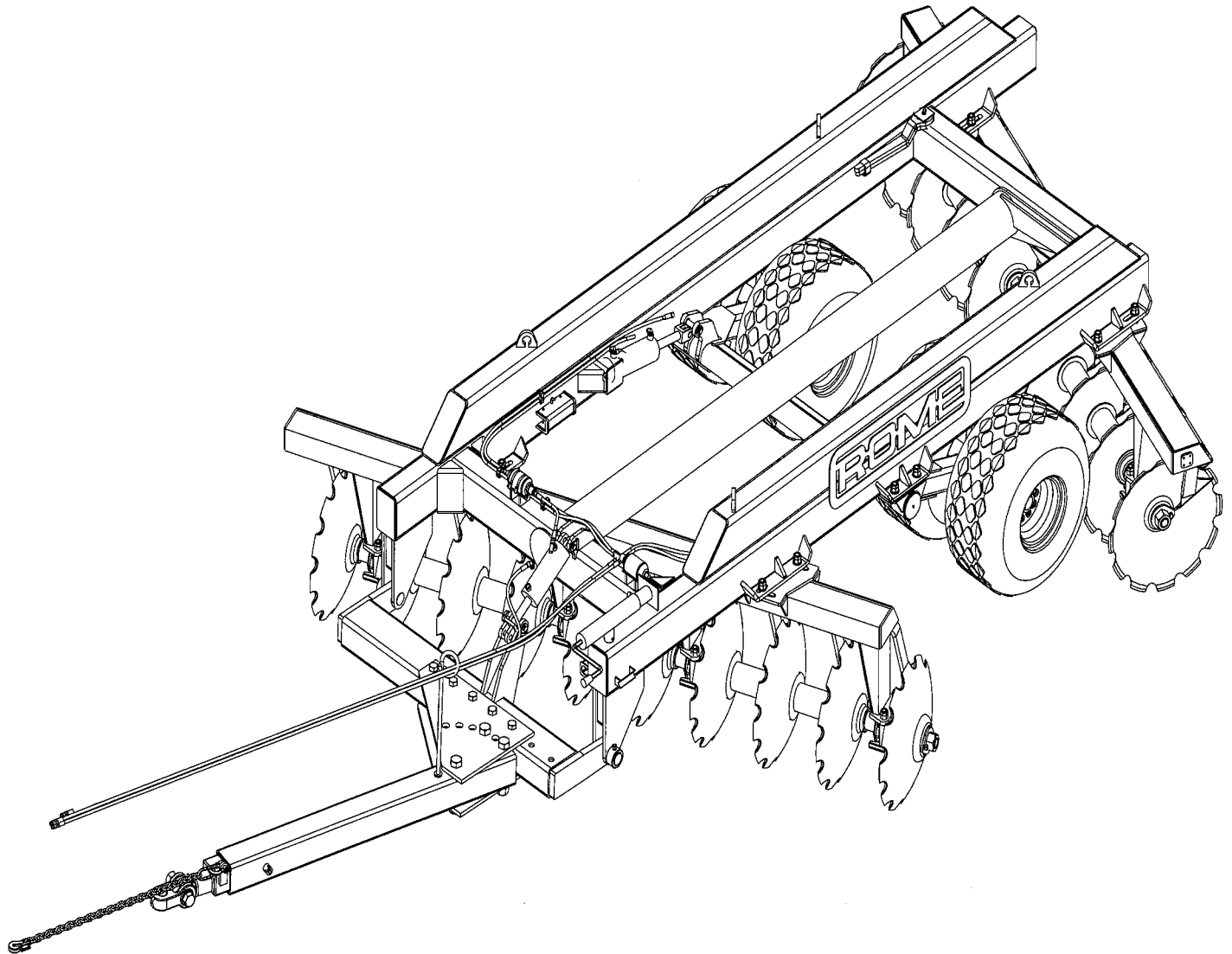




ASSEMBLY & OPERATOR'S MANUAL



WHEEL OFFSET DISC HARROW MODELS: TRCW-20 & TRCW-24

EFFECTIVE SERIAL #:
TRCW-20: 10TRCW-100
TRCW-24: 12TRCW-100

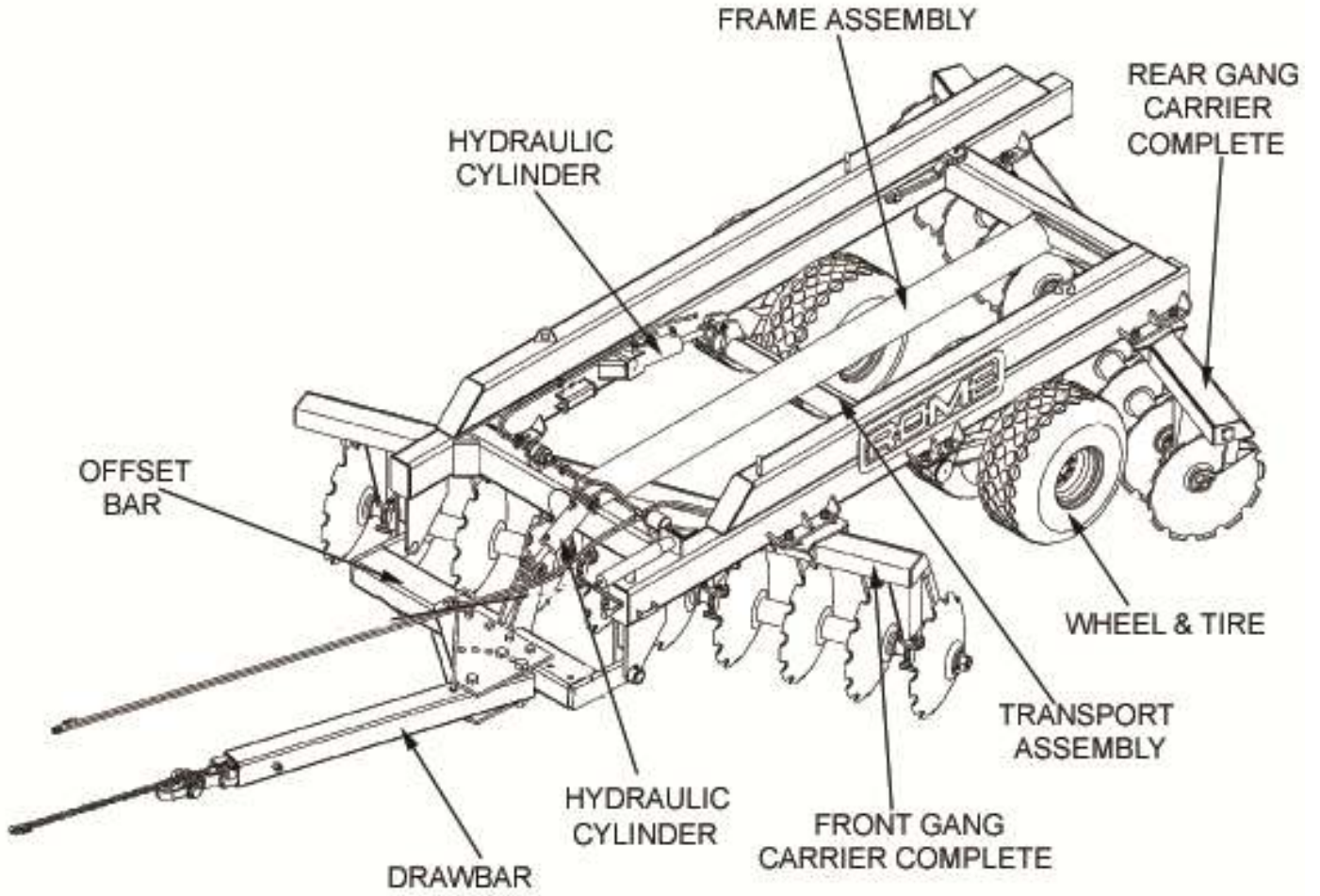
PUBLISHED DATE: 08/08/2017

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MODEL VIEW / PRODUCT IDENTIFICATION

TRW-20



INTRODUCTION

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may be ordered from your Rome dealer.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and should remain with the machine when you sell it.

MEASUREMENTS in this manual are given in customary U.S. units. Use only the correct replacement parts and fasteners.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction the implement will travel when going forward.

WRITE DOWN PRODUCT IDENTIFICATION NUMBERS. Accurately record all the numbers to help in tracing the machine should it be stolen. Your Rome dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the machine.

WARRANTY is provided as a part of the Rome support program for customers who operate and maintain their equipment as described in this manual. The warranties are explained on the warranty pages that are included in this manual.

THE WARRANTY REGISTRATION FORM IN THE BACK OF THIS MANUAL MUST BE COMPLETED AND SENT IN TO ROME PLOW COMPANY WITHIN 30 DAYS OF THE DATE OF PURCHASE FOR THE WARRANTY TO GO INTO EFFECT.

This warranty provides you the assurance that Rome will back its products where defects appear within the warranty period. In some circumstances, Rome also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.

THE TIRE MANUFACTURER'S warranty applicable to your machine may not apply outside the U.S.

GENERAL INFORMATION

TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Rome dealer. Read the manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

NOTE: The dealer must complete the Warranty Registration Form. Warranty claims will be denied if the Warranty Registration Form has not been completed.

TO THE OWNER:

Read this manual before operating your Rome equipment. The information presented will prepare you to do a better job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your selling dealer.

The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the equipment.

For service, your authorized Rome dealer has trained mechanics, genuine Rome service parts, and the necessary tools and equipment to handle your needs.

Use only genuine Rome service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided.

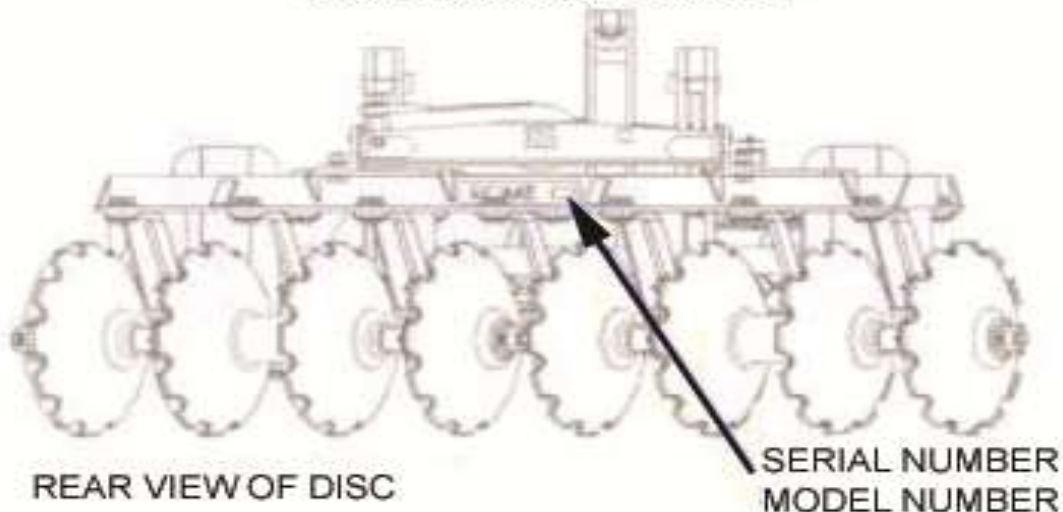
Model: _____

Date of Purchase: _____

Serial Number: _____

Provide this information to your dealer to obtain correct repair parts.

SERIAL NUMBER LOCATION



CHECKLISTS

PRE-DELIVERY CHECK LIST

After the disc harrow has been completely assembled and lubricated, inspect it to be sure it is in proper operating condition before making the 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 disc 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.
- Disc 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 disc harrow securely to tractor drawbar and check hydraulic system for leaks and proper operation of the hydraulic components.
- Safety chain is attached.
- This disc harrow has been checked and, to the best of my knowledge, is ready for delivery to the customer.

(Date Set Up): _____

(Signature of
Set Up Person): _____

CHECKLISTS

DELIVERY CHECK LIST

The following check list is a reminder of important information that should be conveyed directly to the customer on delivery of the disc harrow. Check off each item as it is fully explained.

- Advise customer that the life expectancy of this, like any other machine, is dependent on regular lubrication as described in the Operator's Manual.
- Explain the importance of safe and proper operation of the machine. Point out decals warning the operator of the dangers of unsafe operation procedures and conditions.
- The customer has been told to keep all bolts tight.
- When the disc harrow is transported on the road or highway at night or during the day, accessory lights and devices should be used for adequate warning to operators of other vehicles. Various safety lights and safety devices are available from your Rome dealer. In this regard, tell customers to check local governmental regulations.
- Complete Delivery and Warranty Registration forms, listing serial number of machine.
- Explain Warranty. Have dealer and customer sign form.
- Show customer how to hitch machine and operation of the controls.
- Explain the adjustments for operation.
- Advise to use safety chain.
- Give the Operator's Manual to the customer and explain all operating adjustments and lubrication fully.
- To the best of my knowledge, this machine has been delivered ready for use and the customer has been fully informed as to its proper care and operation.

(Delivery Date): _____

(Signature of
Delivery Person): _____

CHECKLISTS

AFTER-SALE CHECK LIST

It is suggested that the following items be checked sometime during the first six months of operation of the disc.

- Check the entire disc for loose or missing hardware.
- Check for broken or damaged parts. Make necessary repairs.
- Re-torque the hardware.
- Check to make sure the safety chain is properly installed.
- If possible, run the disc to see if it is functioning properly.
- Review the entire Operator's Manual with the customer and stress the importance of proper and regular lubrication and safety precautions.
- Advise the customer of optional attachments that are available.

