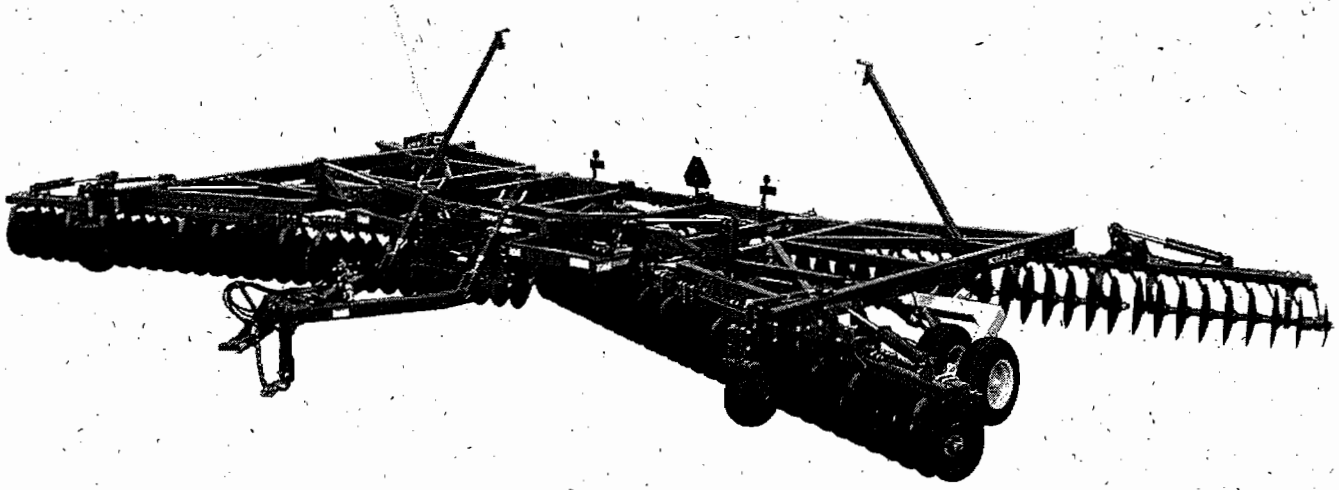
JAN -- 2006

7408-

OWNER'S MANUAL

7400-41

7400-46



# FLEX-WING TANDEM DISC HARROW

## MODELS 7400-41 & 7400-46

KRAUSE

305 SOUTH MONROE / P.O. BOX 2707 / HUTCHINSON, KS 67504-2707

# *Congratulations*

You have just purchased a quality designed and manufactured Krause tillage tool. Advanced features have been designed into the implement for modern farming operations. As with any investment, a return is expected, and the return received from this investment will be in the form of maximum tillage performance during may years of dependable service.

In order to maintain quality performance of the new Krause implement, it is important that all of the information in the manual be reviewed and studied carefully before operation. The contents provide operating instructions, maintenance instructions, and information on how to make adjustments.

## SAFETY ALERT SYMBOL

**BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY. THIS SYMBOL IDENTIFIES IMPORTANT SAFETY MESSAGES. CAREFULLY READ THE MESSAGE THAT FOLLOWS.**

MODEL NUMBER_____ SERIAL NUMBER_____

PURCHASE RECORD - - DATE_____

## A note to our customers, parts managers and dealers:

This manual has been prepared to assist you in the proper use, daily care, and operation of your new Krause equipment. It contains specific information on the many built-in features of your equipment, the accessories and options that are available, general specifications, and instructions for making minor adjustments.

Read this manual carefully before operating your Krause equipment, and keep it in a convenient location for later reference.

In order to ensure that you have the most current owner's manual available for your implement, we have added a revision code to each manual. Please note the information listed below and specify when placing service calls or ordering parts.

Manual for Model: 7400-41 & 7400-46

This manual covers models beginning with Serial No. 1001

Owner's Manual #: 7408-1

Parts Manual #: 7408-2

Rev.:

| ISSUED TO: | ISSUED BY: |
|---|---|
| *Owner's Name* | *Krause Dealer* |
| *Mailing Address* | *City* |
| *City* | *State* |
| *State* | *Date of Purchase* |

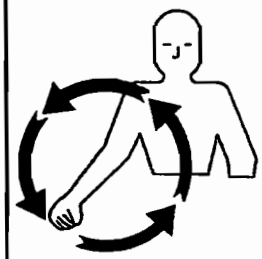
# SAFETY ALERT SYMBOL

BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY.

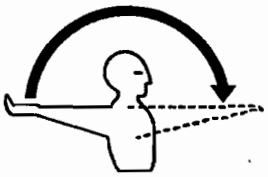
THIS SYMBOL IDENTIFIES IMPORTANT SAFETY MESSAGES.

CAREFULLY READ THE MESSAGE THAT FOLLOWS.

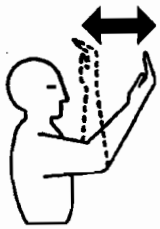
## TEN MOST COMMON HAND SIGNALS USED IN THE FIELD



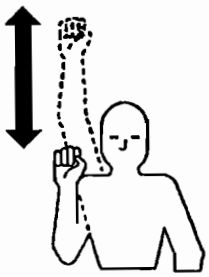
START THE ENGINE



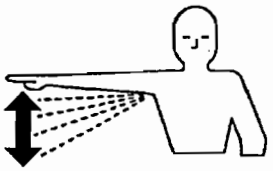
MOVE OUT OR TAKE OFF



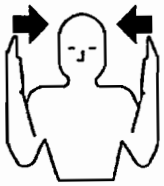
MOVE TOWARD ME



SPEED IT UP



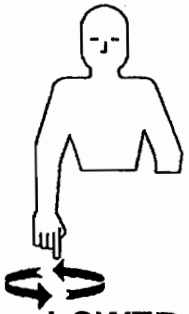
SLOW IT DOWN



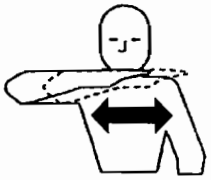
THIS FAR TO GO

STOP

RAISE THE EQUIPMENT



LOWER THE EQUIPMENT



STOP THE ENGINE

# SAFETY FIRST

## WATCH FOR THIS SYMBOL AND CAREFULLY READ THE MESSAGES.

1. UNDERSTAND SIGNAL WORDS. A signal word - - **DANGER**, **WARNING**, or **CAUTION** is used 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.

2. Read and understand this owner's manual before operating the machine.
3. Be sure that the safety decals and reflectors are clean and in place.
4. Do not climb on or walk on disc frame, or tires.
5. Never position yourself under any portion of the implement unless the entire unit is lowered to the ground or stands sufficient to carry the weight positioned under each section.
6. Stop tractor engine and set parking brake before leaving operator's position to adjust, lubricate, clean or unclog the machine.
7. Do not stand between the implement and the tractor unless the tractor brakes are locked and the engine is shut off.
8. Do not stand on or straddle a tongue when unhitching.
9. Never operate unit until hydraulic cylinders and lines are full of oil and free of air. See operating instructions.
10. Use a Slow-Moving-Vehicle (SMV) emblem and proper lighting when transporting the disc harrow.
11. Always use a safety chain of tensile strength equal to the gross weight of the disc harrow plus any attachments when transporting.
12. Check wheel bolt before and during transport.
13. Always close the transport lock valve to hold disc harrow in raised position.
14. Do not road an implement over 15 miles per hour on the best surface conditions. Reduce speed when going up or down hills and when approaching ditches or corners.
15. Check condition of hitch pins and bolts, tires and hubs, and safety chain before transporting.
16. Do not add excessive additional weight to the disc. Additional weight could cause frame or axle to fail resulting in loss of control of implement / tractor during transporting.
17. Serious injury can be inflicted by disc blades and disc gangs if not handled safely. Watch for unsafe conditions. Keep your co-worker's safety in mind.

# SAFETY DECALS

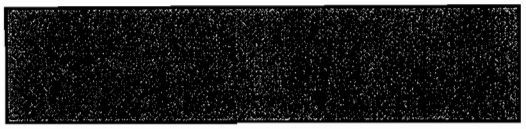
## ⚠ C A U T I O N

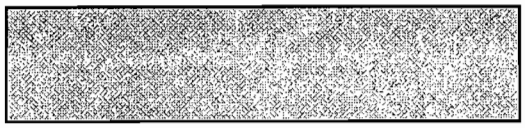
**READ AND UNDERSTAND YOUR OPERATOR'S MANUAL! OBSERVE ALL CAUTION, WARNING, &/OR DANGER INSTRUCTIONS AND OTHER SAFETY PRACTICES.**

1. To service machine: Park on level surface and lower wings. Set parking brake and/or place in park, shut off engine and remove key. Never work under raised equipment without adequate supports. If supports are not available, completely lower unit to the ground. Block wheels if detached from tractor.
2. Do not allow riders on implement or tractor.
3. Make certain that everyone is clear before activating any controls that may cause movement of implement, hydraulics, or any components.
4. Operate with increased caution on slopes and near ditches where there is a possibility that the tractor could overturn.
5. Before transporting, engage all transport locks and safety chain. The towing vehicle must weigh more than the implement.
6. Before transporting, check tractor and implement lights, clean reflectors and make certain SMV emblem is clearly visible.
7. Maximum transport speed is 15 MPH on best road surface.
8. Store with wings down, and implement on ground or blocks.
9. Regularly inspect bolts and pins in hitch, wheel hubs, cylinders and transport locks.

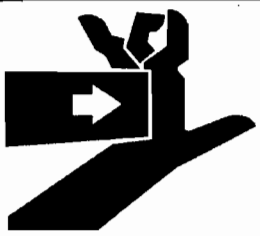
**FAILURE TO OBSERVE SAFETY INSTRUCTIONS AND SAFETY PRACTICES CAN CAUSE PROPERTY DAMAGE, SERIOUS BODILY INJURY, &/OR DEATH.**

74-117





## ⚠ WARNING



**PINCH POINT**

STAY CLEAR OF THIS AREA!

SERIOUS PERSONAL INJURY MAY OCCUR.

206-6377 74-348

## ⚠ WARNING

Escaping fluid under pressure can penetrate the skin causing serious injury or death. Relieve pressure before disconnecting hydraulic lines, tighten all connections before applying pressure, and inspect all lines before each use. See "Safety" section in operation manual for additional information.

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.

205-8735 74-276

## ⚠ WARNING

**CONTACT WITH A POWER LINE OR OTHER OBSTRUCTION CAN CAUSE DAMAGE, SERIOUS BODILY INJURY OR DEATH.**

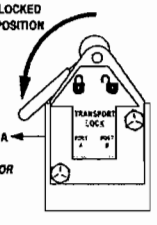
**Be aware of implement transport width and height.**

Rear attachments will add to transport height, and transport width on some implements. See Operation Manual.

205-8734 74-121

## ⚠ WARNING

TO AVOID INJURY DUE TO ACCIDENTAL LOWERING OF IMPLEMENT, MOVE LEVER TO LOCKED POSITION BEFORE TRANSPORTING OR SERVICING IMPLEMENT.




205-8738 74-465

## ⚠ WARNING

**FAILURE OF HYDRAULIC COMPONENTS OR ACCIDENTAL OPERATION OF HYDRAULIC CONTROLS CAN ALLOW IMPLEMENT OR WINGS TO FALL AND CAUSE SERIOUS BODILY INJURY OR DEATH!**

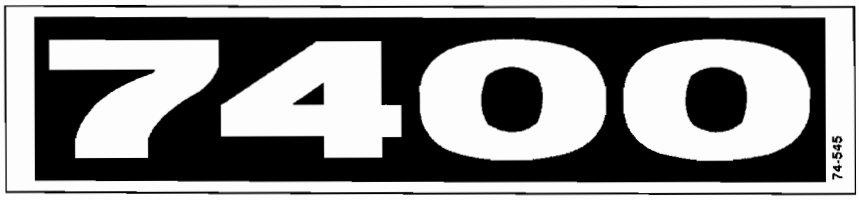
1. Install all maintenance locks when working on or under implement. See operation manual.
2. Keep everyone clear when raising or lowering implement.
   Check for adequate overhead and side to side clearance before raising or lowering wings.
   Make certain all hydraulic systems are full of oil and free of air before raising or lowering wings or implement. Check operation manual for detailed instructions.

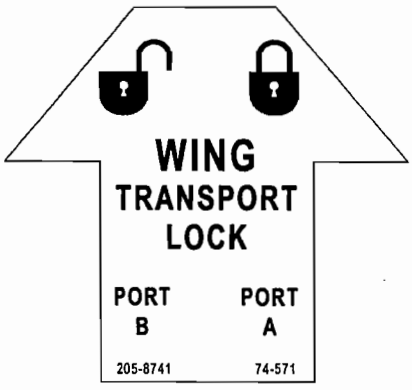
205-8731 74-102

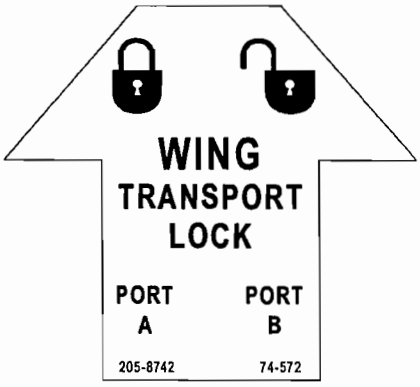
See page P38 in this manual for proper location on the implement.

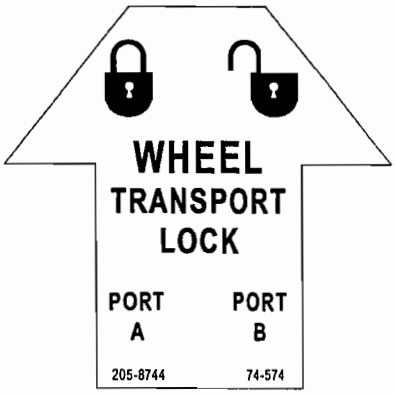
Rev.5/02

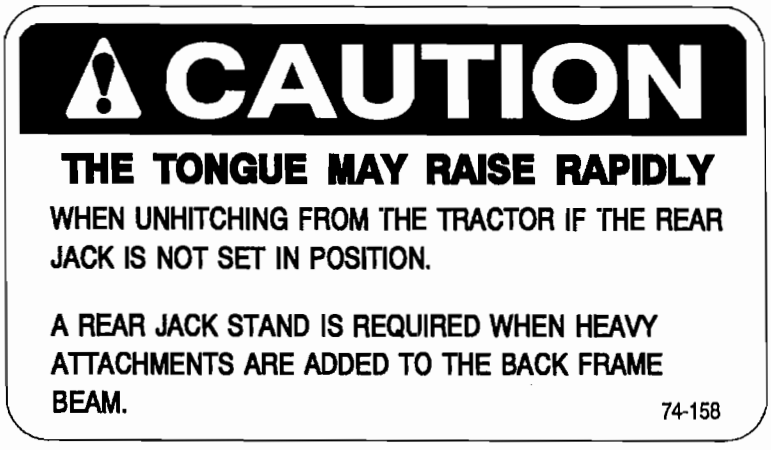
# INFORMATIVE DECALS

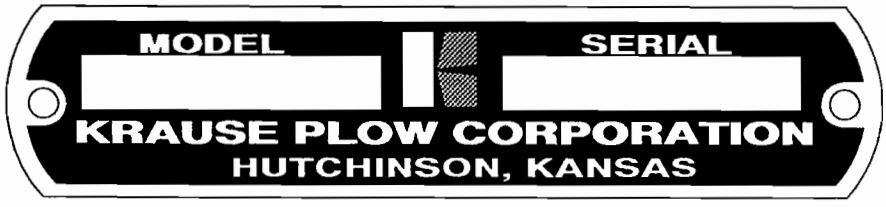



# OPERATING INSTRUCTIONS

Elimination of the hazards listed in this manual should not be construed as providing guarantees that the equipment will meet or exceed all standards or regulations, or will be completely safe to all personnel. The operator should inspect and review the implement after it is in his possession for adequacy in safety for the function for which it will be used.

**READ ALL OF THE SAFETY DECALS ON THE IMPLEMENT AND REVIEW THE SAFETY FIRST SUGGESTIONS ON THE BACK COVER OF THIS MANUAL TO REFRESH YOUR MEMORY. WATCH FOR THE SAFETY SYMBOL, AND READ THE INFORMATION THAT FOLLOWS. THIS IS FOR YOUR OWN PROTECTION.**

## ABOUT YOUR TANDEM DISC

This tandem disc was designed for medium primary to finish work and can be pulled over a wide range of field speeds ranging from 3.5 to 6 m.p.h., with maximum working depth under normal conditions of 6.5 inches. Do not exceed 5 m.p.h. in rocky conditions.

Horsepower requirements will be about 6 HP per foot of cut in average soil conditions. See your Krause dealer about a "Disc Harrow Selection Guide" for additional information.

Adding attachments should be limited to KRAUSE original equipment options, or light duty tine or spike harrows that weigh no more than 30 pounds per foot of cut width. Additions of harrows will make the disc "tail heavy" and a rear jack assembly (2146-99-0) must be added to the rear when the disc is parked or stored. (See "Hitching & Unhitching")

## PREPARING THE DISC FOR OPERATION

**Caution: Lower the implement to the ground before making the following inspections. If the implement is not lowered, any hydraulic failure could cause the implement to drop suddenly, causing personal injury.**

1. Inspect for any loose bolts.
2. Check disc gangs for tight tie rod nuts and clinched cotter pins.
3. Look at the top of each bearing arm and check to see if it is flush with the bottom of the frames. See page O15 "DISC GANGS".
4. Check tire pressure. Inflate 12.5L x 15, Load Range F tires to 56 P.S.I.

**Caution: Frequently check to see that the wheel lug bolts are torqued to 145 Ft. Lbs. particularly during the initial transport and operation of the tillage tool. The bolts may work loose, resulting in the loss of a wheel and subsequent loss of control of the tractor and / or implement.**

5. Make sure that all grease zerk locations have been sufficiently greased. Grease zerks will be found on rocker shaft bearings, regreaseable disc gang bearings, adjustment screws, wheel hubs, tongue cylinder pivots, and hinge tubes.

   **USE EXTREME CAUTION WHEN WORKING AROUND DISC BLADES.**

6. Check and adjust tightness of wheel bearings before operation, after the first week and periodically thereafter. (See Service Section of this manual.)

## PREPARING THE TRACTOR

Read your tractor owner's manual. It will describe safe methods of operation. Make sure your tractor has proper added ballast, and that its hydraulic system is full of oil and working properly. Check tractor brakes and warning lights, make sure that they are in working order.

## HYDRAULIC SAFETY (PLEASE READ CAREFULLY)

If the implement hydraulic system has never been used, stored over a period of time or disassembled for any reason, unpin the rod ends of the cylinders and support the cylinders so the rod ends will clear frame members when fully extended. Back the tractor to the front of the implement and connect the hydraulic hoses. Check the tractor hydraulic reservoir and make sure it is full of the manufacturer's recommended oil. If you are sure the implement hydraulic hose connections are tight, begin filling the system by extending and retracting the cylinders. Hold the control lever open and pause at the end of each stroke to bleed the air from the system. Continue the cycles until the cylinders respond with immediate solid actuation. When you are sure the systems are free of air, pin the rod ends of the cylinders to the implement cylinder lugs.

**Warning: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic 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.**

## AVOID HEATING NEAR PRESSURIZED HYDRAULIC HOSES

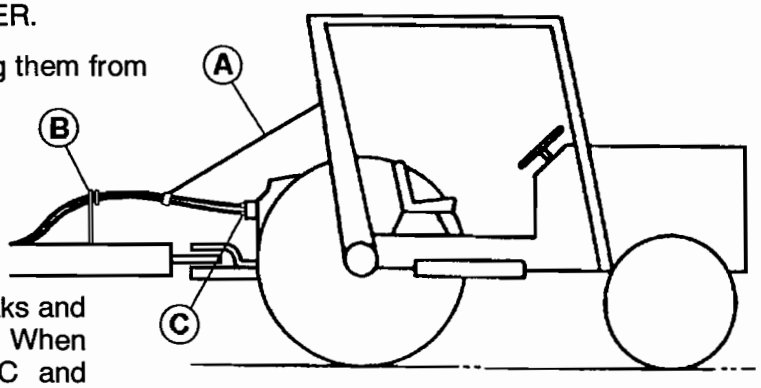
Flammable spray can be generated by heating near pressurized hydraulic hoses, resulting in severe burns to yourself and bystanders. Do not heat by welding, or using a torch near hoses. Hose can be accidentally cut when heat goes beyond the immediate flame area.

**THE FOLLOWING WARNINGS PERTAIN TO THE MORE COMMON ABUSES OF HYDRAULIC HOSE:**

1. **INSPECT** the hose assembly before each use.
2. **REPLACE** the hose assembly immediately if:
   a.) The jacket of the hose appears abnormal.
   b) You have reason to believe it may be abnormal.
   c.) There is any fluid leakage.
   d.) The couplings are damaged.
   e.) The hose is damaged or kinked.
   f.) The reinforcement is visible through the jacket.
3. **DO NOT EXCEED** the maximum recommended working pressure of the hose.
4. **DO NOT KINK** the hose assembly
5. **DO NOT BEND** the hose assembly beyond its minimum bend radius of 3.25 inches.
6. **DO NOT EXPOSE** to temperatures in excess of 225° Fahrenheit
7. **DO NOT USE AS A STRENGTH MEMBER** for pulling or lifting equipment.

**Caution: If replacing hydraulic hose, use only hose that meets of exceeds 3,000 PSI working pressure.**

IMPORTANT: REPAIR OF HYDRAULIC CYLINDERS SHOULD BE MADE BY AN AUTHORIZED KRAUSE DEALER.




Prevent damage to trail hoses by supporting them from the tractor with an elastic strap "A" . Avoid having excess hose between the implement support "B" and the tractor connection "C" . Either reposition the hose farther back on the implement or request a shorter hose from your dealer.

Inspect the hydraulic system for tell-tale leaks and loose fittings. Tighten if needed. When assembling your hydraulic system, if JIC and O-Ring fittings and hoses are to be used, the use of a tape or liquid sealer is not necessary. MAKE SURE a restrictor (YELLOW COLOR) is installed in the rod end port of the wing lift cylinder.

**Caution: Air in hydraulic system will allow disc harrow or wings to drop suddenly.**

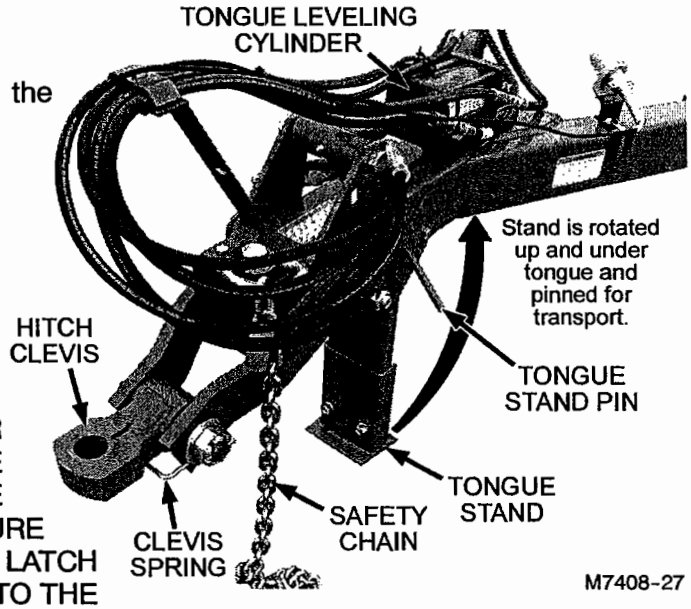
**Warning:** **Do not operate the wing hydraulics until you have read wing lift and locking instructions in *"TRANSPORTING"* section of this manual.**

## HITCHING AND UNHITCHING

**Danger:** **Do not allow any person to stand between the tractor and the implement while backing into position. Sudden loss of control could cause serious injury or death to a person caught between the tractor and implement. Tell your helper to wait until you give him the signal that the tractor is in park or neutral and the hand brake is set and the engine is shut off.**

### Hitching to the Tractor

1. The disc should be supported by the tongue stand.
2. Unpin the tractor drawbar so it can be moved from side to side.
3. Lift the hitch clevis and position the clevis spring under the clevis. This will aid the one man operator to align the tractor drawbar when backing to the disc clevis.




**IMPORTANT:** MAKE SURE THE OUTER WING FOLD CYLINDERS ARE FULLY EXTENDED BEFORE FIELD OPERATION TO ENSURE FULL ENGAGEMENT OF LATCH BAR.BEFORE YOU BACK UP TO THE DISC, BE SURE THE LOWER ARMS OF THE **TRACTOR 3-POINT HITCH** HAVE BEEN **RAISED TO THE TOP & SECURED** TO PREVENT DAMAGE TO THE DISC WHEN MAKING TURNS.

4. Back the tractor up close to the disc hitch.
5. Connect the hoses to the tractor. If you are sure the hydraulic system is full of oil and free of air, extend or retract the tongue leveling cylinder until the clevis is drawbar height. Attach the clevis to the drawbar with an approved hitch.
6. Extend the tongue leveling cylinder so the tongue stand can be unpirined and swing up under the tongue. Repin the stand in the transport position.
7. Attach the safety chain to the tractor as shown on page O9.
8. Be sure to repin the swinging drawbar before transporting.

### Unhitching from the Tractor

If the implement is not to be used for the remainder of the day, select a good parking place that will permit the lowering of the wings. The implement should be parked in the storage position with the wings down and the road lock valve closed. If the implement is to remain parked for storage over a long period of time, be sure to read storage suggestions.

1. To unhitch the tractor from the disc, place the tractor in park or neutral and set the brake. Always block the implement tires to prevent damage to the stand.
2. Go to the back of the disc and set the two wing lock pin handles to release position. (See page O7 in "TRANSPORTING")
3. Have all personnel stand clear and then lower the wings.
4. Release the transport lock valve.
5. Extend the tongue cylinder and lower the stand to the ground. Be sure to pin the stand in this position.

6. Retract the tongue leveling cylinder until the clevis has no weight on the drawbar of the tractor. If the clevis is pulling up on the drawbar, a rear jack must be used at the back of the center frame. Do not disengage the hitch pin until there is no clevis forces up or down on the drawbar. (Rear Jack Assembly 2146-99-0)
7. Close the transport lock valve.
8. Turn off tractor power and relieve any hydraulic pressure that might be in the system by moving the tractor control levers back and forth.
9. Disconnect the hydraulic hoses, release the safety chain, unpin the hitch clevis and move the tractor away.

**Caution:** **Do not stand on or straddle a tongue when unhitching. If attachments have been added to the rear of the implement, it may affect the balance of the implement, causing the tongue to raise up suddenly when unhitching.**

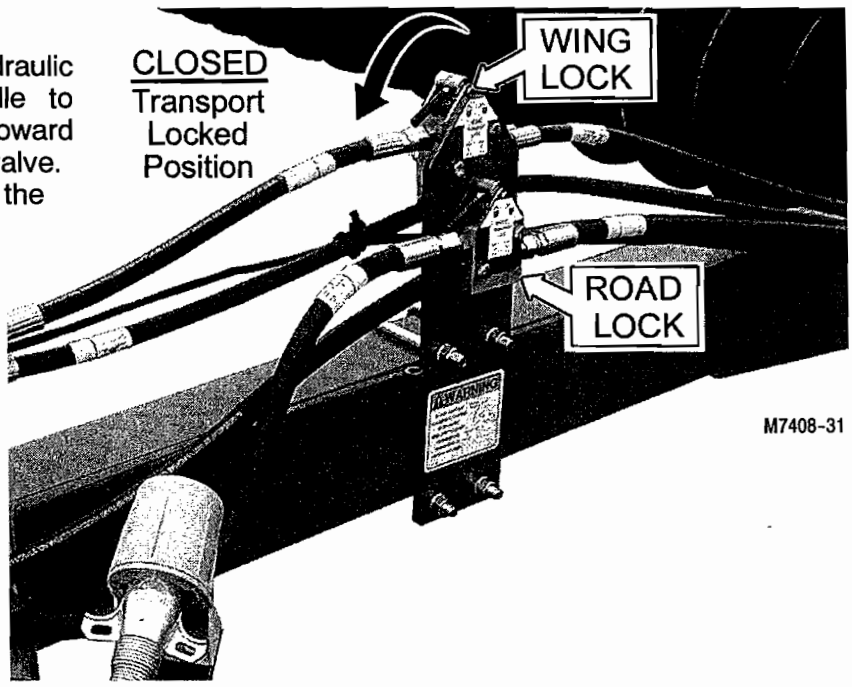
## TRANSPORTING

**Warning:** **Always close BOTH transport locks when transporting to prevent unit from falling due to hydraulic failure, or accidental activation of the operator's control. Lowering of the tool during transporting could result in loss of control of implement and / or tractor. The tractor drawbar must always be pinned for transport.**

### Transport Lock Valve

The road locks are hydraulic valves. Turning the handle to release the poppet (handle toward the tractor) will close the valve. Turning the handle to engage the poppet (handle towards the disc) will open the road lock valve for field use.

