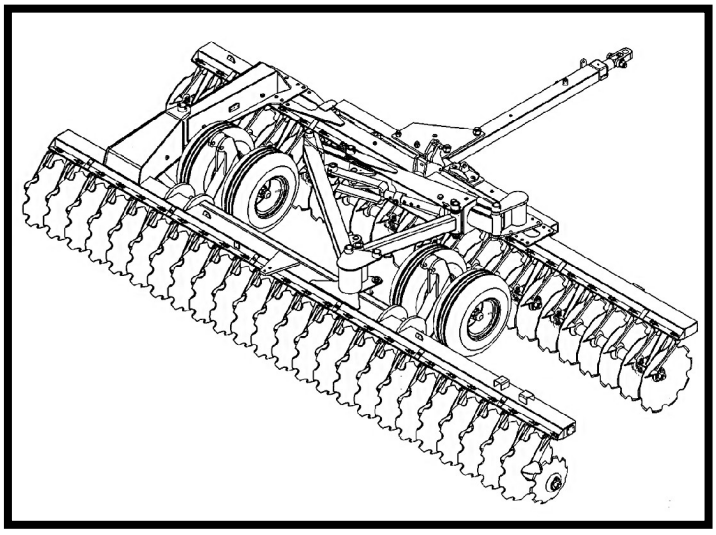
FRONTIER EQUIPMENT™

ASSEMBLY & OPERATING INSTRUCTIONS



MODELS DH4218 AND DH4221

HINGE-WHEEL OFFSET DISK HARROW

FORM NO.: 5RPMAN332AO

PUBLISHED: 06-08

Printed in USA

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Checklists

PREDELIVERY CHECK LIST

After the disk harrow has been completely assembled and lubricated, inspect it to be sure it is in proper operating condition before making delivery to the customer. The following check list is a reminder of points to inspect. Check off each item as it is found satisfactory.

- ❑ The disk harrow has been assembled according to instructions. Nuts on all bolts have been tightened.
- ❑ The axle lift fittings have been installed and lubricated.
- ❑ Be sure all grease fittings are installed. Lubricate the harrow.
- ❑ Tires are properly inflated.
- ❑ Disk gangs rotate freely without dragging on scrapers.
- ❑ Check all pins to make sure retaining hardware is in place.
- ❑ Paint all unpainted bolts and nuts and any other parts scratched in shipment.
- ❑ Connect disk harrow securely to tractor drawbar and check hydraulic system for leaks and proper operation of the hydraulic components.
- ❑ Safety chain is attached.
- ❑ This disk harrow has been checked and, to the best of my knowledge, is ready for delivery to the customer.
- ❑ Check to insure that the Warranty Registration, located on the Frontier dealer website, has been submitted by the Dealer.

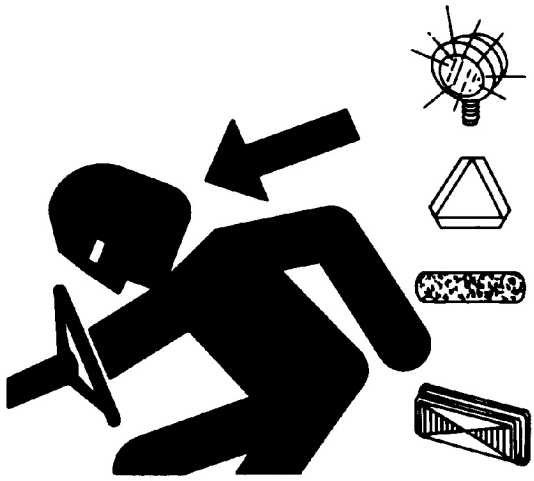
(Date Set Up): _____

(Signature of Set Up Person): _____

USE SAFETY LIGHTS AND DEVICES

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use hand signals or turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep the lighting and marking visible and in good working order. Replace or repair lighting and marking that has been damaged or lost.