(Date Checked): _____ (Signature): _____

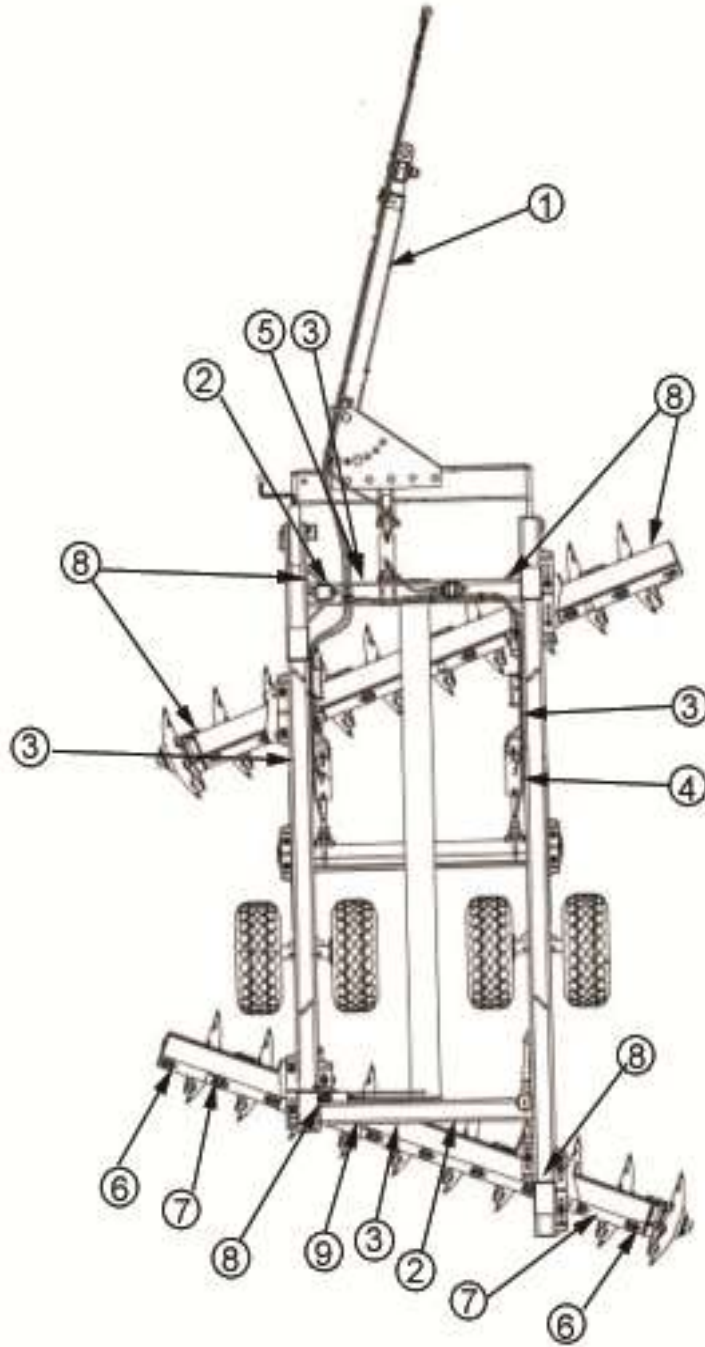
EACH MORNING OF OPERATION CHECKLIST

- Lubricate items required daily and those whose lubrication time is due.
- Look for loose or missing bolts or parts.
- Check hydraulic system for leakage.
- Check the tire pressures and wheel bolts.
- Check all pins to be sure that retaining hardware is in place.
- Check all oil-bath bearing assemblies and inspect for leakage.
- Be sure that all gang components are tight on the axles and axle nuts meet the recommended torque foot-pound pressure specified in the Axle Nut Torque Chart.

BEFORE EACH SEASON CHECKLIST

- Be sure recommended lubrication has been performed.
- Inspect all bearings to be sure they are tight and not badly worn.
- Check hydraulic system for proper operation and leakage.
- Check the tire pressure and wheel bolts.
- Be sure the proper operating adjustments have been made for your conditions.
- Inspect for loose or missing bolts.
- Inspect all the oil-bath bearings for any sign of leakage.

SAFETY DECALS

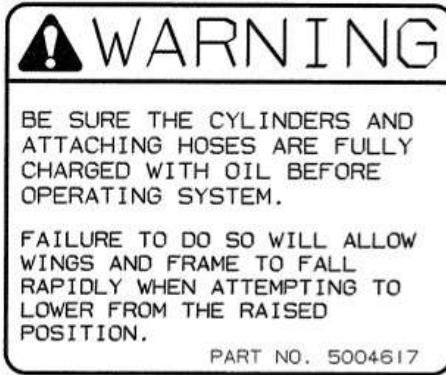


SAFETY DECALS

1



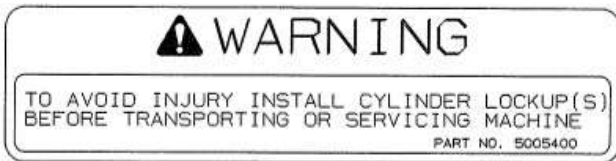
2



3



4



5



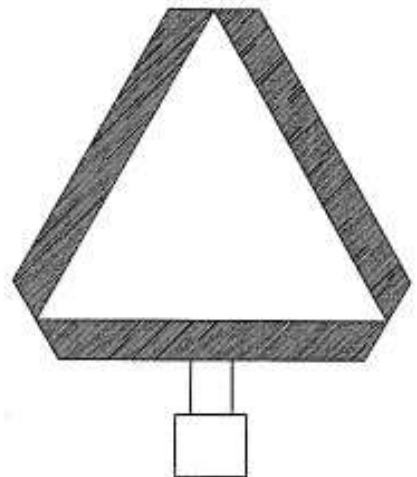
RED REFLECTOR 6



RED FLO. REFLECTOR 7



AMBER REFLECTOR 8



S.M.V. DECAL 9

SAFETY RULES

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



UNDERSTAND SIGNAL WORDS

A signal word -- DANGER, WARNING, or CAUTION -- issued with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. Caution also calls attention to safety messages in this manual.



▲ WARNING

▲ CAUTION

FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts included the current safety signs. Replacement safety signs are available from your Rome dealer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your Rome dealer.

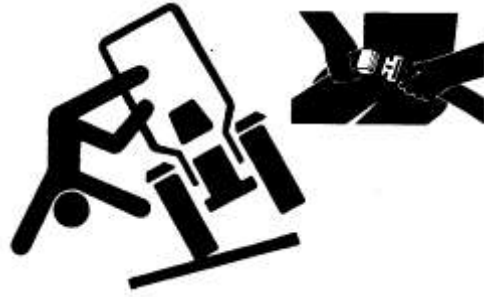


SAFETY RULES

USE SEAT BELT PROPERLY

Use a seat belt when you operate with a rollover protective structure (ROPS) or cab to minimize chance of injury from an accident such as an overturn.

Do not use a seat belt if operating without a ROPS or cab.



OPERATE SAFELY

DO NOT allow others to ride on the machine or tractor.

DO NOT operate close to a ditch or creek.

SLOW DOWN when turning and traveling over rough ground or the machine may tip over.

Wear protective gloves to help prevent injury from cutting edges of disc blades when removing or installing scraper blades.

Park or block disc so it will not roll when disconnecting from tractor drawbar.

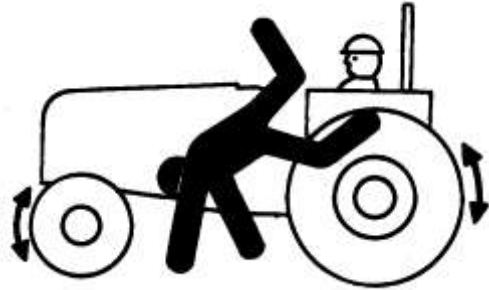
Lower the disc completely to the ground before unhitching from tractor. If disc is to be unhitched in raised position, tongue can whip upward when unhitching. Be sure disc is resting on transport lockups and disc is on a level and firm surface

SAFETY RULES

KEEP RIDERS OFF MACHINE

Only allow the operator on the machine. Keep riders off.

Riders on the machine are subject to injury such as being struck by foreign objects and being thrown off of the machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.

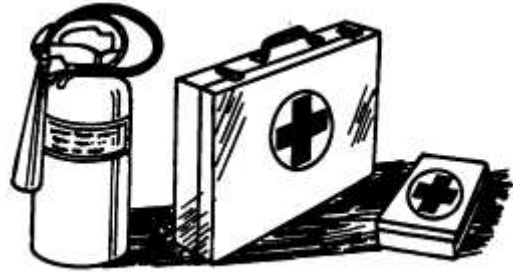


PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.



PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

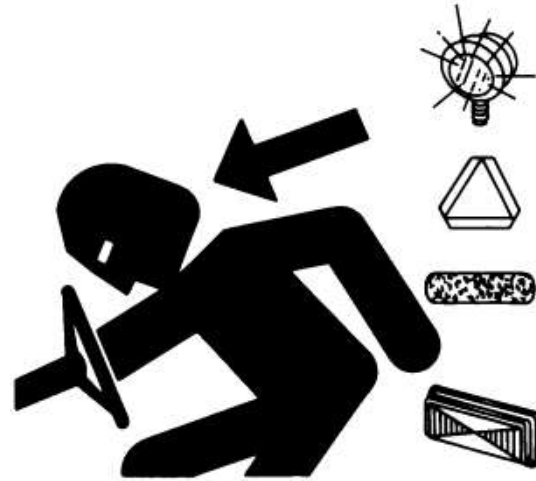


SAFETY RULES

USE SAFETY LIGHTS & 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 markings that have 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 Rome dealer for a chain with a strength rating equal to or greater than the gross weight of the towed machine. Do not use the safety chain for towing.



SAFETY RULES

TRANSPORT SAFETY

ALWAYS install transport lockups on depth control cylinders.

Latch tractor brakes together. Stop slowly.

Travel at a reasonable and safe speed.

Shift tractor into a lower gear when transporting down steep slopes or hills.

Keep the SMV emblem and reflectors clean and visible from the rear.

Always pin drawbar in center position for ALL tractors when transporting.

When transporting machine on a road or highway at night or during the day, use accessory lights and devices for adequate warning to operators of other vehicles. In this regard, check local governmental regulations. Various safety lights and devices are available from your Rome dealer.



SAFETY RULES

TOW LOAD SAFETY

Stopping distance increases with speed and weight of towed loads and on slopes. Towed loads with or without brakes that are too heavy for the tractor or are towed too fast can cause loss of control. Consider the total weight of the equipment and its load.

Observe these recommended maximum road speeds, or local speed limits, which may be lower:

- If towed equipment does not have brakes, do not travel more than 32 km/h (20 mph) and do not tow loads more than 1.5 times the tractor's weight.
- If towed equipment has brakes, do not travel more than 40 km/h (25 mph) and do not tow loads more than 4.5 times the tractor weight.

Ensure the load does not exceed the recommended weight ratio. Add ballast to recommended maximum for the tractor, lighten the load, or get a heavier towing unit. The tractor must be heavy and powerful enough with adequate braking power for the towed load. Use additional caution when towing loads under adverse surface conditions, when turning, and on inclines.



SAFETY RULES

PRACTICE SAFE MAINTENANCE

Understand service procedure before doing work.
Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower the equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.



SAFETY RULES

REMOVE PAINT BEFORE WELDING OR HEATING

Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when welding, soldering, or using a torch heats paint.

Do all work outside or in a well-ventilated area.
Dispose of paint and solvent properly.

Remove paint before welding or heating:

- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



AVOID HEATING NEAR PRESSURIZED FLUID LINES

Heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders can generate flammable spray. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.



SAFETY RULES

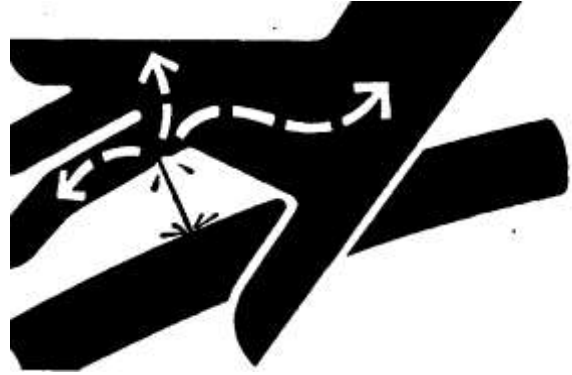
AVOID HIGH-PRESSURE FLUIDS

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 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.



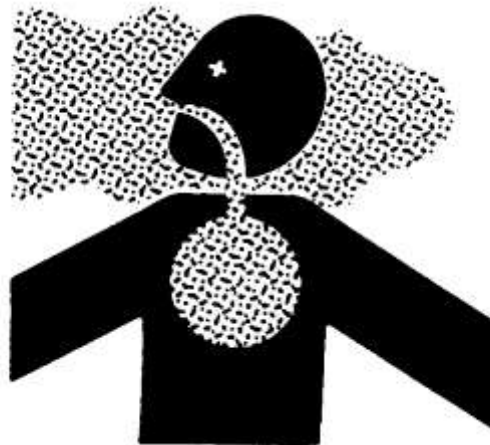
AVOID HARMFUL ASBESTOS DUST

Avoid breathing dust that may be generated when handling components containing asbestos fibers. Inhaled asbestos fibers may cause lung cancer.

Components in products that may contain asbestos fibers are brake pads, brake band and lining assemblies, clutch plates, and some gaskets. The asbestos used in these components is usually found in a resin or sealed in some way. Normal handling is not hazardous as long as airborne dust containing asbestos is not generated.

Avoid creating dust. Never use compressed air for cleaning. Avoid brushing or grinding material containing asbestos. When servicing, wear an approved respirator. A special vacuum cleaner is recommended to clean asbestos. If not available, apply a mist of oil or water on the material containing asbestos.

Keep bystanders away from the area.



SAFETY RULES

STORE ATTACHMENTS SAFELY

Stored attachments such as dual wheels, cage wheels, and loaders can fall and cause serious injury or death.

Securely store attachments and implements to prevent falling. Keep playing children and bystanders away from storage area.



DISPOSE OF WASTE PROPERLY

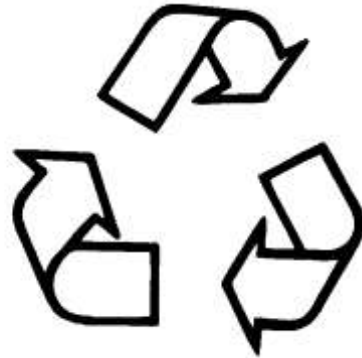
Improperly disposing of waste can threaten the environment. Potentially harmful waste used with the equipment includes such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leak proof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your Rome dealer.



PREPARING THE TRACTOR

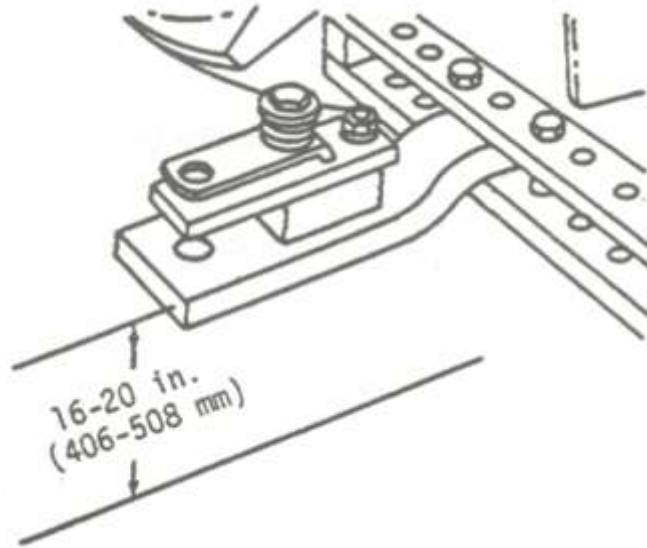
POSITIONING DRAWBAR



CAUTION: Avoid personal injury or death due to losing steering control of machine. Always pin drawbar in center position for ALL tractors when transporting machine.

Place the drawbar in lower position (offset down) (16-20 in.) from ground to top of drawbar as shown.

For four-wheel drive tractors, allow drawbar to swing by moving bolts on support of drawbar one position for field operation only.



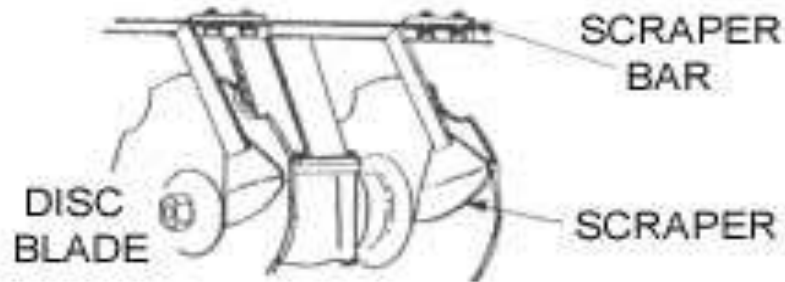
PREPARING DISC

CHECKING & LUBRICATING DISC

1. Inflate all tires to recommended air pressure. (See CHECKING TIRE PRESSURE in **MAINTENANCE** section).
2. Perform required lubrication. See **LUBRICATION** section.)
3. Inspect for loose, missing, or damaged parts. Repair if necessary.

