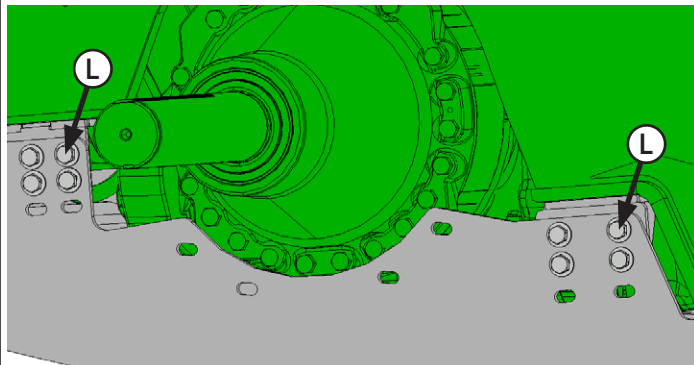
18. Thread a 3/4" flange nut on top 4 bolts from Step #17. Attach nut plate to bottom bolt and line up top hex nuts to fit in nut plate (J). Note orientation of flange nuts.

Double Reduction Installation Only:



19. Attach front and rear brackets to inside of undercarriage with 16 - 3/4" x 2-1/4" bolts, 32 - 3/4" hardened HD flat washers, and 16 - 3/4" nuts (K). Continue with Step #21.

Double Reduction Axle with HydraCushion™ Suspension Installation Only:

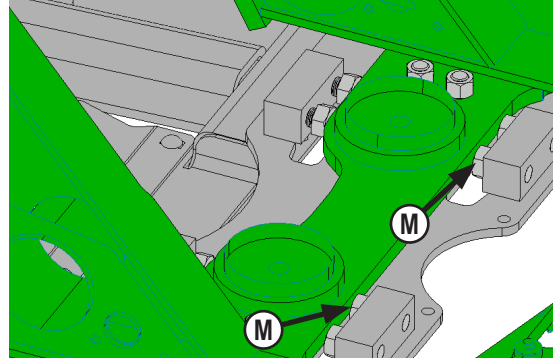


20. Attach front and rear brackets to inside of undercarriage with 16 - 3/4" x 2-1/4" bolts, 32 - 3/4" hardened HD flat washers, and 16 - 3/4" nuts (L). Continue with Step #21.

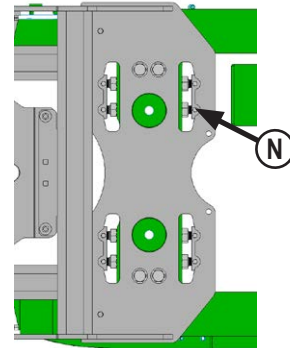
21. Torque rear vertical 7/8" bolts (G) to 600 ft-lbs.
 22. Torque front 24 - 3/4" bolts (H & I) 380 ft-lbs.
 23. Torque all 3/4" bolts (K & L) attaching the brackets to undercarriage to 380 ft-lbs. Alternate between the groups of bolts when torquing. For example, torque the front left bracket bolts, the rear right bracket bolts, rear left bracket bolts, front right bracket bolts.

24. Torque vertical 24mm bolts (B - E) to 909 ft-lbs.

NOTE: If available, John Deere service tool JDG650 (shown below) can be used to torque the vertical 24mm bolts.

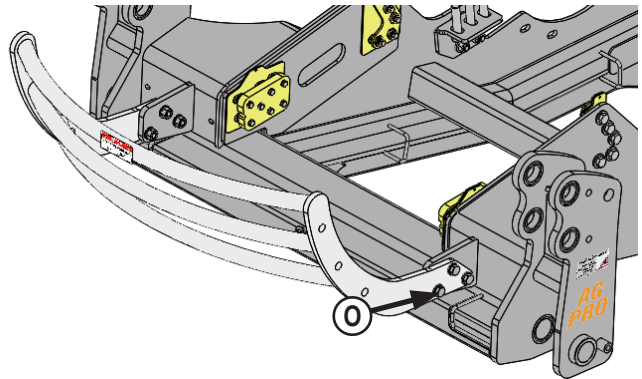


25. Unscrew 1" x 2" bolts (M) at rear of undercarriage until they are tight against tractor frame. Torque 1" bolts to 200 ft-lbs.



NOTE: View is from underneath tractor and undercarriage.

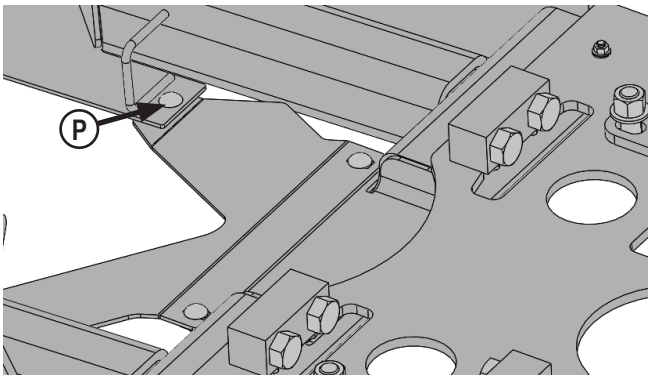
26. Install 2 - 5/16" x 3/4" bolts (N) into blocks at rear of undercarriage to lock each 1" x 2" bolt in place. Torque 5/16" bolts to 19 ft-lbs.