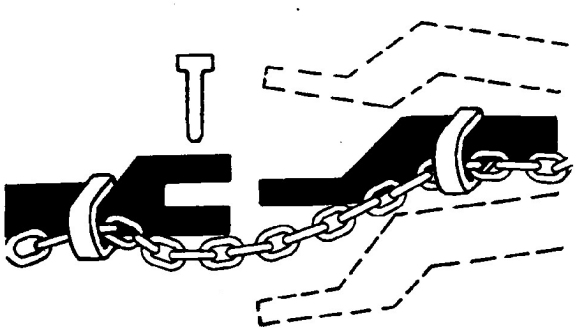


USE A SAFETY CHAIN

A safety chain will help control drawn equipment should it accidentally separate from the drawbar.

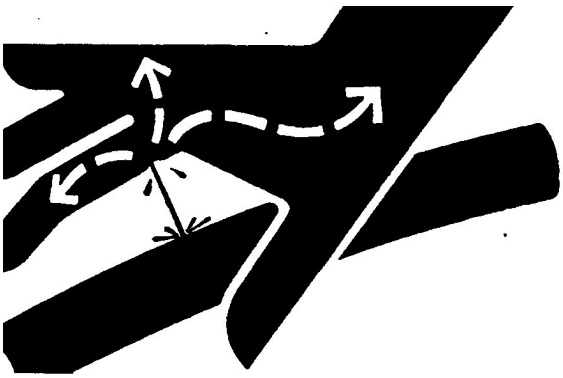
Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning.

See your Frontier dealer for a chain with a strength rating equal to or greater than the gross weight of the towed machine. Do not use safety chain for towing.



Attaching and Detaching

ATTACHING HYDRAULIC HOSES

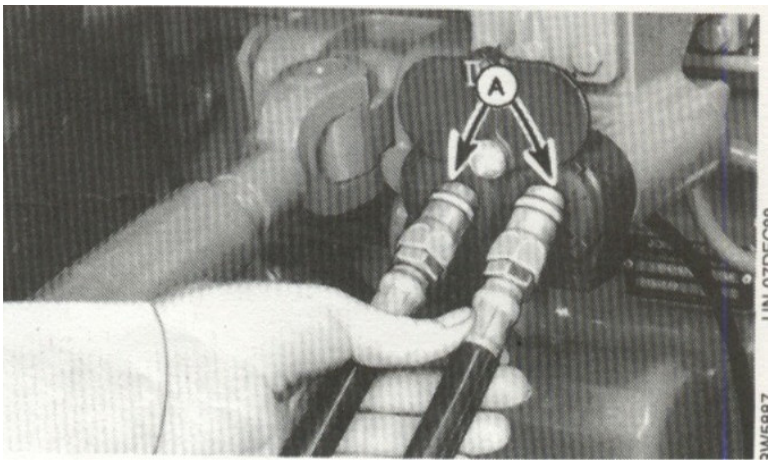


CAUTION: Shut off tractor engine, work levers back and forth to relieve system of pressure.

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all the connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

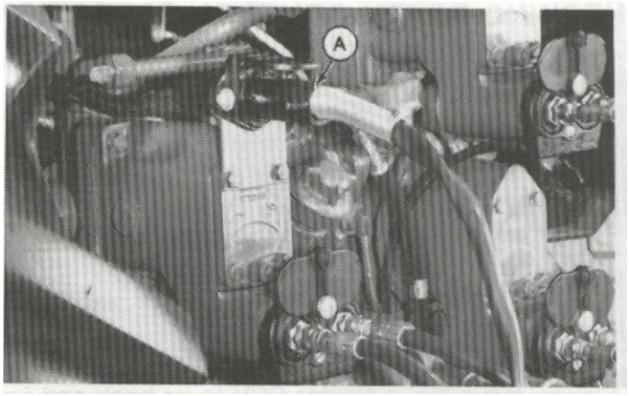
If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.

1. Plug hydraulic cylinder hoses into No.1 tractor hydraulic coupler.



ATTACHING WARNING LIGHT PLUG

Attach warning light plug to 7-terminal plug on tractor.