ADJUSTING RIGID SCRAPERS

Using a ratchet or other suitable wrench, adjust scraper blade so curved surfaces match with the curved disc blade. The heel of the scraper should be $\frac{1}{4}$ " from the disc blade. It should be slightly closer at the point so that trash build-up between the scraper and the disc blade is minimal. The scraper should not come in contact with the disc blade as the blade turns.



SCRAPER INSTALLATION

Tighten the carriage bolts to 80 ft.-lbs.

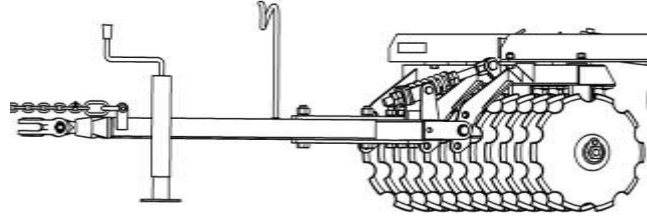
NOTES:

ATTACHING & DETACHING

ATTACHING DISC TO TRACTOR



CAUTION: Prevent serious injury or death to you or others caused by unexpected movement of the machine. Engage parking brake and/or place transmission in PARK, shut off engine, and remove key before working around hitch.



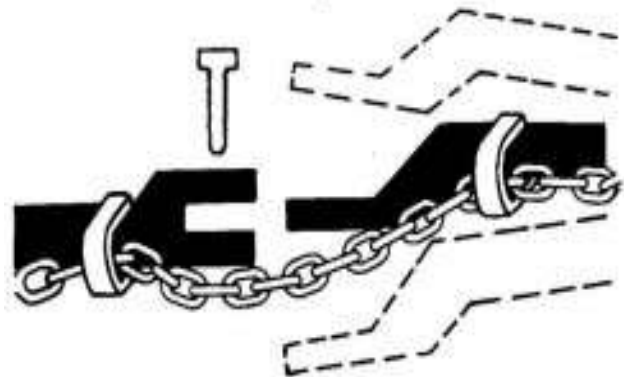
1. Back tractor into position. Raise or lower harrow drawbar to tractor drawbar using tongue jack.
2. Attach drawbar clevis to tractor drawbar. Secure drawbar pin with spring strap or hex nut.
3. Remove tongue jack from hitch point on side of drawbar and install in storage position.

ATTACHING SAFETY CHAIN TO TRACTOR




CAUTION: 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 Rome 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 alone for towing.



ATTACHING & DETACHING

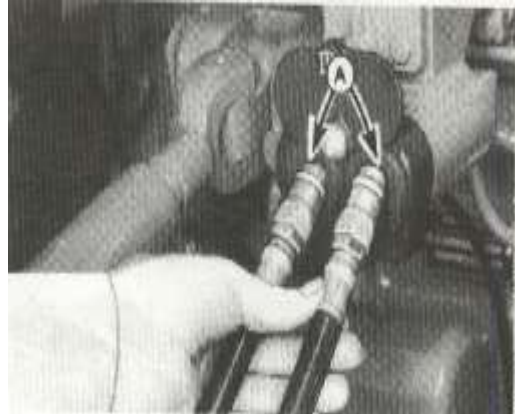
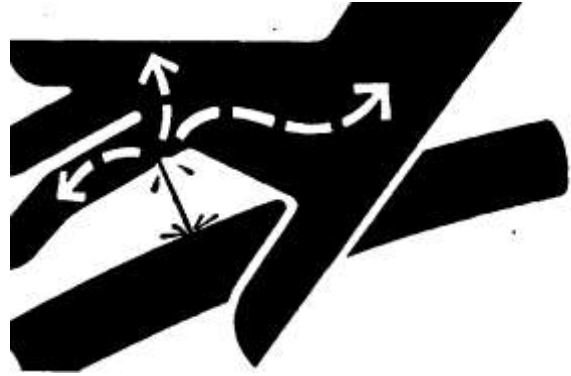
ATTACHING HYDRAULIC HOSES

 **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 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 depth control cylinder hoses into No.1 tractor hydraulic coupler.



ATTACHING WARNING LIGHT PLUG

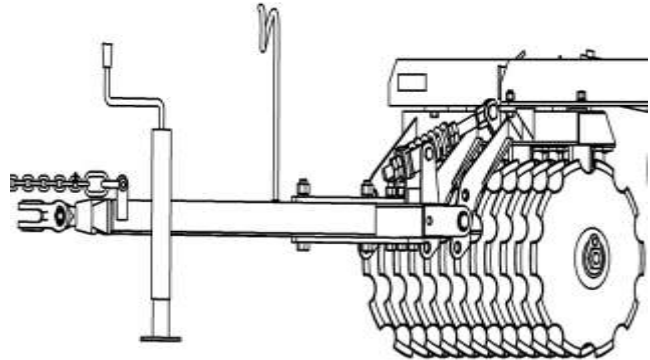
If disc is equipped with warning lights, attach warning light plug to 7-terminal plug on tractor.



ATTACHING & DETACHING

DETACHING DISC FROM TRACTOR

1. Lower disc completely to the ground with remote cylinder operating lever before unhitching from the tractor, or if disc is to be unhitched in raised position, be sure the transport lockups are installed and the disc is on a firm and level surface.
2. Remove quick-lock pin and L-pin from the tongue jack. Install the jack to vertical position with handle up. Reinstall L-pin and quick-lock pin.
3. Remove weight from drawbar by cranking jack handle clockwise.
4. Disconnect warning light plug from tractor and place in storage receptacle if available. (If equipped).



CAUTION: To avoid injury from escaping hydraulic oil under pressure, relieve pressure in the system by shutting off tractor and moving remote cylinder operating levers in both directions before attaching hoses to or detaching hoses from the breakaway couplers.

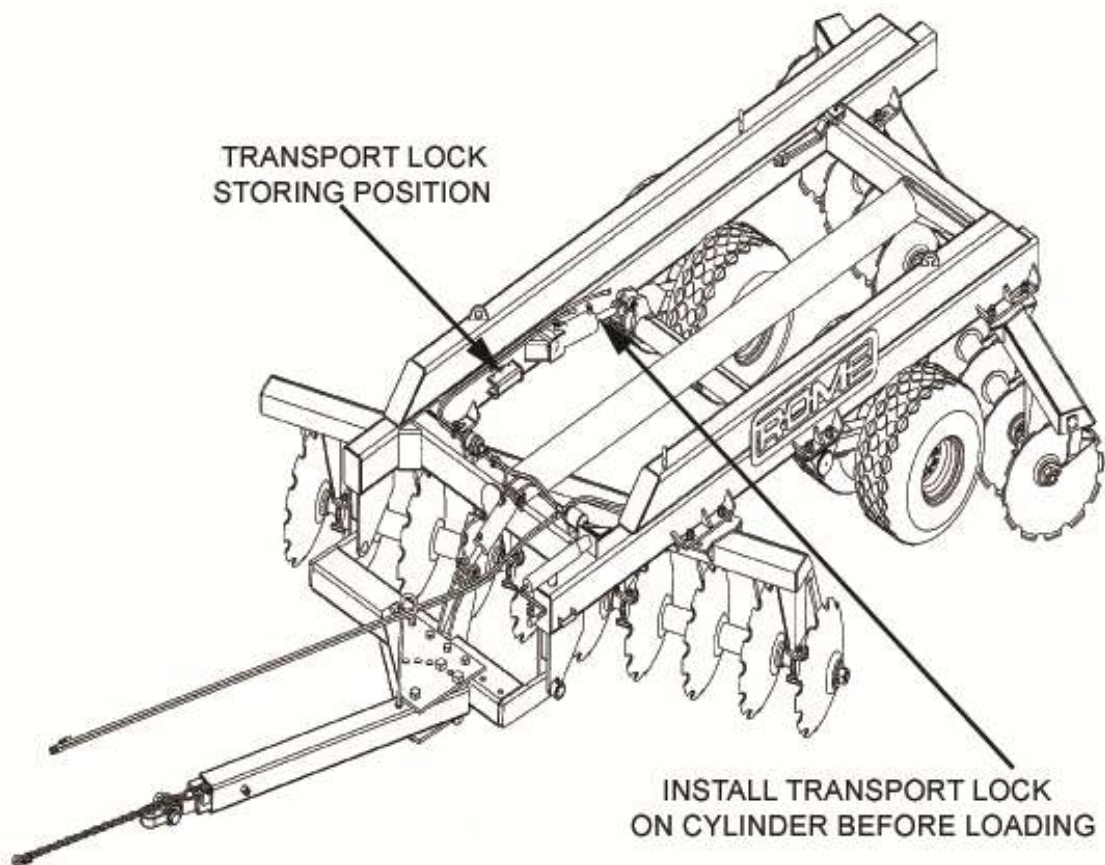
1. Remove hydraulic hoses (A) from tractor outlets and cover receptacles. Install dust covers over hose ends.
2. Remove safety chain.
3. Remove tractor drawbar pin and drive tractor forward.



ATTACHING & DETACHING

CHECKING TRANSPORT CONTROL OPERATION

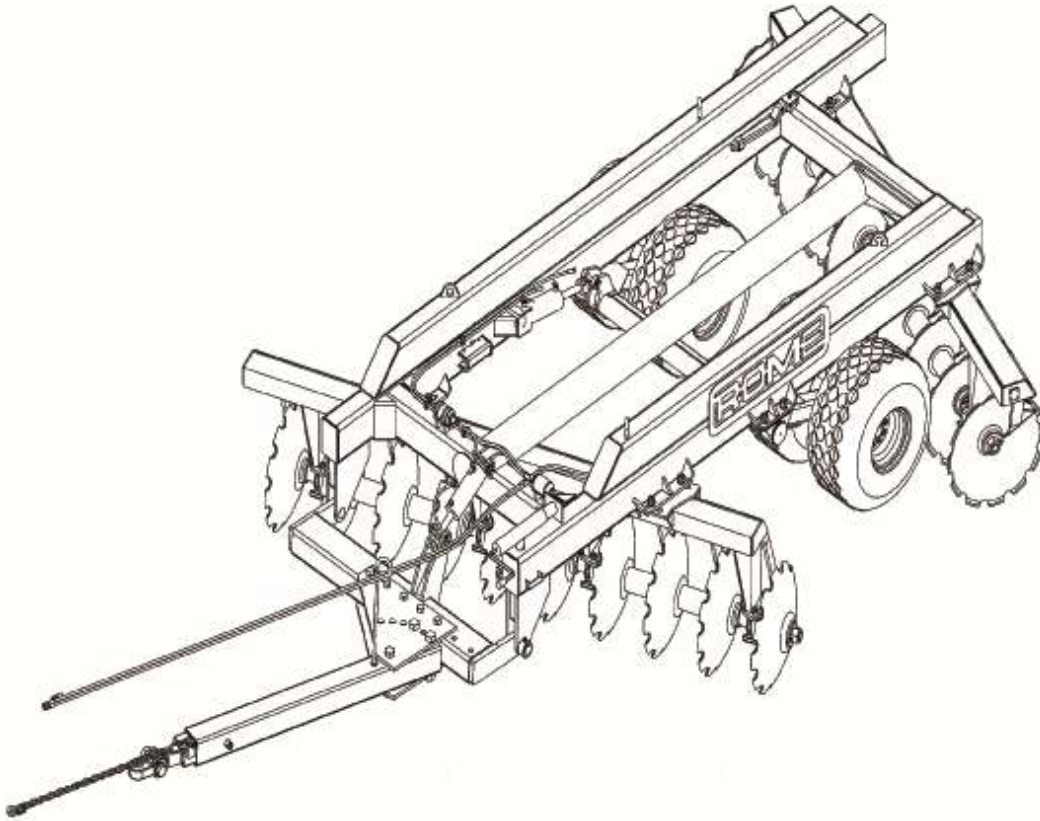
1. Place tractor transmission in “park” and/or set brakes, then start engine and pull back on No. 1 SCV lever until transport cylinders are fully extended.
Important: Remove transport locks from the cylinder rods to avoid machine damage. Always remove the left rear transport lock, and then remove front transport lock.
2. Remove transport locks and place in the field positions (see illustration below).
3. Slowly move No. 1 tractor SCV lever back and forth several times while observing smooth operation of disc. The disc should rise when the lever is pulled back and lower when the lever is pushed forward. If the action is reversed, reverse the hose connections in the No. 1 hydraulic quick coupler. If harrow does not rise smoothly, indicating that there is air in the system, raise and lower disc several times.



ATTACHING & DETACHING

CHECKING LEVELING ADJUSTMENT

Note: Disc may need readjusting when using a tractor with a different drawbar height. The disc must be level (front-to-rear) when transporting. If the harrow is not level, then use the hydraulic tongue cylinder (before and after) to level the harrow.



NOTES:

TRANSPORTING MACHINE



CAUTION: SAFETY GUIDELINES

- **ONLY TRANSPORT HARROW WITH A TRACTOR.**
- Do not transport harrow by towing with a truck or similar motor vehicle

- **USE CARE WHEN HITCHING THE HARROW TO THE TRACTOR.**
- Hands or fingers can be injured when caught between the hitch and the tractor.

- **NEVER ALLOW RIDERS ON THE TRACTOR OR HARROW.**
- Serious personal injury can result from falling in the path of the harrow while in operation or transport.

- **OBSERVE ALL LAWS AND REGULATIONS WHILE TRANSPORTING THE HARROW.**
- Never transport the harrow at speeds greater than 20 mph. Reduce speed and exercise caution on turns, bridges, rough roads, steep grades, and other adverse conditions.

- **ALWAYS INSTALL TRANSPORT LOCK DEVICES BEFORE TRANSPORTING THE HARROW.**
- Without the transporting locking devices installed, the harrow could fall during transport, resulting in damage to the machine or personal injury to the operator or bystanders. Before transporting, close harrow fully and install locking pin. Raise the harrow to its full height and install locking devices. Always install transport locks in the following sequence: front, right rear, then left rear.

- **EXERCISE CAUTION WHEN TRANSPORTING THE HARROW ON PUBLIC ROADS.**
- The harrow, depending on size, may be wider than a highway lane. Beware of traffic and avoid obstacles on the roadside such as signposts and mailboxes.

- **BE SURE THAT WARNING DEVICES ARE IN PLACE, CLEAN, AND VISIBLE.**
- Be sure a SMV (slow moving vehicle) emblem is attached on the rear of the harrow. When transporting the harrow during the day or at night, use accessory lights and other devices in order to give adequate warning to the operators of other vehicles.

- **IF THE TRACTOR IS EQUIPPED WITH A SWINGING DRAWBAR, LOCK THE DRAWBAR IN THE FIXED POSITION.**

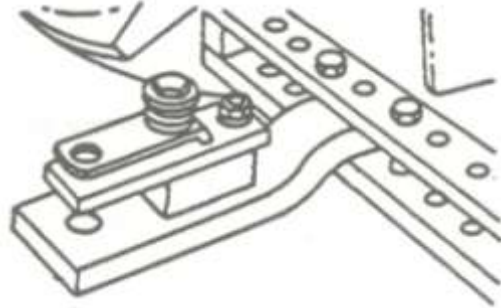
- **USE A SAFETY CHAIN TO SECURE THE HARROW TO THE TRACTOR DURING TRANSPORT.**
- The harrow could separate from the tractor drawbar during transport resulting in severe property damage or serious injury to bystanders or passersby.