27. Install grill guard to front of undercarriage with 3 - 3/4" x 2-1/2" bolts, 6 - 3/4" flat washers and 3 - 3/4" nuts on each side (O).

28. Torque the 3/4" bolts (O) to 257 ft-lbs.

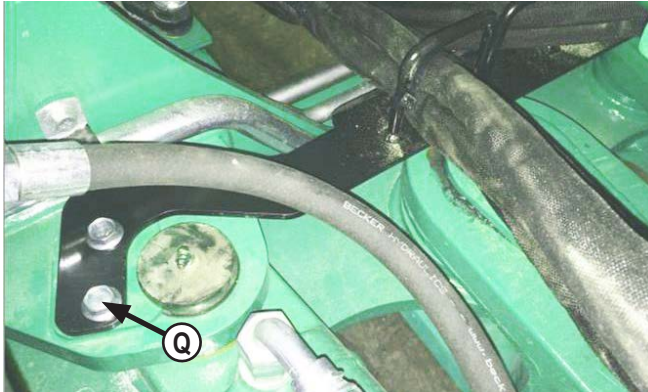
NOTE: If applicable, refer to Page 7 to reinstall tow cable.



29. Install hose guard plate to rear of undercarriage with 4 - 1/2" x 1" carriage bolts, 4 - 1/2" washers and 4 - 1/2" nuts (P). Install bolts from top. Torque 1/2" nuts to 78 ft-lbs.

NOTE: To perform John Deere's 9R Upper Retainer Improvement (PIP #19RW830), remove the hose guard plate from Step #29. After the PIP is complete, reinstall the hose guard plate.

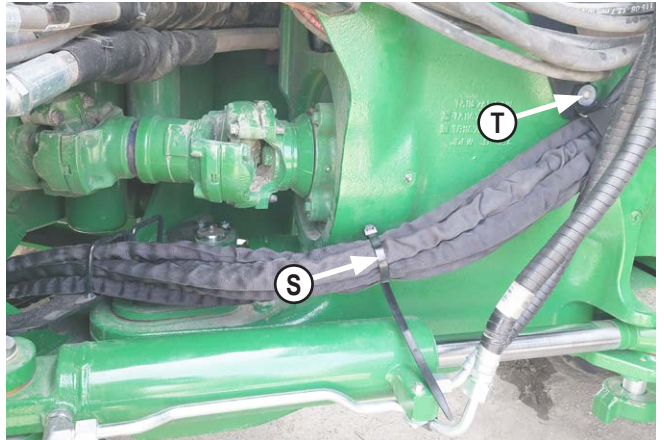
Hose Routing



1. At pivot area of tractor, remove bolts from top plate that hold the cylinder pins and install hose routing bracket along with original plate and new 12mm flange bolts. Torque 12mm bolts to 105 ft-lbs (Q).
2. Route hoses through hose loops on undercarriage until you reach end of undercarriage as shown in Step #3.



3. Route hoses toward center and attach to undercarriage with a heavy zip tie (R).
4. Route hoses up through hose loops on bracket that was installed in Step #1 above.



5. Route hoses upward through tractor. Staying away from the driveshaft. Group hoses together with zip ties (S). Remove bottom bolt from guard and bolt on velcro strap with a fender washer and original bolt. Secure hoses with strap (T).



6. Route hoses through open cavity of back section of tractor. Secure hoses with zip ties where necessary to avoid rubbing and pinch areas. Plug hoses into open SCV's at back of tractor.



7. Secure hoses with a velcro strap (**U**) above rear axle with original hardware.

NOTE: If unable to bolt velcro strap is location shown, secure hoses in a different location that secures hoses from rubbing on any sharp edges.

8. Turn and articulate tractor in both directions to verify hoses have enough slack and are not being pinched around pivot area. Adjust velcro strap if necessary.

NOTE: The quantity of hoses may vary depending on blade system.

Special Note:

John Deere 9R tractors (non scraper versions) can experience a condition that will cause a cavitation or squealing in the hydraulic pump. The symptoms could be a chatter when operator raises their blade, the blade wanting to ride up the pile, or a delay in lift.

If you experience these conditions, please refer to John Deere Accumulator Kit BRE10185.

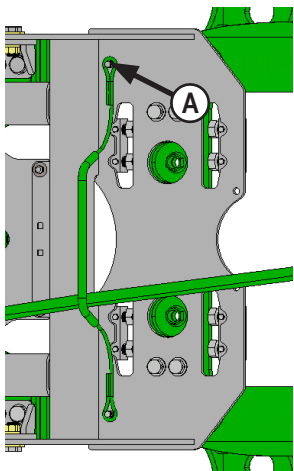
Assembling Lift Components

Refer to the Blade Owner's Manual & Parts Book for instructions on how to assemble the lift components.