NOTE: The road lock will allow the unit to be raised when in the transport position, but will not allow the unit to be lowered.




### Raising the Wings

The implement should be in the raised position with the transport lock valve closed. If the system is full of oil, you are ready to also raise the wings. The wings will be secured in the raised position with a transport lock valve.

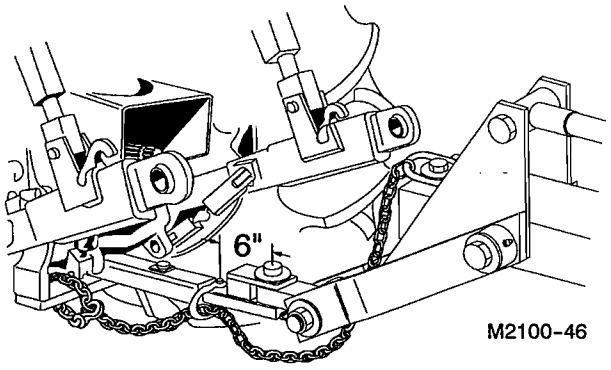
**MOVE VALVE HANDLE TO CLOSED (LOCKED POSITION) BEFORE TRANSPORTING IMPLEMENT.**

**Warning:** **Always stand clear of the wings when they are in the raised position. A hydraulic failure or activation of hydraulic controls by someone could result in serious injury to anyone under the wings.**

### Lowering the Wings

Open the wing lock valve to unlock both wings; then lower the wings with all persons standing at a safe distance away from the implement.

## Transport Safety



M2100-46

**Caution:** **Always use a safety chain with a tensile strength equal to the gross weight of the unit, plus any attachments when transporting.**

**Danger:** **Do not exceed 15 m.p.h. in transport on best surface. Exceeding this speed can result in failure in wheel hubs or spindles and loss of control of implement and/or tractor. Do not tow this implement is its weight exceeds 1-1/2 times the weight of the towing unit. Pin tractor drawbar to prevent side sway during transport.**

**NOTE: A safety chain, SMV emblem, and a light kit were furnished as standard equipment with your implement. Make sure they are in place, clean and in working order.**

**Caution:** **Always check conditions of transport lock valve, tires, wheels, hubs, safety chain, hitch bolts and clevis pin before transporting the disc.**

Be aware of the transport height as well as the width of your model of disc. Care should be taken not to snag low hanging telephone lines or electrical service lines.

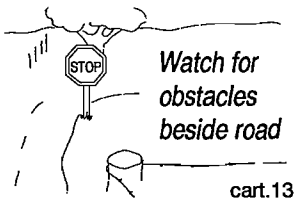
It is best to use a tractor to transport the disc to another location. If using another type of towing vehicle, it should never be allowed to exceed 15 M.P.H., since implement tires are not constructed to be operated at higher speeds. The towing vehicle should always equal or exceed the gross weight of the disc and attachments.

Always check the tire pressure before transporting and look for damaged tires. Wobble the tires from side to side. If excessive play is noted, adjust the hub spindle nut before transporting to prevent damage to the hub or bearings.

**Caution:** **It is very important to check wheel lug bolts after the first 1/2 mile of initial transport (delivery). If loose, tighten to 145 Ft. Lbs. of torque. Continue to check frequently until they remain firmly seated.**

## Hitch Pin

Use the proper size hitch pin with a means for holding it in place so it cannot work itself out during transport. The hitch pin should be inspected for wear or cracks before using it to transport your implement.



cart.13

Always comply with state and local laws pertaining to lighting and road widths. Turn on flashing lights whenever traveling on a highway except where it is prohibited by law. If the implement obscures the tractor warning lamp, a lamp must be added to the left of the implement. Transport during daylight hours only. Watch your clearance. Be aware of obstacles on the side of the road that the disc might snag when passing by. Pull over to the side of the road to permit safe clearance for any oncoming traffic and passing vehicles. Keep the red and yellow reflectors clean and visible. Replace the reflectors if they become faded or damaged. Watch for narrow bridges and re-route if necessary. Watch for pedestrians on the side of the roadway that need to be warned of your presence.

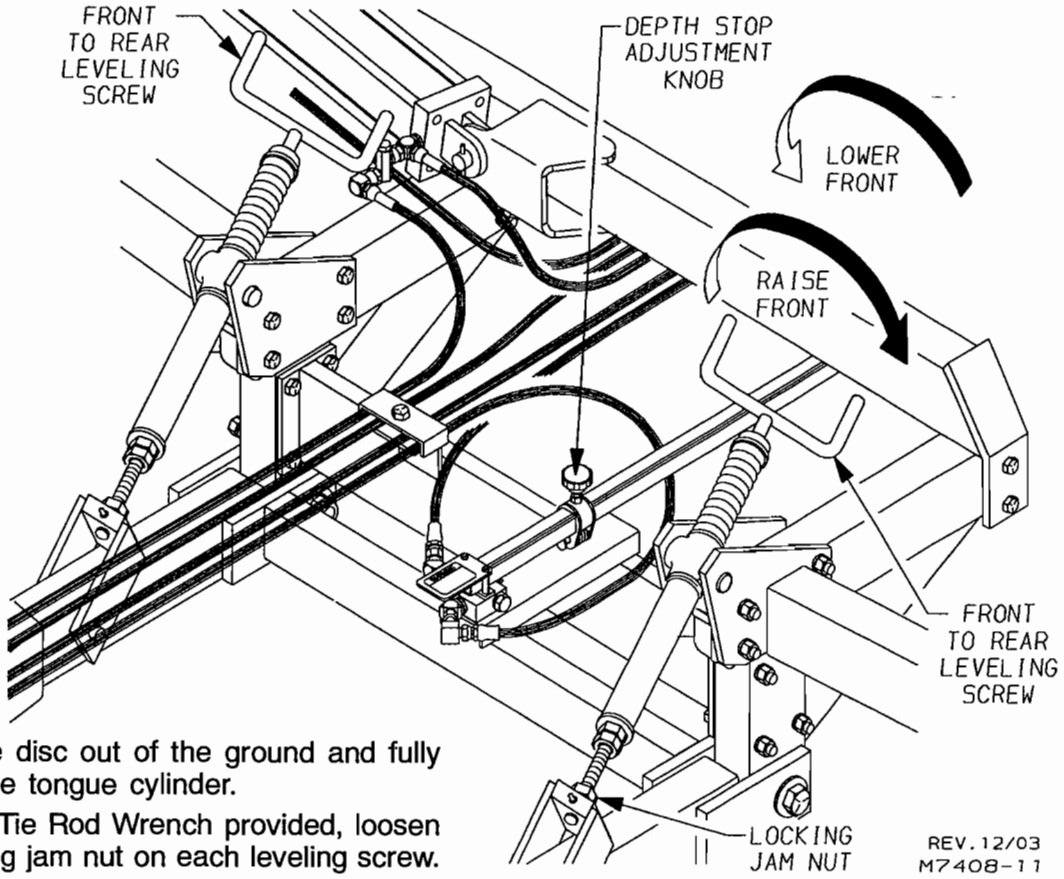
# FIELD ADJUSTMENTS

THERE ARE THREE IMPORTANT RULES TO FOLLOW FOR PROPER FIELD ADJUSTMENT:

1. LEVEL THE IMPLEMENT FROM FRONT TO REAR

2. LEVEL THE IMPLEMENT FROM SIDE TO SIDE
3. SET THE STOP ON THE HYDRAULIC CYLINDER, AND CARRY THE WEIGHT OF THE IMPLEMENT ON THE WHEELS.

### Front to Rear Leveling




1. Raise the disc out of the ground and fully extend the tongue cylinder.
2. With the Tie Rod Wrench provided, loosen the locking jam nut on each leveling screw.
3. Turn both leveling screws until the frame is level from front to rear.
4. Retighten both locking jam nuts.
5. Some minor tongue leveling screw adjustments may be required when the disc is operating at plowing depth. When checking the front to rear leveling in the field, always stand well away from the unit and view the frames from frame height.

   NOTE: Before making field adjustments, make sure the tongue cylinder is fully retracted.

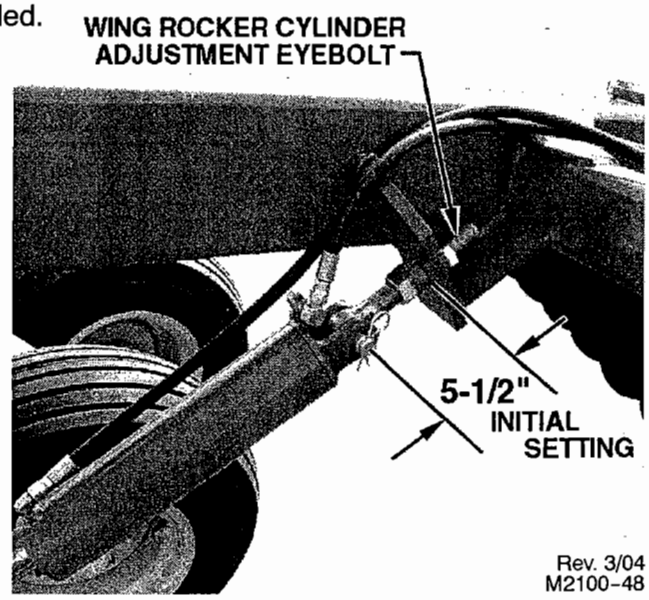
6. Make leveling screw adjustments if needed.
7. Tighten locking jam nuts.

### Leveling the Wings

Each wing can be raised or lowered with the adjusting eyebolt at the base end of the wing rocker cylinder.

The initial setup dimension is 5-1/2"; however; field adjustments may vary.

The wings should operate level with the center section. View the frame with the disc stopped, but still in the ground. Determine if the wing needs to be higher or lower and then adjust the eyebolt as needed.



Since there is a smaller volume of oil which passes from the rod end of the master cylinder to the base end of each slave cylinder, the cylinders must be progressively smaller in diameter. In this system the master cylinders are 4" in diameter and the wing slave cylinders are 3-3/4" in diameter. All of the cylinders in this system have a 12" stroke length.

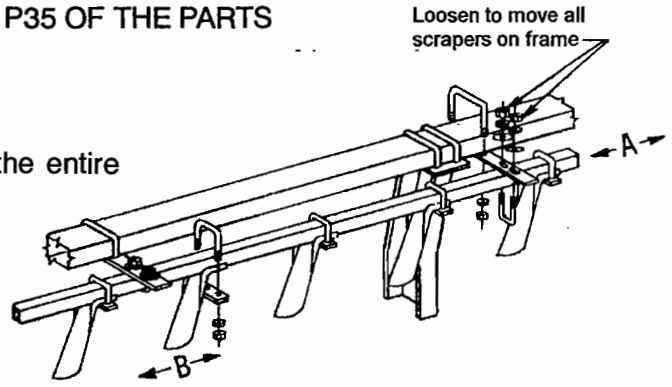
When the disc is raised completely out of the ground, these specially designed cylinders are synchronized for uniform lifting by holding the tractor remote hydraulic control lever in the raised position for a few seconds. This allows a small volume of oil to bypass from the base of the master cylinder to the base end of the slave cylinders, and back to the tractor. Consequently, all of the cylinders are fully extended simultaneously. To maintain a precise working depth, it may be necessary to synchronize the slave cylinders once or twice during each hour of use. This can be easily done when the unit is being raised to make a turn.

When working with this kind of arrangement, be sure all of the cylinders are mounted in proper sequence. Hoses must be attached in the proper order, and all air bled form the hoses and the cylinders. See page O5 under "Hydraulics" for synchronizing instructions.

REPAIR OF HYDRAULIC CYLINDERS SHOULD BE MADE BY AN AUTHORIZED KRAUSE DEALER ONLY.

A HYDRAULIC HOSE AND CYLINDER DRAWING CAN BE FOUND FOR EACH MODEL IN THIS SERIES ON PAGES P22 THROUGH P35 OF THE PARTS SECTION.

## Rigid Scraper Adjustments




1. Scrapers can be adjusted by moving the entire assembly "A" from side to side at the bracket location.
2. Also each scraper blade "B" can be adjusted individually along its mounting frame.

When scrapers are required, adjust blades so that the scraping edge of each scraper blade is flush against the disc blade, but not tight enough to prevent the gang from revolving freely. When scrapers are not required, adjust the scraper frame to move scraper blades away from disc blades. Under most conditions, scrapers should be positioned approximately 2" in from the cutting edge and approximately 1/8" from the surface of the disc blades.

Each field requires some individual scraper adjustment. Moving scrapers one way or the other will help solve your individual scraper problems. The removal of the scraper blade at a bearing arm location may be necessary in some conditions. Frequent examination will prevent damage to scraper assemblies and spacer spools.

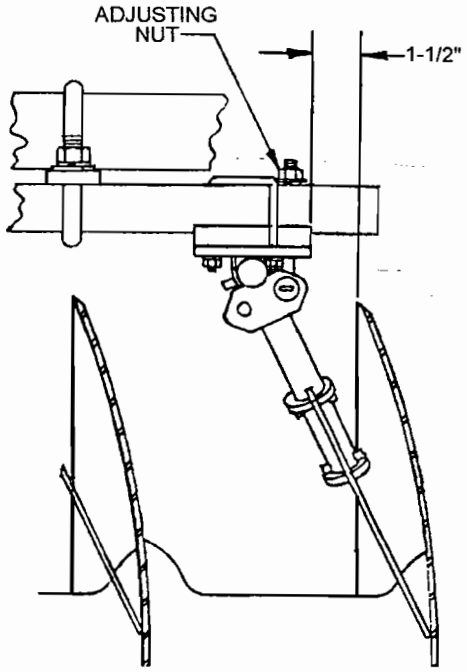
Some wet or heavy trash conditions may require use of chain trash guard option (Part Number 1582-146-0).

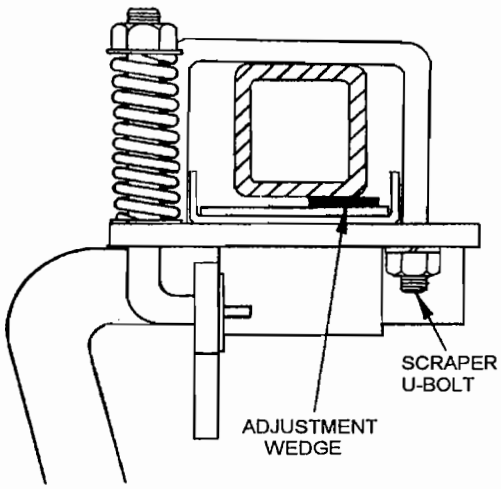
## Spring Loaded Scraper Adjustments

Spring loaded scrapers can be adjusted towards or away from the disc blades by moving the entire assembly or moving individual scrapers, similar to the rigid scraper adjustments. Spring scrapers are in correct position when the scraper mounting plate is 1-1/2" from the edge of the disc blade as shown in the illustration below. In most conditions, the edge of the scraper blade should be approximately 3/4" in from the outside cutting edge of the disc blade. Use the following procedure to adjust the scraper blade force against the disc blade.

1. Loosen the adjusting nut until scraper blade starts to move away from the disc blade.
2. Retighten the adjusting nut until the scraping edge of the blade is just contacting the disc blade. (At this point there should not be any force against the disc blade.

3. Tighten the adjusting nut one complete revolution for each 5 lbs. of scraper force desired against the disc. The initial setting should be approximately 15 lbs. or three complete revolutions.
4. In moderate conditions, a smaller scraper force may be desired and in tough conditions a larger force may be required. The scraper setting should fall between a 10 lb. minimum and a 30 lb. maximum setting.




There is an adjustment wedge used to mount the spring scraper next to the extension trash bar loop on the rear outer disc blades. This scraper can be tilted towards the spool by tightening and loosening the nuts on the scraper U-Bolt. This scraper should be adjusted so that the scraper does not hang over the outside of the taper disc blades.

## FIELD OPERATION

### Working Depth

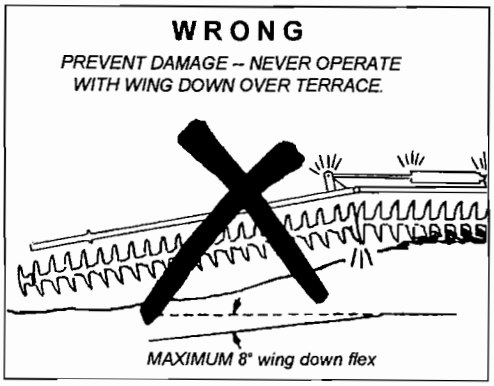
The depth of your disc harrow is controlled by the remote cylinder control lever(s) of the tractor. The wheels will act as gauge wheels to regulate working depth. Your disc harrow will not work uniformly, unless some weight of the unit is carried on the wheels. Speed will affect working depth. Do not expect maximum depth at high field speeds. Other factors affecting working depth are moisture conditions, amount of trash on surface, polish of disc blades, blade spacing and blade sharpness.

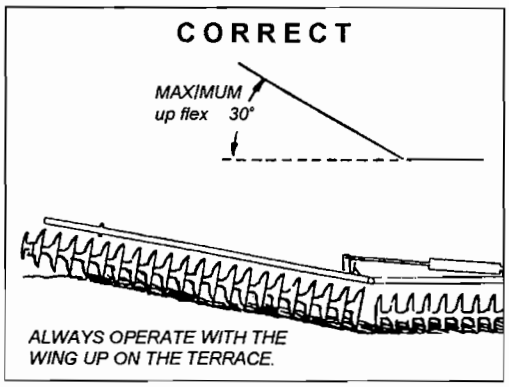
Remember to reduce speeds when working in extremely rocky conditions. Field speed should not exceed 5 M.P.H. You will get better penetration and less blade breakage at lower speeds.

### Flexibility

ALWAYS WORK WITH WINGS DOWN: Major damage may occur to disc blades and bearing arms if used with the wings up. For maximum flexibility, make sure the wing fold hydraulic cylinders are fully extended after the wing is down.

When working terraced ground, place the wing up on the terrace, not down over the terrace, as the wings are limited in their downward movement, but not in their upward movement.



### Turning in the Field

Short turns at working depth may result in driving the front blade deeper into the ground, causing damage to disc blades or bearings. If short turns must be executed, raise the disc out of the ground and complete the turn before engaging the tool for further tilling.

**IMPORTANT:** MAKE SURE THE OUTER WING FOLD CYLINDERS ARE FULLY EXTENDED BEFORE FIELD OPERATION TO ENSURE FULL ENGAGEMENT OF LATCH BAR. ***4-WHEEL DRIVE TRACTORS CAUSE SEVER SIDE STRAIN ON TONGUE AND CLEVIS UNLESS THE DRAWBAR IS ALLOWED SOME MOVEMENT. ALWAYS ALLOW DRAWBAR MOVEMENT DURING FIELD OPERATION FOR STEERING CORRECTIONS. DRAWBAR MUST BE PINNED BEFORE TRANSPORTING.***

### General Information

Different soil types require different blade sizes, thickness, and spacing.

As a general rule, heavy wet soils require wider spacing. For a finer seed bed preparation, narrow spacing should be used.

Six gauge or 1/4" thick blades should be used in severe conditions.

⚠ **Caution: Never add weight to the implement to gain added penetration. Overloading of tires and axles may cause damage to the disc harrow.**

## STORAGE SUGGESTIONS

Wings should ***not*** be stored in the raised position. Make sure transport lock valves are in the closed position. Coat disc blades and hydraulic cylinder shafts with rust preventative during extended periods of storage. Cylinder rod ends may be unpinned and retracted to protect the polished surface of the cylinder rods. **FOR ADDED SAFETY:** Lower unit to the ground during long periods of storage. Inspect for worn or damaged parts and replace as needed to avoid delays the next season.

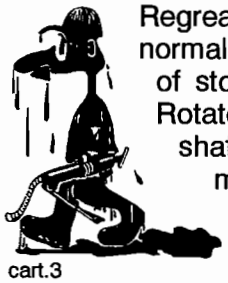
## SERVICING

### General Maintenance

All nuts should be checked and tightened during and after the first 1/2 day of operation, and periodically thereafter. Check disc gang tie rods frequently and keep tight at all times. Torque tie rods to 1,200 Ft. Lbs. Torque all wheel bolts to 145 ft. lbs.

The Krause Disc is a ruggedly designed implement which will perform efficiently if properly adjusted and maintained. Keep blades sharp.

### Lubrication


cart.3

Regreaseable disc gang bearings should be greased after each 48 hours of use in normal conditions, every 24 hours of use in extreme conditions, and before long periods of storage. Grease the disc gang bearings until the grease passes through seals. Rotate the disc gang while greasing. This will lubricate and flush the seals. Rocker shaft pivots, wing hinges, and tongue adjustment screws should be lubricated with multi-purpose type grease after each 48 hours of use.

⚠ **Caution: For your safety, lower wings and implement to the ground and enter framework by stepping over. When lubricating or making adjustments on your disc harrow, watch for obstructions and protrusions.**

### Wheel Bearings

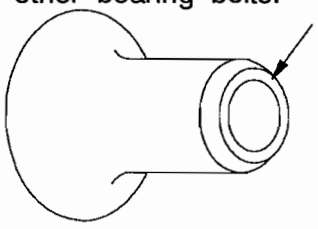
Grease wheel bearings every 24 hours of use. Check for excessive end play each time that the bearings are greased. Once a year, clean and repack the wheel bearings with EP#2 Grease. Replace seals each time that the bearings are removed. Replace any worn or damaged parts. After repacking, replace hub with seal and rear bearing already assembled. Use light oil on the seal surface and use extreme care when pushing seal over the spindle. Install outer bearing, flat washer, and slotted nut. Tighten nut while turning hub until there is resistance to rotation. Then back off nut from 1 to 2 slots until hub turns freely without end play. Secure nut with clinched cotter pin.

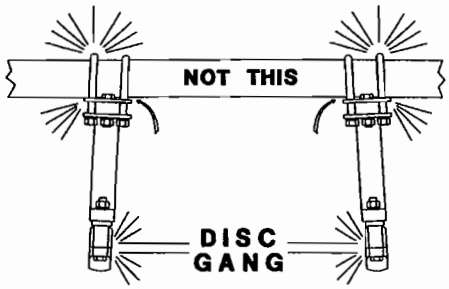
## Walking Beams

Grease the walking beam bearing every 24 hours of use. When greasing the bearings, lower the unit onto the disc blades and raise the walking beams off the ground. Check each walking beam for any slack in the pivot bearings. When the slack is found, tighten the axle nut until slack is eliminated and tighten 5 to 10 ft. lbs. of preload on the bearings. DO NOT BACK THE AXLE NUT OFF. Check, clean and repack the walking beam bearings each year in a procedure that is similar to that of the wheel bearings.

## Disc Gangs

Refer to the Placement Pages at the back of this manual when replacing disc blades, bearings or spools. Leave bearing bolts one turn loose until bearing arms are in place on the frame. Tighten tie rods to 1,200 ft. lbs. Tighten one bearing arm to the frame then tighten its bearing bolts. Make sure the other bearing arm top plate is parallel with the bottom of the frame before tightening its U-Bolts. Tighten other bearing bolts.




BE SURE THE BEARING ARMS ARE PERPENDICULAR TO THE GANG BEAM BEFORE TIGHTENING THE U-BOLTS.

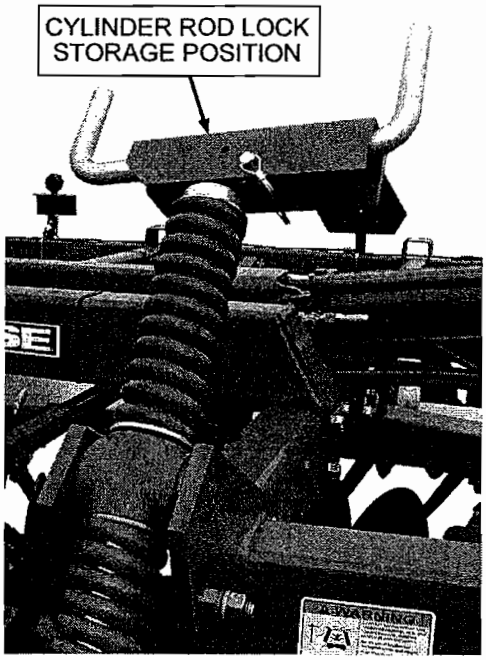
M2100-103

**Danger:** **Due to their sharpness and weight, serious injury can be inflicted by disc blades and disc gangs if not handled safely. Watch for unsafe conditions. Keep your co-workers safety in mind. Should personal injury occur, have medical treatment administered immediately.**

Cylinder rod locks have been provided for use when performing maintenance operations.

Extend the cylinders and fasten the channel shaped locks onto both cylinder rods (see photo below). This will prevent accidental lowering of the implement during maintenance operations.

**IMPORTANT:** MAKE SURE THE OUTER WING FOLD CYLINDERS ARE FULLY EXTENDED BEFORE FIELD OPERATION TO ENSURE FULL ENGAGEMENT OF LATCH BAR. **ROCKER DAMAGE CAN OCCUR IF ONE LOCK IS ON THE CYLINDER ROD AND THE OTHER CYLINDER ROD LOCK IS OFF. USE BOTH LOCKS!**

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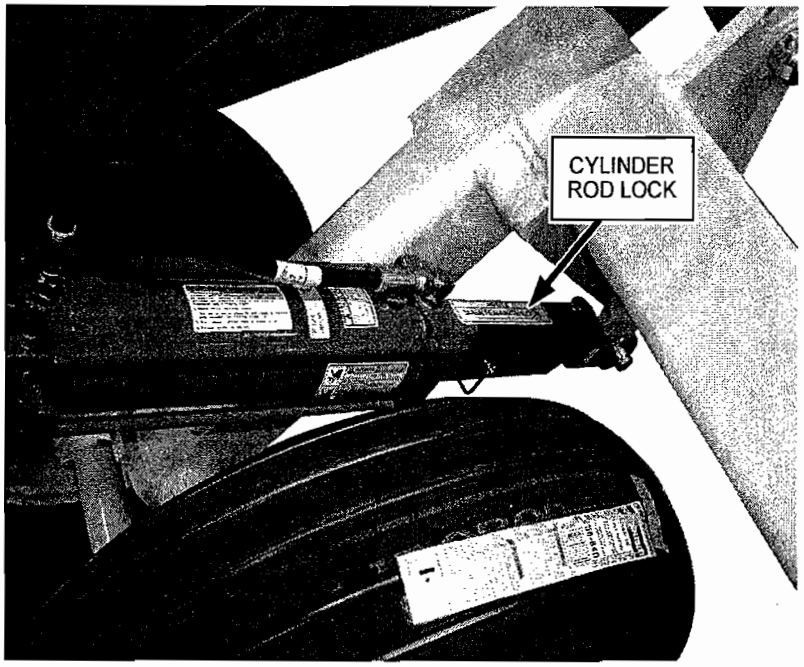



M7408-36

## Repair Parts

Refer to the Assembly Section of this owner's manual when repairing or replacing parts, and follow the same procedure as used when assembling a new unit. Reverse this procedure for disassembly. The Parts Section of this manual will show a breakdown of assemblies, location of parts and part numbers.

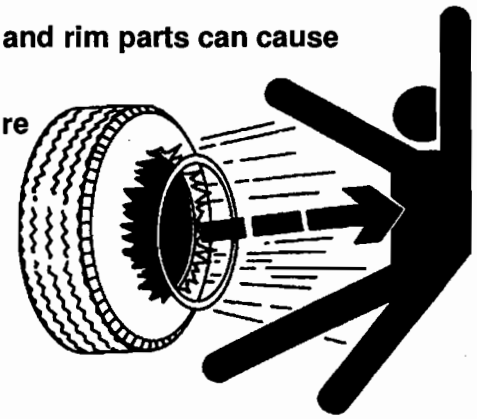
KRAUSE PARTS WERE DEVELOPED AND TESTED FOR THESE IMPLEMENTS, therefore it is recommended that KRAUSE replacement parts be used.

**Caution: If replacing hydraulic hose, use only hose that meets or exceeds 3,000 PSI working pressure.**

IMPORTANT: REPAIR OF HYDRAULIC CYLINDERS SHOULD BE MADE BY AN AUTHORIZED KRAUSE DEALER ONLY.