TRANSPORTING MACHINE

POSITIONING TRACTOR DRAWBAR FOR TRANSPORT (FOUR WHEEL DRIVE TRACTORS)

1. Pin tractor drawbar in center down position.

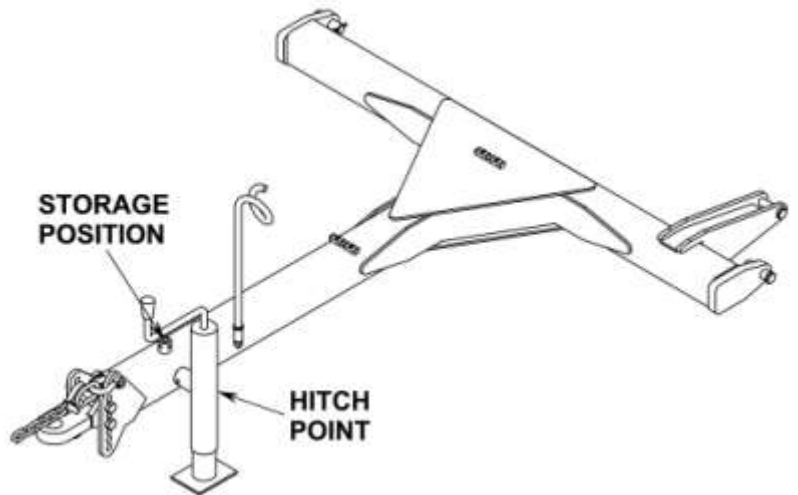
Note: Two -wheel drive tractors should be pinned tightly in center position at all times.



POSITIONING TONGUE JACK FOR TRANSPORT

IMPORTANT: Avoid damage to jack. Make sure tongue jack is installed in storage position on top of drawbar.

1. After hitching to tractor, remove tongue jack from hitch point on the side of the drawbar and install in storage position on the top of the drawbar.



ATTACHING SAFETY CHAIN TO TRACTOR

CAUTION: A safety chain will help control drawn equipment should it accidentally separate from the tractor drawbar while transporting.

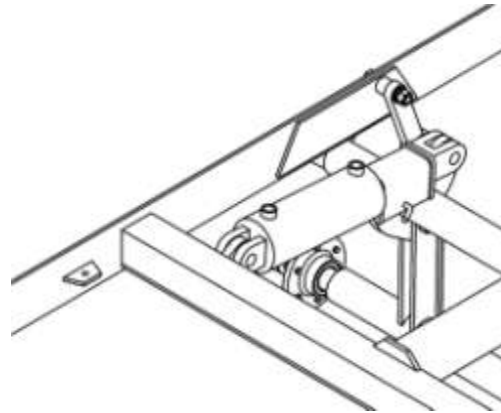
1. Attach safety chain to tractor.
(See **ATTACHING AND DETACHING** section).



TRANSPORTING MACHINE


INSTALLING TRANSPORT LOCK

1. Lock harrow in closed position with transport lock pin
2. Secure transport locks on lift cylinders with locking pins and hairpin clips (See **PREPARING THE HARROW FOR TRANSPORT** in the **OPERATING MACHINE SECTION**).

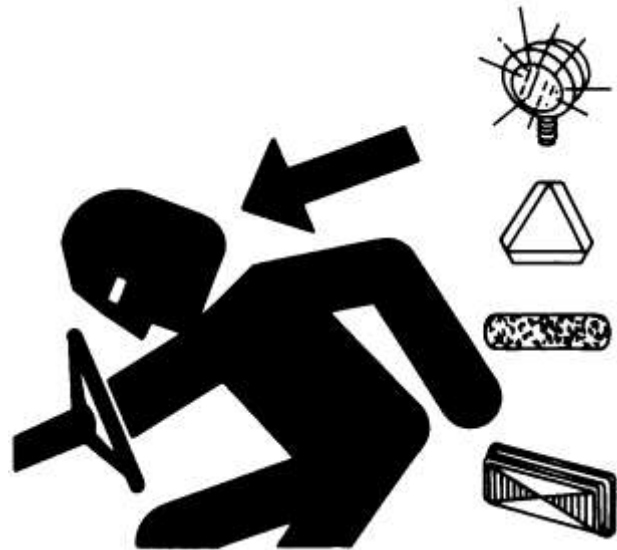


Important: Avoid machine damage. Make sure transport locks are in place on the transport cylinder rods


ATTACHING WARNING LIGHT PLUG

 **CAUTION:** When transporting machine on a road or highway at night or during the day, use accessory lights and devices for adequate warning to operators of other vehicles. In this regard, check local governmental regulations. Various safety lights and devices are available from your Rome dealer.

1. Attach warning light plug to tractor outlet socket.
2. To obtain maximum warning, be sure warning lights, reflectors, and SMV sign are clean.



TRANSPORTING THE MACHINE

 **CAUTION:** When transporting machine on a smooth surface road, do not exceed maximum tractor transport speed. Reduce speed considerably when traveling over rough ground. (See TOW LOAD SAFETY in **SAFETY RULES** section).

Reduce speed when turning.

Pin drawbar in center position to prevent side-to-side movement. When turning, do not uncouple tractor brake pedals and apply tractor brakes individually in an attempt to make a shorter turn.



OPERATING MACHINE



CAUTION: SAFETY GUIDELINES

- **BECOME FAMILIAR WITH THE HARROW AND ITS OPERATION BEFORE RUNNING THE UNIT.**
- Read the Operator's Manual carefully, regardless of experience. Improper use of the disc could result in serious personal injury.

- **NEVER ALLOW RIDERS ON THE TRACTOR OR HARROW.**
- Serious personal injury could result from falling in the path of the disc while in operation or transport.

- **BE SURE THAT BYSTANDERS ARE STANDING CLEAR OF THE DISC BEFORE FOLDING OR UNFOLDING THE WINGS - IF DISC IS SO EQUIPPED.**
- The wings of the harrow could suddenly fall due to hydraulic failure or accidental movement of the controls resulting in serious personal injury to a bystander.

- **BE SURE THAT EVERYONE IS STANDING CLEAR BEFORE OPERATING THE DISC.**
- Walk around the unit looking for people (servicemen, etc.) before mounting the tractor to operate the disc. Moving the disc while someone is between the gang assemblies could result in their serious personal injury.

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

- **USE EXTREME CAUTION WHEN WORKING AROUND DISC BLADES.**
- The disc blades are sharp and could cut hands, feet, etc. Wear gloves when holding the disc blades or gang assemblies.

- **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 DISC WHILE WORKING AROUND THE DISC GANGS COULD RESULT IN SERIOUS PERSONAL INJURY.**

OPERATING MACHINE

GUIDELINES FOR USE

1. Use recommended size tractor.
2. Decrease the gang angle to zero at which point the gangs are parallel to one another. Wheels are used for transport purposes only.
3. The harrow will plow most level with the front and rear gangs if the disc drawbar is level with the tractor drawbar when the harrow is in the ground in the plowing position.
4. Be sure the tractor and machine has been properly prepared (See **PREPARING THE TRACTOR** and **PREPARING THE DISC** sections).

TIGHTENING HARDWARE

After the first day of operation, check all hardware and gang bolts. Tighten as needed. (See: **MAINTENANCE** section.)

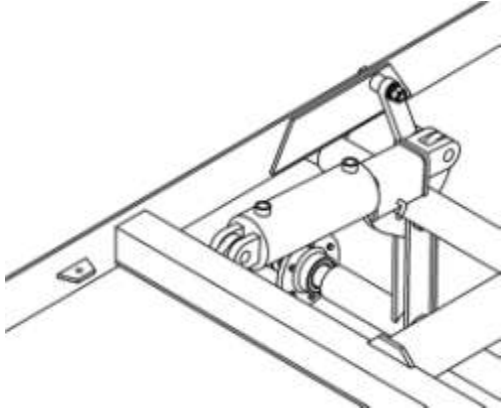
OPERATING SPEED

The harrow should be operated between 4 and 6 mph. Reduce speed in rocky, rough or other unsafe conditions.

OPERATING MACHINE

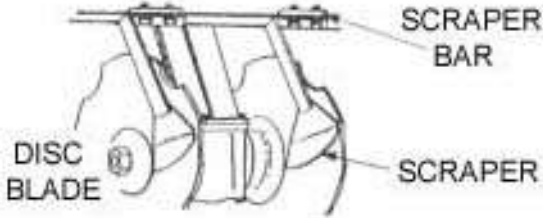
HYDRAULIC CONTROL

The disc can be raised onto the transport assembly by operating the hydraulic control unit. Extending the hydraulic cylinder will raise disc and lower the wheels for transporting and turning.



SCRAPER ADJUSTMENT

Each scraper should be adjusted so that it does not come in contact with the disc blade as the blade turns, but be slightly closer at the point so that trash cannot build up between the scraper and the disc blade.



SCRAPER INSTALLATION

OPERATING MACHINE

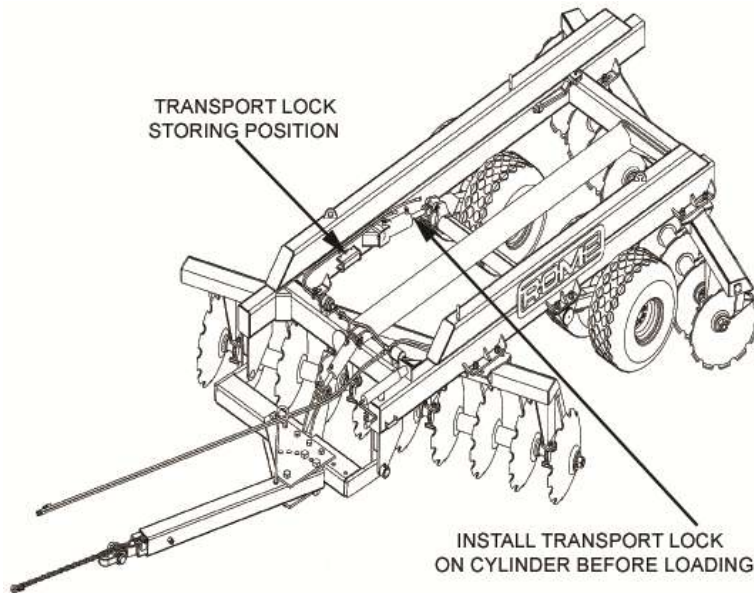
PREPARING TO OPERATE IN FIELD

1. Remove the cylinder transport lock from cylinder and store in field position. Follow safe procedures in the **ATTACHING & DETACHING** section.



CAUTION: Keep all persons away from the disc when raising or lowering the disc.

2. Use tractor SCV lever to raise and lower disc several times.



SET DEPTH OF PENETRATION CONTROL

Precise depth control is possible using wheels on transport assembly to act as depth gauges. Select a level area and lower the disc gangs to the ground. Determine the inches of penetration desired and raise wheels to a height equal to that requirement. Check measurement. From the hydraulic rod stop assortment, select the proper combination of stops, that when attached around the rod, will limit rod travel so it bottoms out at that point. After installation of the rod stops, when cylinder is fully retracted, the wheels will raise to the predetermined height, assuring desired disc blade penetration.

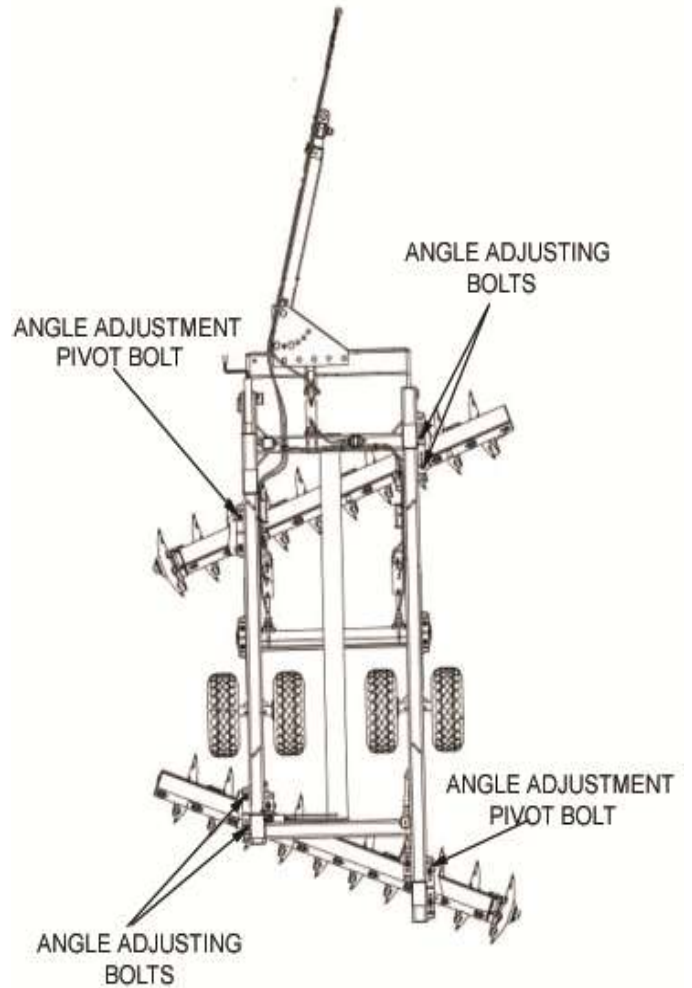


HYDRAULIC ROD STOPS

OPERATING MACHINE

ANGLING FRONT AND REAR GANGS

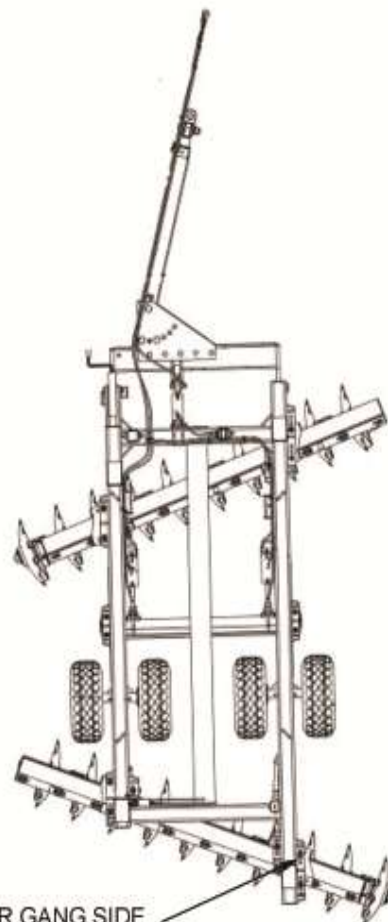
Changing the angle of the front or rear gangs will affect penetration of gangs and mixing and covering of crop residue. By changing the gang angle, the operator can adjust for different soil and trash conditions. Too little total angle between gangs (front and rear gangs set at minimum angle), may leave uncut areas and poor penetration of disc blades. Too much total gang angle (front and rear gangs set maximum angle), may cause harrow to trail unevenly in hard or soft ground conditions. Also, it may cause the gang to bulldoze so the soil will not flow through the disc blades. The greater the angle, the more aggressively the gang will plow. The ideal situation is for the front and rear gangs to have close to equal amounts of angle so they both plow to the same depth. The front and rear gang carriers both have a series of angle adjusting holes that are located on the frame. Each gang carrier can be adjusted from a minimum of 17.5° to a maximum of 25° - approximately. To change the angle of the front and rear gangs, lower the disc to the ground. Then, remove the gang angle selecting bolts located on opposite sides of each end of the frame. Loosen the gang carrier mounting bolts and the gang carrier opposite the angle selecting bolts. Slide gang carrier to the desired angle and replace the angle selecting bolts. Make sure to torque securely all bolts that attach the gang carrier to the frame.