Maintenance

1. After first 8 hours of use, re-torque all bolts.
2. Check all fasteners regularly to ensure proper operation of equipment.
3. Inspect all equipment for existing or potential damages every 10 hours or less.

Tow Cable Support Bracket Assembly

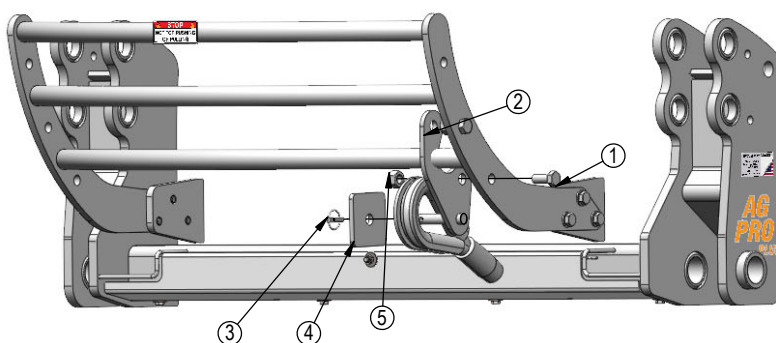


NOTE: Kit (PN: 41788-A) is required if tractor has a tow cable.

1. Reinstall cable holder with original spacers and washers and use new 2 - 3/8" x 1-3/4" bolts, 2 - 3/8" washers and 2 - 3/8" flange nuts at rear of undercarriage (A). Torque bolts to 47 ft-lbs.

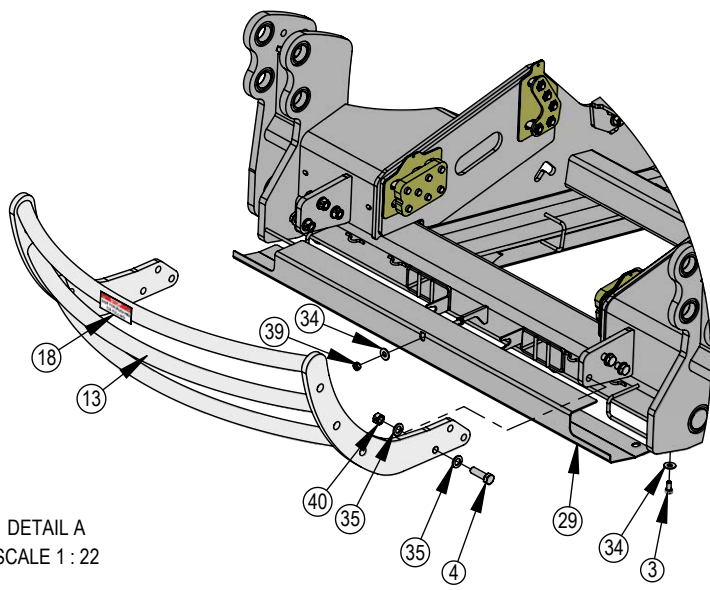
NOTE: Original spacers and washers are not shown in picture.