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

**Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Inspect tires and wheels daily. Do not operate with low pressure, cuts or bubbles, damaged rims or missing lug bolts and nuts.**



M5650-76

## .SUGGESTED REMEDIES FOR HYDRAULIC PROBLEMS

| PROBLEM | POSSIBLE CAUSE | SUGGESTED REMEDY |
|---|---|---|
| Disc raises and lowers slowly | Restrictor fitting in rocker shaft cylinder | Check for restrictor fitting and replace with standard fitting<br>**NOTE: Wing lift cylinder rod end ports should have restrictor fittings.** |
| Rocker cylinders are settling after rephasing | Rephasing groove in cylinder | It is normal for rephasing cylinder to settle approximately 3/8" until the piston is past the rephasing groove. |
| All rocker cylinders settling at mid-stroke | Tractor valve leaking | Repair tractor valve |
| Cylinder has spongy or erratic movement | Air in the hydraulic system | Purge the system of air as described on page O5 |
| Cylinder retracting or extending out of sequence | Leaking seal | Check for external leaks |
| | | Locate internal piston leak as described on the following pages |
| | Air in hydraulic system | Purge air from system. See page O5 |
| | Scarred cylinder wall | Locate internal leak as described on the following pages |
| **IMPORTANT: REPAIR OF HYDRAULIC CYLINDERS SHOULD BE MADE BY AN AUTHORIZED KRAUSE DEALER.** | | |

## TEST PROCEDURE TO LOCATE INTERNAL LEAKING IN A REPHASING SYSTEM

**For Your Safety: Be sure to read and understand all of the hydraulic safety information on page O5 of this manual.**

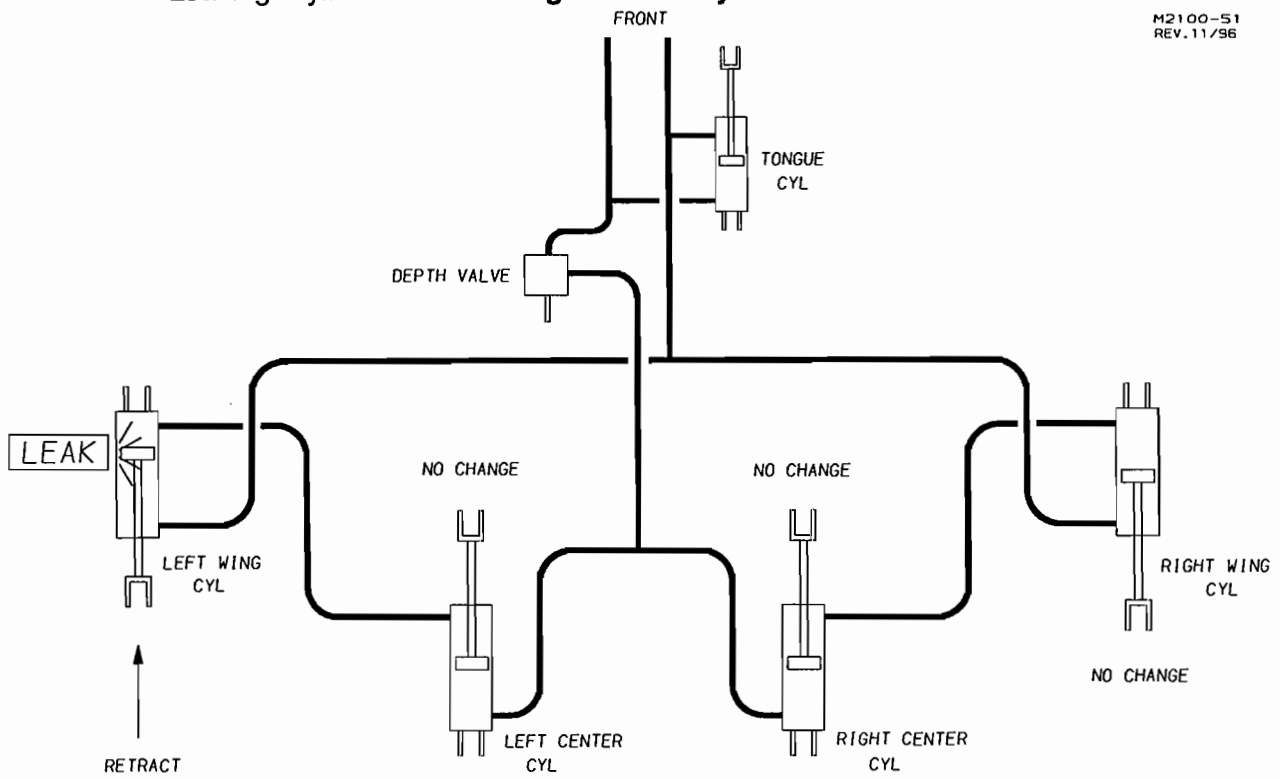
1. Raise the unit until the disc blades are 4" to 5" above the ground, but do not fully extend the cylinder.
2. Measure the length of the four rocker cylinders and record those lengths.
3. Allow the unit to sit for a period of time until there is a measurable change in one of the cylinder lengths. This may require an hour or two (preferably overnight).
4. Measure the length of each cylinder again and note whether or not the cylinder extended or retracted.
5. Match your results to one of the six case studies shown on the following pages to locate the leaking cylinder.

**CASE 1:** Field Symptom: Left wing lowering as disc is pulled in field.

Probable Causes: (A) Left wing cylinder piston seal leak

Test Results: (See page O17) Left cylinder retracts, all other cylinders do not change.

Leaking Cylinder: **Left Wing Rocker Cylinder**

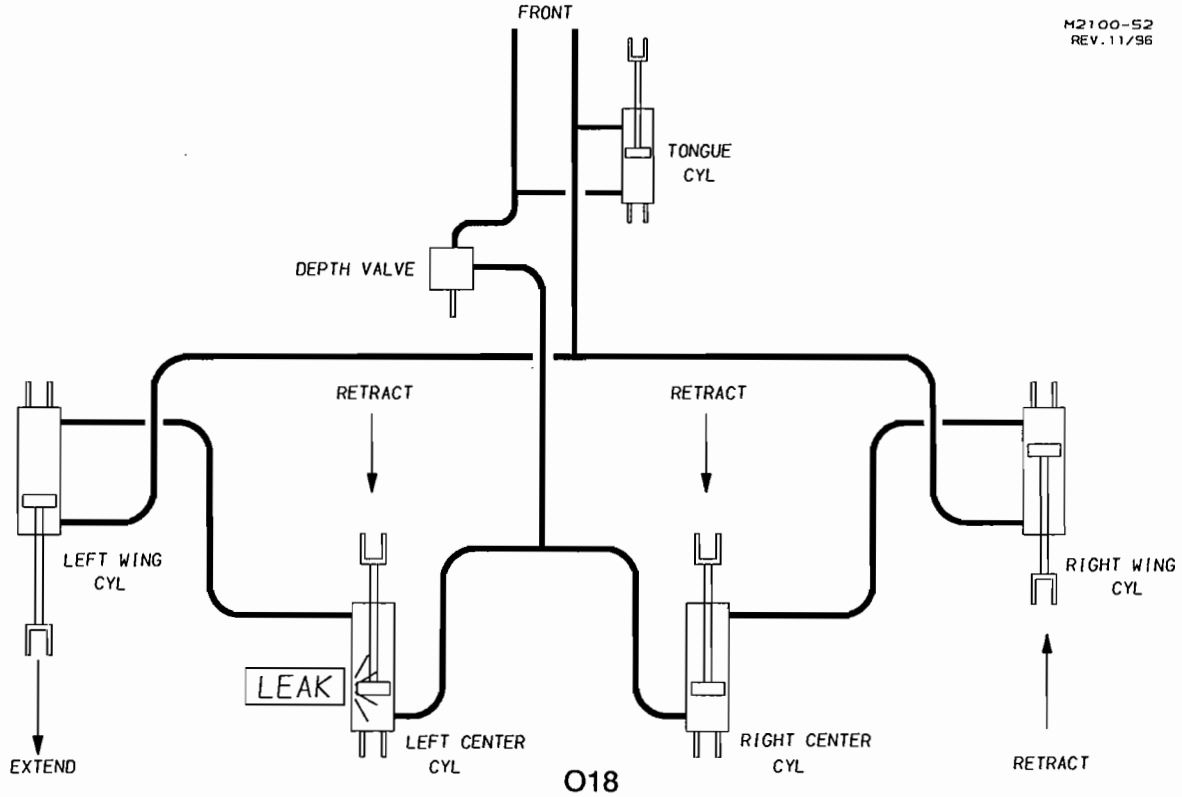



**CASE 2:** Field Symptom: Left wing raising as unit is pulled through the field

Probable Causes: (A) Left center cylinder piston seal leak.

Test Results: (See page O17) Left wing cylinder extends, all other cylinders retract.

Leaking Cylinder: **Left Center Rocker Cylinder**

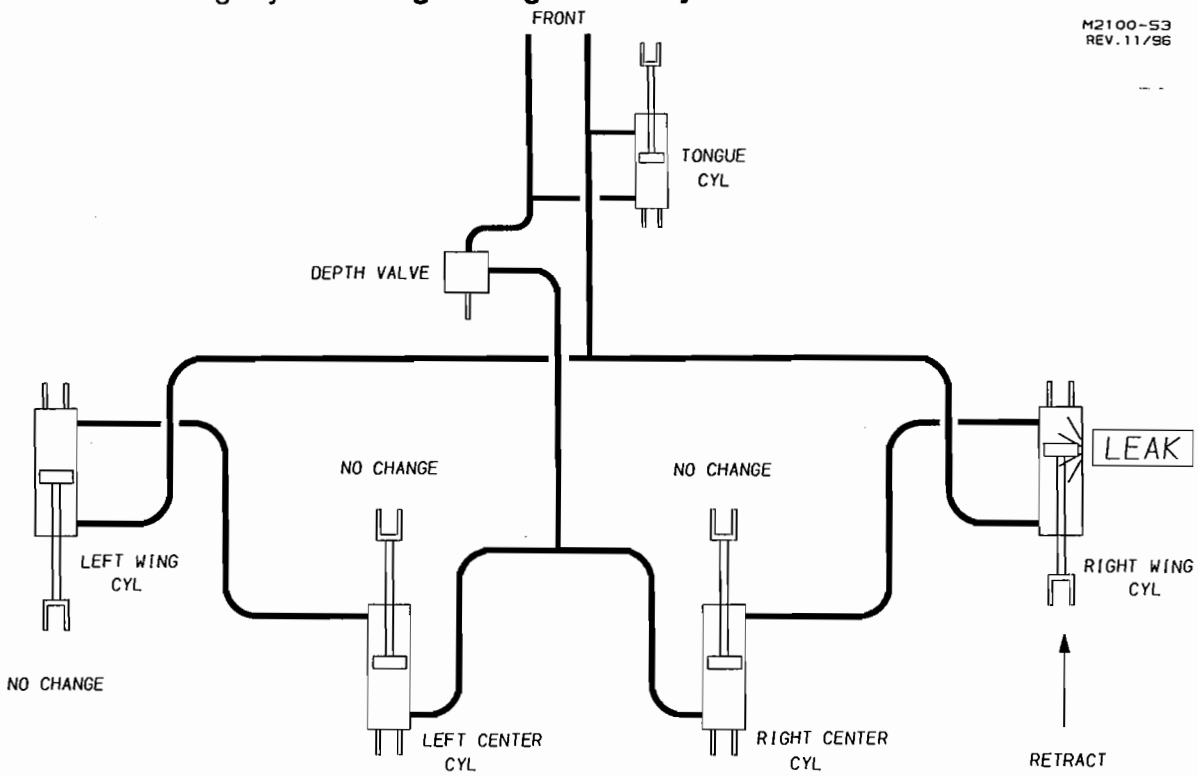


**CASE 3:** Field Symptom: Right wing lowering as the unit is pulled through the field

Probable Causes: (A) Right wing cylinder piston leaks

Test Results: (See page O17) Right wing cylinder retracts, all other cylinders do not change.

Leaking Cylinder: **Right wing rocker cylinder.**

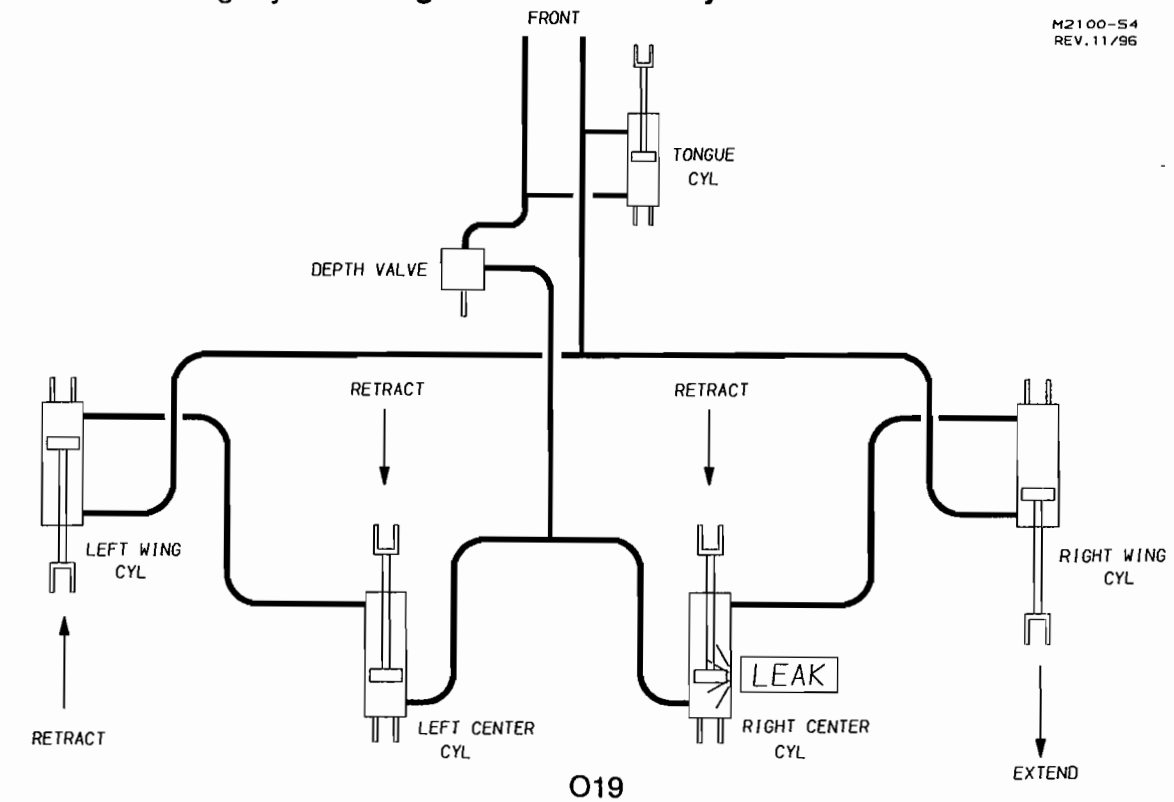



**CASE 4:** Field Symptom: Right wing raising as unit is pulled through the field

Probable Causes: (A) Right center cylinder piston seal leak.

Test Results: (See page O17) Right wing cylinder extends, other three cylinders retract.

Leaking Cylinder: **Right center rocker cylinder.**

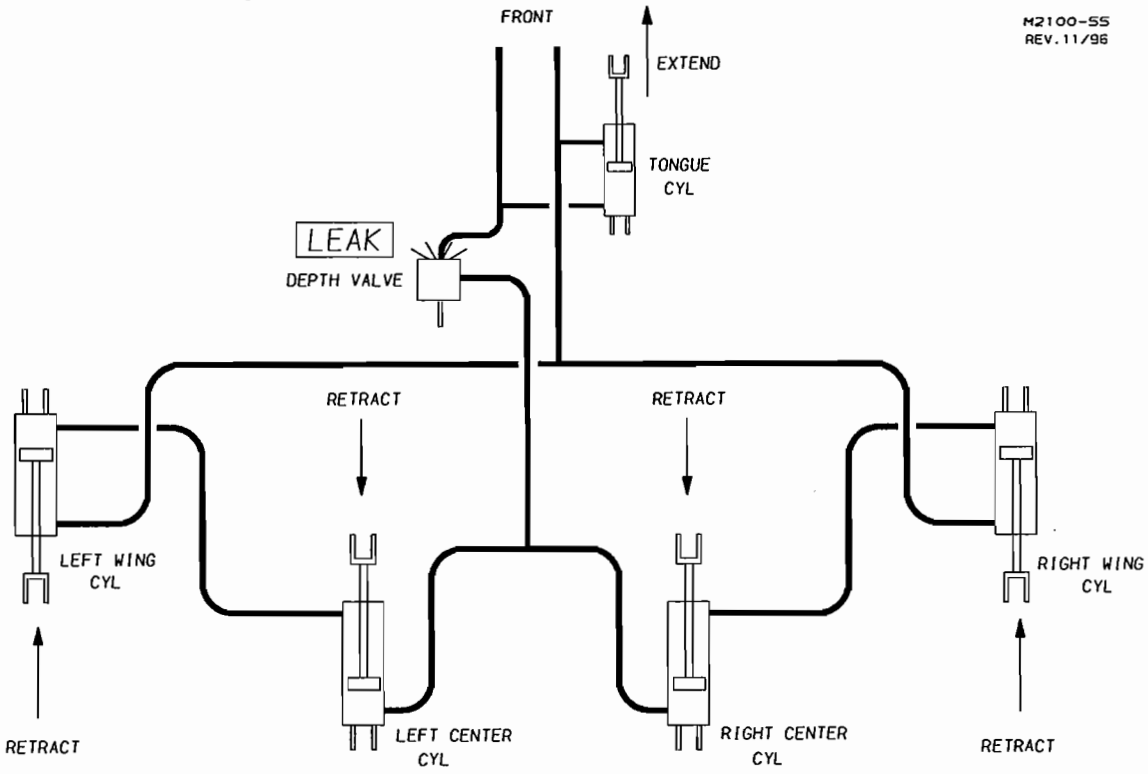


**CASE 5:** Field Symptom: Discing depth increases as disc is pulled through field.

Probable Causes: (A) Depth valve leak

Test Results: All rocker cylinders retract at the same rate when depth valve poppet is depressed.

Leaking Cylinder: **Depth valve leak.**

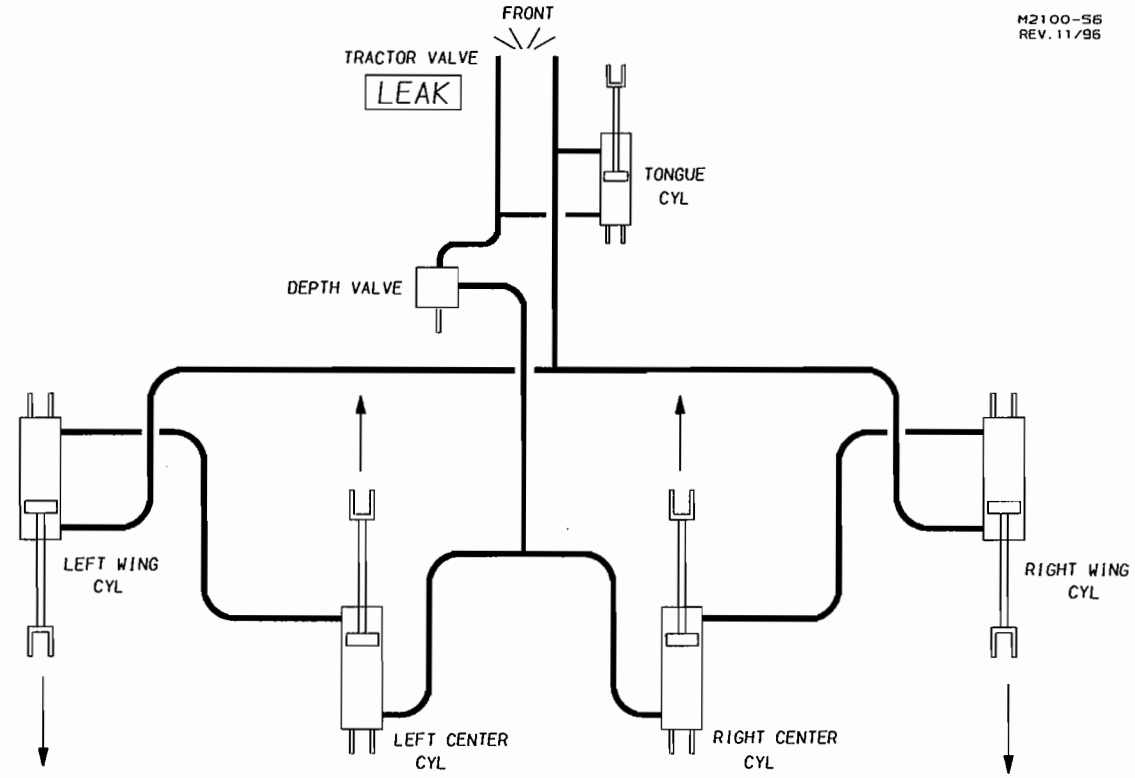



**CASE 6:** Field Symptom: Discing depth decreases as disc is pulled through field.

Probable Causes: (A) Tractor valve leak

Test Results: All cylinders extending at the same rate when the tractor is running.

Leak Location: **Tractor valve.**



# SUGGESTED REMEDIES FOR FIELD PROBLEMS

| PROBLEM | POSSIBLE CAUSE | SUGGESTED REMEDY |
|---|---|---|
| Leaving center ridge | Excessive speed | Reduce speed |
| | Rear gangs cutting too deep | Shorten length of tongue adjustment screws |
| | Rear discs are set too close together | Readjust distance between inside disc blades |
| | | Reduce size of inside rear disc blades |
| Leaving center furrow | Discing too slowly | Increase speed, do not exceed 6 M.P.H. rigid models, 5 M.P.H. rock flex models |
| | Rear gang not cutting deep enough | Lengthen tongue adjustment screws |
| | | Increase tension on adjustment screw springs |
| | Rear blades are too far apart | Readjust distance between disc blades |
| Leaving untilled strip | Discing too shallow | Increase depth |
| | Front center gangs too far apart | Move front center gangs in |
| | Front center gangs overlapped too much | Move front center gangs out |
| Leaving furrow on outside | Rear running too deep | Readjust tongue leveling screws |
| | Extension disc blade incorrect size | Decrease size of extension disc blade |
| Leaving ridge on outside | Front running too deep | Adjust tongue leveling screws |
| | Not enough overlap | Move tractor toward plowed ground |
| | Wing section running too deep | Increase size of extension disc blades |
| | Excessive speed | Reduce speed |
| Center section not level from side to side | Incorrect air pressure in tires | 12.5L x 15, Load Range F tires to 56 P.S.I. |
| Wings not level from side to side | Wing too high | To lower wing, shorten wing adjustment screw |
| | Wing too low | To raise wing, lengthen wing adjustment screw |
| | Wing lift cylinder not fully extended | Extend cylinder to maximum length and hold open briefly |
| | Slave cylinders out of phase | Raise unit out of ground and hold control lever open until all cylinder are completely extended |
| Disc not level from front to rear | Tongue adjustment screw setting | Lengthen screw to RAISE front<br>Shorten screw to LOWER front |
| | Tongue leveling cylinder | Make sure tongue leveling cylinder is fully retracted during field operation |
| Disc not level during transport | Leveling spring adjustment | Adjust tension on leveling screw springs |
| Gangs plugging | Extremely wet field conditions | Decrease depth of work or allow field to dry if possible |
| | Worn or improper adjustment of scrapers | Readjust scrapers; replace worn parts |
| Gangs does not revolve | Obstruction in disc gang | Check for rocks, mud, roots, etc. |
| | Scrapers | Check for scrapers adjusted too tight to disc blades |
| | Seized bearing | Replace |
| | Plugging at bearing arm | Try removing scraper at this location |
| Wing will not flex down far enough | Wing lift cylinder | Make sure cylinders are fully extended |
| Disc will not penetrate or penetrates too much | Depth valve striker setting on wheel control cylinders | Readjust depth control striker See pg O11 |
| Wheels have excessive wobble | Loose wheel bolts | Immediately stop. Torque wheel bolts 145 Ft. Lbs. |
| | Loose spindle nuts | Tighten nut until tight, then back off one to two notches |
| Discs have excessive wobble | Tie rod nut loose | Retorque tie rod nut to 1200 Ft. Lbs. |
| Disc will not lower; or wings will not lower | Transport locks engaged | Open transport lock valve |
| | | Disengage wing lock pins |
| Wings will not raise to transport position | Plugged restrictor | Remove restrictors from ends of cylinder to check orifice for foreign material |
| | Insufficient hydraulic pressure | Check tractor hydraulic system |

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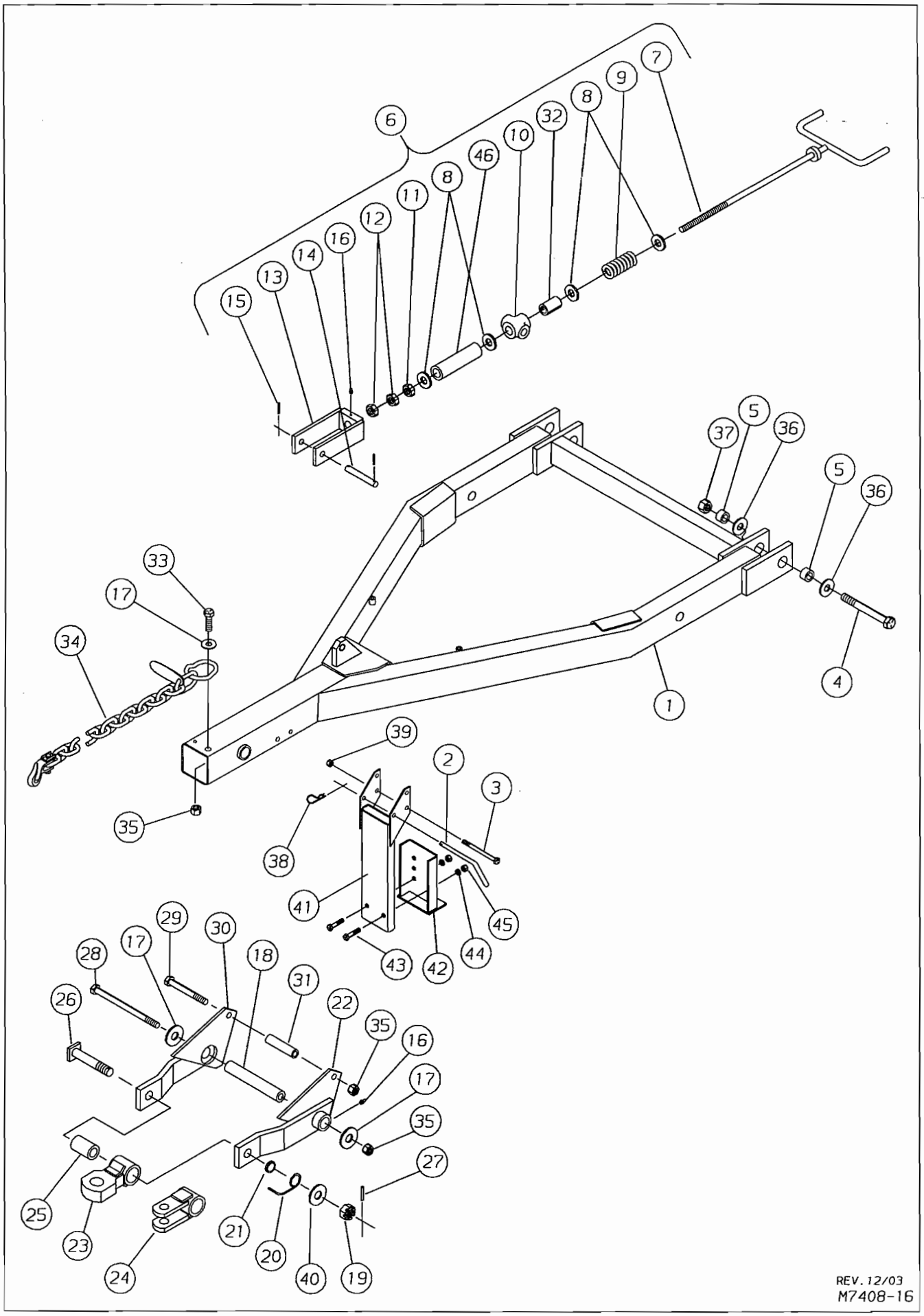
# PARTS SECTION

THE FOLLOWING ILLUSTRATED PARTS SECTION HAS BEEN COMPILED TO REFLECT PART NUMBERS REQUIRED TO ORDER PARTS, AND TO SUPPORT THE ASSEMBLY SECTION FOR DIMENSIONS AND DESCRIPTIONS OF ALL PARTS, BOLTS, PINS, ETC. THE OPERATOR CAN ALSO IDENTIFY PART NAMES TO CLARIFY PROPER OPERATIONAL STEPS.