OPERATING MACHINE

REAR GANG SIDE ADJUSTMENT

The rear gang of the disc harrow can be adjusted from side to side. If the rear gang is moved to the left, it increases the amount of soil being thrown into furrow. If the rear gang is shifted right, it will decrease the amount of soil being thrown into the furrow. In order to shift the rear gang to the right or left, loosen the gang carrier mounting bolts on the gang carrier brackets that are slotted. Now remove the bolts that are in the brackets without slots. Then reposition the gang carrier on the frame by pulling the harrow forward or backward while the disc blades are resting on the ground. This action will cause the gang carrier to shift to the right or left as desired. Finally, align bolt holes and replace bolts. Be sure to torque all bolts securely.

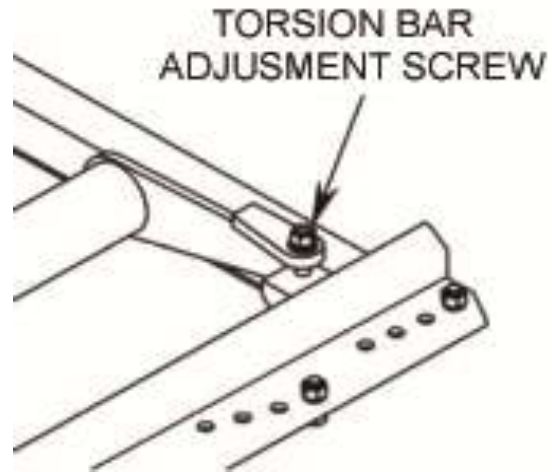


REAR GANG SIDE
TO SIDE ADJUSTMENT

OPERATING MACHINE

TORSION BAR ADJUSTMENT

The leading discs on a wheel-offset disc harrow tend to plow deeper thanks to the trailing discs. Incorporated into the design of the offset harrow frame assembly is a feature that helps compensate for this tendency. This feature is the torsion bar. The torsion bar adjusting nut permits tension to be placed on the frame, which lifts up the outside leading ends of the gang carriers to better level the depth of the cut of the gangs. The tighter the torsion nut is turned clockwise, the more the leading ends of the front and rear gangs will be raised.



FRONT HITCH ADJUSTMENT

It is important that the harrow drawbar be as close to level as possible when hitched to the tractor. If the tractor drawbar is higher than the harrow drawbar, it will tend to pull the front disc gang out of the ground. Conversely, if the tractor drawbar is lower, it will tend to pull the front gang deeper into the ground. Therefore, if the harrow drawbar and the tractor drawbar are on the same plane, the disc will plow level.

LEVELING FRONT TO REAR

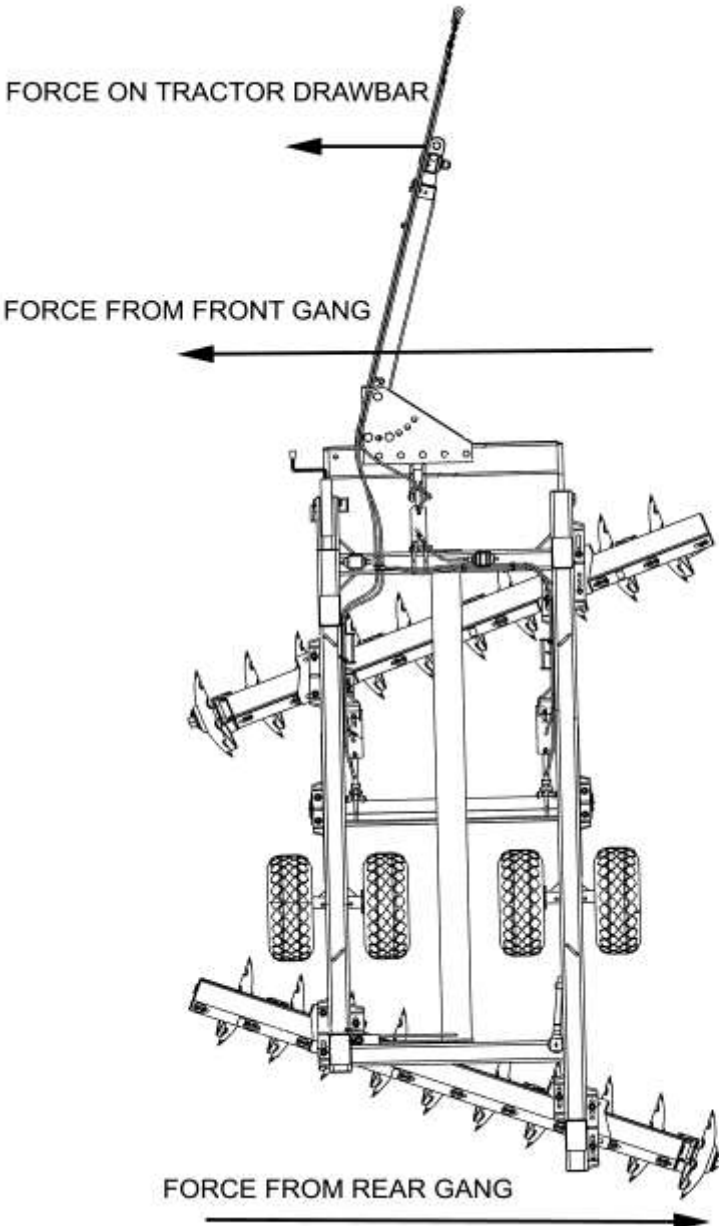
On wheel type offset harrows, it is important that the front disc gangs are level with the rear disc gangs. To accomplish this, use the hydraulic tongue cylinder (before and after) you level the harrow.

OPERATING MACHINE

POSITIONING THE DRAWBAR ON OFFSET BAR TO REDUCE TRACTOR SIDE DRAFT

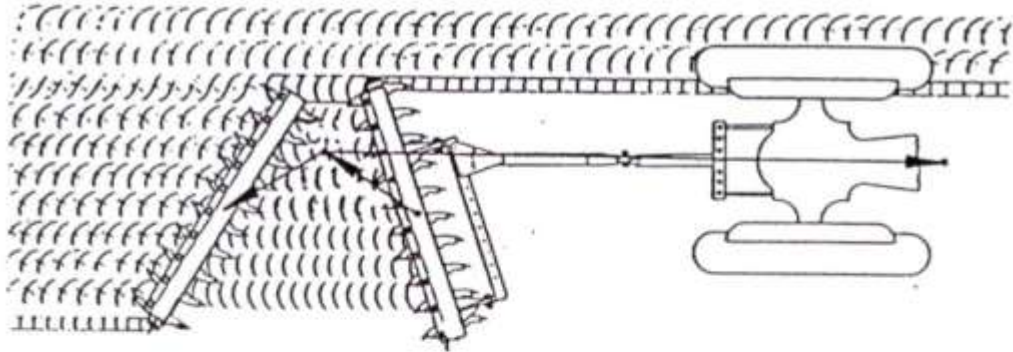
The fact that the disc is trying to rotate counterclockwise must be compensated for by shifting the drawbar plates on the offset bar to the left of the centerline to make the harrow heavier on the right side of the centerline as it is pulled through the ground.

THE FURTHER THE DRAWBAR PLATES ARE MOVED TO THE LEFT, THE LESS THE SIDE DRAFT WILL BE ON THE TRACTOR.

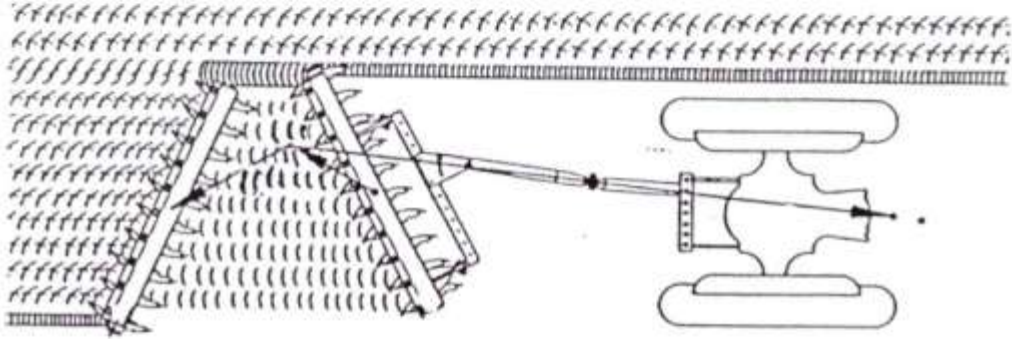


OPERATING MACHINE

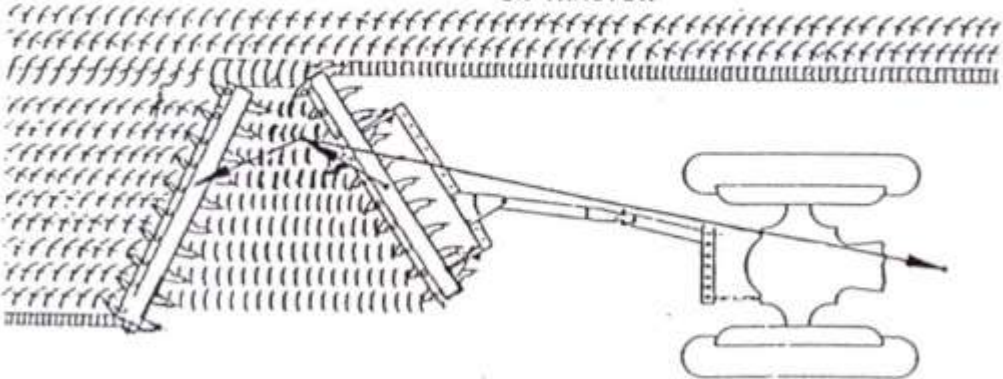
ADJUSTING SIDE DRAFT



FORCES PRESENT WITH DRAWBAR LOCATION FOR STRAIGHT LINE OF DRAFT, NO-SIDE-DRAFT POSITION – RIGHT OFFSET



FORCES PRESENT WITH DRAWBAR LOCATION FOR NOMINAL SETTING, WITH MINIMUM SIDE FORCES ON TRACTOR



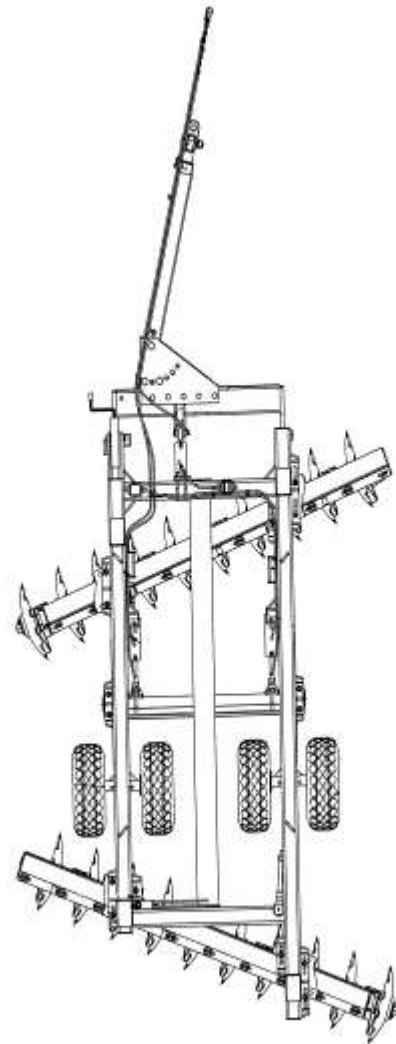
FORCES PRESENT WITH DRAWBAR LOCATION FOR LEFT OFFSET, WITH EXCESSIVE SIDE DRAFT ON TRACTOR

OPERATING MACHINE

ADJUSTING UNEVEN GANG PENETRATION

In certain soil conditions, less penetration on left front and/or right rear gang carriers may occur. The following adjustments can be made to equalize disc blade penetration:

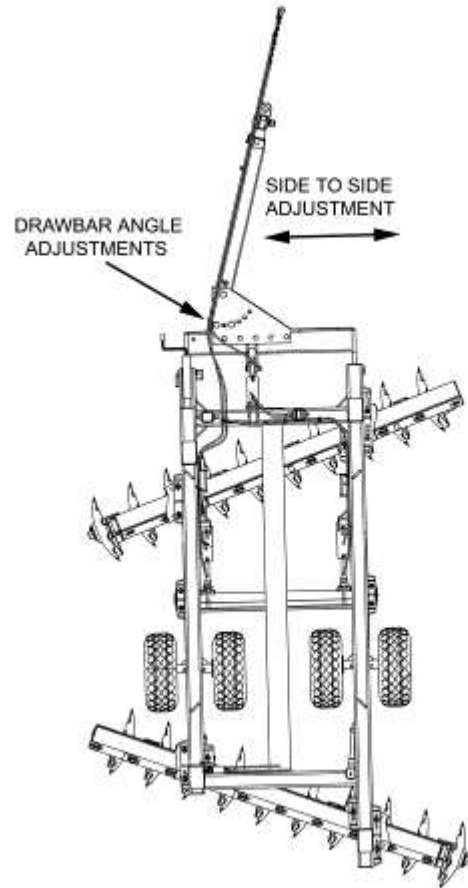
1. Move drawbar to left to reduce force against front gang disc blades.
2. Reducing front angle will decrease amount of soil thrown by front gang, equalizing amount of soil being moved by rear gangs.
3. Too much angle will cause the gang to bulldoze and the soil will not flow through the disc blades.
4. Letting transport wheels roll without gauging disc depth will stabilize front and rear gang penetration.
5. The ideal situation is for the front and rear gangs to have close to equal amounts of angle so they both plow to the same depth.



OPERATING MACHINE

SET DRAWBAR ANGLE

The drawbar can be positioned so disc will trail directly behind tractor or be offset in one of several positions. The harrow may be moved laterally behind tractor by moving drawbar plates on offset bar. First, remove the bolts through offset bar, slide plates to right or left, and replace bolts. The drawbar may be adjusted to give the desired angle in the front gang. To do this, remove the angle-selecting bolt, rotate the drawbar to the desired setting, replace and tighten bolts. Moving the drawbar to right has the effect of increasing angle in the front gang, moving it to the left decreases it. The greater the angle, the more aggressively the gang will plow. This is desirable in hard ground conditions or when more penetration is wanted. Final adjustment should be made after harrow has been put into operation, observing the proper angle and trailing of the harrow.



LUBRICATION

LUBRICANT STORAGE

Your equipment can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Whenever possible, store lubricants and containers in an area protected from dust, moisture and other contamination. Store containers on their side to avoid water and dirt accumulation.