2. Attach tow cable bracket and tow cable as shown below. Torque 7/8" bolts to 600 ft-lbs.



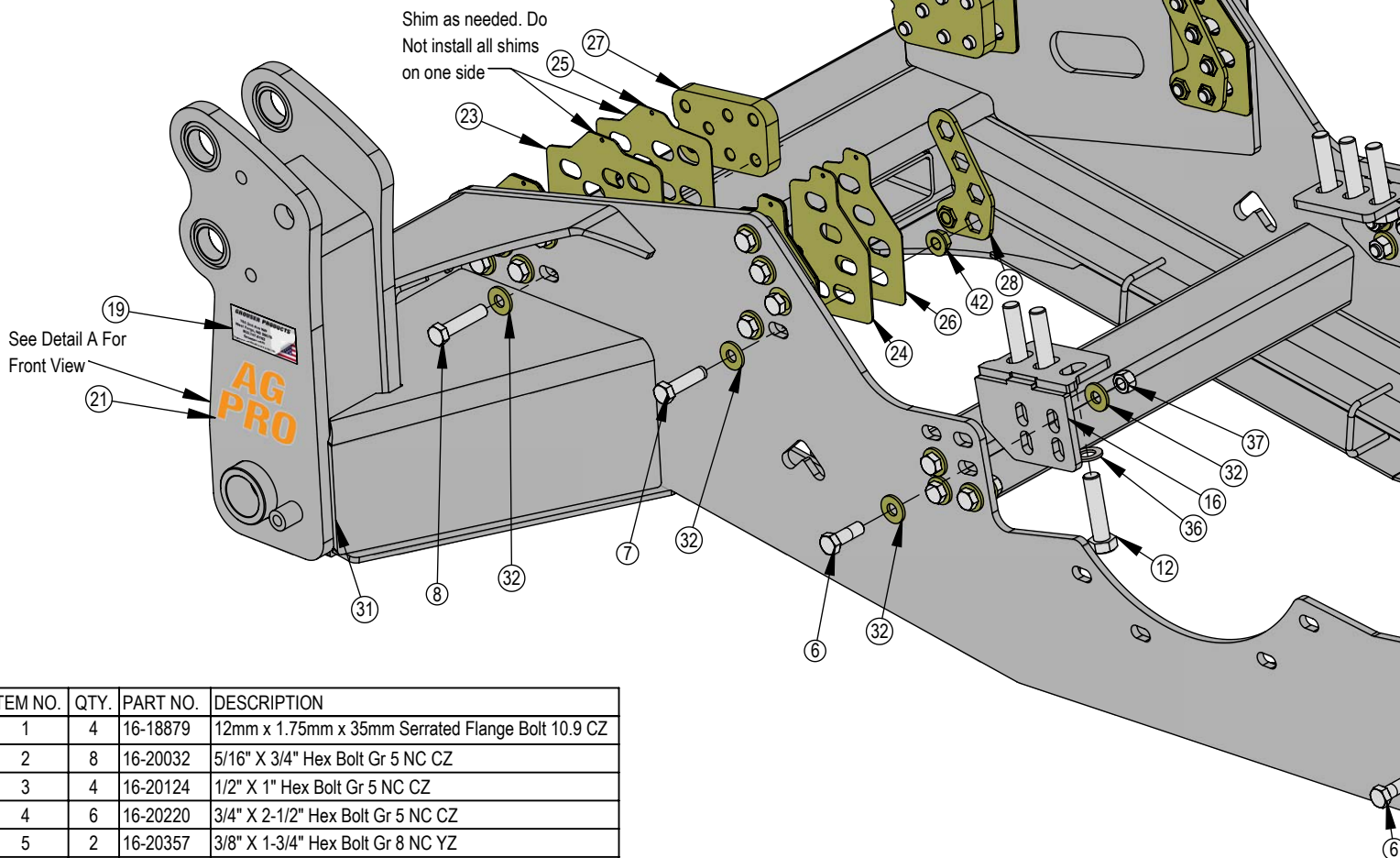
Tow Cable Support Bracket Assy - 18-41788-A

| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|----------|----------------------------|
| 1 | 2 | 16-20538 | 7/8" x 2" Hex Bolt Gr 8 NC |
| 2 | 1 | 18-41788 | Tow Cable Bracket |
| 3 | 1 | 43-16764 | 7/16" x 1-3/4" Lynch Pin |
| 4 | 1 | 44-15585 | Plate |
| 5 | 2 | 70-20598 | 7/8" Hex Nut Gr 8 NC |



DETAIL A
SCALE 1 : 22

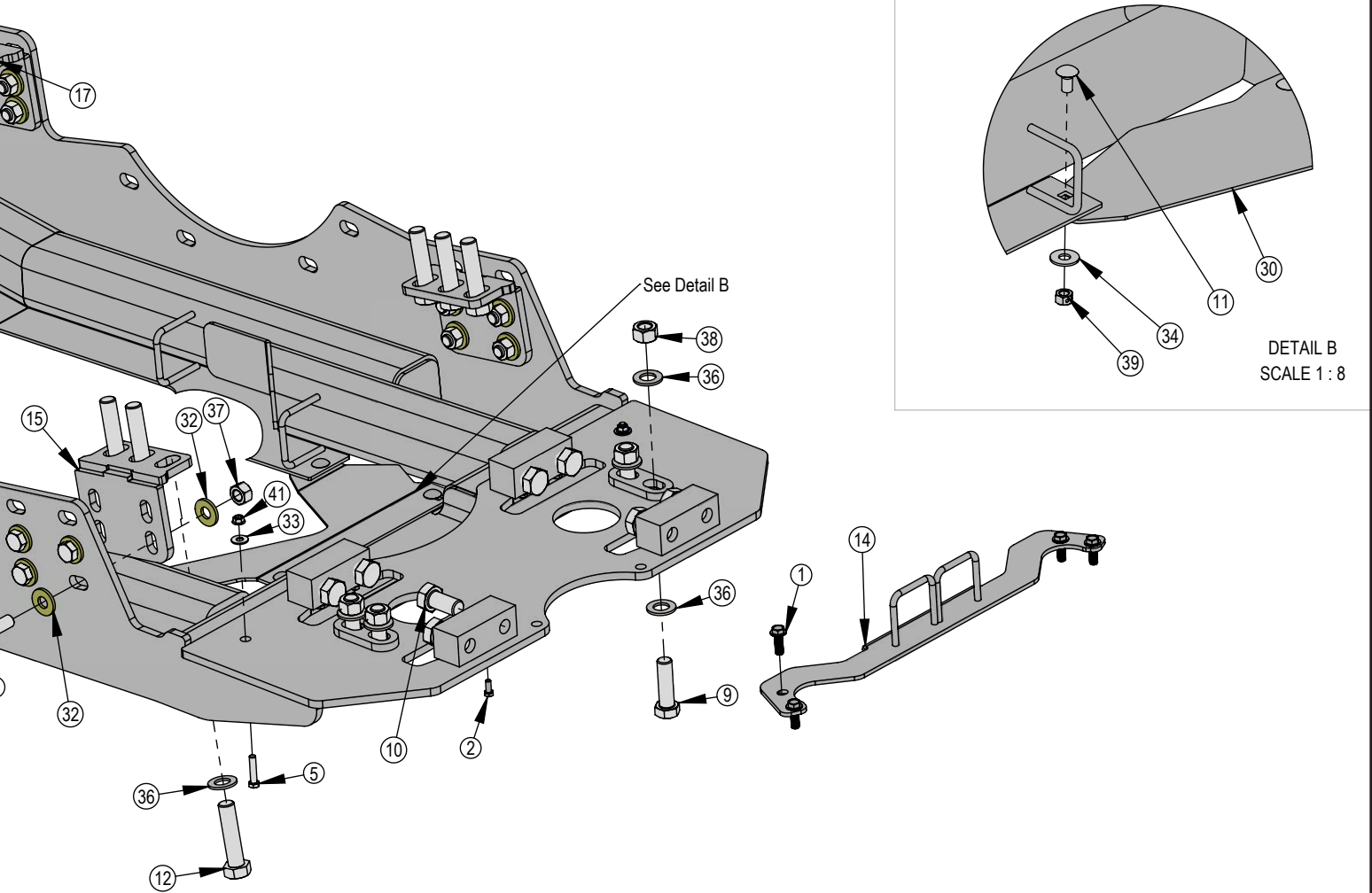
Shim as needed. Do
Not install all shims
on one side



| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|------------|---------------------------------------------------|
| 1 | 4 | 16-18879 | 12mm x 1.75mm x 35mm Serrated Flange Bolt 10.9 CZ |
| 2 | 8 | 16-20032 | 5/16" X 3/4" Hex Bolt Gr 5 NC CZ |
| 3 | 4 | 16-20124 | 1/2" X 1" Hex Bolt Gr 5 NC CZ |
| 4 | 6 | 16-20220 | 3/4" X 2-1/2" Hex Bolt Gr 5 NC CZ |
| 5 | 2 | 16-20357 | 3/8" X 1-3/4" Hex Bolt Gr 8 NC YZ |
| 6 | 16 | 16-20509 | 3/4" X 2-1/4" Hex Bolt Gr 8 NC YZ |
| 7 | 10 | 16-20512 | 3/4" X 3" Hex Bolt Gr 8 NC YZ |
| 8 | 14 | 16-20514 | 3/4" X 3-1/2" Hex Bolt Gr 8 NC YZ |
| 9 | 4 | 16-20542 | 7/8" X 3" Hex Bolt Gr 8 NC YZ |
| 10 | 8 | 16-20558 | 1" X 2" Hex Bolt Gr 8 NC YZ |
| 11 | 4 | 16-21124 | 1/2" x 1" Carriage Bolt Gr 5 NC CZ |
| 12 | 12 | 16-2486 | 24mm x 3.0mm x 100mm Hex Bolt Gr 10.9 |
| 13 | 1 | 18-18059 | Grill Guard Weld |
| 14 | 1 | 18-18415 | Bracket |
| 15 | 2 | 18-43508 | Rear Bracket Weld |
| 16 | 1 | 18-43305-L | Front Bracket, Left |
| 17 | 1 | 18-43305-R | Front Bracket, Right |
| 18 | 1 | 27-18882 | Not For Pushing or Pulling Decal |
| 19 | 1 | 27-18887 | Grouser Name Plate Decal |