# Notes


REV. 12/03
M7408-16

# TONGUE & HITCH

**FOR MODELS -** ALL 3/04

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | 2145-30-0A | Tongue | 1 |
| 2 | 2145-0-4 | Tongue Stand Pin | 1 |
| 3 | 62-188 | 5/8NC x 7-1/2" Cap Screw | 1 |
| 4 | 62-280 | 1-1/4NC x 9" Machine Bolt | 2 |
| 5 | 2145-0-2 | Tongue Pivot Bushing | 4 |
| 6 | 2191-52-0 | Adjustment Screw Assembly | 2 |
| 7 | 2145-50-0 | Adjustment Screw | 1 |
| 8 | 64-130 | 1-1/2" SAE Flat Washer | 4 |
| 9 | 76-164 | Spring | 1 |
| 10 | 2191-52-1 | Trunnion | 1 |
| 11 | 63-127 | 1-1/2NC Hex Nut | 1 |
| 12 | 63-129 | 1-1/2NC Jam Nut | 2 |
| 13 | 2145-51-0 | Adjustment Screw Clevis | 1 |
| 14 | 2145-52-2 | Pin | 1 |
| 15 | 60-706 | 7/32" DIA. x 2" Cotter Pin | 2 |
| 16 | 65-101 | 1/8NPT Zerk | 1 |
| 17 | 770-101-3 | Special Washer (3-1/8" O.D. x 3/8" Thick) | 3 |
| 18 | 2145-0-7A | Pivot Bushing | 1 |
| 19 | 63-128 | 1-1/2NC Slotted Hex Nut | 1 |
| 20 | 76-119 | Clevis Spring | 1 |
| 21 | 2145-0-21 | Bushing | 1 |
| 22 | 2145-95-0 | Left Hitch Strap | 1 |
| 23 | 2135-54-0 | Clevis (Crawler Type) | 1 |
| 24 | 2420-56-0 | Clevis (Optional) | 1 |
| 25 | 2135-55-1 | Hitch Tube | 1 |
| 26 | 2145-115-0A | Clevis Bolt Weldment | 1 |
| 27 | 60-617 | 3/8"DIA. x 2-1/2" Roll Pin | 1 |
| 28 | 62-269 | 1NC x 14" Machine Bolt | 1 |
| 29 | 62-256 | 1NC x 8" Machine Bolt | 1 |
| 30 | 2145-94-0 | Right Hitch Strap | 1 |
| 31 | 2145-0-8 | Cylinder Pivot Spacer | 1 |
| 32 | 2191-52-2 | Tube Spacer | 1 |
| 33 | 62-238 | 1NC x 3" GD. 5 Bolt | 1 |
| 34 | 72-352 | 20,000# Safety Chain | 1 |
| 35 | 63-119 | 1NC Lock Nut | 1 |
| 36 | 64-126 | 1-1/4" STD. Flat Washer | 4 |
| 37 | 63-126 | 1-1/4NC Lock Nut | 2 |
| 38 | 60-716 | #3 Hair Pin Cotter | 1 |
| 39 | 63-110 | 5/8NC Lock Nut | 1 |
| 40 | 64-129 | 1-1/2" STD. Flat Washer | 1 |
| | 2191-38-0 | Tongue Stand Assembly | 1 |
| 41 | 2191-36-0 | Tongue Stand | 1 |
| 42 | 2191-37-0 | Stand Base | 1 |
| 43 | 62-409 | 5/8NC x 3" GD.5 Cap Screw | 2 |
| 44 | 64-109 | 5/8" STD. Lock Washer | 2 |
| 45 | 63-109 | 5/8NC Hex Nut | 2 |
| 46 | 2191-52-3 | Spacer Tube | 1 |
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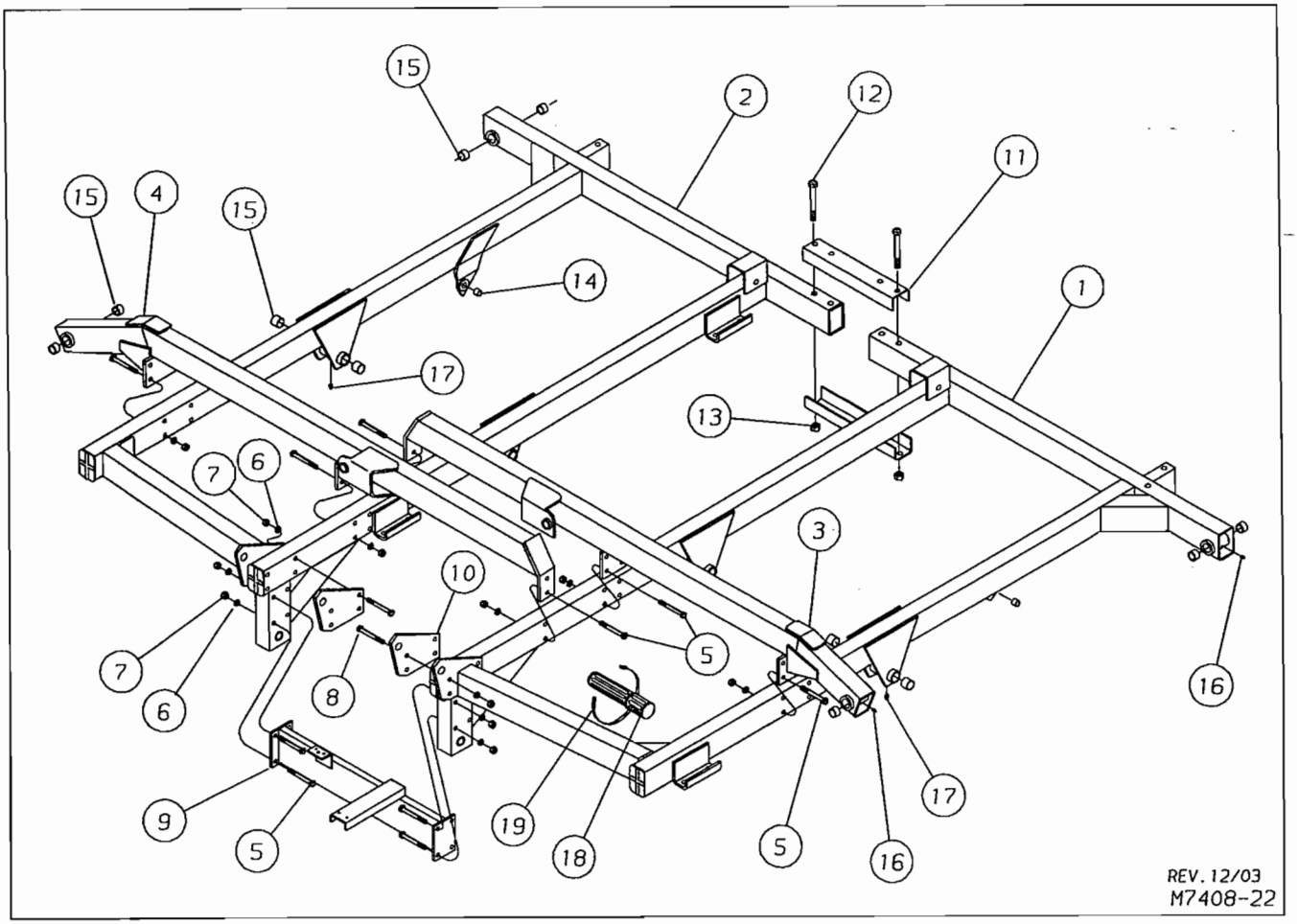
# CENTER FRAME SECTION



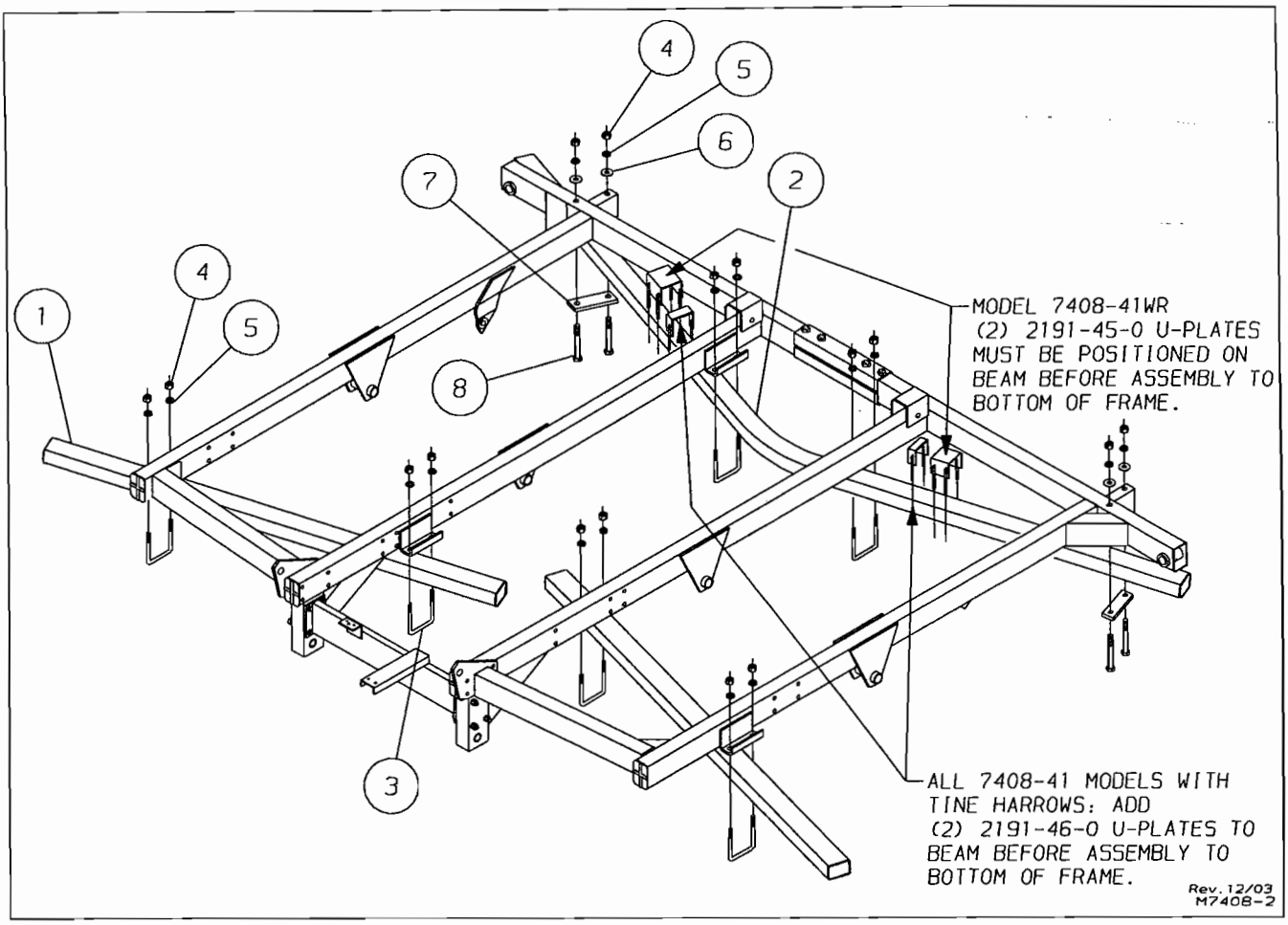

**FOR MODELS -** 7400-41 & 7400-46 5/02

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | ★ 2191-2-0A | Left Frame | 1 |
| | ● 2196-2-0A | Left Frame | 1 |
| 2 | ★ 2191-1-0A | Right Frame | 1 |
| | ● 2196-1-0A | Right Frame | 1 |
| 3 | ★ 2191-25-0 | Left Crossmember | 1 |
| | ● 2196-25-0 | Left Crossmember | 1 |
| 4 | ★ 2191-24-0 | Right Crossmember | 1 |
| | ● 2196-24-0 | Right Crossmember | 1 |
| 5 | 62-207 | 3/4NC x 5-1/2" GD5 Cap Screw | 28 |
| 6 | 64-112 | 3/4" STD. Lock Washer | 36 |
| 7 | 63-112 | 3/4NC Hex Nut | 36 |
| 8 | 62-212 | 3/4NC x 6-1/2" Cap Screw | 8 |
| 9 | 2145-68-0B | Front Frame Connector | 1 |
| 10 | 2145-3-5A | Trunnion Bracket | 2 |
| 11 | 2145-48-1A | Connector Channel | 2 |
| 12 | 62-256 | 1NC x 8" Cap Screw | 4 |
| 13 | 63-119 | 1NC Lock Nut | 4 |
| 14 | 53-102 | Wear Sleeve | 2 |
| 15 | 53-110 | Wear Sleeve | 16 |
| 16 | 65-101 | 1/8NPT STD. Zerk | 4 |
| 17 | 65-104 | 1/4NPT x 67-1/2° Zerk | 2 |
| 18 | 99-192 | Owner's Manual Canister | 1 |
| 19 | 25-1163 | Hose Clamp | 1 |

★ For Model 7400-41

● For Model 7400-46

# CENTER GANG BEAMS




**FOR MODELS -** 7400-41, 7400-46 5/02

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | ★ 2191-0-1 | Center Front Gang Beam | 2 |
| | ● 2196-0-1 | Center Front Gang Beam | 2 |
| 2 | ★ 2191-0-2 | Center Rear Gang Beam | 1 |
| | ● 2196-0-2 | Center Rear Gang Beam | 1 |
| 3 | 61-262 | U-Bolt, 1.00" DIA. x 5.44" W x 6.00" Long | 6 |
| 4 | 63-117 | 1NC Hex Nut | 16 |
| 5 | 64-118 | 1" STD. Lock Washer | 16 |
| 6 | 64-119 | 1" STD. Flat Washer | 4 |
| 7 | 1580-0-2 | Gang Clamp Plate | 2 |
| 8 | 62-268 | 1NC x 13" Hex Machine Bolt | 4 |
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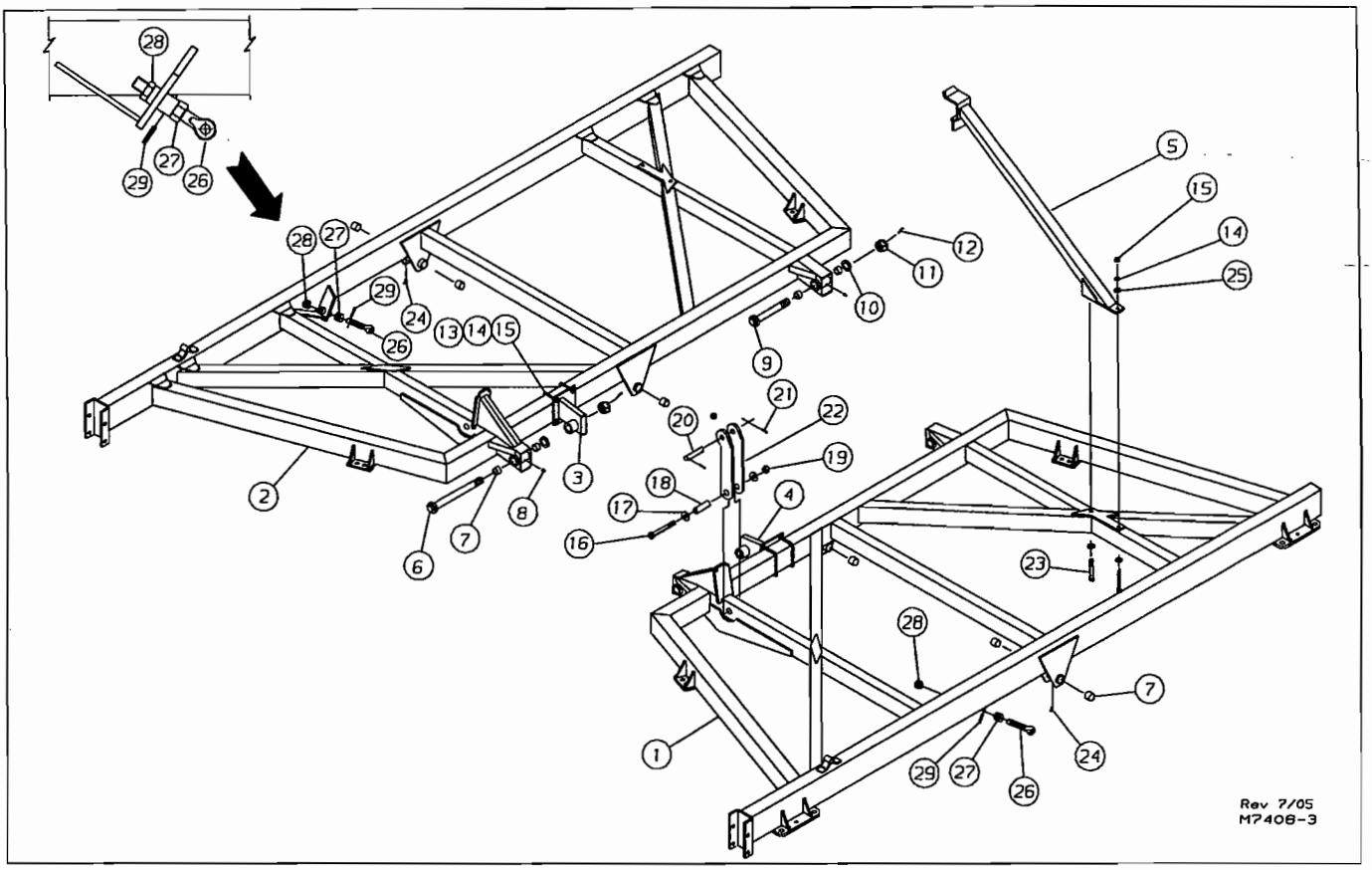
★ For Model 7400-41
● For Model 7400-46

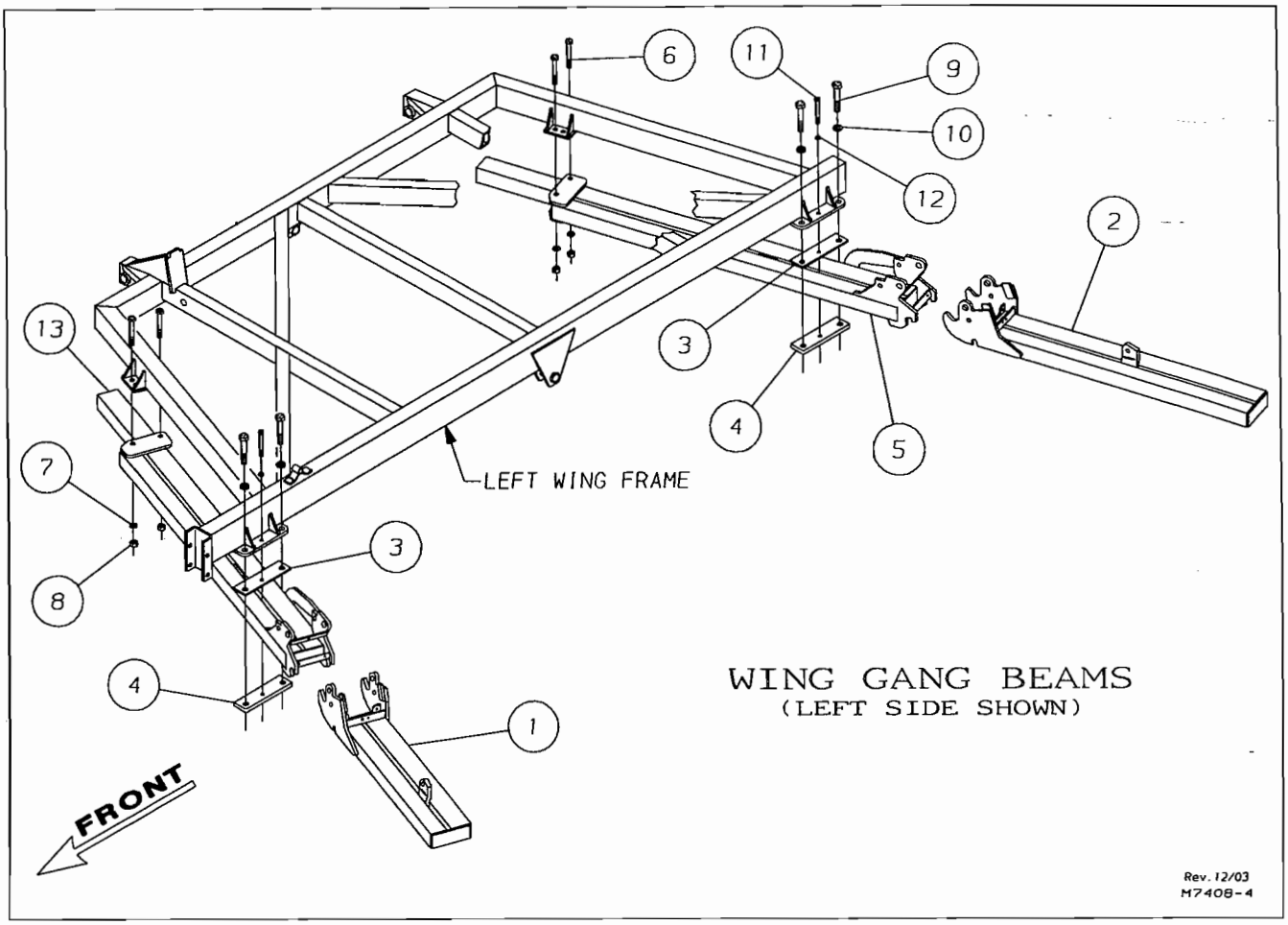
# WING FRAMES




**FOR MODELS** - ALL 1/06

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | 2190-18-0 | Left Wing Frame Weldment | 1 |
| 2 | 2190-20-0 | Right Wing Frame Weldment | 1 |
| 3 | 2145-38-0 | Right Support Hinge | 1 |
| 4 | 2145-39-0 | Left Support Hinge | 1 |
| 5 | 2191-44-0A | Wing Lock - Model 7400-41 | 2 |
| | 2196-44-0A | Wing Lock - Model 7400-46 | 2 |
| 6 | 2145-37-0 | Front Hinge Pin | 2 |
| 7 | 53-110 | Wear Bushing | 14 |
| 8 | 65-101 | 1/8NPT Zerk | 4 |
| 9 | 2145-28-0 | Rear Hinge Pin | 2 |
| 10 | 64-133 | Special Washer | 6 |
| 11 | 63-132 | 1-3/4NC Slotted Hex Nut | 4 |
| 12 | 60-714 | 3/8" DIA. x 3-1/2" Cotter Pin | 4 |
| 13 | 61-120 | 3/4" DIA. U-Bolt | 4 |
| 14 | 64-112 | 3/4" STD. Lock Washer | 12 |
| 15 | 63-112 | 3/4NC Hex Nut | 12 |
| 16 | 62-251 | 1NC x 6-1/2" GD5 Cap Screw | 2 |
| 17 | 64-119 | 1" STD. Flat Washer | 4 |
| 18 | 2145-0-1 | Sleeve | 2 |
| 19 | 63-119 | 1NC Lock Nut | 2 |
| 20 | 2145-0-6 | Wing Lift Pin | 2 |
| 21 | 60-710 | 1/4" DIA. x 2-1/2" Cotter Pin | 4 |
| 22 | 7408-56-0 | Wing Swing Lug | 2 |
| 23 | 62-217 | 3/4NC x 7-1/2" GD5 Cap Screw | 4 |
| 24 | 65-104 | 1/4NPT x 67-1/2° Zerk | 2 |
| 25 | 64-113 | 3/4" STD. Flat Washer | 6 |
| 26 | 61-249 | 1-1/4" DIA. Eye Bolt | 2 |
| 27 | 63-123 | 1-1/4NC Hex Nut | 2 |
| 28 | 63-124 | 1-1/4NC Hex Jam Nut | 2 |
| 29 | 60-614 | 3/8"DIA. x 1-3/4" Roll Pin | 2 |

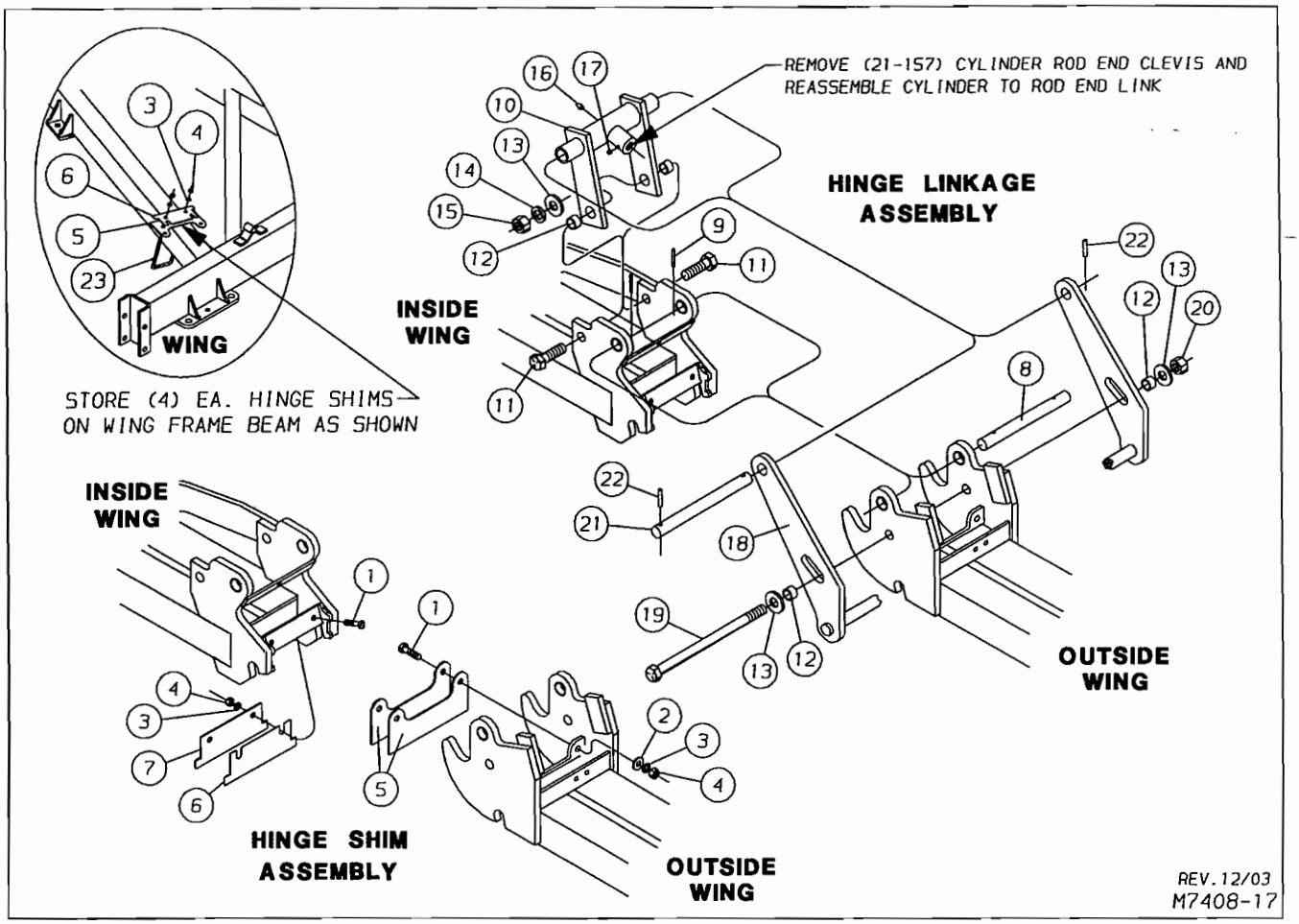
# WING GANG BEAMS




**FOR MODELS -** 7400-41, 7400-46 3/04

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| 1 | 2190-41-0 | Lt. Front Outside Gang Beam Weldment **(Shown)** | 1 |
| | 2190-40-0 | Rt. Front Outside Gang Beam Weldment (Opposite) | 1 |
| 2 | 2190-43-0 | Lt. Rear Outside Gang Beam Weldment **(Shown)** | 1 |
| | 2190-42-0 | Rt. Rear Outside Gang Beam Weldment (Opposite) | 1 |
| 3 | 2190-0-10 | Gang Spacer Plate | 4 |
| 4 | 2190-0-11 | Gang Bolt Plate | 4 |
| 5 | 2190-45-0 | Lt. Rear Wing Inner Gang Beam Weldment **(Shown)** | 1 |
| | 2190-44-0 | Rt Rear Wing Inner Gang Beam Weldment (Opposite) | 1 |
| 6 | 62-253 | 1NC x 7" GD5 Cap Screw | 8 |
| 7 | 64-118 | 1" STD. Lock Washer | 8 |
| 8 | 63-117 | 1NC Hex Nut | 8 |
| 9 | 62-274 | 1-1/4NC x 7" GD5 Machine Bolt | 8 |
| 10 | 64-125 | 1-1/4" STD. Lock Washer | 8 |
| 11 | 62-213 | 3/4NC x 6-1/2" GD5 Cap Screw | 4 |
| 12 | 64-112 | 3/4" STD. Lock Washer | 4 |
| 13 | 2190-55-0 | Lt. Front Wing Inner Gang Beam Weldment **(Shown)** | 1 |
| | 2190-54-0 | Rt. Front Wing Inner Gang Beam Weldment (Opposite) | 1 |
| | | | |