LUBRICATE GANG BEARINGS

Use medium consistency pressure grease. Grease the bearings whenever the seals appear dry. Add sufficient grease to force lubricant out under seal lip. In sandy conditions, the bearings should be lubricated daily to prevent the build-up of sand and grease just outside the sealing surface. The Timken tapered roller bearing assemblies are equipped with seals facing outward; therefore, no damage can occur due to excessive lubrication.



CAUTION! Before servicing the harrow, always:

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



LUBRICATE WHEEL BEARINGS

Once each season, remove hubcaps and pack the bearing cones and seals with No. 2 multi-purpose lithium grease or equivalent. Replace the grease seals if necessary. Make sure no foreign material is allowed to get into grease or bearings. Replace hubcaps.

LUBRICATE BELL CRANK BEARINGS

The grease fittings on the bell crank bearings should be greased daily during operation with any standard brand of lubricant recommended by grease manufacturer for this purpose.

LUBRICATE LEVELING ADJUSTMENT SPRING

Use high temperature grease while rotating spring rod or brush grease on entire length of rod threads. Also lubricate the long spring guide between the jam nut and the short spring guide.

MAINTENANCE



SAFETY GUIDELINES CAUTION:

- **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 DISC GANGS COULD RESULT IN SERIOUS OR 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 p.s.i. displayed on the sidewall of the tire.
- **BEFORE DISCONNECTING ANY HYDRAULIC LINES, 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 disc blades are sharp and could cut hands, feet, etc. Use chock blocks to prevent the gang assembly from rolling on surfaces before assembly of the frame. Wear gloves when handling the disc 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.

MAINTENANCE

CHECKING WHEEL BOLTS AND BEARINGS

Check tightness of all wheel bolts and wheel bearings during the first week of operation, and periodically after that.

Torque wheel bolts:
220 lb./ft.

To adjust the wheel bearing, remove center hubcap and bearing lock nuts. Raise the wheel and turn it. Tighten nut until there is a slight but noticeable drag on the bearing. Back off nut until nut hub turns smoothly with slight drag. Lock bearing lock nuts. Replace hubcap.

Note: When placing the hub spindle, care must be exercised to avoid damaging the seal.

REPACK WHEEL HUB BEARING ANNUALLY

Wheel hub bearings should be repacked once a year with wheel bearing grease. Replace the grease seals if necessary.

- Remove wheel hubs.
- Place bearings, seals, caps, washers, and nuts in clean container and clean with kerosene or other solvents.
- Inspect the bearings and seals. If they are not in satisfactory condition, replace them with new parts available from your Rome dealer.
- Clean inside of hubs.
- Pack the bearing cones and seals with No. 2 multi-purpose lithium grease or equivalent.
- Make sure no foreign material is allowed to get into lubricant or bearing.
- Re-install the hub and bearings. Refer to the illustration on the following page for proper assembly.
- Be sure to:
 1. Press the cups against the shoulders in the hub.
 2. Press the bearing cones into the bearing cup in the hub.
 3. Press the oil seal very lightly against the shoulders in the hub.
 4. Lubricate the seal lips with grease before installing the hub onto the spindle.
 5. Install the hub onto the spindle.
 6. Install washer and bearing lock nuts and set bearing end play.
 7. Pack cover plate with grease and install.
 8. See information above for proper wheel hub bearing adjustment instructions.

MAINTENANCE

GANG BEARINGS

Check the gang bearings every 400 to 500 hours of operation for proper adjustment. If end play is detected, remove shims from under the bearing cap in order to eliminate it. However, if too many shims are removed, the bearing will run light. This is undesirable and will result in accelerated wear of the bearing rollers and races.

Note: The Neoprene seals should be watched closely for wear. These seals should last for 1000 to 1500 hours of use. When they become worn, they must be replaced. The successful operation and extended life of the bearing depends on keeping it dirt free.

DISC GANGS (TRCW-20 & TRCW-24 HAVE 2 1/2" GANG AXLES - 20" DISC SPACING)

All nuts and bolts must be kept tight. Special attention must be given to keeping the axle nuts tight.

Important: Tighten axle nuts daily during the first (7) seven days of operation when the harrow is new or after replacing an axle, disc blade, spacer, or bearing. After the next 36-40 hours of operation, tighten again. If these nuts are not kept tight, axles will bend or break, discs will turn on the axle, and all components of the gang will be damaged.

AXLE DIAMETER	FEET/POUNDS OF TORQUE
1 1/2"	1200-1500 FT./LBS.
1 5/8"	1600-1800 FT./LBS.
2 1/8"	1800-2000 FT./LBS.
2 1/2"	2000-2200 FT./LBS.
3 1/4"	2400-2600 FT./LBS.

HYDRAULIC HOSES

Periodically, inspect all hydraulic hoses for leaks, abrasions, and cracks. Tighten all fittings and replace hoses as necessary.

FASTENERS

Tighten all fasteners after the first day of operation. Refer to Torque Chart to set proper torque values.

"A" Bolt Diameter (in.)	Threads Per Inch	TORQUE (lb.-ft.)	
		Grade 5	Grade 8
1/4	20	8	12
5/16	18	17	25
3/8	16	31	44
7/16	14	49	70
1/2	13	76	106
9/16	12	109	153
5/8	11	150	212
3/4	10	266	376
7/8	9	430	606
1	8	644	909

BOLT TORQUE CHART

Torque values in the table are for plain unlubricated bolts and nuts.

For plain lubricated bolts and nuts use 85% of the values in the table.

For plated unlubricated nuts and bolts use 75% of the values listed in the table.

For plated and lubricated bolts and nuts use 65% of the values in the table.



1
"A"
1



Grade 5



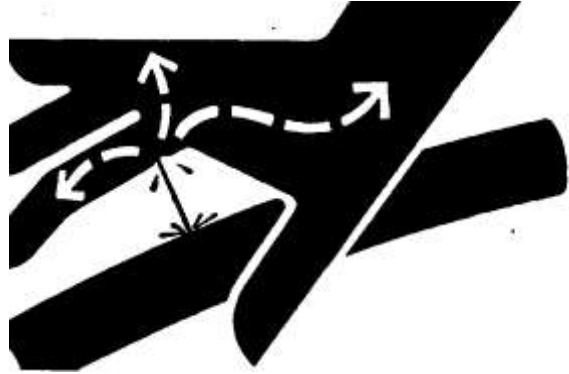
Grade 8

MAINTENANCE

REMOVING HYDRAULIC CYLINDER



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. Lower the disc to the ground.
2. Shut off tractor engine and move hydraulic levers back and forth to release pressure.
3. Disconnect hoses at tractor and cylinder ports. Cover tractor outlets, cylinder ports and hose ends.
4. Remove cylinder pins. Check and repair as necessary. (See your dealer).
5. When installing cylinders, follow instructions below for bleeding transport cylinder.

BLEEDING TRANSPORT CYLINDER




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 connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.



Extend and retract transport cylinder several times, pausing at full extension for (5) five seconds to remove all trapped air.

MAINTENANCE

SERVICING DISC GANGS

 **CAUTION:** When removing disc gangs, use suitable lifting devices or support stands to prevent injury. Block disc gang to keep it from rolling. Wear gloves and other safety equipment to avoid injury.

1. Remove hex nut, hex jam nut, and hex bolt fastening disc gang bearings to bearing standards on gang carriers.
2. Raise harrow slightly to roll disc gang away from harrow.
3. Block gang to prevent rolling. Support harrow frame.
4. Use axle nut wrenches to loosen gang axle nuts. See **TIGHTEN GANG AXLE NUTS** in this section.

ASSEMBLING DISC SPACERS

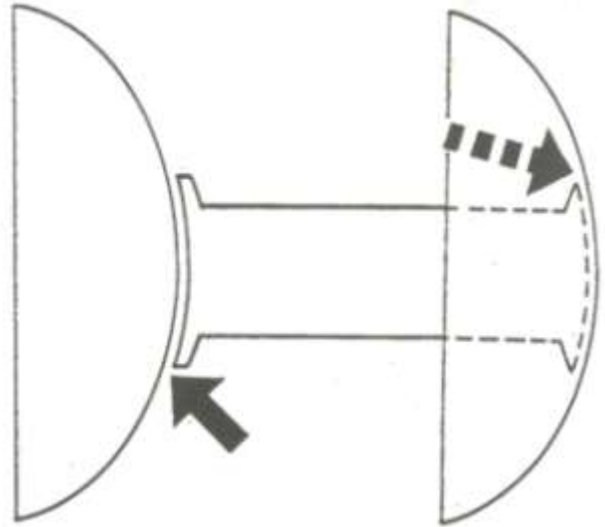
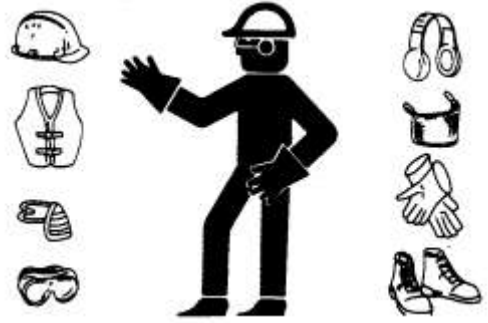
Important: When gangs are disassembled, be sure to wire brush spools and center of disc blades to remove dirt, grit, rust, and paint. You **MUST** have metal-to-metal contact between spools and disc blades to ensure satisfactory gang tightness.

Reassemble gangs so curved surfaces of spools and disc blades match (bold arrows).

GANG AXLE NUT WRENCHES

Tightening of gang axle nuts using Rome offset gang axle nut wrenches is easier and safer.

These (2) two axle nut wrenches, Rome Part Number 2r-81, are included with your harrow.



MAINTENANCE

TIGHTEN GANG AXLE NUTS - 2 1/2" GANG AXLE



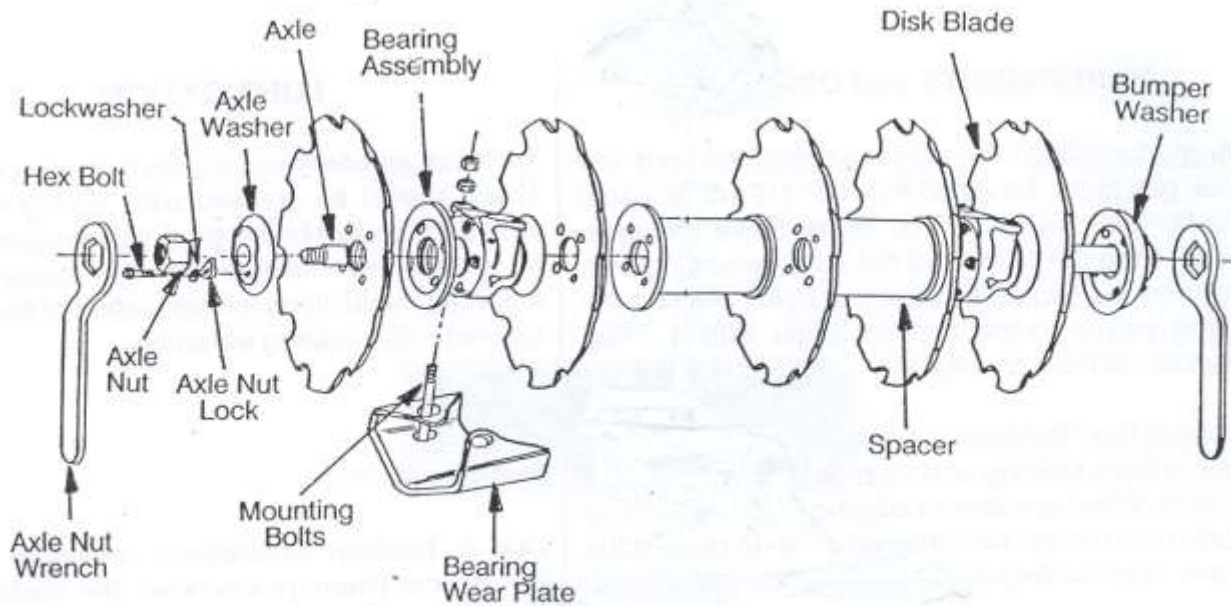
CAUTION: Wear gloves and other safety equipment to avoid injury.

Oil threads on axle and using the axle nut wrenches provided, tighten the axle nuts as tightly as possible. For best results and added leverage, place an (8) eight or (10) ten foot length of 2 inch pipe on each axle nut wrench to serve as an extension of the handle and hit it with a hammer. Using a torque wrench, check to be sure that the recommended ft. /lbs. torque has been achieved. See the Torque Chart to the right for the proper torque setting of your particular gang axle nut size. Mount the axle nut lock to either the bumper washer or the axle washer and secure axle nut with bolt and lock washer.

Important: Re-tighten axle nuts after the first 10-12 hours of operation. Thereafter, visually inspect axle nuts daily for tightness and retighten as necessary to ensure that proper torque requirement is maintained.



AXLE DIAMETER	FEET/POUNDS OF TORQUE
1 1/2"	1200-1500 FT./LBS.
1 5/8"	1600-1800 FT./LBS.
2 1/8"	1800-2000 FT./LBS.
2 1/2"	2000-2200 FT./LBS.
3 1/4"	2400-2600 FT./LBS.



MAINTENANCE

ATTACHING DISC GANGS TO STANDARDS



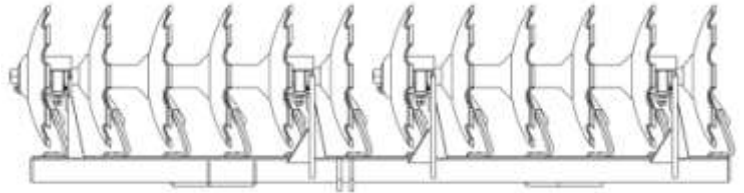
CAUTION: Use suitable lifting devices or support stands to prevent disc from falling. Block disc gang when not rolling it into place. Wear gloves and other safety equipment to avoid injury.

Where lifting facilities are available:

1. Position front gang assembly with concave side of discs to right, as viewed from the rear.
2. Position rear gang assembly with concave side of discs to left, as viewed from rear.
3. Place gang carriers on corresponding gang assemblies and attach to bearing standards with bearing hex bolts, hex jam nuts, hex nuts, and bearing wear plates.

Where lifting facilities are limited:

1. Position gang carriers upside down. Place gang assemblies on gang carriers and attach to bearing standards with bearing hex bolts, hex jam nuts, hex nuts, and bearing wear plates.
2. Turn complete assemblies of gangs and gang carriers right side up.



MAINTENANCE

SERVICES TIRES SAFELY



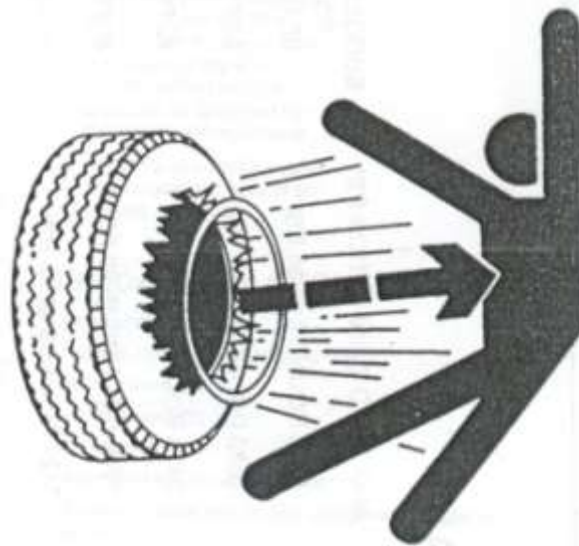
CAUTION: Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims, or missing lug bolts and nuts.