uction Axle

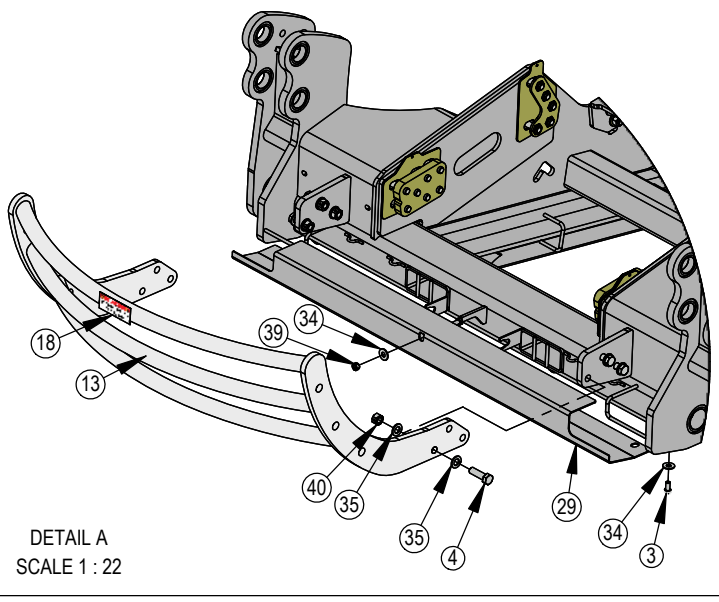
| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|----------|--------------------------------------------|
| 20 | 1 | 27-40962 | Warning Prop 65 Decal |
| 21 | 2 | 27-40983 | Ag Pro Decal |
| 22 | 1 | NA | Grouser Dozer Metal Serial Tag |
| 23 | 3 | 44-18141 | Shim, Front 1/8" |
| 24 | 3 | 44-18142 | Shim, Rear 1/8" |
| 25 | 3 | 44-18143 | Shim, Front 1/16" |
| 26 | 3 | 44-18144 | Shim, Rear 1/16" |
| 27 | 2 | 44-18147 | Plate, Front Nut |
| 28 | 2 | 44-18245 | Rear Nut Plate Weldment |
| 29 | 1 | 44-40504 | Plate, Cover |
| 30 | 1 | 44-41875 | Plate, Hose Guard |
| 31 | 1 | 54-44030 | Undercarriage Weld |
| 32 | 56 | 57-19088 | 3/4" x 1.68" x .18" HD Washer YZ |
| 33 | 2 | 57-20742 | 3/8" Flat Washer CZ |
| 34 | 9 | 57-20744 | 1/2" Flat Washer CZ |
| 35 | 12 | 57-20757 | 3/4" SAE Hardened Flat Washer - 1-1/2" OD |
| 36 | 20 | 57-20758 | 7/8" SAE Hardened Flat Washer - 1-3/4" OD |
| 37 | 16 | 70-20597 | 3/4" Hex Nut Gr 8 NC CZ |
| 38 | 4 | 70-20598 | 7/8" Hex Nut Gr 8 NC CZ |
| 39 | 5 | 70-20604 | 1/2" Hex Center Lock Nut Gr 5 NC CZ |
| 40 | 6 | 70-20607 | 3/4" Hex Center Lock Nut Gr 5 NC CZ |
| 41 | 2 | 70-20622 | 3/8" Flange Hex Nut Gr 5 NC CZ |
| 42 | 8 | 70-20627 | 3/4" Flange Hex Top Locking Nut Gr 5 NC YZ |



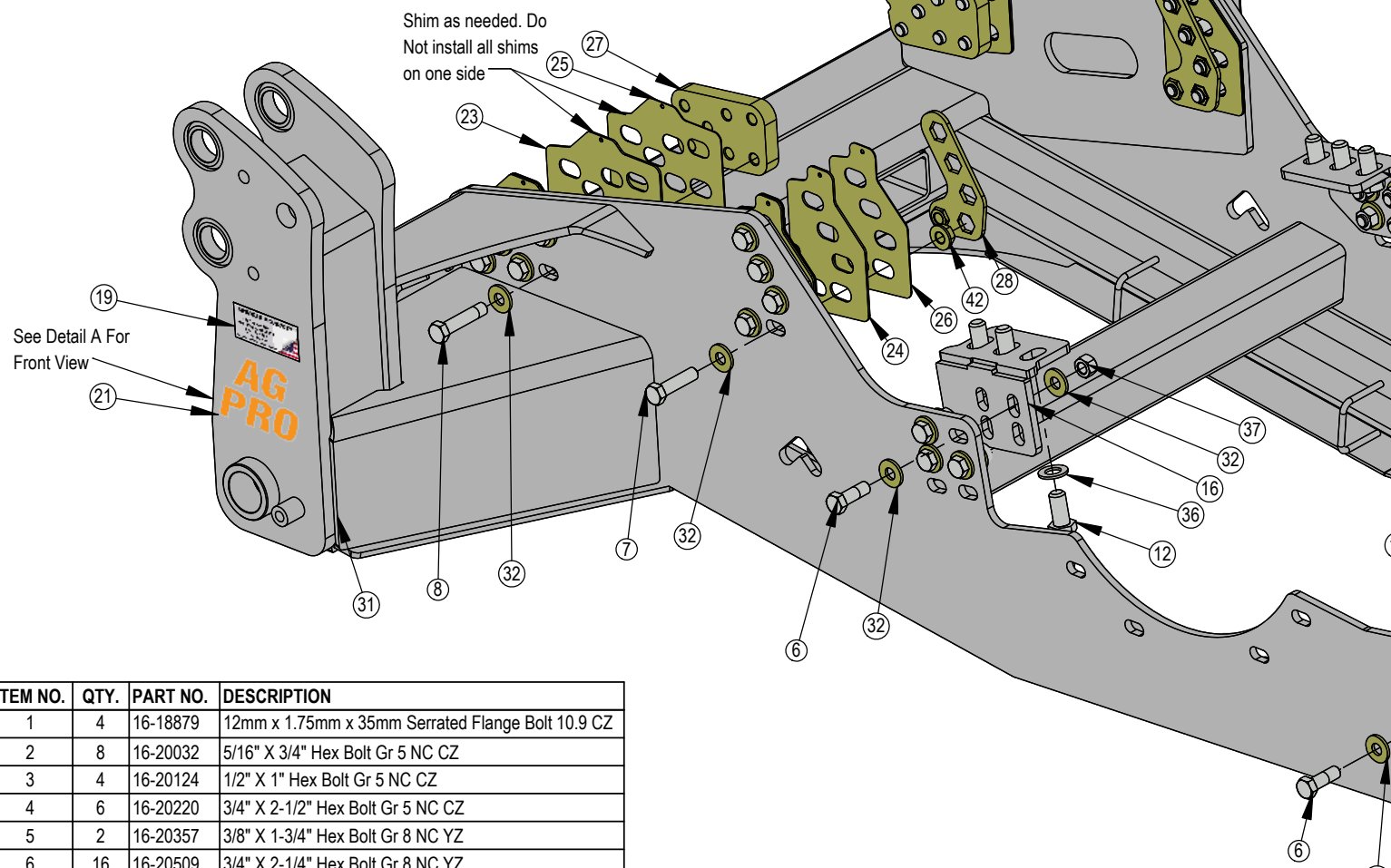
| ITEM NO | QTY. | PART NO. | DESCRIPTION |
|---------|------|------------|----------------------------|
| 43* | 2 | 59-16899-8 | 8" Heavy Duty Velcro Strap |
| 44* | 1 | 57-20791 | 5/16" Fender Washer |