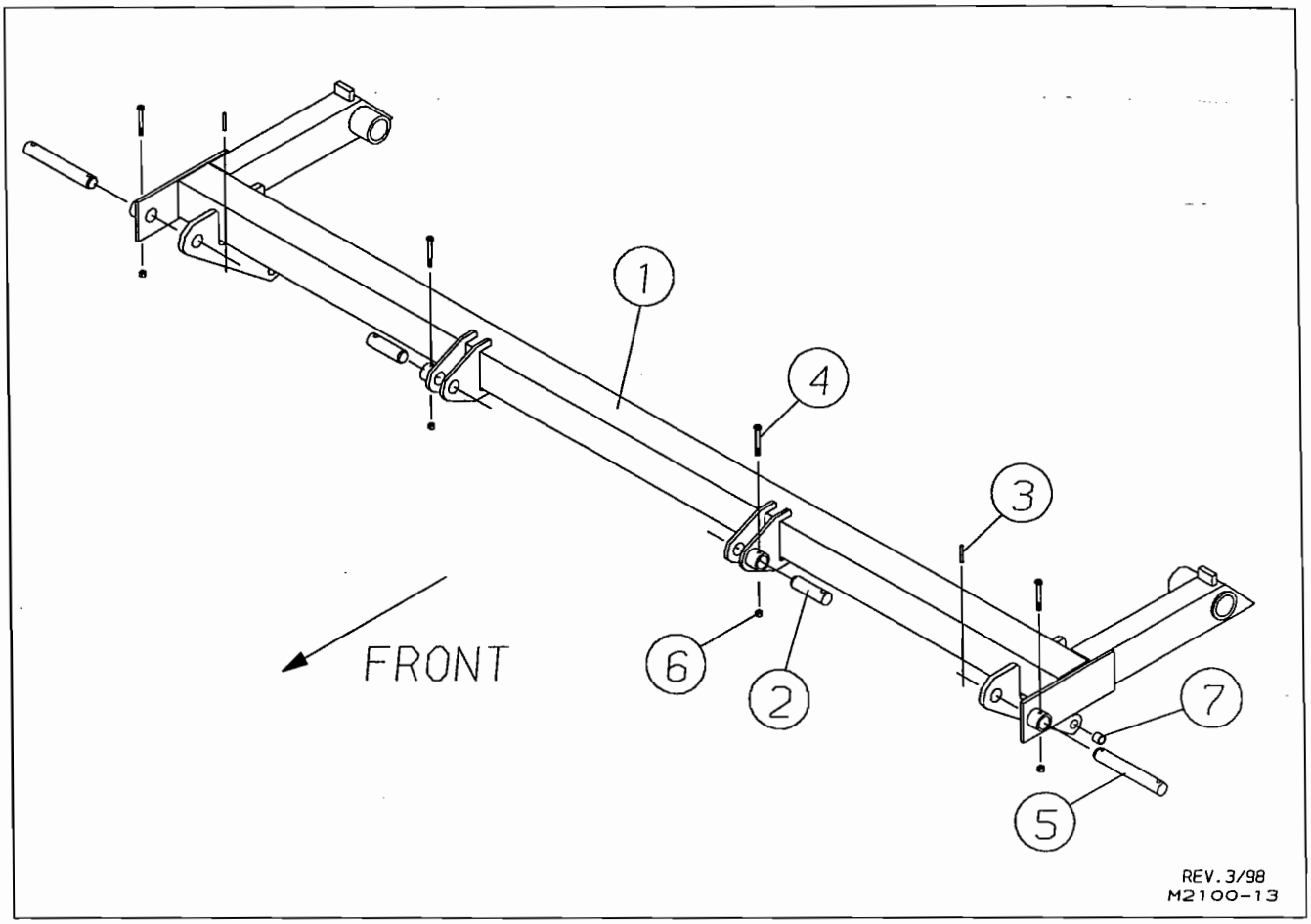
# WING HINGE (LINKAGE & SHIMS)




**FOR MODELS** - ALL 5/02

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | 62-569 | 1/2NC x 1-1/2" GD5 Cap Screw | 4 |
| 2 | 64-108 | 1/2" STD. Flat Washer | 2 |
| 3 | 64-107 | 1/2" STD. Lock Washer | 6 |
| 4 | 63-106 | 1/2NC Hex Nut | 6 |
| 5 | 5800-0-28 | 16 Ga. Outer Wing Hinge Shim | 2 |
| 6 | 5800-0-27 | 16 Ga. Inner Wing Hinge Shim | 1 |
| 7 | 5800-0-26 | 3/16" Shim Plate | 1 |
| 8 | 5800-0-12 | Hinge Pin (1-1/4" DIA. x 11-9/16" Long) | 1 |
| 9 | 60-606 | 1/4" DIA. x 2" Roll Pin | 2 |
| 10 | 5821-41-0 | Rod End Link | 1 |
| 11 | 62-238 | 1NC x 3" GD5 Cap Screw | 2 |
| 12 | 53-103 | Wear Bushing (1-1/4" OD x 3/4" Long) | 4 |
| 13 | 64-119 | 1" STD. Flat Washer | 4 |
| 14 | 64-118 | 1" STD. Lock Washer | 2 |
| 15 | 63-117 | 1NC Hex Nut | 2 |
| 16 | 65-101 | 1/8" STD. Zerk | 1 |
| 17 | 62-310 | 3/8NF x 3/8" Set Screw | 1 |
| 18 | 5821-40-0 | Latch Weldment | 1 |
| 19 | 62-807 | 1NC x 15" GD5 Machine Bolt | 1 |
| 20 | 63-119 | 1NC Lock Nut | 1 |
| 21 | 5800-0-11 | Rod End Pin (1-1/4" DIA. x 14-3/4" Long) | 1 |
| 22 | 60-615 | 3/8" DIA. x 2" Roll Pin | 2 |
| 23 | 61-263 | U-Bolt, .50"DIA. x 4.06"W x 7.25"L | 1 |

# CENTER ROCKER SHAFT




**FOR MODELS** - ALL 5/02

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| 1 | ★ 2191-10-0 | Center Rocker | 1 |
| | ● 2196-10-0 | Center Rocker | 1 |
| 2 | 4987-0-3 | Pin | 2 |
| 3 | 60-617 | 3/8" DIA. x 2-1/2" Roll Pin | 2 |
| 4 | 62-154 | 1/2NC x 3-1/2" GD. 5 Cap Screw | 4 |
| 5 | 2196-0-3 | Pin | 2 |
| 6 | 63-107 | 1/2NC Lock Nut | 4 |
| 7 | 53-102 | Wear Sleeve | 2 |
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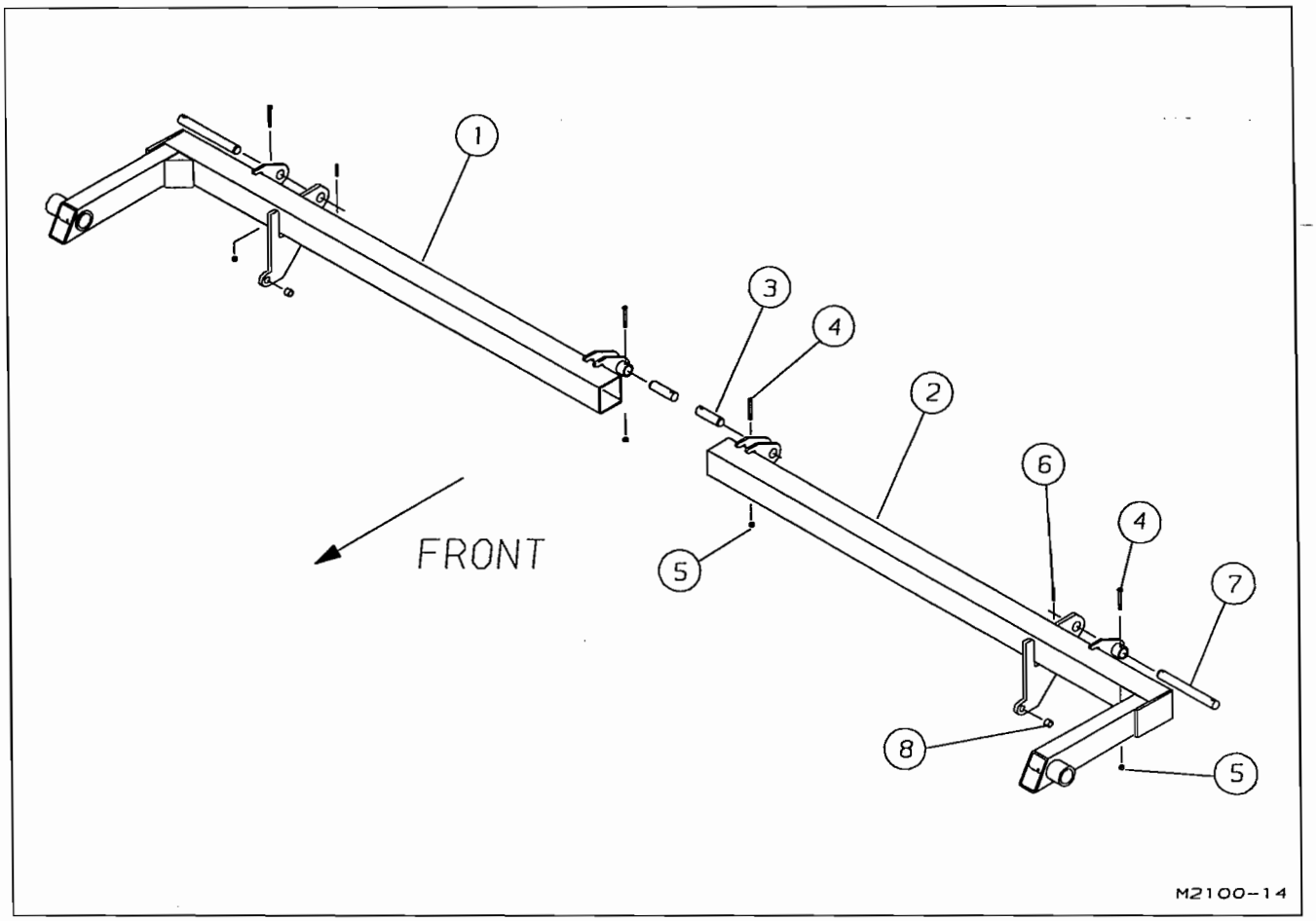
★ For Model 7400-41
● For Model 7400-46

# WING ROCKER SHAFT




**FOR MODELS -** ALL 5/02

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| 1 | 2196-13-0 | Right Wing Rocker | 1 |
| 2 | 2196-12-0 | Left Wing Rocker | 1 |
| 3 | 4987-0-3 | Pin | 2 |
| 4 | 62-154 | 1/2NC x 3-1/2" GD5 Cap Screw | 4 |
| 5 | 63-107 | 1/2NC Lock Nut | 4 |
| 6 | 60-617 | 3/8" DIA. x 2-1/2" Roll Pin | 2 |
| 7 | 2196-0-7 | Pin | 2 |
| 8 | 53-102 | Wear Sleeve | 2 |
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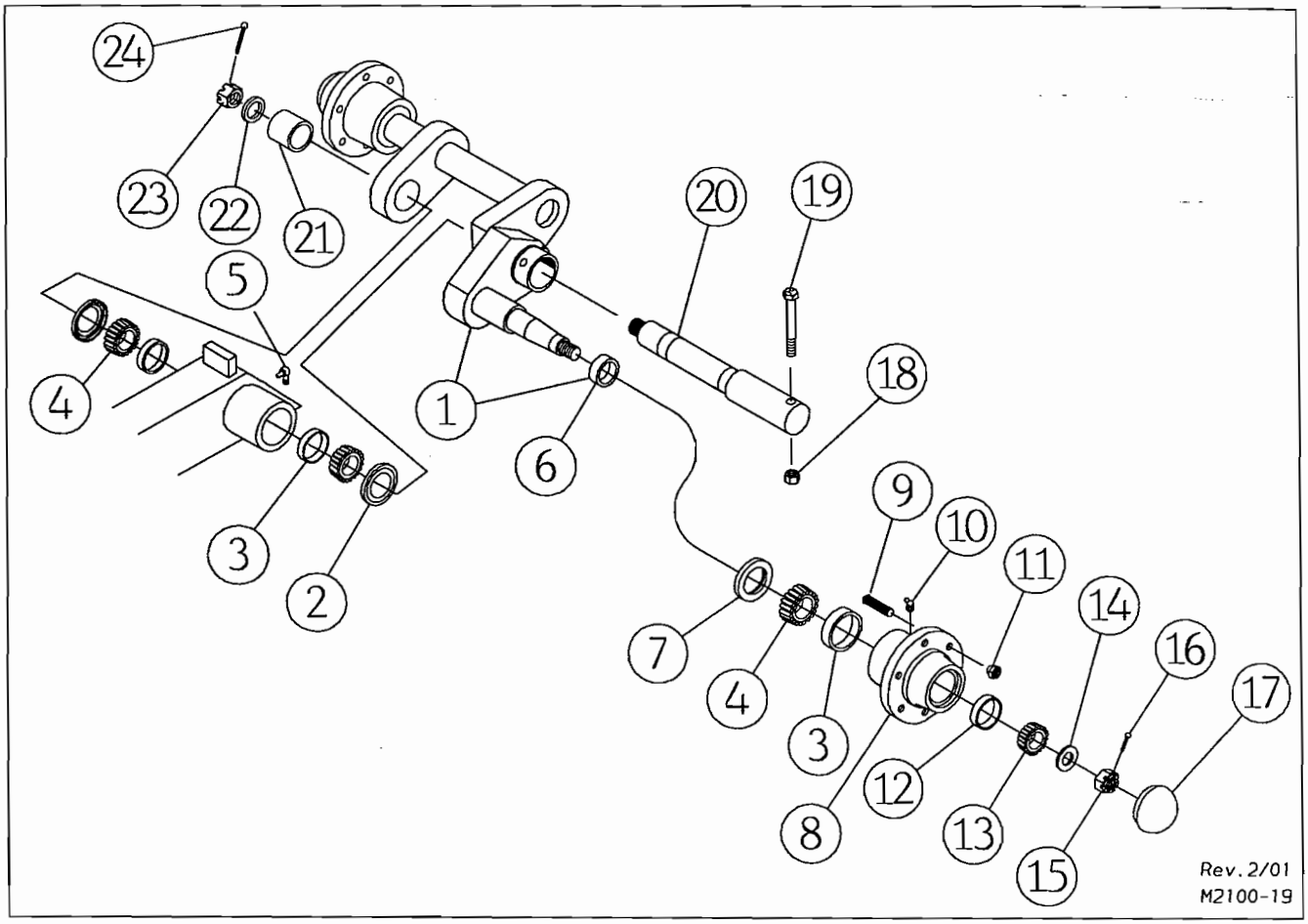
# WALKING BEAM ASSEMBLY

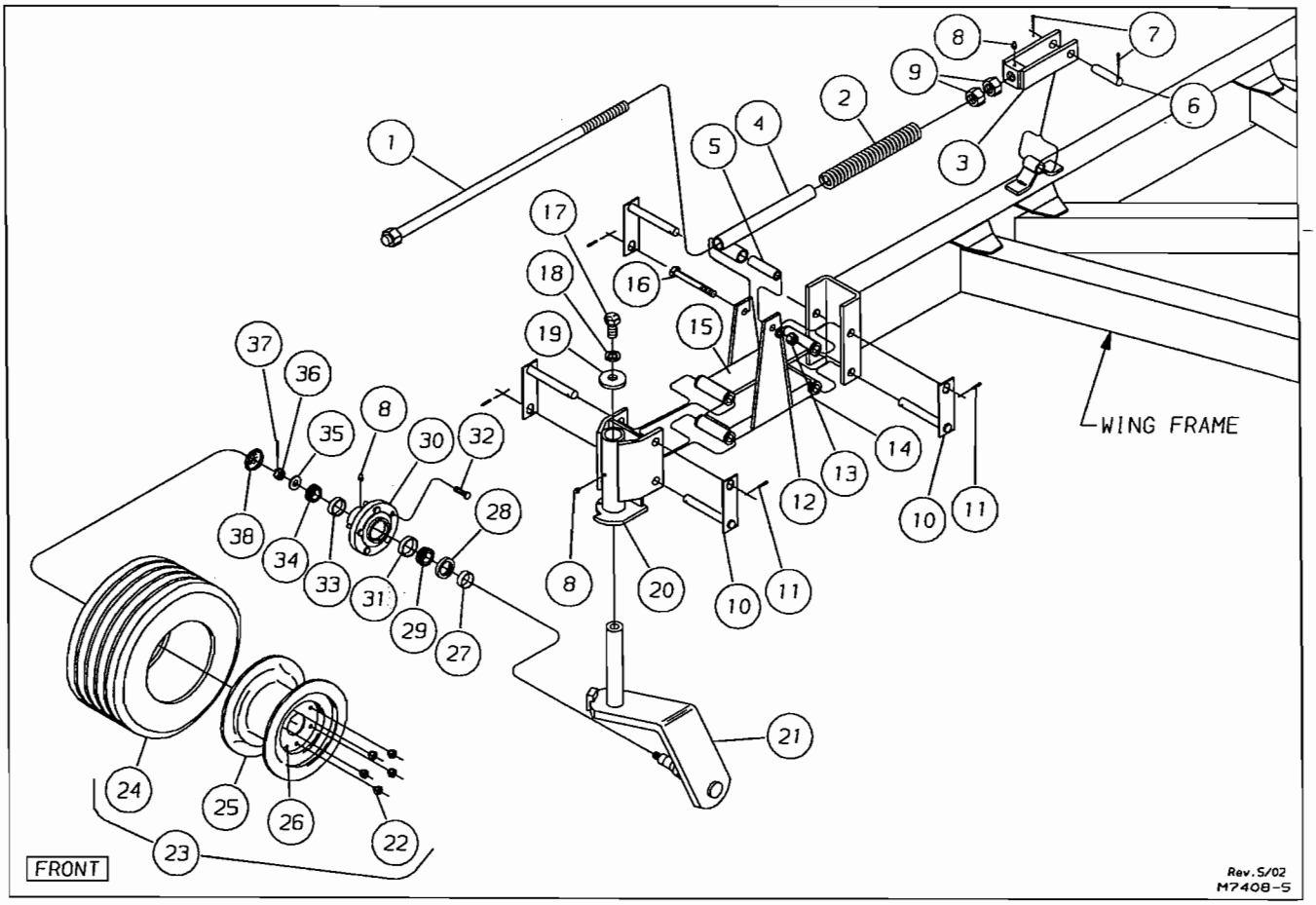



**FOR MODELS** - ALL

5/02

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| 1 | 2490-91-0 | Walking Beam w/ Wear Sleeves | 1 |
| 2 | 42-131 | Seal | 2 |
| 3 | 41-210 | Cup (Timken # LM-1049911) | 4 |
| 4 | 41-114 | Cone (Timken # LM-104949) | 4 |
| 5 | 65-100 | 1/8NPT x 45° Zerk | 1 |
| 6 | 53-108 | Wear Sleeve | 2 |
| 7 | 42-109 | Seal | 2 |
| 8 | 2490-96-0 | Repair Hub Assembly (Includes Items 3, 8, 9, 10, 11, 12) | 2 |
| 9 | 62-311 | 5/8NF x 2-1/4" Wheel Bolt | 16 |
| 10 | 65-122 | 1/4 x 65° Drive Zerk | 2 |
| 11 | 63-208 | 5/8NF Lug Nut | 16 |
| 12 | 41-208 | Cup (Timken # LM-48510) | 2 |
| 13 | 41-112 | Cone (Timken # LM-48548) | 2 |
| 14 | 64-120 | 1"SAE Flat Washer | 2 |
| 15 | 63-204 | 1NF Slotted Nut | 2 |
| 16 | 60-702 | 3/16" DIA. x 1-1/2" Cotter Pin | 2 |
| 17 | 52-302 | Hub Cap | 2 |
| 18 | 63-110 | 5/8NC Lock Nut | 1 |
| 19 | 62-178 | 5/8NC x 4" GD5 Cap Screw | 1 |
| 20 | 2490-90-1 | Pivot Spindle | 1 |
| 21 | 2490-90-3 | Bushing | 1 |
| 22 | 64-167 | Special Washer | 1 |
| 23 | 63-231 | 1-1/4NF Slotted Jam Nut | 1 |
| 24 | 60-710 | 1/4"DIA. x 2-1/2" Cotter Pin | 1 |

# FRONT GAUGE WHEEL ASSEMBLY




**FOR MODELS -** ALL

5/02

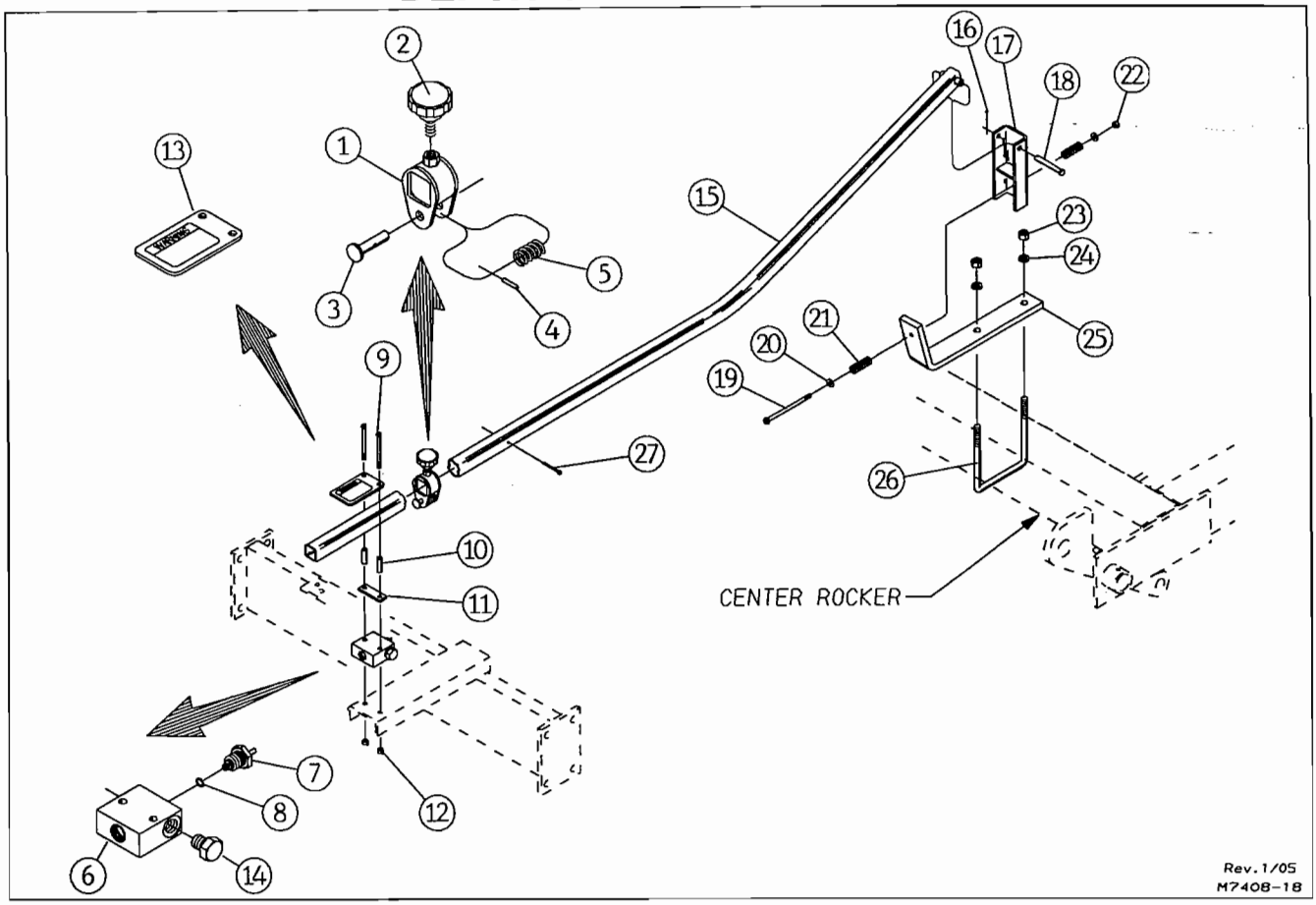
| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | 5630-117-0 | Adjustment Screw Weldment | 1 |
| 2 | 76-203 | Spring - Painted | 1 |
| 3 | 5630-115-0 | Link End Weldment | 1 |
| 4 | 5630-116-0 | Trunnion Weldment | 1 |
| 5 | 5630-0-13 | 1-1/4" x 4-1/8" Sleeve | 1 |
| 6 | 4226-0-8 | Clevis Pin | 1 |
| 7 | 60-702 | 3/16" DIA x 1-1/2" Cotter Pin | 2 |
| 8 | 65-101 | 1/8" STD. Zerk | 3 |
| 9 | 63-123 | 1-1/4NC Hex Nut | 2 |
| 10 | 5630-159-0 | Link Pin | 4 |
| 11 | 60-606 | 1/4" DIA. x 2" Roll Pin | 4 |
| 12 | 64-112 | 3/4" STD Lock Washer | 1 |
| 13 | 63-112 | 3/4NC Hex Nut | 1 |
| 14 | 5630-105-0 | Lower Link Weldment | 1 |
| 15 | 5630-107-0A | Upper Link Weldment | 1 |
| 16 | 62-210 | 3/4NC x 6" GD5 Cap Screw | 1 |
| 17 | 62-234 | 1NC x 2" Cap Screw | 1 |
| 18 | 64-118 | 1" STD. Lock Washer | 1 |
| 19 | 770-101-3 | Flat Washer | 1 |
| 20 | 5630-98-0 | Castor Pivot Weldment | 1 |
| 21 | 5630-97-0A | Castor Weldment | 1 |

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 22 | 63-209 | 1/2NF Lug Nut | 5 |
| 23 | ★1000-81066-0 | Wheel Assembly | 1 |
| 24 | 51-121 | 20.5 x 8-10 Tire | 1 |
| 25 | 52-109 | 10 x 6 Wheel | 1 |
| 26 | 51-120 | Valve Stem | 1 |
| 27 | 53-111 | Wear Bushing-2"OD x 1.88"ID x .62" Long | 1 |
| 28 | 42-115 | Seal | 1 |
| 29 | 41-112 | Cone | 1 |
| 30 | ● 4990-114-0 | Repair Hub Assembly | 1 |
| 31 | 41-208 | Cup | 1 |
| 32 | 62-498 | 1/2NF x 1-7/8" Wheel Bolt | 5 |
| 33 | 41-215 | Cup | 1 |
| 34 | 41-117 | Cone | 1 |
| 35 | 64-161 | 5/8" STD. Lock Washer | 1 |
| 36 | 63-201 | 3/4NF Slotted Hex Nut | 1 |
| 37 | 60-725 | 5/32" DIA. x 1-1/2" Cotter Pin | 1 |
| 38 | 52-305 | Hub Cap | 1 |