CHECKING TIRE PRESSURE

Equal pressure in all tires is necessary for even penetration. A low tire will cause deeper penetration on one side than the other. The increased penetration on one side will result in side draft of the disc. Inflate tires to pressure shown in chart.

See [TIRE PRESSURE CHART](#) on the next page.

MAINTENANCE

TIRE PRESSURE CHART

TIRE SIZE	LOAD INDICATOR	MAX TIRE SPEED	MAX LOAD@ INFLATION PSI	SUGGESTED PSI
7.5 X 16 6 PLY	6 PLY	25 MPH	1930 LBS @ 36 PSI	36
7.5 X 16 10 PLY	10 PLY	25 MPH	2680 LBS @ 60 PSI	50
9.5L X 15 8 PLY	8 PLY	25 MPH	2470 LBS @ 44 PSI	42
11L X 15 FI	F	INTERMITTENT HIGHWAY	3960 LBS @ 90 PSI	80
12.5L X 15 10 PLY	10 PLY	25 MPH	3420 LBS @ 44 PSI	40
12.5L X 15 12 PLY	12 PLY	25 MPH	3860 LBS @ 52 PSI	48
12.5L X 15 FI	F	INTERMITTENT HIGHWAY	4680 LBS @ 90 PSI	80
12.5L X 16 12 PLY	12 PLY	25 MPH	3960 LBS @ 52 PSI	50
16.5L X 16.1 10 PLY	10 PLY	25 MPH	5200 LBS @ 35 PSI	35
21.5L X 16.1 12 PLY	12 PLY	25 MPH	7150 LBS @ 32 PSI	30
385/65R 22.5	T	65 MPH	9370 LBS @ 120 PSI	95



CAUTION: Check tire pressure regularly.



WARNING: Never pull disc harrows faster than 20 miles per hour.



DANGER: Never use rims from other equipment. Tire pressures above 60 PSI require special rims.

STORAGE

STORAGE

BEGINNING OF THE SEASON MAINTENANCE

1. Clean off any dirt or grease that may have accumulated on moving parts. This prevents abrasive action that could cause excessive wear.
2. Thoroughly inspect the disc for loose parts and adjust as necessary.
3. Inflate tires to correct pressure.
4. Clean grease off hydraulic cylinder rods.
5. If there is evidence of hydraulic oil leakage, correct the problem.

END OF THE SEASON MAINTENANCE

1. Clean disc thoroughly to remove dirt and trash, which hold moisture and cause rusting.
2. Lubricate disc. BE SURE to grease gang bearings, rotate the gangs and grease again. This procedure WILL extend bearing life.
3. Store disc where it is adequately protected from the weather.
- 4. Coat exposed hydraulic cylinder rods with grease.**
5. Apply a good rust preventive, such as paint or a heavy coating of grease, to disc blades. Paint is available from your ROME dealer.
6. Inspect for worn and damaged parts. Replace them now to make sure disc will be ready for next season.

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 DISC GANG COMPONENTS WITH CARE.**
- The disc 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 disc blades or gang assemblies.
- Disc 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 ensure safe assembly of the disc gang.

- **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.

ASSEMBLY

CHECK ALL PARTS ON PACKING LIST

For Export Shipment assembly procedure, follow steps 1 through 10.

For Domestic Shipment assembly procedure, follow steps 3 through 10.

Note: Use the parts diagrams and listings in the Parts Manual to help facilitate assembly of the disc harrow.

STEP 1: ASSEMBLING GANGS

For shipping purposes, the bearings, spacers, axle washer, bumper washer, axle nuts, and axle nut locks are shipped bundled together.

To assemble the gangs, these following steps should be observed.

Mount disc blades on each axle assembly as shown. The number of discs and spacers will vary for each size gang.

- A. Remove the axle nut on the bumper washer end of the shipping assembly. The bumper washer is the one that fits the convex surface of the disc blade.
- B. Remove all bearings and spacers on the axle. This leaves only the bumper washer, an axle nut lock, and one axle nut on the axle.
- C. **Important:** Care should be taken to prevent damage to the axle threads as parts are slid off and on the axle.
- D. Slide one disc blade down the axle until it contacts the axle washer. **Note:** The axle washer fits the concave side of the disc blade. Bearings and spacers have concave and convex ends. Curvatures must mate with discs or the gangs will not stay tight and damage will result. Now, slide a bearing onto the axle.
- E. Raise the axle into a vertical position. Axle, blade, and bearing will now stand in an upright position without being held. If the axle washer is not snug against the concave side of the disc blade, it will be necessary to tilt axle and disc blade and slide a 1" x 4" block of wood underneath the disc. Be sure to position it between the nut and the floor or ground. This assures that the threaded end of the axle will be visible when the gang is completely stacked. **Note:** If this procedure is not followed, the shaft will be too short and the nut cannot be installed.



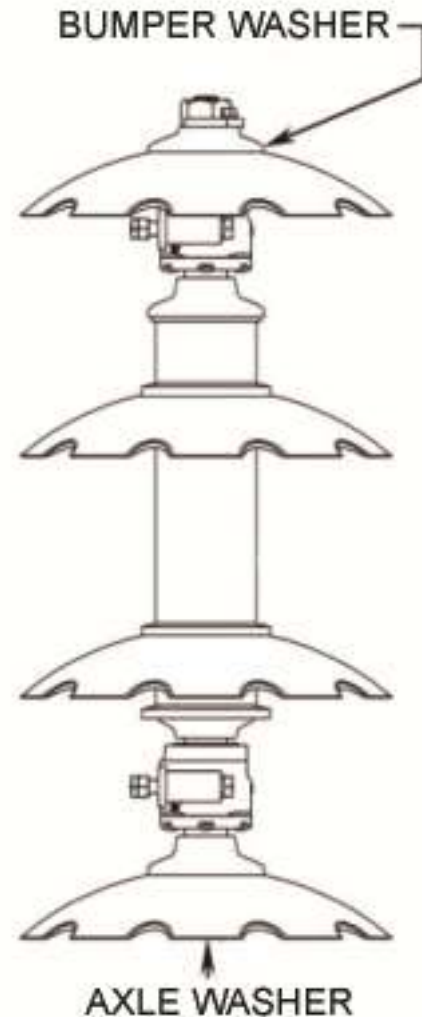
CAUTION: Gang components are heavy. Two-person gang assembly is recommended. Follow Safety Guidelines.

ASSEMBLY

STEP 1: ASSEMBLING GANGS - CONTINUED....

- F. Refer to the Illustration and continue to slide the discs, spacers, and bearings down the axle exactly in the order shown. **Important:** Make sure that concave and convex faces on the washers, bearing assemblies, and disc spacers coincide with the faces of the discs. **Note:** Concave and convex flanges on the bearing assemblies are factory mounted to correspond to the front and rear gangs in order to have the grease fittings always facing to the rear. This makes it easier to grease the bearings.
- G. After the last disc blade is in place, place the bumper washer onto the axle. Replace axle nut after applying lubricant to axle threads. Tighten nut to remove all slack. Final tightening will be done when the gang is in the horizontal position.
- H. Use an overhead crane or hoist to lower disc gang to horizontal position on the floor. Use chock blocks to prevent the gang assembly from rolling. Using the axle nut wrenches, tighten both axle nuts as tight as possible.

For best results and added leverage, place a four or five foot length of 2-inch pipe on each axle nut wrench to serve as handle extensions. It may be necessary to hit the pipe extension with a hammer to meet recommended lbs. /ft. of torque as set forth in the **AXLE NUT TORQUES CHART** found in the **MAINTENANCE** section - TIGHTEN GANG AXLE NUTS. Mount axle nut locks to axle and bumper washers and secure with hex bolts and lock washers.

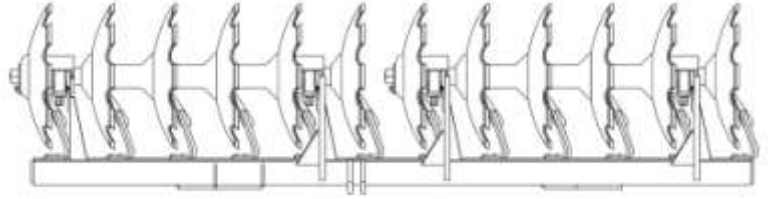


ASSEMBLY

STEP 2: INSTALLING GANGS ON GANG CARRIERS

Where lifting facilities are available:

- A. Position front gang assembly with concave side of discs to right, as viewed from the rear.
- B. Position rear gang assembly with concave side of discs to left, as viewed from the rear.
- C. Place gang carriers on corresponding gang assemblies and attach to bearing standards with the bearing hex bolts, hex jam nuts, hex nuts, and bearing wear plates.

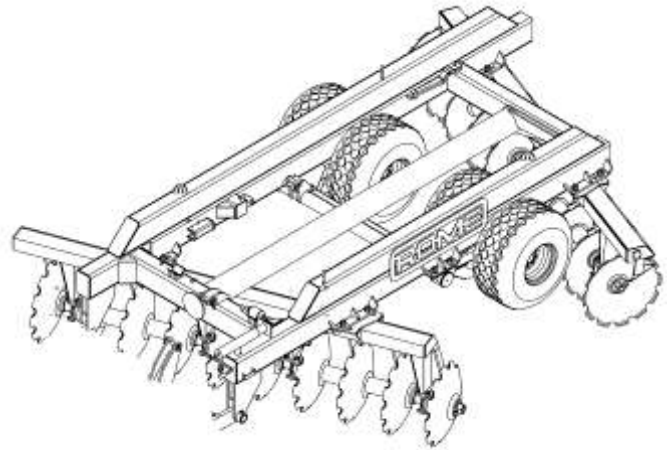


Where lifting facilities are limited:

- A. Position gang carriers upside down. Place gang assemblies on gang carriers and attach to bearing standards with the bearing hex bolts, hex jam nuts, hex nut, and bearing wear plates.
- B. Turn completed assemblies of gangs and gang carriers right side up.
- C. Install disc scrapers.

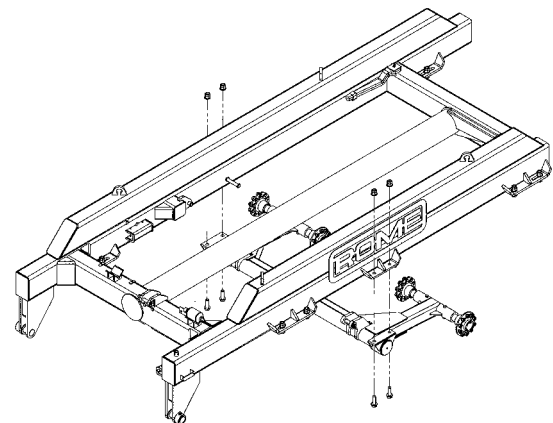
STEP 3: INSTALLING GANG CARRIERS TO FRAME

Place the gang carriers in approximately the correct position on a flat surface and securely block them in an upright position. Place the frame on top of the gang carriers and bolt in place with hex nuts provided. **Note:** Place flat washers against all slotted holes. Inserting the pivot bolts first facilitates easy assembly. Gangs may then be provided to the desired angle beneath the frame and bolted in place with appropriate hardware.



STEP 4: INSTALLING TRANSPORT ASSEMBLY

The transport assembly is attached to the frame with two bearing assemblies. These slide onto the transport and then bolt onto the frame. The transport should be facing the rear of the unit when attached onto the frame. This orientation allows the wheels to pivot down and towards the front of the disc harrow. **Note:** For domestic shipment the transport will be mounted onto the frame assembly.

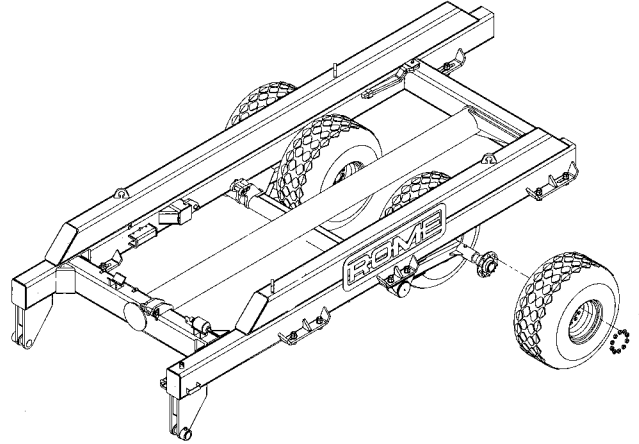


ASSEMBLY

STEP 5: INSTALLING WHEEL ASSEMBLIES

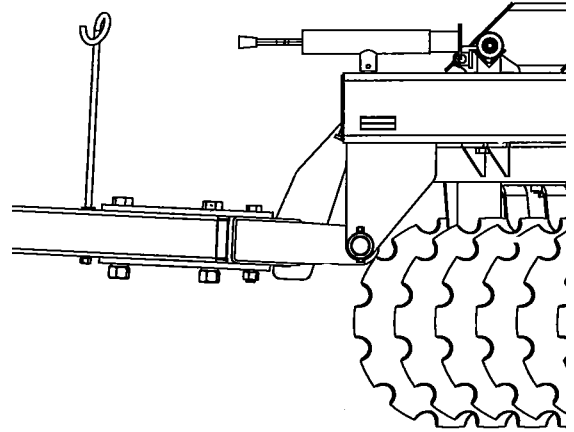
The wheel and tire assemblies should be attached to the hubs with studs and lug nuts (8 or 10 per hub) provided on hub assemblies. Wheel bearings have been properly adjusted and lubricated at the factory. When you mount the wheel assembly onto the hubs, make sure the valve stem is to the outside (lug bolt side). Inflate tires to recommended tire pressure for best flotation as stated in the **MAINTENANCE** section - **TIRE PRESSURE CHART**.

Note: Torque lugs on the 8 bolt hubs to 80-100 lbs./ft.
Torque lugs on the 10 bolt hubs to 250 lbs./ft.



