

NH TG/T8000 Supersteer Frame Mount

FH-400 Front 3-Point Hitch & Undercarriage Owner's Manual, Installation Instructions, & Parts Book

Purchase Date		
Serial Number		
Model Number		
Fractor Model		
Dealer		

PN: 63-11957-INS

Date 8-26-2010

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To The Owner

This manual contains information concerning the operation, adjustment, and maintenance of the FH-400 Front 3-Point Hitch. 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 have all operators read this manual carefully and keep the manual available for ready reference. If you have any questions or concerns, contact Grouser Products.

Maintenance

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

- Inspect equipment before operation for existing or potential damages.
- Lubricate all joints with high quality grease.
- Inspect and tighten all bolts to torque specifications on page 2.
- · Make sure all non-rotating pins are secured properly.
- Check hydraulic cylinders and hoses for damage or leaks.

Torque Specifications

All bolts should be tightened to specifications set by the manufacturer or previously stated amounts. If neither of these can be found the following torque chart should be used.

	Torque (ft–lbs)		
Size	Grade 8.8	Grade 10.9	
M18 x 2.50	202	284	
M20 x 2.50	286	401	
M22 x 2.50	388	547	
M24 x 3.00	493	694	

		Torque (ft–lbs)				
		SAE Grade 5		SAE G	irade 8	
	Size	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	
ĺ	1	640	720	910	1020	

Safety Precautions

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 to these precautions, please follow all safety and operational instructions of your tractor manufacturer.

The FH-400 Front 3-Point Hitch:

- 1. The FH-400 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 front hitch 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 or a Grouser dealer.

Servicing the FH-400 Front 3-Point Hitch:

- 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 FH-400 Front 3-Point Hitch:

- 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.

Tractor Preparation

- 1. Tires need to be moved to the outmost position by having the rim offset to furthest out position.
- 2. Angle stops need to be adjusted to 20°.
- 3. Some fender and axle configurations may not give adequate clearance. Check tractor specifications and make any proper adjustments or modify the fender frame.

Note: Adjustments can be done, but there could be clearance issues. Run the tractor though the full range of motion and verify that nothing is interfering with the undercarriage, brackets, lower arm, blade, etc.

Caution

- Always use precaution when working around any equipment.
- · Always wear safety glasses.
- Follow tractor manufacturer's safety guidelines when installing this product.

Bracket Installations

- 1. Read all instructions prior to installation.
- 2. Remove weights from the axle mounted weight carrier if installed. The weight carrier can stay installed.

Refer to Figure 1 on Page 5 for the front bracket installation Steps #3-8.

- 3. Remove the original oscillation roller stop from the tractor. Keep the hardware for installing the new pin.
- **4.** Place the roller over the front pin mount (PN: 18-12756) and install in the same location that the original oscillation roller stop was installed. Use the original hardware. Tighten hardware to tractor manufacturer specifications.
- Loosely attach front bracket (PN: 18-12755) to the front pin mounts with 4 3/4" x 2-1/2" bolts (PN: 16-20220), 8 3/4" SAE flat washers (PN: 57-20757), and 4 3/4" center lock nuts (PN: 70-20607) for each side.
- 6. Attach each nose clamp (PN: 18-12744) to the tractor in front of the tie rod mounting location with a 20mm x 50mm bolt (PN: 16-1878) and 3/4" flat washer (PN: 57-20747) and to the front bracket with a 1" x 3" bolt (PN: 16-20562) and a 1" nut (PN: 70-20599).
- **7.** Torque the 1" bolts to about 100 ft-lbs. Measure the gap distance between the nose clamp and the front bracket and take off 1/8" from the measurement. Remove the 1" bolts and install washers to fill in the gap that was measured minus the 1/8". Reinstall the hardware.
- 8. Once all bolts are installed, push the front bracket towards the tractor until it is tight up against the tractor. Torque the 20mm bolts to 432 ft-lbs., the 1" bolts to 903 ft-lbs., and then the 3/4" bolts to 257 ft-lbs.