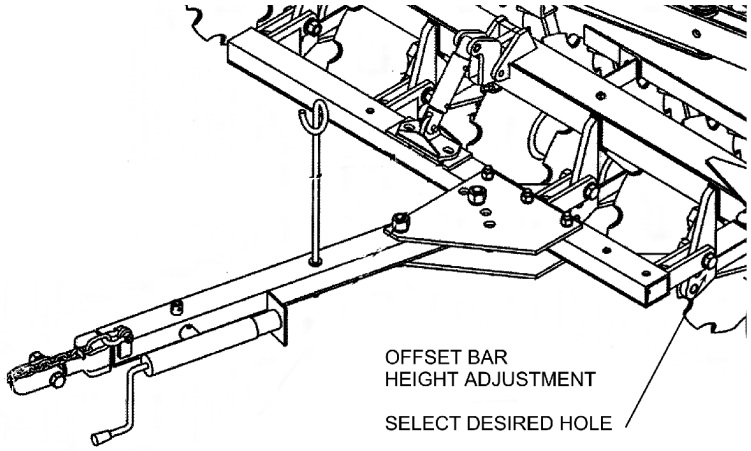


OFFSET BAR HEIGHT ADJUSTMENT

On each of the front gang carrier hitch plates, there are located three adjustment holes that are used to adjust the height of the offset bar. This should be adjusted in order to make the drawbar on the disk as close to level as possible with the tractor drawbar when the disk is in the ground in the plowing position.

If the tractor drawbar is higher than the disk drawbar, there is a tendency to pull the front disk gang out of the ground. On the other hand, if the tractor drawbar is lower, it will tend to pull the front gang deeper into the ground.

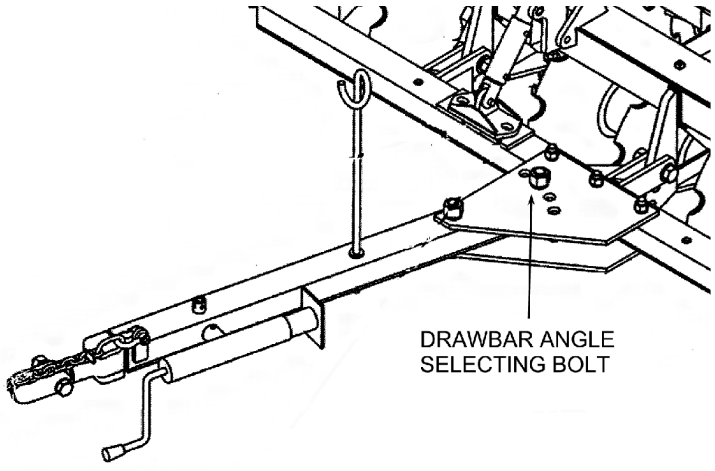
Therefore, the harrow will plow most level with the front and rear gang, if the drawbar on the disk is level with the drawbar on the tractor.



POSITIONING THE DRAWBAR ANGLE SELECTING BOLT

This important adjustment increases or decreases the angle of the front and rear gang and allows you to achieve a balance between the two. If the front gang angle is increased, the rear gang angle will be decreased and if the front angle is decreased the rear angle will be increased.
The greater the angle, the more aggressive the gang will plow.

Too much angle will cause the gang to bulldoze and the soil will not flow through the disk blades. The ideal situation is for both the front and rear gangs to have close to equal amounts of angle so they plow to the same depth.



MAINTENANCE



CAUTION: SAFETY GUIDELINES

- **BEFORE SERVICING THE HARROW, ALWAYS:**

1. Lower the harrow to the ground.
2. Shut the tractor off.
3. Lock the tractor's parking brake.
4. Remove the key.

INADVERTENT OR UNINTENTIONAL MOVEMENT OF THE HARROW WHILE WORKING AROUND THE DISK GANGS COULD RESULT IN SERIOUS PERSONAL INJURY.

- **NEVER WORK UNDER A RAISED HARROW.**
- The raised harrow could fall suddenly causing serious personal injury. Always lower the harrow to the ground before servicing. Never rely on the hydraulic system to hold the harrow up.