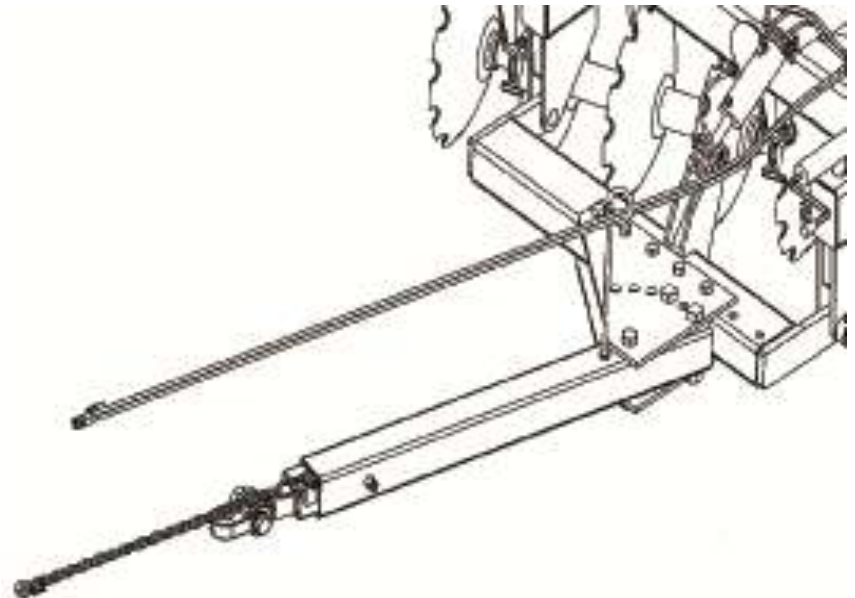
STEP 6: INSTALLING OFFSET BAR

A. Pin the offset bar onto the frame. Use the pins provided with the cross locking bolt to secure the pin.



STEP 7: INSTALLING DRAWBAR

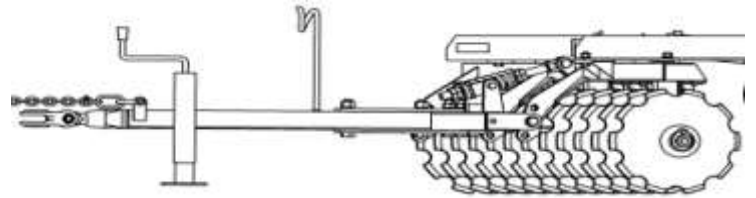
The drawbar is attached to the offset bar with bolts that go through the bottom drawbar plate first and then through the top drawbar plate. Secure hex bolts with lock washers and hex nuts provided. **Note:** The drawbar plates should be placed so that the drawbar pull point is to the left of the center and approximately in line with the left frame rail (standing behind the disc and looking toward tractor). The final adjustment should be made, needed, after the harrow has been put into operation.



ASSEMBLY

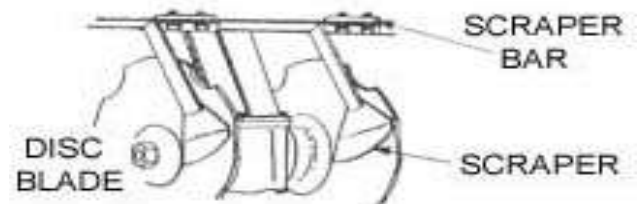
STEP 8: ATTACH JACK ASSEMBLY

Pin the jack stand to the hitch point located on the left hand side of the drawbar assembly. Whenever transporting or plowing, unpin jack and place in the convenient storage position located on top of the drawbar.



STEP 9: INSTALLING & ADJUSTING SCRAPERS

Install and adjust the scrapers as shown in the illustration below. On domestic shipments, scrapers come from the factory mounted to the rear of the gang carriers and should be adjusted so that they do not come in contact with the disc blades as it turns. They should be slightly closer at the scraper point so that the trash build-up between the disc blades and the scrapers are minimal. The heel of the scraper needs to be approximately $\frac{1}{4}$ " from the disc blade.



SCRAPER INSTALLATION

STEP 10: INSTALLING HYDRAULIC CONTROL GROUPS

A. There are three hydraulic cylinders on the TRCW-20 & TRCW-24. Two of these are transport cylinders. The base end of these cylinders attach to the frame of the TRW. The rod end attaches to the cylinder bracket on the transport. The other cylinder is a tongue leveling cylinder. The base end of this cylinder attaches to the frame, and the rod end attaches to the cylinder bracket on the offset bar.

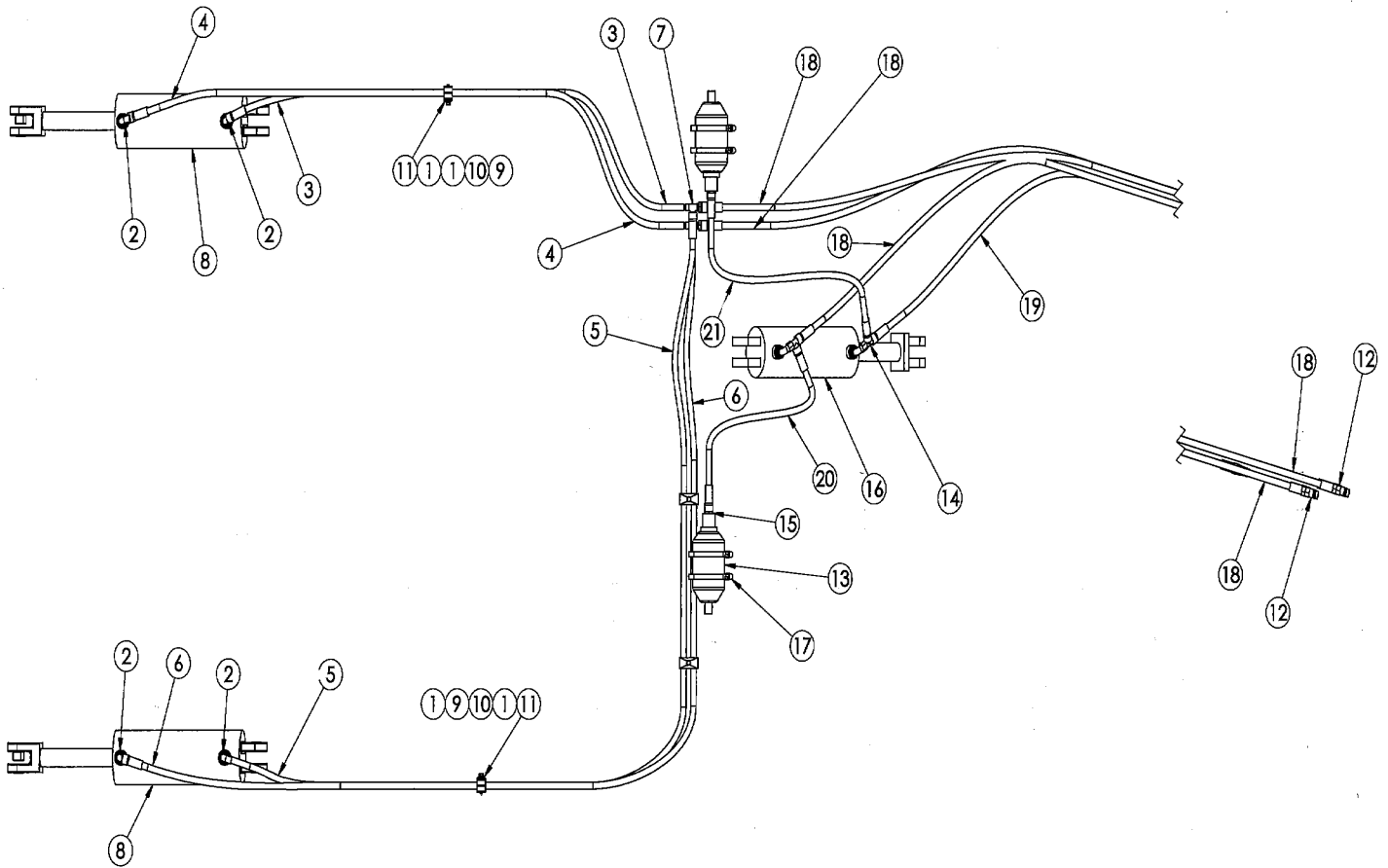
B. Attach the hydraulic hose holder to the drawbar by inserting it through the hole located just in front of the top drawbar plate and secure with lock washer and hex nut.

C. Install the nitrogen accumulators for the tongue leveling cylinder, and all of the hoses as per the hydraulic schematic. The pressure and tank hoses will go into "T" fittings where they will feed to one nitrogen accumulator, and one port on the cylinder. Thus linking each port on the cylinder to its own nitrogen accumulator.

D. The transport cylinders will be linked together using a "T" fitting on both the pressure and return sides of the cylinder. This allows them to work together on the same hydraulic function. Please see the hydraulic schematic for more information.

ASSEMBLY

HS-TRCW-20 & TRCW-24 HYDRAULIC SCHEMATIC



REF. NO.	PART NUMBER	PART NAME	NO. REQ'D
1	5005453	HOSE CLAMP HALVE	8
2	5000618	3/4" O-RING BOSS X 1/2" MJIC 90	6
3	3059764	HOSE ASSEMBLY, 74"	1
4	3059765	HOSE ASSEMBLY, 90"	1
5	3059766	HOSE ASSEMBLY, 126"	1
6	3059767	HOSE ASSEMBLY, 140"	1
7	5000557	BULKHEAD TEE	2
8	5005125	HYDRRAULIC CYLINDERS, 5" X 12"	2
9	031200B5	BOLT, 5/16" X 2" GRADE 5	4
10	LW-031	LOCK WASHER, 5/16"	4
11	5005452	COVER PLATE	4
12	5004267	MALE QUICK COUPLER	4
13	5005737	NITROGEN ACCUMULATOR	2
14	5000673	SWIVEL NUT RUN TEE	2
15	5000583	STRAIGHT ADAPTER MNPT-MJIC	2
16	5005141	WELDED CYLINDER, 5" X 8"	1
17	5005742	LARGE CLAMP	4
18	3059769	HOSE ASSEMBLY, 208"	3
19	3059768	HOSE ASSEMBLY, 198"	1
20	3060643	HOSE ASSEMBLY, 24"	1
21	H-340J-8-36	HOSE ASSEMBLY, 36"	1

ASSEMBLY

ATTACHMENT ASSEMBLY

GENERAL:



CAUTION: Wear protective clothing and safety equipment appropriate to the job. Work safely to avoid injury and observe all safety messages.

Read all assembly instructions and carefully observe illustrations!



INSTALL SAFETY CHAIN

Attach safety chain by pinning shackle through hole in bracket on left front side of the drawbar assembly. Secure with the shackle pin and cotter pin.



BEARING WEAR PLATES

Note: All models equipped.

The heavy duty bearing wear plates come from the factory already installed on the bearing assemblies. If it becomes necessary to replace a wear plate, follow these instructions: remove the mounting bolts from the bearing assembly, and place the bolt heads into the slots of the wear plate. Now, insert the mounting bolts through the bearings and secure to the gang carrier bearing standards with the hex jam nuts and hex nuts provided.



HOW TO ORDER PARTS

Please be sure to furnish the quantity, part number, and name of each part wanted. It is also important to give the Serial Number of the machine for which parts are intended. It is also suggested that the Serial Number of the machine be written on the space below so that it will be readily available when you need it.

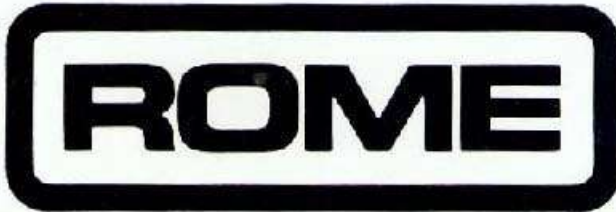
THIS PARTS BOOK IS FOR:

MACHINE SERIAL NUMBER:

To ensure prompt delivery, please furnish the correct name of the co-signee, as well as the street address, city, state, and zip code to which the parts are to be shipped. Also, please indicate whether shipment is to be by truck, UPS, air courier, or by other means.

**ONLY ROME PARTS GIVE
ROME PERFORMANCE**

The same quality and craftsmanship that have made Rome products famous throughout the world are built into all Rome replacement parts



**MISSOURI MACHINE & PLOW, LLC.
475 SIXTH STREET / P.O. BOX 48
CEDARTOWN, GA 30125 USA
PHONE NUMBER: 770-748-4450
WWW.ROMELOW.COM**

WARRANTY

ROME AGRICULTURAL/CONSTRUCTIONS PRODUCTS WARRANTY

MISSOURI MACHINE & PLOW, LLC.

PO BOX 48, CEDARTOWN, GA 30125, USA

(1) WHAT IS COVERED BY THIS WARRANTY: Missouri Machine & Plow, LLC., hereafter referred to as Rome, warrants, to the original retail purchaser only, or placed in the dealers' rental fleet, that all equipment, parts, and accessories which it manufactures are free from defects in material or workmanship under normal agricultural/construction use, service, proper setup, and adjustment. **The duration of this warranty is one (1) year from the date of delivery to the original purchaser.** This warranty is limited to the repair or replacement of part or parts to the original purchaser, found by the manufacturer, through the authorized selling dealer, to be defective in material or workmanship in the warranty period. Labor for authorized repairs are covered at dealer registered labor rate based on Rome's published flat rate. Rome reserves the right to have defective parts returned to Missouri Machine & Plow, LLC. At 475 Sixth Street, Cedartown, GA 30125, prepaid by the dealer or purchaser and accompanied by a completed Warranty Return Authorization Number. Rome shall complete such repair or replacement within a reasonable time after Rome receives the product. Rome may, at its option, authorize its representatives to make adjustments in the field. Consult your dealer before removing any parts or making repairs. For warranty claims, notify the selling dealer.

(2) WHAT IS NOT COVERED BY THIS WARRANTY: Rome does not warranty: (a) any product component or parts not manufactured by Rome (including, but not limited to, tires), (b) repairs made by unauthorized persons, (c) damage caused by use for purposes other than those for which it was designed, (d) damage caused by disasters such as fire, flood, wind, and lightning, (e) damage caused by neglect, abuse, abnormal use, improper or unreasonable use, accident or misuse, (f) damage caused by unauthorized attachments, alterations, or modifications, (g) damage caused by improper service, setup or adjustments, (h) Rome equipment which has had the serial numbers removed or made illegible, (i) normal wear, (j) transportation to and from authorized dealer's place of business or Rome, (k) dealer travel hours, (l) mileage, (m) labor for unauthorized.

(3) DISCLAIMER OF WARRANTY: The foregoing warranties are in lieu of all other warranties of merchantability and fitness for a particular purpose. Any implied warranty of merchantability or fitness for a particular purpose is limited to the duration of this limited warranty. This warranty gives you specific legal rights and you may have other rights, which vary from state to state.

(4) LIMITATION OF REMEDIES: In no case shall Rome be liable for any special, incidental, or consequential damages based on breach of warranty, breach of contract, negligence, strict liability in tort, or any other legal theory. Such damages include, but are not limited to, loss of profits, loss of savings and revenue, loss of use of the equipment, or any associated equipment, cost of capital, cost of any substitute equipment, facilities, or services, downtime, the claims of third parties, and injury to property. Some states do not allow limitations or incidental or consequential damages, so the above may not apply to you.

(5) NO OTHER WARRANTIES: Unless modified in writing, signed by both parties, and approved by the General Manager of Rome, this agreement is understood to be the complete and exclusive agreement between the parties, superseding all prior agreements, oral or written, and all other communications between the parties relating to the subject matter of this agreement. No employee of Rome or any other party is authorized to make any warranty in addition to those made in this agreement.

(6) Rome reserves the right to improve products through modifications and changes in design or material without being obligated to incorporate such changes in products of prior manufacture.

MISSOURI MACHINE & PLOW, LLC. WARRANTY
1 YEAR LIMITED WARRANTY & OWNER REGISTRATION FORM
MISSOURI MACHINE & PLOW, LLC. PO BOX 48, CEDARTOWN, GA, 30125 USA

Product Name: _____

Model Number: _____

Serial Number: _____

Owner/Purchaser Name: _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Phone: (____) _____

Owner/Purchaser Name: _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

I have checked this equipment and reviewed the Owner's Manual and safe operating instructions with the owner.

Dealer Signature: _____

Date: _____

I have been instructed in the sale and proper operation of this equipment. I have received a copy of the Owner's Manual and accept the terms of warranty offered. I promise to instruct any and all other operators, or any future owner of this equipment, on its safe and proper use and care.

Owner's Signature: _____

Date: _____



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