Refer to Figure 2 on Page 5 for the mid bracket installation Steps #9-14.

NOTE: Only finger tighten the mid bracket bolts. The bolts will be tightened in a later step.

- 9. Remove the ground boss from the right side of the tractor. The boss will be reinstalled in Step #10.
- **10.** Use 1 20mm x 100mm bolt (PN: 16-1877) with the ground boss and a 3/4" flat washer (PN: 57-20747) through the top rear hole of the right rail (PN: 46-12760-R) to attach the right rail to the tractor frame.
- **11.** Use 8 20mm x 50mm bolts (PN: 16-1878) with a 3/4" flat washer (PN: 57-20747) on each bolt through the remaining holes of the right rail to attach the right rail to the tractor frame.
- 12. Remove the window step. It will be reinstalled in Step #14.
- **13.** Use 6 20mm x 50mm bolts (PN: 16-1878) with a 3/4" flat washer (PN: 57-20747) on each bolt in the holes of the left rail (PN: 46-12760-L) to attach the left rail to the tractor frame.

Don't install 20mm x 50mm bolts in holes that were used for the front window step.

14. Use 2 - 20mm x 70mm bolts (PN: 16-1876) with a 3/4" flat washer (PN: 57-20747) on each bolt to attach the window step and the left rail to the tractor frame in the same holes that were originally used for the window step.

Refer to Figure 3 on Page 5 for the push pole bracket installation Steps #15-22.

- **15.** Remove the tractor drawbar from the drawbar pivot bracket.
- **16.** Support the drawbar pivot bracket with a floor jack or block and carefully remove the bolts holding the drawbar pivot bracket to the tractor rear axle housing. Discard the removed bolts.
- **17.** Install the push pole bracket (PN: 18-13373) by slipping the push pole bracket over the drawbar pivot bracket with the chamfered holes facing down and toward the front of the tractor.
- **18.** Place 4 3/4" SAE flat washers (PN: 57-20757) between the front drawbar pivot bracket and the push pole bracket. The washers are for the 4 outside holes on the push pole bracket. See the attached diagram for clarification.
- 19. Attach the drawbar pivot bracket and the push pole bracket to the tractor rear axle housing with

2 - 20mm flat socket head cap screws (PN: 16-13405) in the front holes of the push pole bracket.

- **20.** Use 2 20mm x 90mm bolts (PN: 16-1510) with a 3/4" SAE flat washer (PN: 57-20757) on the two bolts in the rear holes of the push pole bracket. See the attached diagram for any clarification.
- **21.** Remove the floor jack or block.
- 22. Torque the 20mm flat socket head cap screws and the 20mm x 90mm bolts to 577-607 N-m (425-447 ft-lbs.).



Refer to Figure 1 on Page 7 for the undercarriage installation Steps #1-6.

- 1. Position the undercarriage (PN: 54-12730) under the tractor and center with the frame of the tractor.
- **2.** Lift the front of the undercarriage until the top pin hole lines up with the front ear of the front bracket. Install front bracket pin (PN: 43-13923) through the undercarriage and the front bracket that was installed on Page 4.
- 3. Install 3/4" x 4-1/2" bolt (PN: 16-20227) through front bracket pin.
- 4. Lift the rear of the undercarriage until the the rear cross tube hits the stops on the side rails. Insert the mid mount pin (PN: 43-12770) from the right side. Keep the pin in place with a 1/2" bolt (PN: 16-20126) and a 1/2" fender washer (PN: 57-20794). Tighten the 1/2" bolt.
- **5.** Remove the mid mount pin. Verify that pin holes on both side rails are in alignment. If necessary adjust side rails so rails are in alignment to make easy removal of the mid mount at a later time. Reinstall mid mount pin.
- 6. Torque all 20mm bolts on the side rails to 432 ft-lbs.