- **PERIODICALLY, VISUALLY INSPECT THE HARROW.**
- Look for hydraulic leaks, and broken, missing or malfunctioning parts and make any necessary repairs.

- **USE CAUTION WHEN INFLATING TIRES.**
- Use a clip-on air chuck, extension hose with gauge, and stand to one side away from the tire when inflating to avoid the possibility of personal injury due to blow offs, etc. Maintain proper air pressure in the tires.
- **Important!** Never exceed manufacturer's maximum psi. Displayed on the sidewall of the tire**.**

- **BEFORE DISCONNECTING ANY HYDRAULIC LINE RELIEVE THE PRESSURE.**
- Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin causing serious personal injury. If injured by escaping hydraulic fluid, obtain medical treatment immediately

- **HANDLE THE GANG ASSEMBLIES WITH CARE.**
- The disk blades are sharp and could cut hands, feet, etc. Use chock blocks to prevent the gang assembly from rolling on surfaces before assembly to the frame. Wear gloves when handling the disk blades or gang assemblies.

- **PURGE AIR FROM THE HYDRAULIC SYSTEM BEFORE OPERATION.**
- Always be sure the hydraulic lines and cylinders are free of air and do not leak. After connecting the hydraulic lines, carefully cycle the hydraulic cylinders several times to purge air from the hydraulic system. Visually check all connections for leaks before cycling the hydraulic cylinders.

Assembly



CAUTION: SAFETY GUIDELINES

- **WEAR PROPER ATTIRE WHEN ASSEMBLING HARROW.**
- Always wear relatively tight and belted clothing to avoid entanglement in equipment. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.

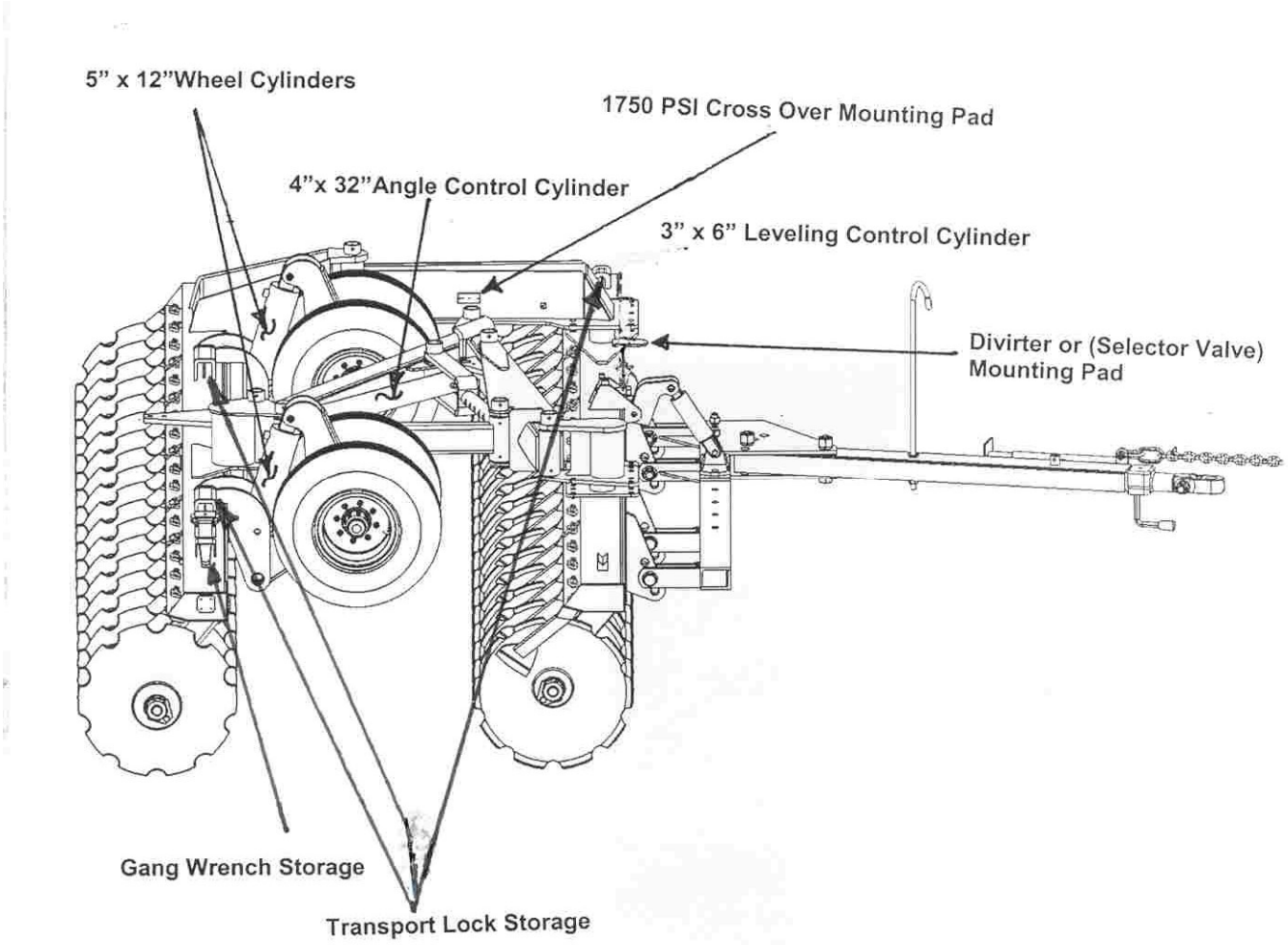
- **HANDLE THE DISK GANG COMPONENTS WITH CARE DURING ASSEMBLY.**
- The disk blades are sharp and could cut hands, feet, etc. Wear gloves when handling the disk blades or gang components.
- Disk blades and gang components are heavy and can be awkward to handle during assembly of the gang. Two-person gang assembly is recommended. Use overhead lifting device or other supports if necessary to insure safe assembly of the disk gang.