★ Includes Items 24, 25 and 26

● Includes Items 31, 32 and 33

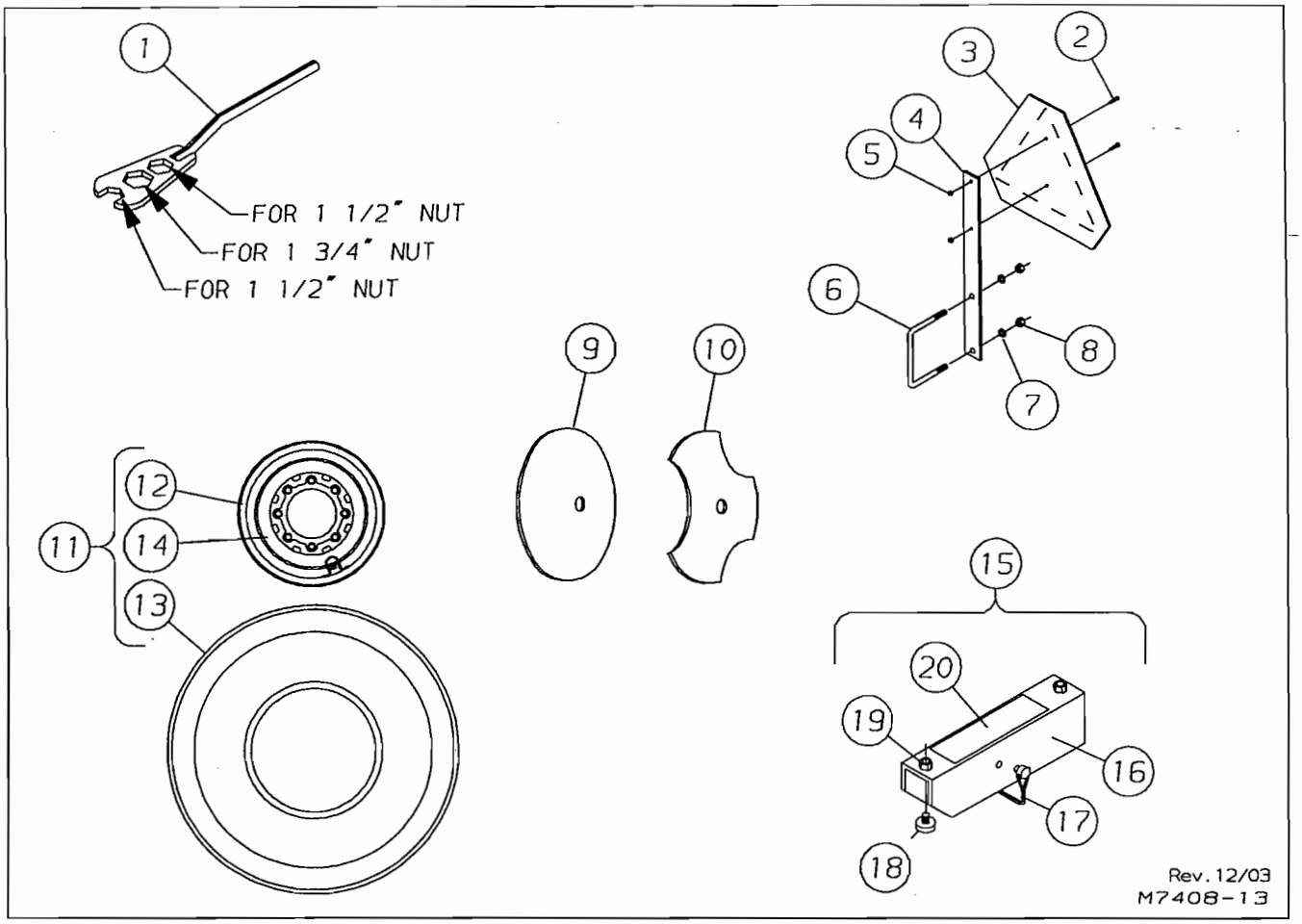
# DEPTH STOP ASSEMBLY




**FOR MODELS** - ALL 1/05

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| | 6112-91-0 | Striker Assembly | 1 |
| 1 | 6112-92-0A | Striker Weldment | 1 |
| 2 | 99-165 | Adjustment Knob | 1 |
| 3 | 60-126 | Clevis Pin | 1 |
| 4 | 60-602 | 3/16" DIA. x 1" Roll Pin | 1 |
| 5 | 76-102 | Spring | 1 |
| 6 | 25-2474 | Depth Valve | 1 |
| 7 | 25-2475 | Cartridge Assembly | 1 |
| 8 | 25-2476 | O-Ring | 1 |
| 9 | 62-475 | 3/8NC x 5" GD5 Cap Screw | 2 |
| 10 | 3112-69-1 | Spacer | 2 |
| 11 | 3112-69-2 | Bolt Strap | 1 |
| 12 | 63-134 | 3/8NC Nylon-Top Lock Nut | 2 |
| 13 | 4881-0069-0 | Guide Plate Assembly | 1 |
| 14 | 25-317 | 3/4" O-Ring Plug | 1 |
| 15 | 2196-85-0A | Stop Linkage Weldment | 1 |
| 16 | 60-725 | 5/32" DIA. x 1-1/2" Cotter Pin | 1 |
| 17 | 4987-84-0 | Stop Arm Weldment | 1 |
| 18 | 60-231 | 1/2" DIA. x 3-1/2" Clevis Pin | 1 |
| 19 | 62-636 | 3/8NC x 6" GD.5 Cap Screw | 1 |
| 20 | 64-104 | 3/8" STD. Flat Washer | 2 |
| 21 | 76-120 | Spring | 2 |
| 22 | 63-134 | 3/8NC Nylon-Top Lock Nut | 1 |
| 23 | 63-109 | 5/8NC Hex Nut | 2 |
| 24 | 64-109 | 5/8" STD. Lock Washer | 2 |
| 25 | 2196-0-6 | Hydraulic Stop Arm | 1 |
| 26 | 61-261 | U-Bolt - .62"DIA. x 6.50" W x 7.50"L) | 1 |
| 27 | 60-704 | 3/16"DIA. x 2" Cotter Pin | 1 |

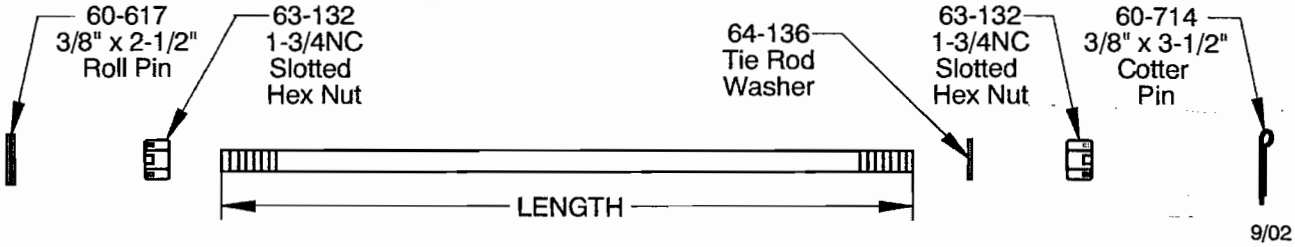
# DISC BLADES, WHEELS, TIRES & EXTENSIONS




**FOR MODELS** - ALL 3/04

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | 2191-35-0 | Tie Rod Wrench | 1 |
| 2 | 62-417 | 1/4NC x 1" GD5 Cap Screw | 2 |
| 3 | 74-487 | SMV Sign | 1 |
| 4 | 4830-0-7 | SMV Arm | 1 |
| 5 | 63-100 | 1/4NC Hex Nut | 2 |
| 6 | 61-244 | U-Bolt - .50"DIA. x 6.06" W x 5.25"L | 1 |
| 7 | 64-107 | 1/2" STD. Lock Washer | 2 |
| 8 | 63-106 | 1/2NC Hex Nut | 3 |
| 9 | 30-223 | Plain Sharp 22" DIA. 7 Ga. | |
| | 30-225 | Plain Sharp 20" DIA. 6 Ga. | |
| | 30-240 | Plain Sharp 22" DIA. 6 Ga. | |
| | 30-241 | Plain Sharp 22" DIA. 1/4" | |
| | 30-219 | Plain Sharp 24" DIA. 7 Ga. | |
| | 30-220 | Plain Sharp 24" DIA. 1/4" | |
| | 30-243 | Plain Sharp 24" DIA. 6Ga. | |
| 10 | 30-147 | Cut-Out Blade 18" DIA. 7Ga. (Ref. 1055-0-18) | |
| 11 | 1000-12540-01 | Wheel Assembly | Spec. |
| 12 | 52-114 | 15 x 10 8-Bolt Wheel (1-1/8" Offset) | 1 |
| 13 | 51-132 | 12.5L x 15, Load Range F, Hi-Way SE | 1 |
| 14 | 74-109 | Caution Decal | 1 |
| 15 | 5800-17-0 | Cylinder Lock Assembly | 1 |
| 16 | 6124-17-1 | Road Lock Channel | 1 |
| 17 | 60-103 | 5/16" P.T.O. Lock Pin | 1 |
| 18 | 44-107 | Rubber Threaded Bumper | 2 |
| 19 | 63-102 | 3/8NC Hex Nut | 2 |
| 20 | 74-387 | Decal - Cylinder Lock | 1 |

# 1-3/4" ROUND TIE RODS




9/02

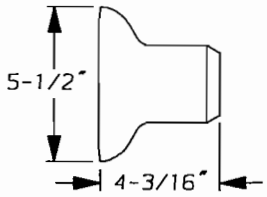
| MODEL | Location | | Length | Disc Spacing | No. of Disc | Alloy Tie Rod |
|---|---|---|---|---|---|---|
| 7400-41N<br>7400-41NR | Center | Front | 78-1/2" | 8" | 10 | 4995-0-6 |
| | | Rear | 70-1/2" | 8" | 9 | 4995-0-5 |
| | Inside Wing | Front Inner | 54-5/8" | 8" | 7 | 4995-0-2 |
| | | Front Middle | 62-5/8" | 8" | 8 | 4995-0-4 |
| | | Rear Inner | 54-5/8" | 8" | 7 | 4995-0-2 |
| | | Rear Middle | 54-5/8" | 8" | 7 | 4995-0-2 |
| | Outer Wing | Front | 54-5/8" | 8" | 7 | 4995-0-2 |
| | | Rear | 70-1/2" | 8" | 9 | 4995-0-5 |
| 7400-41W<br>7400-41WR | Center | Front | 79-1/2" | 9-1/8" | 9 | 4995-0-7 |
| | | Rear | 70-1/2" | 9-1/8" | 8 | 4995-0-5 |
| | Inside Wing | Front Inner | 52-1/8" | 9-1/8" | 6 | 4995-0-1 |
| | | Front Middle | 61-3/8" | 9-1/8" | 7 | 4995-0-3 |
| | | Rear Inner | 52-1/8" | 9-1/8" | 6 | 4995-0-1 |
| | | Rear Middle | 52-1/8" | 9-1/8" | 6 | 4995-0-1 |
| | Outer Wing | Front | 52-1/8" | 9-1/8" | 6 | 4995-0-1 |
| | | Rear | 70-1/2" | 9-1/8" | 8 | 4995-0-5 |
| 7400-46N<br>7400-46NR | Center | Front Inner | 54-5/8" | 8" | 7 | 4995-0-2 |
| | | Front Middle | 46-1/2" | 8" | 6 | 2430-18-1 |
| | | Rear | 94-1/2" | 8" | 12 | 1546-20-1 |
| | Inside Wing | Front Inner | 62-5/8" | 8" | 8 | 4995-0-4 |
| | | Front Middle | 54-5/8" | 8" | 7 | 4995-0-2 |
| | | Rear Inner | 54-5/8" | 8" | 7 | 4995-0-2 |
| | | Rear Middle | 54-5/8" | 8" | 7 | 4995-0-2 |
| | Outer Wing | Front | 54-5/8" | 8" | 7 | 4995-0-2 |
| | | Rear | 70-1/2" | 8" | 9 | 4995-0-5 |
| 7400-46W<br>7400-46WR | Center | Front Inner | 52-1/8" | 9-1/8" | 6 | 4995-0-1 |
| | | Front Middle | 52-1/8" | 9-1/8" | 6 | 4995-0-1 |
| | | Rear | 97-7/8" | 9-1/8" | 11 | 4995-0-9 |
| | Inside Wing | Front Inner | 52-1/8" | 9-1/8" | 6 | 4995-0-1 |
| | | Front Middle | 61-3/8" | 9-1/8" | 7 | 4995-0-3 |
| | | Rear Inner | 52-1/8" | 9-1/8" | 6 | 4995-0-1 |
| | | Rear Middle | 52-1/8" | 9-1/8" | 6 | 4995-0-1 |
| | Outer Wing | Front | 52-1/8" | 9-1/8" | 6 | 4995-0-1 |
| | | Rear | 70-1/2" | 9-1/8" | 8 | 4995-0-5 |

# SPACER SPOOLS

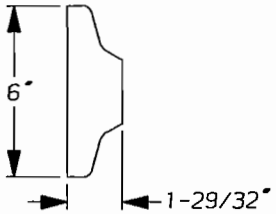
REV 9/02
M7408-67

## 8" SPACING

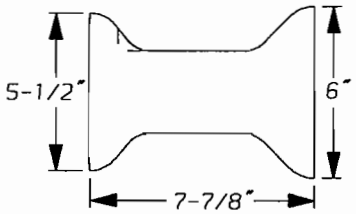
7400-0-8
LONG
HALF SPOOL



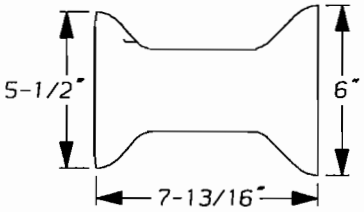

7400-0-11
SHORT
HALF SPOOL



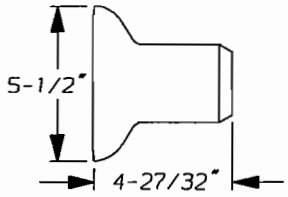

7400-0-6
CAST
SPACER SPOOL



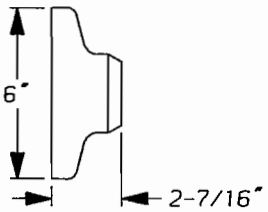

7400-0-12
DUCTILE
SPACER SPOOL



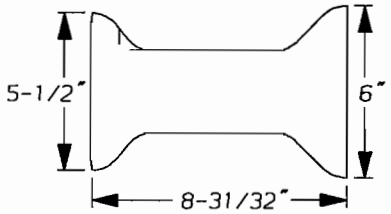

## 9-1/8" SPACING



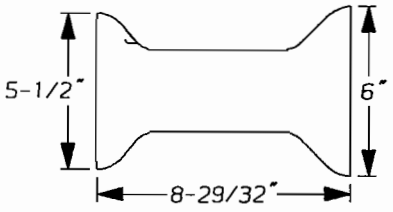

7400-0-9
LONG
HALF SPOOL




7400-0-10
SHORT
HALF SPOOL

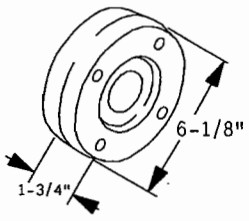



7400-0-7
CAST
SPACER SPOOL



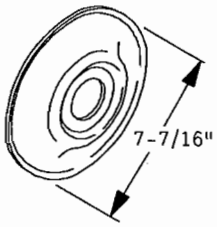

7400-0-5
DUCTILE
SPACER SPOOL

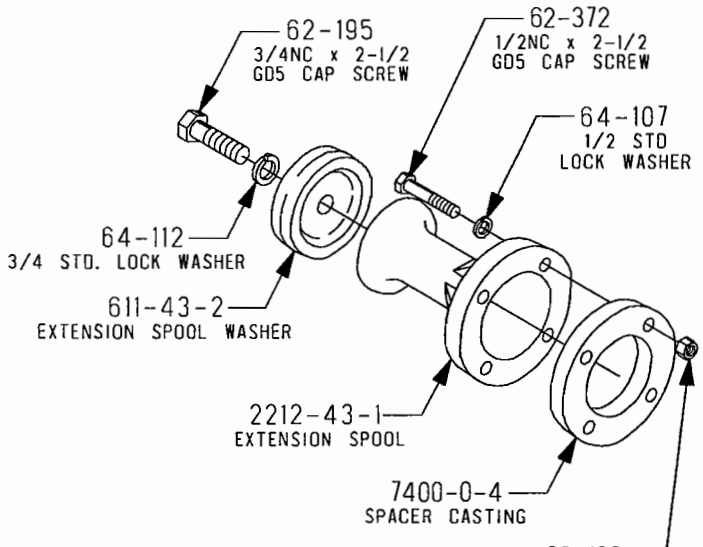
7400-0-3
LARGE
END WASHER




END WASHERS
ALL MODELS

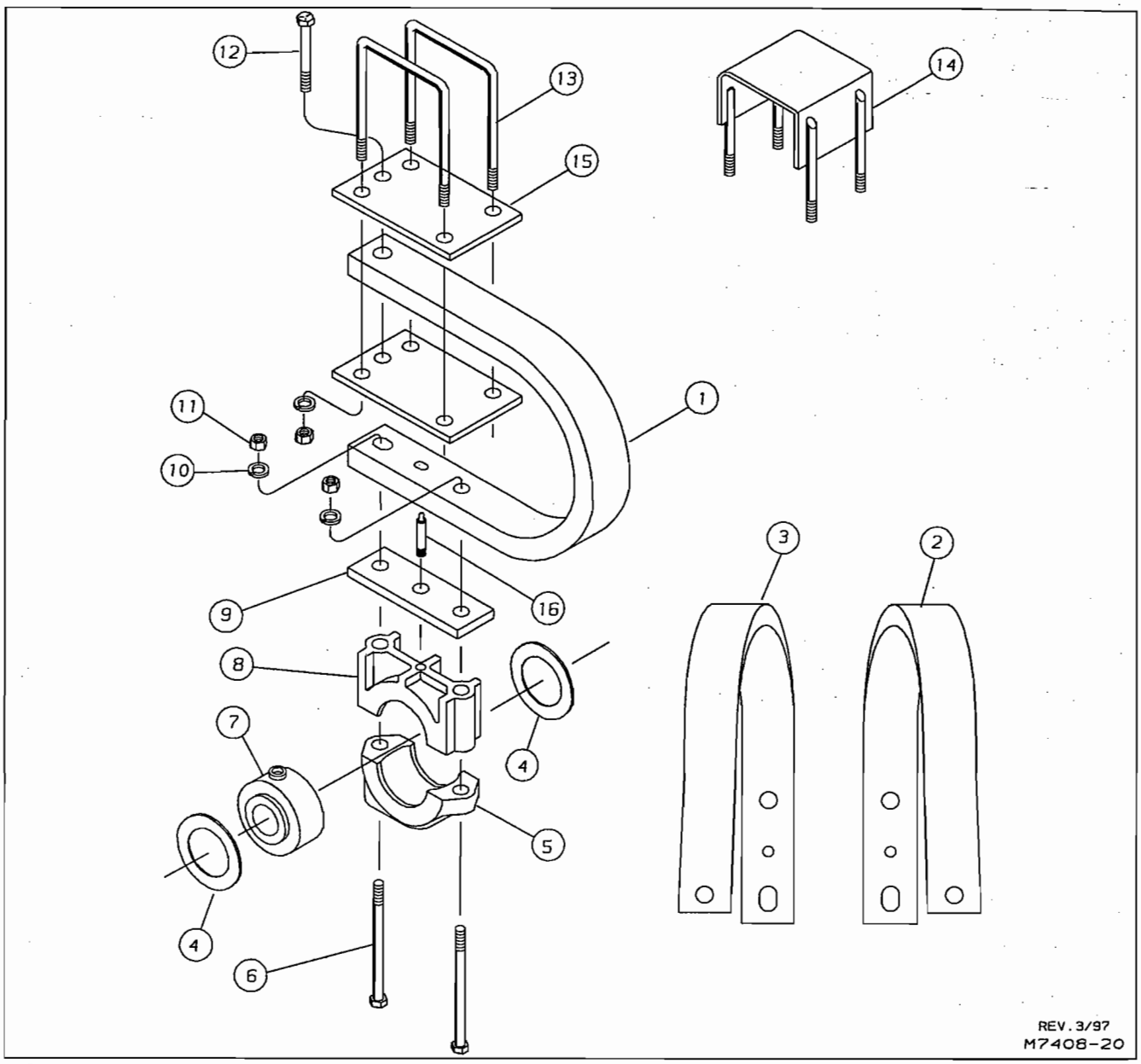
45-107
END WASHER




EXTENSION
SPOOL

# REGREASEABLE BEARING ARM ASSEMBLY

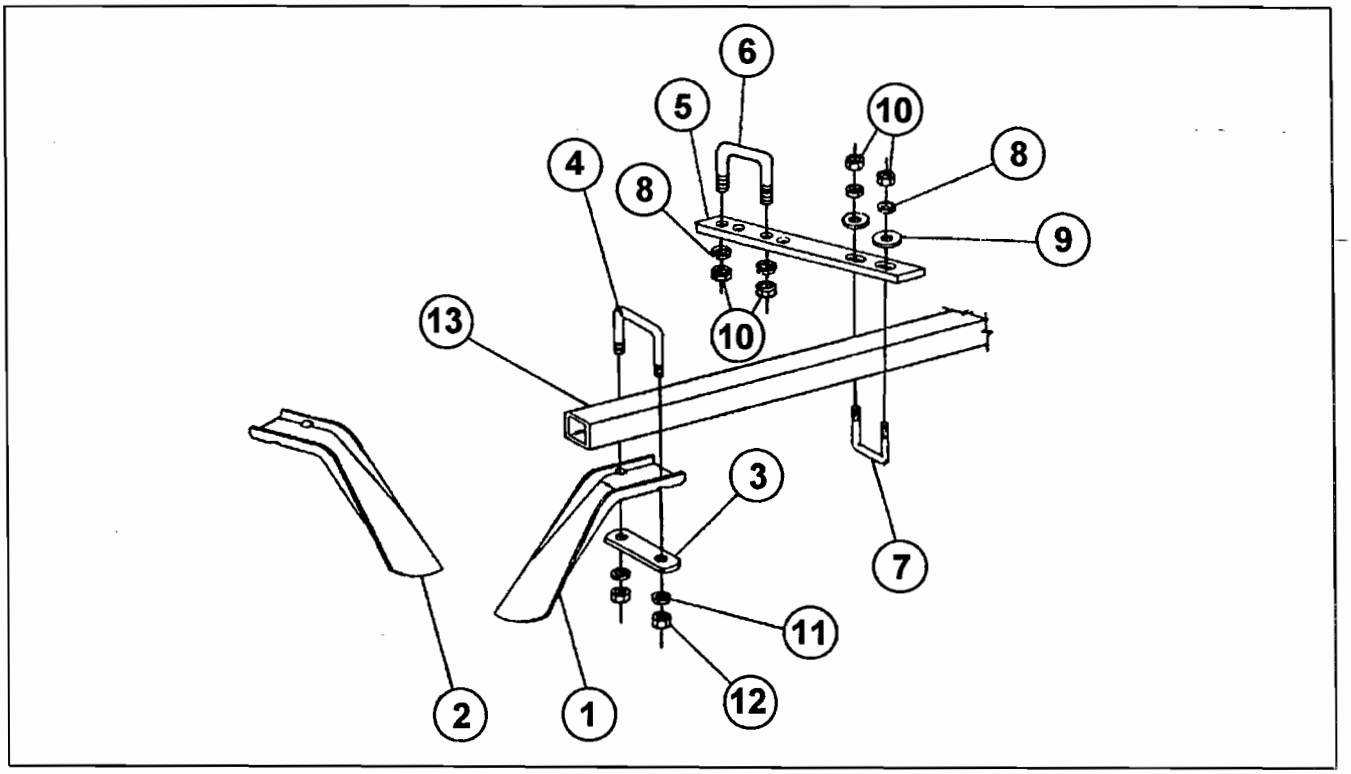



**FOR MODELS -** ALL

2/03

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | 31-196 | Disc Shank | 1 |
| 2 | 31-197 | Right Disc Shank | |
| 3 | 31-198 | Left Disc Shank | |
| 4 | 45-105 | Side Ring | 2 |
| 5 | 1927-10-1 | Lower Bearing Housing | 1 |
| 6 | 62-213 | 3/4NC x 61/2" GD5 Cap Screw | 2 |
| 7 | 40-167 | Superseal Bearing | 1 |
| 8 | 1927-10-2 | Upper Bearing Housing | 1 |
| 9 | 4995-196-1 | Bolt Plate | 1 |
| 10 | 64-112 | 3/4" STD. Lock Washer | 7 |
| 11 | 63-112 | 3/4NC Hex Nut | 7 |
| 12 | 62-197 | 3/4NC x 3" GD5 Cap Screw | 1 |
| 13 | 61-264 | U-Bolt | 2 |
| 14 | 2191-45-0 | U-Plate | |
| 15 | 2196-0-10 | Bolt Plate | 2 |
| 16 | 65-123 | Zerk | 1 |

# RIGID SCRAPERS FOR 24" DISC BLADES

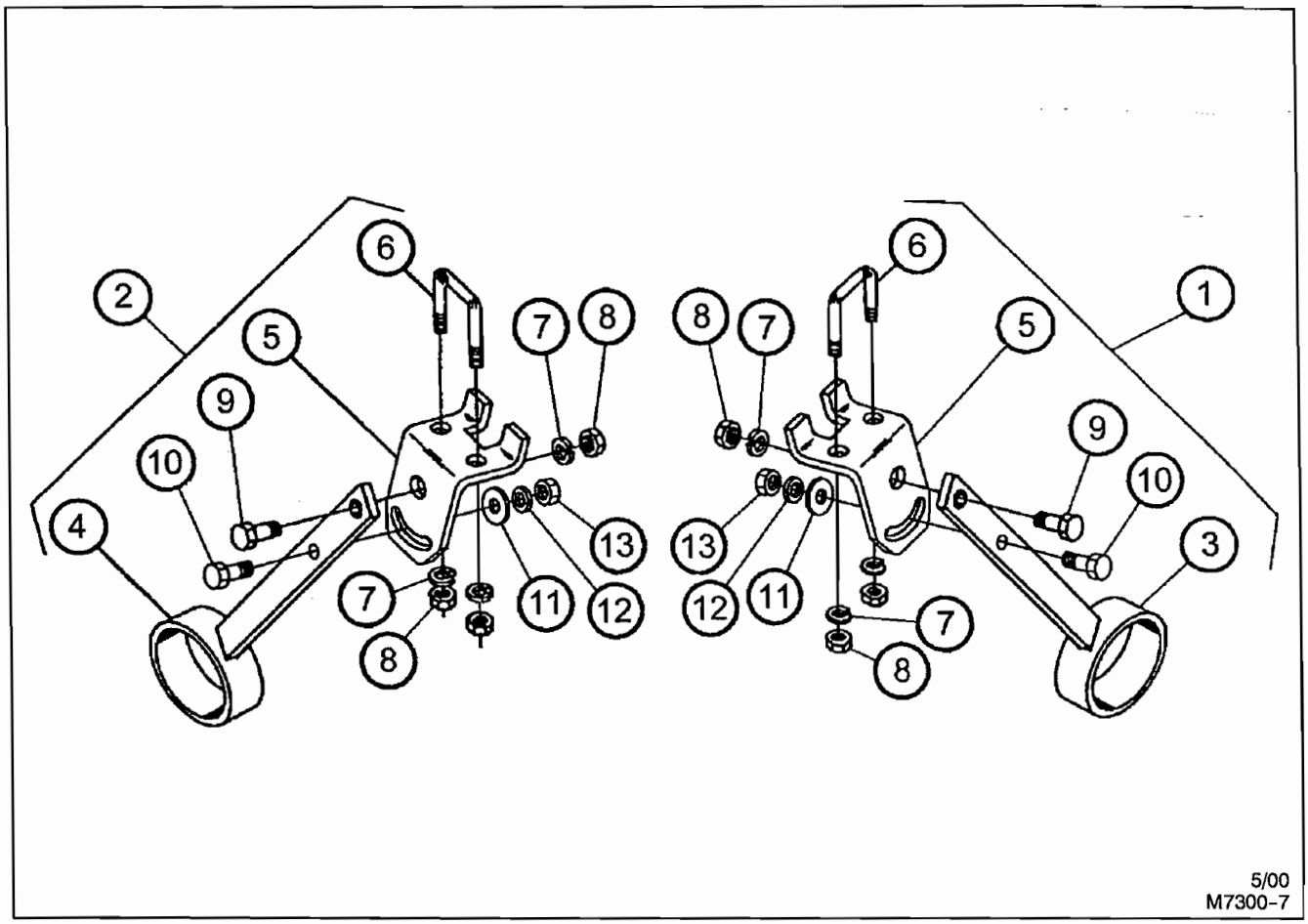



**FOR MODELS** - ALL

5/02

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| 1 | 32-115 | Left Rear - Right Front Scraper Blade | |
| 2 | 32-114 | Right Rear - Left Front Scraper Blade | |
| 3 | 4907-186-3 | Clamp | |
| 4 | 61-145 | U-Bolt | |
| 5 | 1901-187-1 | Scraper Bracket | |
| 6 | 61-127 | U-Bolt | |
| 7 | 61-119 | U-Bolt | |
| 8 | 64-109 | 5/8" STD. Lock Washer | |
| 9 | 64-110 | 5/8" STD. Flat Washer | |
| 10 | 63-109 | 5/8NC Hex Nut | |
| 11 | 64-107 | 1/2" STD. Lock Washer | |
| 12 | 63-106 | 1/2NC Hex Nut | |
| 13 | 2008-1-435 | Scraper Tube 43-1/2" | |
| | 2008-1-535 | Scraper Tube 53-1/2" | |
| | 2008-1-625 | Scraper Tube 62-1/2" | |
| | 2008-1-68 | Scraper Tube 68" | |
| | 2008-1-795 | Scraper Tube 79-1/2" | |
| | 2008-1-875 | Scraper Tube 87-1/2" | |