* Part not shown
 DWG. NO.: 44035-A

Double Rear with HydraCushion



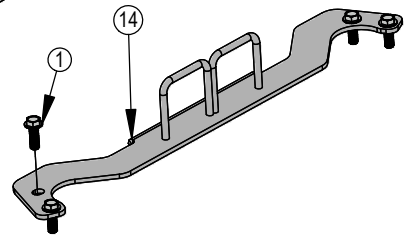
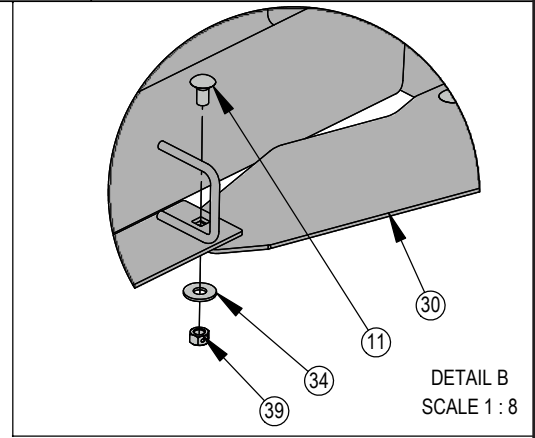
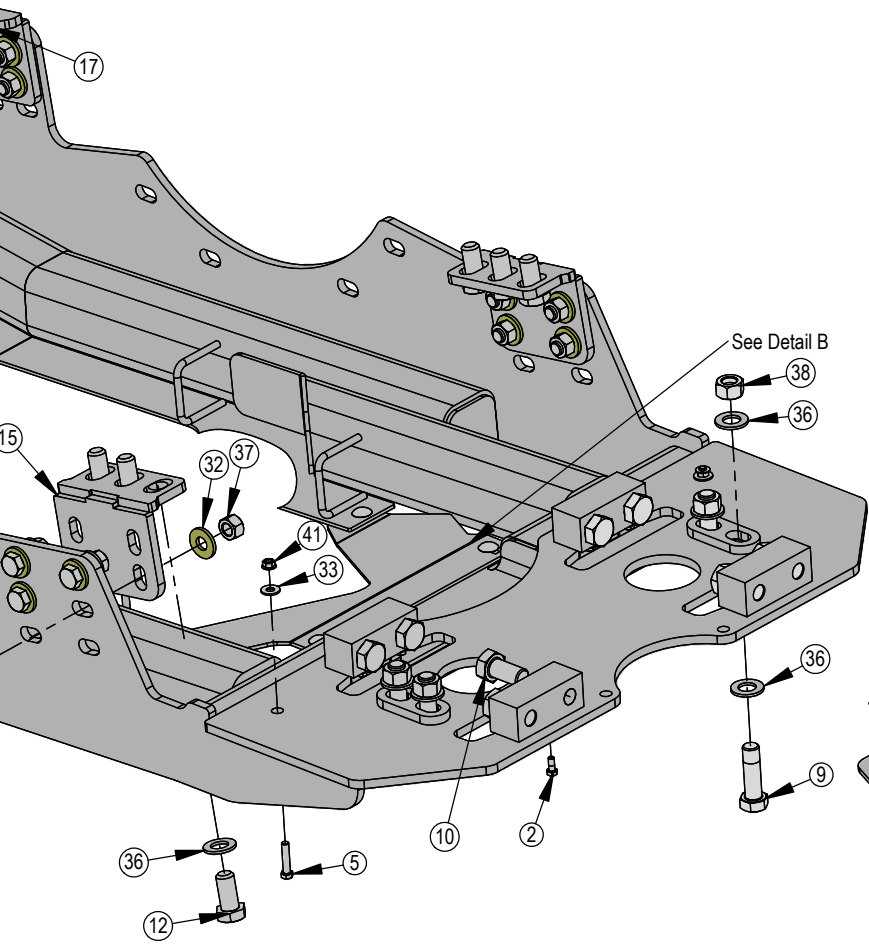
DETAIL A
SCALE 1 : 22