- **HANDLE THE GANG ASSEMBLIES WITH CARE.**
- The disk blades are sharp and could cut hands, feet, etc. Use chock blocks to prevent the gang assembly from rolling on surfaces before assembly to the frame. Wear gloves when handling the disk blades or gang assemblies.

- **SUPPORT THE FRAME ASSEMBLY DURING ASSEMBLY.**
- Support the harrow frame with stands or lifting devices that are in good condition and that are capable of handling the weight of the assembly. Be sure that the supports are on a clean, dry surface.

- **PURGE AIR FROM THE HYDRAULIC SYSTEM BEFORE OPERATION.**
- After connecting the hydraulic lines, carefully cycle the hydraulic cylinders several times to purge air from the hydraulic system. Visually check all connections for leaks before cycling the hydraulic cylinders.

- **NEVER USE YOUR HANDS TO CHECK FOR HYDRAULIC LEAKS.**
- Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin causing serious personal injury. If injured by escaping hydraulic fluid, obtain medical treatment immediately.



HYDRAULIC GROUP ASSEMBLY INSTALLATION

For a detailed description and part numbers refer to the hydraulic group at the end of the assembly steps.

Note: Always use a high quality, high-pressure hydraulic thread sealant on all pipe thread fittings to prevent hydraulic leaks. Refer to the HYDRAULIC CONTROL GROUP ILLUSTRATION (previous page) for locating the hydraulic components on the harrow. Refer to the hydraulic group assembly diagram and parts listing found in this manual for part numbers and descriptions on individual components.

STEP A

Attach the 3" by 6" hydraulic cylinder base end to the frame leveler on the front gang carrier. Then attach the rod end of the cylinder to the cylinder mounting bracket on the offset bar. Remove the shipping plugs from the cylinder ports and install the cylinder fittings as shown on the HYDRAULIC CONTROL GROUP ILLUSTRATION.

CAUTION: The 3" x 6" cylinder base end port uses two fittings to connect the hydraulic hose. One of the two fittings is a restrictor fitting. The restrictor fitting allows the oil to move out of the cylinder more slowly when the disk is being lowered to the ground from the raised position. If the restrictor fitting is not placed in the base end port the front of the disk will fall rapidly when the disk is being lowered from the raised position!

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