# EXTENSION TRASH BAR ASSEMBLIES




**FOR MODELS** - ALL 5/02

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| 1 | 7400-44-0 | Right Extension Trash Bar Assembly - **Used w/ 5" Scrapers** | Spec. |
| 2 | 7400-43-0 | Left Extension Trash Bar Assembly - **Used w/ 5" Scrapers** | Spec. |
| 3 | 7300-46-0 | Right Extension Trash Bar | 1 |
| 4 | 7300-45-0 | Left Extension Trash Bar | 1 |
| 5 | 7400-43-1 | Bracket | 1 |
| 6 | 61-119 | 5/8" DIA. U-Bolt | 1 |
| 7 | 64-109 | 5/8" STD. Lock Washer | 3 |
| 8 | 63-109 | 5/8NC Hex Nut | 3 |
| 9 | 62-169 | 5/8NC x 2"GD5 Cap Screw | 1 |
| 10 | 62-414 | 1/2NC x 1-3/4" GD5 Cap Screw | 1 |
| 11 | 64-108 | 1/2" STD. Flat Washer | 1 |
| 12 | 64-107 | 1/2" STD. Lock Washer | 1 |
| 13 | 63-106 | 1/2NC Hex Nut | 1 |
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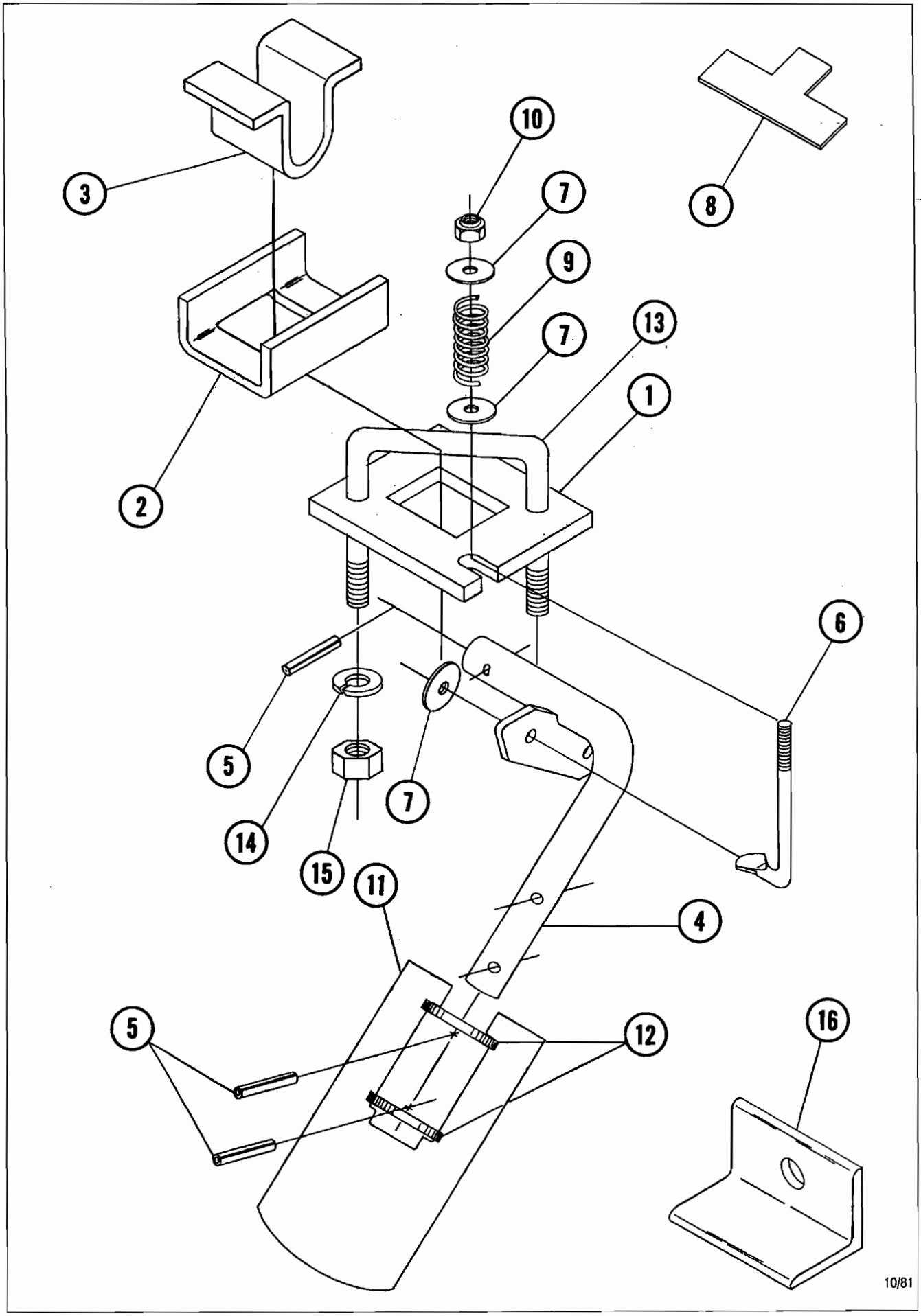
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10/81

# SPRING LOADED SCRAPERS

**FOR MODELS -** ALL

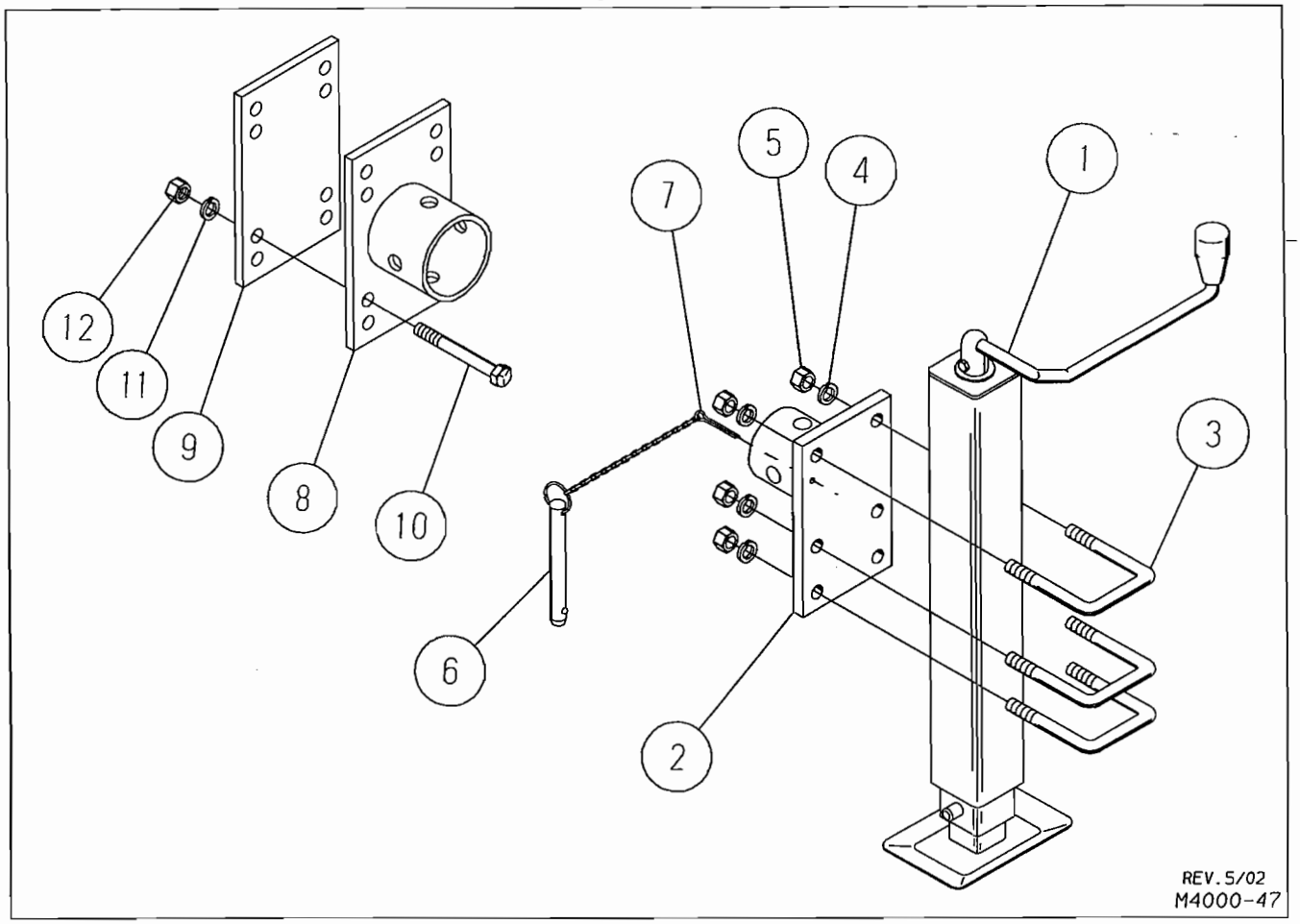
4/93

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| | 2008-32-0 | R.F. - L.R. Spring Scraper Assembly (SHOWN) | |
| | 2008-31-0 | L.F. - R.R. Spring Scraper Assembly | |
| 1 | 2008-51-4 | Mounting Bracket | 1 |
| 2 | 32-109 | Channel | 1 |
| 3 | 32-108 | Pivot Yoke | 1 |
| 4 | 2008-33-0 | Arm Weldment | 1 |
| 5 | 60-610 | 5/16" DIA. x 1-1/2" Roll Pin | 3 |
| 6 | 32-110 | Adjustment Rod | 1 |
| 7 | 64-102 | 5/16" STD. Flat Washer | 3 |
| 8 | ★ 2008-091-3 | Adjustment Wedge | 1 |
| 9 | 76-120 | Compression Spring | 1 |
| 10 | 63-134 | 3/8NC Nylon-Top Lock Nut | 1 |
| 11 | 32-112 | Scraper Blade | 1 |
| 12 | 32-107 | Scraper Pivot Yoke | 2 |
| 13 | ★ 61-121 | 1/2" DIA. U-Bolt | 1 |
| 14 | ★ 64-107 | 1/2" STD. Lock Washer | 2 |
| 15 | ★ 63-106 | 1/2NC Hex Nut | 2 |
| 16 | ●★ 2008-41-1 | Spacer | 1 |

★ Not part of Spring Loaded Scraper Assembly

● Used only in conjunction with 1-3/4" Scraper Bars

# REAR JACK ASSEMBLY




**FOR MODELS** - ALL 5/02

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| | 2146-99-0 | Rear Jack Assembly | |
| 1 | 73-111 | Jack | 1 |
| 2 | 4956-55-0A | Mounting Plate Weldment | 1 |
| 3 | 61-172 | 1/2" DIA. U-Bolt | 3 |
| 4 | 64-107 | 1/2" STD. Lock Washer | 6 |
| 5 | 63-106 | 1/2NC Hex Nut | 6 |
| 6 | 60-106 | Klick Pin with chain | 1 |
| 7 | 60-702 | 3/16" DIA. x 1-1/2" Cotter Pin | 1 |
| 8 | 2146-98-0 | Bolt Plate Weldment | 1 |
| 9 | 2146-98-1 | Bolt Plate | 1 |
| 10 | 62-349 | 1/2NC x 5-1/2" Full Thread Bolt | 4 |
| 11 | 64-107 | 1/2" STD. Lock Washer | 4 |
| 12 | 63-106 | 1/2NC Hex Nut | 4 |
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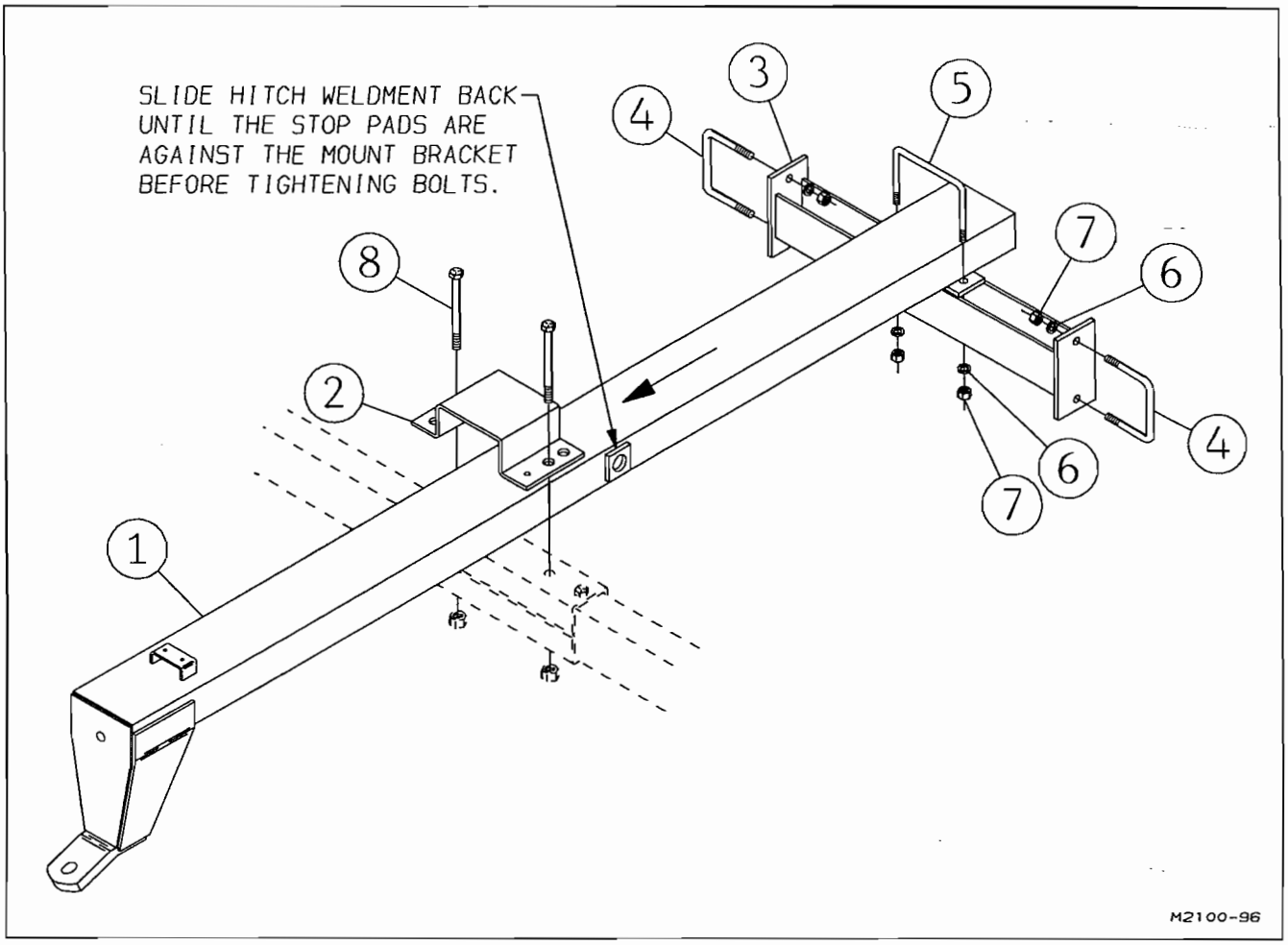
# PACKER HITCH ASSEMBLY




**FOR MODELS -** ALL 5/02

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| | 2190-313-0 | Packer Hitch Group | |
| 1 | 2490-314-0 | Packer Hitch Weldment | 1 |
| | | | |
| | 2190-315-0 | Hitch Mounting Bundle | |
| 2 | 2490-315-1 | Hitch Bracket | 1 |
| 3 | 2190-317-0 | Hitch Mount Weldment | 1 |
| | | | |
| | 2190-316-0 | Bolt & Parts Sack (Packer Hitch Mount) | |
| 4 | 61-120 | U-Bolt - .75" DIA. x 6.00"W x 5.88"L | 2 |
| 5 | 61-135 | U-Bolt - .75" DIA. x 8.00"W x 5.88"L | 1 |
| 6 | 64-112 | 3/4" STD. Lock Washer | 6 |
| 7 | 63-112 | 3/4NC Hex Nut | 6 |
| 8 | 62-259 | 1NC x 8-1/2" GD.5 Machine Bolt | 2 |
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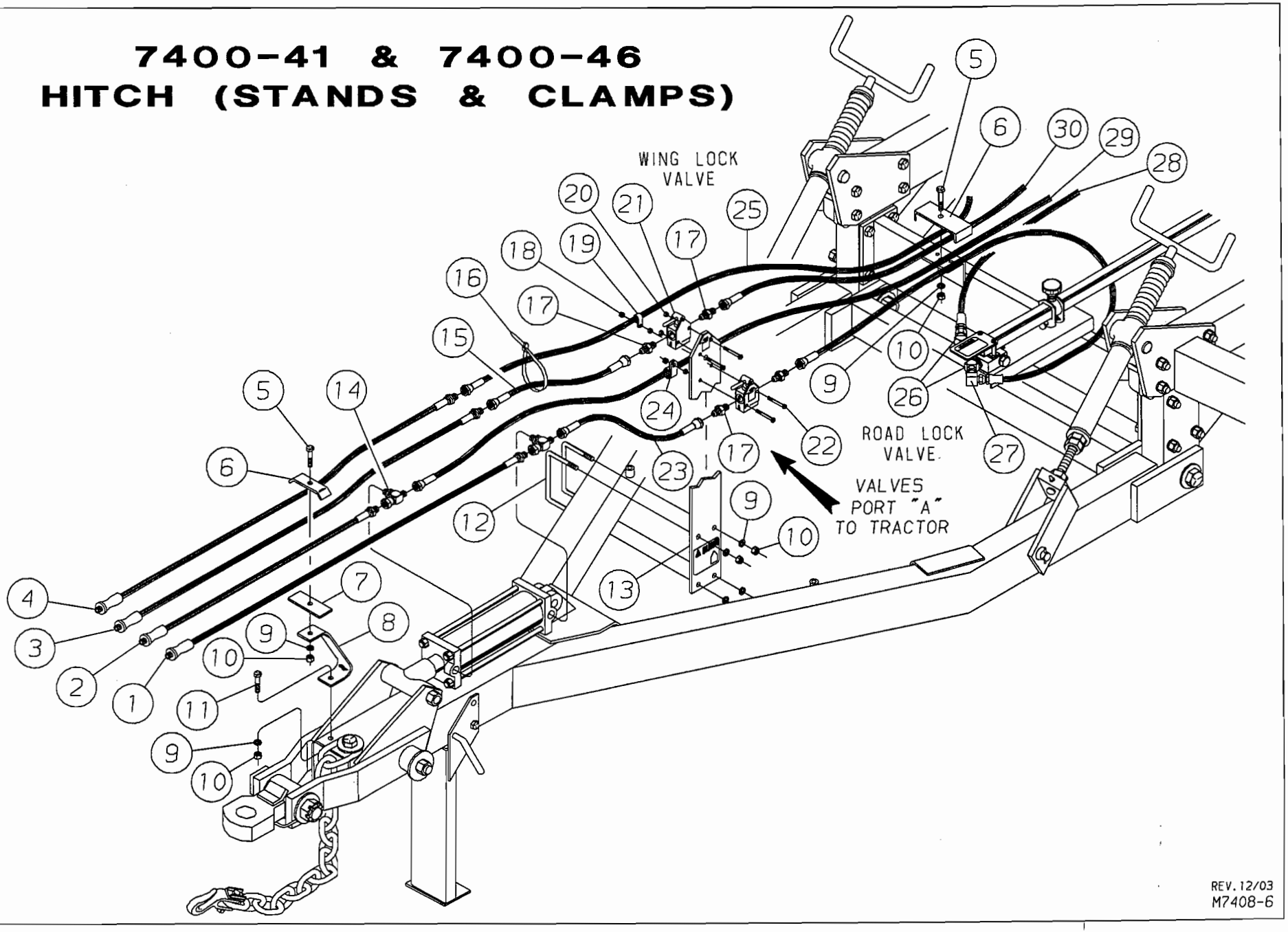
# 7400-41 & 7400-46
# HITCH (STANDS & CLAMPS)



# HITCH (STANDS & CLAMPS)

**FOR MODELS -** 7400-41 & 7400-46 5/02

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | ■ 2190-87-0 | 1/2" x 87" Hose Assembly w/ Red/Black Grip | 1 |
| 2 | ■ 2190-78-0 | 1/2" x 78" Hose Assembly w/ Black/Black Grip | 1 |
| 3 | ■ 4881-70-0 | 3/8" x 95" Hose Assembly w/ Red/Yellow Grip | 1 |
| 4 | ■ 4881-76-0 | 3/8" x 95" Hose Assembly w/ Yellow/Yellow Grip | 1 |
| 5 | 62-343 | 1/2NC x 2" GD5 Cap Screw | 2 |
| 6 | 2426-170-5 | Hose Clamp | 2 |
| 7 | 2145-170-5 | Plate | 1 |
| 8 | 2145-170-3 | Hose Stand | 1 |
| 9 | 64-107 | 1/2" STD. Lock Washer | 7 |
| 10 | 63-106 | 1/2NC Hex Nut | 7 |
| 11 | 62-569 | 1/2NC x 1-1/2" GD5 Cap Screw | 1 |
| 12 | 61-244 | U-Bolt, .50" DIA. x 6.00" W x 5.62" L | 2 |
| 13 | 2190-0-12 | Valve Bracket | 1 |
| 14 | 25-315 | O-Ring JIC M/F Tee Fitting | 2 |
| 15 | 24-235R | 3/8" x 16" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 16 | 25-126 | 34" Long Black Stay Strap | 1 |
| 17 | 25-300 | 3/4 O-Ring JIC Male Connector | 4 |
| 18 | 63-143 | 5/16NC Hex Flange Serrated Nut | 2 |
| 19 | 25-1153 | 5/8" ID Hose Clamp | 1 |
| 20 | | Hex Nuts that come with Item 21 valve assemblies | 4 |
| 21 | 25-2272 | Manual Release Check Valve | 2 |
| 22 | 62-394 | 5/16NC x 2-1/2" GD5 Cap Screw | 4 |
| 23 | 24-3043R | 1/2" x 30" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 24 | 25-127 | 3/4" ID Hose Clamp | 1 |
| 25 | ★ 24-279R | 3/8" x 112" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| | ● 24-258R | 3/8" x 94" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 26 | 25-312 | 3/4 O-Ring JIC 45° Ell Fitting | 2 |
| 27 | 25-310 | 3/4 JIC M/F 90° Ell Fitting | 1 |
| 28 | 24-348R | 1/2" x 44" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 29 | 24-349R | 1/2" x 123" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 30 | 24-213R | 3/8" x 86" Black 2W 3/4" (JIC) Hose Assembly | 1 |
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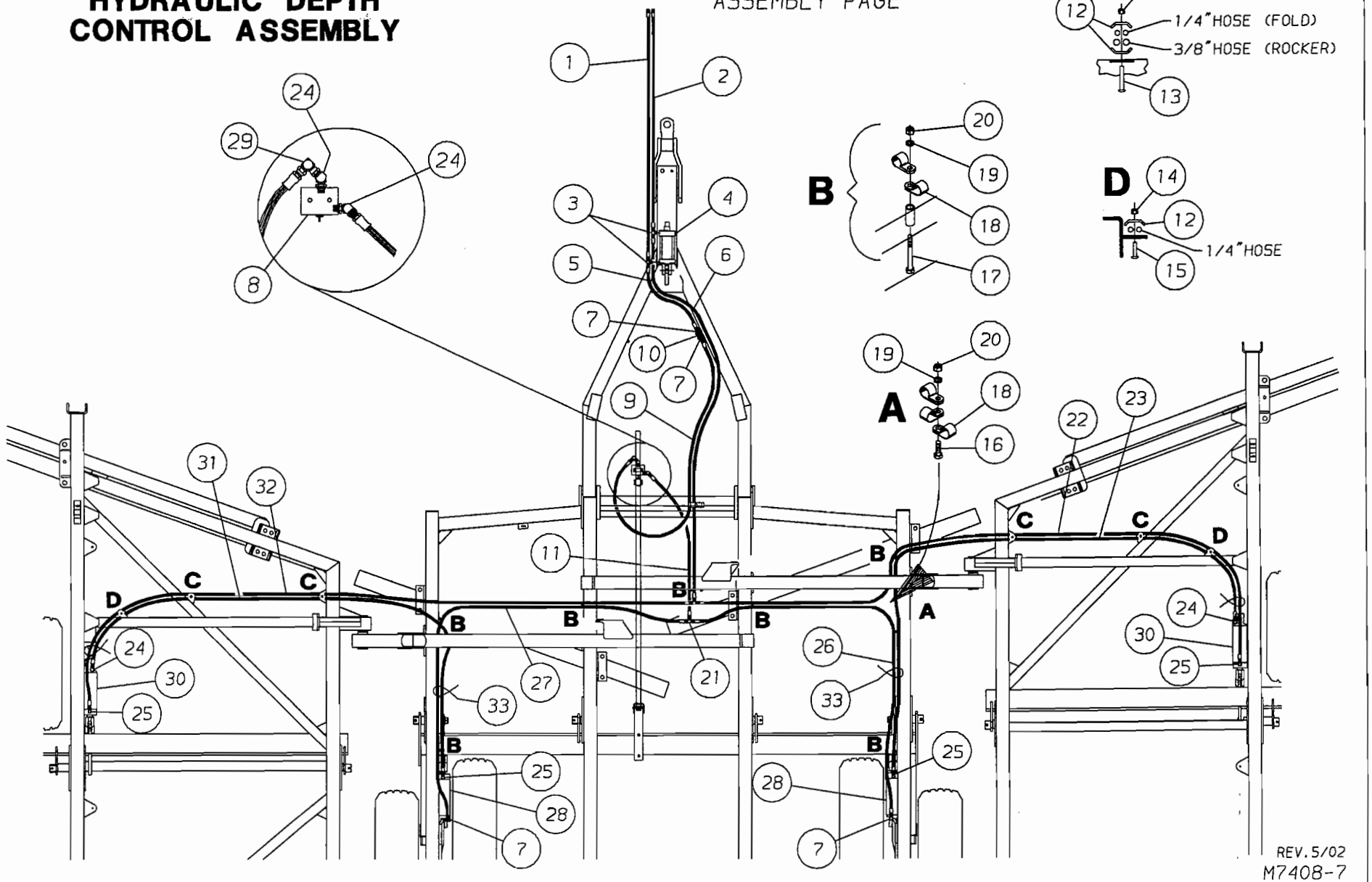
★ Model 7400-41