Refer to Figure 2 on Page 7 for the push pole installation Steps #7-14.

- 7. Position the push pole (PN: 17-12750) under the tractor.
- **8.** Attach the front of the push pole to the side rails with 8 3/4" x 2" bolts (PN: 16-20218), 16 3/4" flat washers (PN: 57-20747), and 8 3/4" lock nuts (PN: 70-20607).
- 9. Attach the rear of the push pole to the push pole bracket with 8 1" x 2-1/2" bolts (PN: 16-20560), 16 1" hardened flat washers (PN: 57-20759), and 8 1" nuts (PN: 70-20599).
- **10.** Once all bolts are installed, torque the 3/4" bolts to 257 ft-lbs. and the 1" bolts to 903 ft-lbs.
- **11.** Route all hoses through the hose loops on the side of the undercarriage and push pole to the rear of the tractor. See Picture 3 on Page 14.
- **12.** If you have 2 sets of auxiliary hydraulics run the 2 hoses from the right side of the lower arm down the right side of the undercarriage about halfway and then cross over the top of the undercarriage by going through the top hose loop and then run the 2 hoses with the remaining hoses on the left side.
- **13.** Verify that all hoses are away from any moving parts. Use Zip Ties to secure hoses if necessary. See picture below (1).



Caution

Operate the front axle to its full range of motion. Check for clearance before any operation is performed. If there is a clearance issue, contact Grouser Products.













Undercarriage Removal

- 1. Lift the blade up and square the blade to the ground and to the tractor.
- **2.** Disconnect the angle and tilt hoses from the quick connect at the side rails if applicable.
- 3. Install the jack (PN: 11-12783) at the rear of the undercarriage. See Picture 1 & 2 on Page 14.
- 4. Remove the mid mount pin (PN: 43-12770) that holds the rear of the undercarriage to the side rails.
- 5. Lower the blade to the ground until the jack is on the ground and holding up the rear of the undercarriage.
- 6. Remove the front bracket pin.
- 7. Unhook the hydraulic quick connects at the coupler mount on the left side rail.
- 8. Tractor can be now driven away.
- 9. Tires and stops can be put back to the original settings if needed.

Caution

Operate the front axle to its full range of motion. Check for clearance before any operation is performed. If there is a clearance issue, contact Grouser Products.

Undercarriage Reinstallation

- 1. Prepare tractor as stated on Page 3.
- 2. Drive the tractor forward towards the front of the undercarriage making sure that the undercarriage is centered under the tractor.
- 3. Connect the Lift hoses to the quick connects.
- **4.** If necessary, use the lift hydraulics to get the undercarriage back in aligment with the front bracket ear so the undercarriage will go on the front bracket when the tractor is driven forward.
- 5. Drive the tractor forward until the undercarriage is back on the front bracket.
- **6.** Install the front bracket pin (PN: 43-13923) through the front ear on the undercarriage and front bracket. Attach with a 3/4" x 4-1/2" bolt (PN: 16-20227)
- 7. Lift the blade until the rear of the undercarriage is up against the stops on the side rails.
- 8. Reinstall the mid mount pin.
- **9.** Remove the jack (PN: 11-12783) and store the jack on the bolt in between the plates on the right side rail. Install a 1/2" flat washer (PN: 57-20744) and a 1/2" nut (PN: 70-20604) on the bolt to secure the jack in place. See Picture 1 on Page 14.
- **10.** Connect the angle and tilt hoses to the quick connects at the side rails if applicable.
- **11.** Check full range of axle motion for clearance issues. See Caution note above.

Extra Pictures



Picture 1: The undercarriage stand (1) is located inside the right side rail.



Picture 2: The undercarriage stand (2) needs to be installed in the tube on the right rear side of the undercarriage.



Picture 3: Hose routing to rear of tractor (3).

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.