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| 2 | 8 | 16-20032 | 5/16" X 3/4" Hex Bolt Gr 5 NC CZ |
| 3 | 4 | 16-20124 | 1/2" X 1" Hex Bolt Gr 5 NC CZ |
| 4 | 6 | 16-20220 | 3/4" X 2-1/2" Hex Bolt Gr 5 NC CZ |
| 5 | 2 | 16-20357 | 3/8" X 1-3/4" Hex Bolt Gr 8 NC YZ |
| 6 | 16 | 16-20509 | 3/4" X 2-1/4" Hex Bolt Gr 8 NC YZ |
| 7 | 10 | 16-20512 | 3/4" X 3" Hex Bolt Gr 8 NC YZ |
| 8 | 14 | 16-20514 | 3/4" X 3-1/2" Hex Bolt Gr 8 NC YZ |
| 9 | 4 | 16-20542 | 7/8" X 3" Hex Bolt Gr 8 NC YZ |
| 10 | 8 | 16-20558 | 1" X 2" Hex Bolt Gr 8 NC YZ |
| 11 | 4 | 16-21124 | 1/2" x 1" Carriage Bolt Gr 5 NC CZ |
| 12 | 12 | 16-2492 | 24mm x 3.0mm x 50mm Hex Bolt Gr 10.9 |
| 13 | 1 | 18-18059 | Grill Guard Weld |
| 14 | 1 | 18-18415 | Bracket |
| 15 | 2 | 18-43508 | Rear Bracket Weld |
| 16 | 1 | 18-43305-L | Front Bracket, Left |
| 17 | 1 | 18-43305-R | Front Bracket, Right |
| 18 | 1 | 27-18882 | Not For Pushing or Pulling Decal |
| 19 | 1 | 27-18887 | Grouser Name Plate Decal |

uction Axle on™ Suspension

| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|----------|--------------------------------------------|
| 20 | 1 | 27-40962 | Warning Prop 65 Decal |
| 21 | 2 | 27-40983 | Ag Pro Decal |
| 22 | 1 | NA | Grouser Dozer Metal Serial Tag |
| 23 | 3 | 44-18141 | Shim, Front 1/8" |
| 24 | 3 | 44-18142 | Shim, Rear 1/8" |
| 25 | 3 | 44-18143 | Shim, Front 1/16" |
| 26 | 3 | 44-18144 | Shim, Rear 1/16" |
| 27 | 2 | 44-18147 | Plate, Front Nut |
| 28 | 2 | 44-18245 | Rear Nut Plate Weldment |
| 29 | 1 | 44-40504 | Plate, Cover |
| 30 | 1 | 44-41875 | Plate, Hose Guard |
| 31 | 1 | 54-44030 | Undercarriage Weld |
| 32 | 56 | 57-19088 | 3/4" x 1.68" x .18" HD Washer YZ |
| 33 | 2 | 57-20742 | 3/8" Flat Washer CZ |
| 34 | 9 | 57-20744 | 1/2" Flat Washer CZ |
| 35 | 12 | 57-20757 | 3/4" SAE Hardened Flat Washer - 1-1/2" OD |
| 36 | 20 | 57-20758 | 7/8" SAE Hardened Flat Washer - 1-3/4" OD |
| 37 | 16 | 70-20597 | 3/4" Hex Nut Gr 8 NC CZ |
| 38 | 4 | 70-20598 | 7/8" Hex Nut Gr 8 NC CZ |
| 39 | 5 | 70-20604 | 1/2" Hex Center Lock Nut Gr 5 NC CZ |
| 40 | 6 | 70-20607 | 3/4" Hex Center Lock Nut Gr 5 NC CZ |
| 41 | 2 | 70-20622 | 3/8" Flange Hex Nut Gr 5 NC CZ |
| 42 | 8 | 70-20627 | 3/4" Flange Hex Top Locking Nut Gr 5 NC YZ |



| ITEM NO | QTY. | PART NO. | DESCRIPTION |
|---------|------|------------|----------------------------|
| 43* | 2 | 59-16899-8 | 8" Heavy Duty Velcro Strap |
| 44* | 1 | 57-20791 | 5/16" Fender Washer |

* Part not shown
DWG. NO.: 44040-A

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 (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

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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www.grouser.com