● Model 7400-46

■ See page P32 for detailed parts listing

# 7400-41 & 7400-46
## HYDRAULIC DEPTH CONTROL ASSEMBLY



# HYDRAULIC DEPTH CONTROL

**FOR MODELS -** 7400-41 & 7400-46 5/02

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | ■ 2190-78-0 | 1/2" x 78" Hose Assembly w/ Black/Black Grip | 1 |
| 2 | ■ 2190-87-0 | 1/2" x 87" Hose Assembly w/ Red/Black Grip | 1 |
| 3 | 25-315 | O-Ring JIC M/F Tee Fitting | 2 |
| 4 | 2145-92-0A | Tongue Leveling Cylinder Assembly | 1 |
| 5 | 24-3043R | 1/2" x 30" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 6 | 24-349R | 1/2" x 123" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 7 | 25-300 | 3/4 O-Ring JIC Male Connector | 4 |
| 8 | 25-2474 | Stop Assembly | 1 |
| 9 | 24-319R | 1/2" x 102" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 10 | 25-2272 | Check Valve | 1 |
| 11 | 24-348R | 1/2" x 44" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 12 | 5800-0-13 | Hose Clamp | 10 |
| 13 | 62-599 | 3/8NC x 2-1/2" GD5 Carriage Bolt | 4 |
| 14 | 63-134 | 3/8NC Nylon-Top Lock Nut | 6 |
| 15 | 62-453 | 3/8NC x 1-1/2" Carriage Bolt | 2 |
| 16 | 62-111 | 3/8NC x 1-1/2" GD5 Cap Screw (GD2 or GD5) | 1 |
| 17 | 62-118 | 3/8NC x 2-1/2" GD5 Cap Screw (GD2 or GD5) | 7 |
| 18 | 25-1153 | 5/8" Hose Clamp | 17 |
| 19 | 64-103 | 3/8" STD. Lock Washer | 8 |
| 20 | 63-102 | 3/8NC Hex Nut | 8 |
| 21 | 25-303 | 3/4 JIC Male Tee Fitting | 2 |
| 22 | ★ 24-250R | 3/8" x 196" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| | ● 24-247R | 3/8" x 220" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 23 | 24-248R | 3/8" x 214" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 24 | 25-312 | 3/4 O-Ring JIC 45° Ell Fitting | 3 |
| 25 | 25-301 | 3/4 O-Ring JIC 90° Ell Fitting | 4 |
| 26 | ★ 24-2106R | 3/8" x 104" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| | ● 24-223R | 3/8" x 128" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 27 | ★ 24-221R | 3/8" x 116" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| | ● 24-225R | 3/8" x 140" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 28 | 21-1012 | 4" x 12" Rephasing Cylinder Assembly | 2 |
| 29 | 25-310 | 3/4 JIC M/F 90° Ell Fitting | 1 |
| 30 | 21-1011 | 3-3/4" x 12" Rephasing Cylinder Assembly | 2 |
| 31 | 24-259R | 3/8" x 202" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 32 | ★ 24-234R | 3/8" x 207" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| | ● 24-2127R | 3/8" x 230" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 33 | 25-126 | 34" Long Black Stay Strap | 4 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

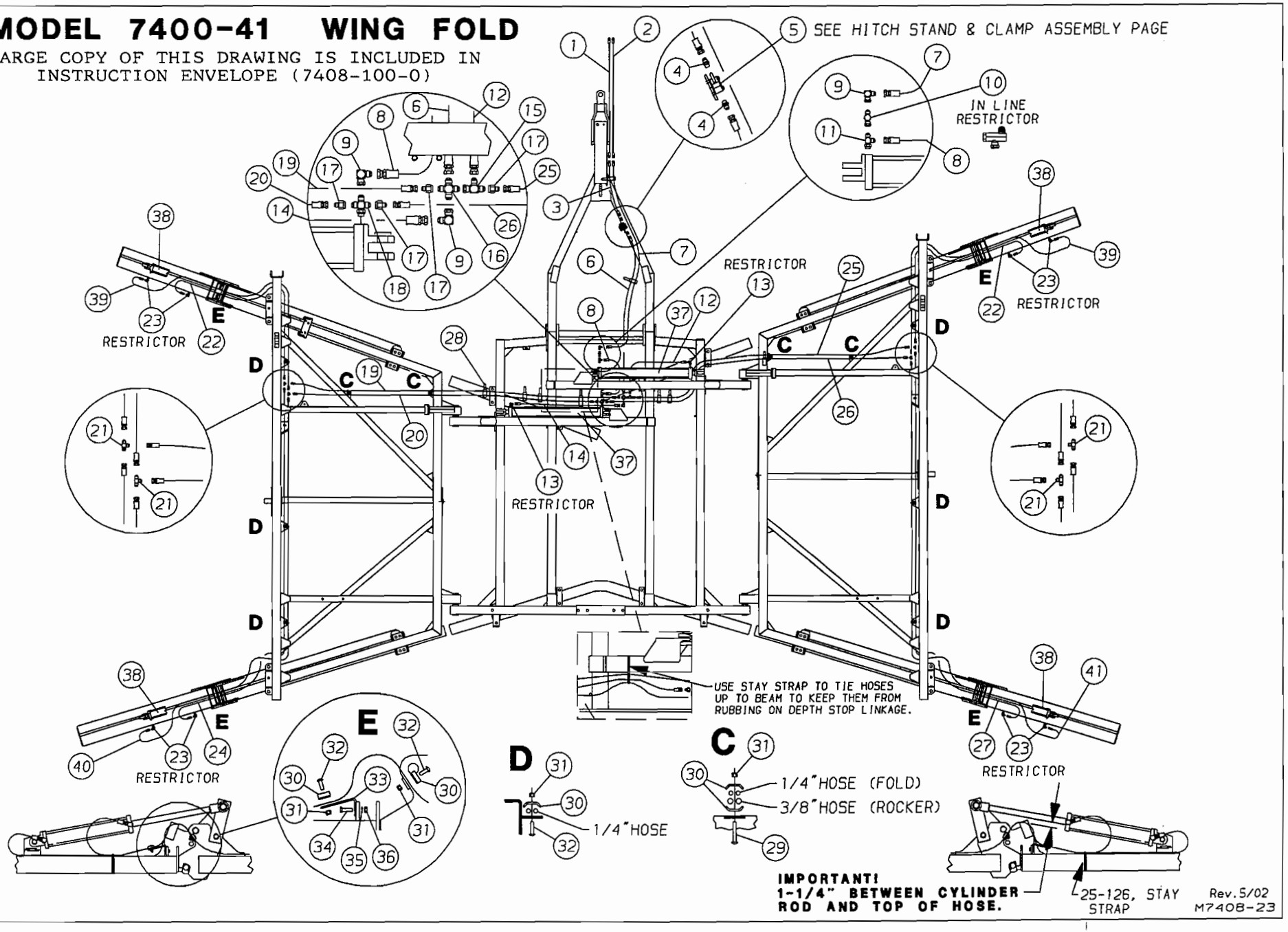
★ Model 7400-41

● Model 7400-46

■ See page P32 for detailed parts listing

# MODEL 7400-41 WING FOLD

LARGE COPY OF THIS DRAWING IS INCLUDED IN INSTRUCTION ENVELOPE (7408-100-0)



# WING FOLD HYDRAULIC ASSEMBLY

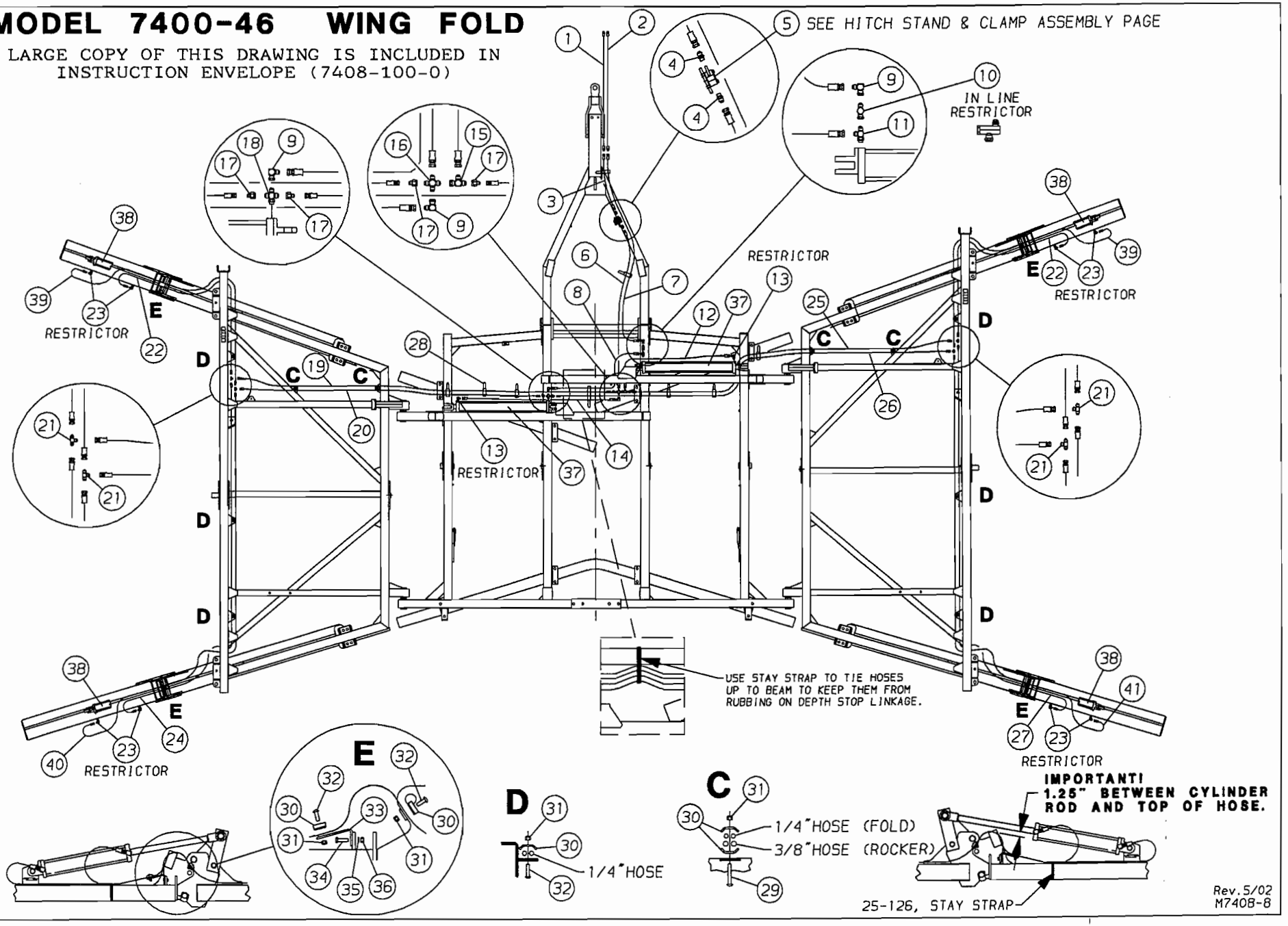
**FOR MODELS** - 7400-41 5/02

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | ■ 4881-70-0 | 3/8" x 95" Hose Assembly w/ Red/Yellow Grip | 1 |
| 2 | ■ 4881-76-0 | 3/8" x 95" Hose Assembly w/ Yellow/Yellow Grip | 1 |
| 3 | 24-235R | 3/8" x 16" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 4 | 25-300 | 3/4 O-Ring JIC Male Connector | 2 |
| 5 | 25-2272 | Manual Release Check Valve | 1 |
| 6 | 24-213R | 3/8" x 86" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 7 | 24-2116R | 3/8" x 96" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 8 | 24-295R | 3/8" x 33" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 9 | 25-310 | 3/4 M/F JIC 90° Swivel Hydraulic Fitting | 3 |
| 10 | 25-324 | 3/4 JIC M/F In-Line Restrictor | 1 |
| 11 | 25-302 | 3/4 O-Ring JIC Flare Tee Adapter Fitting | 1 |
| 12 | 24-272R | 3/8" x 45" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 13 | 4956-75-0 | 3/4 O-RIng JIC 90° Restrictor & Tag | 2 |
| 14 | 24-206R | 3/8" x 57" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 15 | 25-307 | 3/4 JIC M/F Tee Fitting | 1 |
| 16 | 25-361 | 3/4 JIC (M) Cross Fitting | 1 |
| 17 | 25-616 | 3/4 (F) JIC to 9/16 (M) JIC Reducer Fitting | 4 |
| 18 | 25-308 | 3/4 O-Ring to 3/4 JIC Cross Fitting | 1 |
| 19 | 24-564R | 1/4" x 166" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 20 | 24-563R | 1/4" x 156" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 21 | 25-614 | 9/16 JIC (M) Union Tee | 4 |
| 22 | 24-590R | 1/4" x 138" Black 2W 9/16" (JIC) Hose Assembly | 2 |
| 23 | 25-1194 | 9/16 O-Ring JIC 90° Restrictor | 8 |
| 24 | 24-591R | 1/4" x 223" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 25 | 24-595R | 1/4" x 154" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 26 | 24-564R | 1/4" x 166" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 27 | 24-594R | 1/4" x 241" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 28 | 25-126 | 34" Long Black Stay Strap | 21 |
| 29 | 62-599 | 3/8NC x 2-1/2" GD5 Carriage Bolt | 4 |
| 30 | 5800-0-13 | Hose Clamp | 22 |
| 31 | 63-134 | 3/8NC Nylon-Top Lock Nut | 18 |
| 32 | 62-453 | 3/8NC x 1-1/2" Carriage Bolt | 14 |
| 33 | 5800-0-14 | Hose Support | 4 |
| 34 | 62-108 | 3/8NC x 1" GD5 Cap Screw | 4 |
| 35 | 64-103 | 3/8" STD. Lock Washer | 4 |
| 36 | 63-102 | 3/8NC Hex Nut | 4 |
| 37 | 21-169 | 5" x 40" Hydraulic Cylinder Assembly | 2 |
| 38 | 21-157 | 3-1/2" x 18" Hydraulic Cylinder Assembly | 4 |
| 39 | 24-561R | 1/4" x 141" Black 2W 9/16" (JIC) Hose Assembly | 2 |
| 40 | 24-568R | 1/4" x 227" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 41 | 24-596R | 1/4" x 245" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| | | | |

■ See page P32 for detailed parts listing

# MODEL 7400-46 WING FOLD

LARGE COPY OF THIS DRAWING IS INCLUDED IN INSTRUCTION ENVELOPE (7408-100-0)



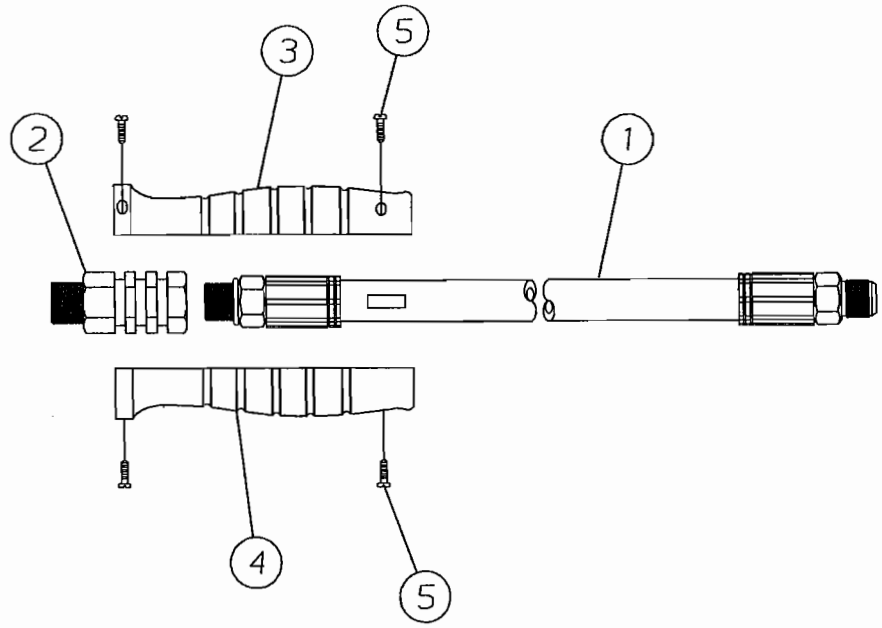
# WING FOLD HYDRAULIC ASSEMBLY

**FOR MODELS -** 7400-46 5/02

| Item | Part Number | Part Description | Qty. |
|---|---|---|---|
| 1 | ■ 4881-70-0 | 3/8" x 95" Hose Assembly w/ Red/Yellow Grip | 1 |
| 2 | ■ 4881-76-0 | 3/8" x 95" Hose Assembly w/ Yellow/Yellow Grip | 1 |
| 3 | 24-235R | 3/8" x 16" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 4 | 25-300 | 3/4 O-Ring JIC Male Connector | 2 |
| 5 | 25-2272 | Manual Release Check Valve | 1 |
| 6 | 24-213R | 3/8" x 86" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 7 | 24-258R | 3/8" x 94" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 8 | 24-2114R | 3/8" x 60" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 9 | 25-310 | 3/4 M/F JIC 90° Swivel Hydraulic Fitting | 3 |
| 10 | 25-324 | 3/4 JIC M/F In-Line Restrictor | 1 |
| 11 | 25-302 | 3/4 O-Ring JIC Flare Tee Adapter Fitting | 1 |
| 12 | 24-288R | 3/8" x 70" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 13 | 4956-75-0 | 3/4 O-RIng JIC 90° Restrictor & Tag | 2 |
| 14 | 24-285R | 3/8" x 82" Black 2W 3/4" (JIC) Hose Assembly | 1 |
| 15 | 25-307 | 3/4 JIC M/F Tee Fitting | 1 |
| 16 | 25-361 | 3/4 JIC (M) Cross Fitting | 1 |
| 17 | 25-616 | 3/4 (F) JIC to 9/16 (M) JIC Reducer Fitting | 4 |
| 18 | 25-308 | 3/4 O-Ring to 3/4 JIC Cross Fitting | 1 |
| 19 | 24-589R | 1/4" x 191" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 20 | 24-563R | 1/4 " x 156" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 21 | 25-614 | 9/16 JIC (M) Union Tee | 4 |
| 22 | 24-590R | 1/4" x 138" Black 2W 9/16" (JIC) Hose Assembly | 2 |
| 23 | 25-1194 | 9/16 O-Ring JIC 90° Restrictor | 8 |
| 24 | 24-591R | 1/4" x 223" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 25 | 24-592R | 1/4" x 178" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 26 | 24-593R | 1/4" x 214" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 27 | 24-594R | 1/4" x 241" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 28 | 25-126 | 34" Long Black Stay Strap | 21 |
| 29 | 62-599 | 3/8NC x 2-1/2" GD5 Carriage Bolt | 4 |
| 30 | 5800-0-13 | Hose Clamp | 22 |
| 31 | 63-134 | 3/8NC Nylon-Top Lock Nut | 18 |
| 32 | 62-453 | 3/8NC x 1-1/2" Carriage Bolt | 14 |
| 33 | 5800-0-14 | Hose Support | 4 |
| 34 | 62-108 | 3/8NC x 1" GD5 Cap Screw | 4 |
| 35 | 64-103 | 3/8" STD. Lock Washer | 4 |
| 36 | 63-102 | 3/8NC Hex Nut | 4 |
| 37 | 21-169 | 5" x 40" Hydraulic Cylinder Assembly | 2 |
| 38 | 21-157 | 3-1/2" x 18" Hydraulic Cylinder Assembly | 4 |
| 39 | 24-561R | 1/4" x 141" Black 2W 9/16" (JIC) Hose Assembly | 2 |
| 40 | 24-568R | 1/4" x 227" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| 41 | 24-596R | 1/4" x 245" Black 2W 9/16" (JIC) Hose Assembly | 1 |
| | | | |

■ See page P32 for detailed parts listing

# HYDRAULIC HOSE WITH PLASTIC GRIP ASSEMBLIES



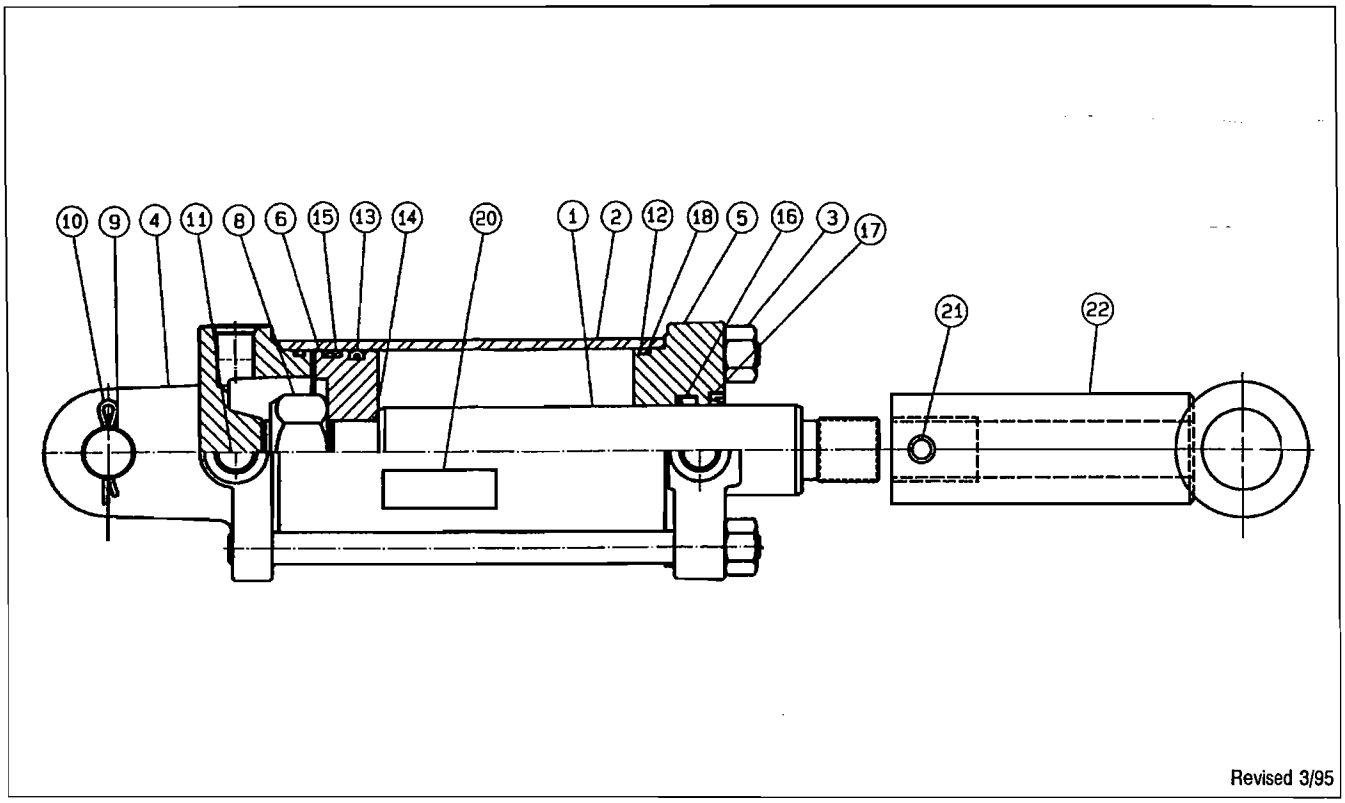

M6100-125
Rev. 5/97

**FOR MODELS -** ALL

5/02

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| | 2190-78-0 | 1/2" x 78" 100R2 Hose with Black/Black Grip Assembly | 1 |
| 1 | 24-308R | 1/2" DIA. x 78" Black 2W Hose Assembly (JIC/ORB) | 1 |
| 2 | 25-2295 | Core Fitting - Hose Grip | 1 |
| 3 | 25-2291 | Hose Grip Half - Black | 1 |
| 4 | 25-2291 | Hose Grip Half - Black | 1 |
| 5 | 62-656 | Screw | 4 |
| | | | |
| | 2190-87-0 | 1/2" x 87" 100R2 Hose with Red/Black Grip Assembly | 1 |
| 1 | 24-3044R | 1/2" DIA. x 87" Black 2W Hose Assembly (JIC/ORB) | 1 |
| 2 | 25-2295 | Core Fitting - Hose Grip | 1 |
| 3 | 25-2289 | Hose Grip Half - Red | 1 |
| 4 | 25-2291 | Hose Grip Half - Black | 1 |
| 5 | 62-656 | Screw | 4 |
| | | | |
| | 4881-70-0 | 3/8" x 95" 100R2 Hose with Red/Yellow Grip Assembly | 1 |
| 1 | 24-2105R | 3/8" x 95" Black 2W Hose Assembly JIC/ORB | 1 |
| 2 | 25-2295 | Core Fitting - Hose Grip | 1 |
| 3 | 25-2289 | Hose Grip Half - Red | 1 |
| 4 | 25-2290 | Hose Grip Half - Yellow | 1 |
| 5 | 62-656 | Screw | 4 |
| | | | |
| | 4881-76-0 | 3/8" x 95" 100R2 Hose with Yellow/Yellow Grip Assembly | 1 |
| 1 | 24-2105R | 3/8" x 95" Black 2W Hose Assembly JIC/ORB | 1 |
| 2 | 25-2295 | Core Fitting - Hose Grip | 1 |
| 3 | 25-2290 | Hose Grip Half - Yellow | 1 |
| 4 | 25-2290 | Hose Grip Half - Yellow | 1 |
| 5 | 62-656 | Screw | 4 |
| | | | |

# PRINCE HYDRAULIC CYLINDER

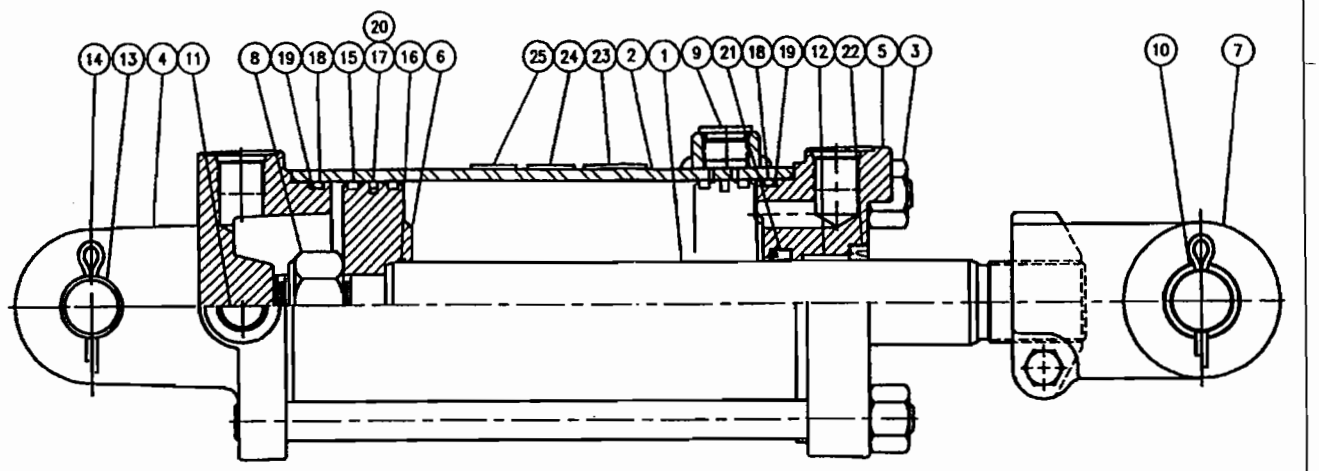



Revised 3/95

2145-92-0A 4" X 5" PRINCE HYDRAULIC TONGUE LEVELING CYLINDER ASSEMBLY 11/99
Retracted - 18-5/8" Extended - 23-5/8" Stroke - 5" Rod Diameter - 1-3/4"

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| | 21-180 | 4" x 5" Prince Hydraulic Cylinder Assembly (NO CLEVIS) | 1 |
| 1 | 21-899 | Piston Rod | 1 |
| 2 | 21-903 | Tube | 1 |
| 3 | 21-905 | Tie Rod Assembly | 4 |
| 4 | 21-337 | Butt | 1 |
| 5 | 21-878 | Gland | 1 |
| 6 | 21-879 | Piston | 1 |
| 7 | | | |
| 8 | 21-286 | Lock Nut | 1 |
| 9 | 21-908 | Clevis Pin | 1 |
| 10 | | 3/16" DIA. x 1-3/4" Cotter Pin | 2 |
| 11 | 21-404 | Port Plug | 3 |
| 12 | ★ | O-Ring | 2 |
| 13 | ★ | Crown Seal | 1 |
| 14 | ★ | O-Ring | 1 |
| 15 | ★ | Bearing Ring | 1 |
| 16 | ★ | U-Cup | 1 |
| 17 | ★ | Wiper | 1 |
| 18 | ★ | Back-Up Washer | 2 |
| 19 | | | |
| 20 | 74-113 | Cylinder Warning Decal | 1 |
| 21 | 62-310 | 3/8NF x 3/8" Allen Head Set Screw | 2 |
| 22 | 2145-93-0 | Cylinder Pivot Weldment (Includes Item 21) | 1 |
| | 21-857 | Seal Kit (★ Items Included In Kit) | |
| | | | |
| | • 21-857 | Seal Kit ( ★ Items Included in Kit) | |
| • Not Included in Cylinder Assembly | | | |

# PRINCE HYDRAULIC CYLINDER

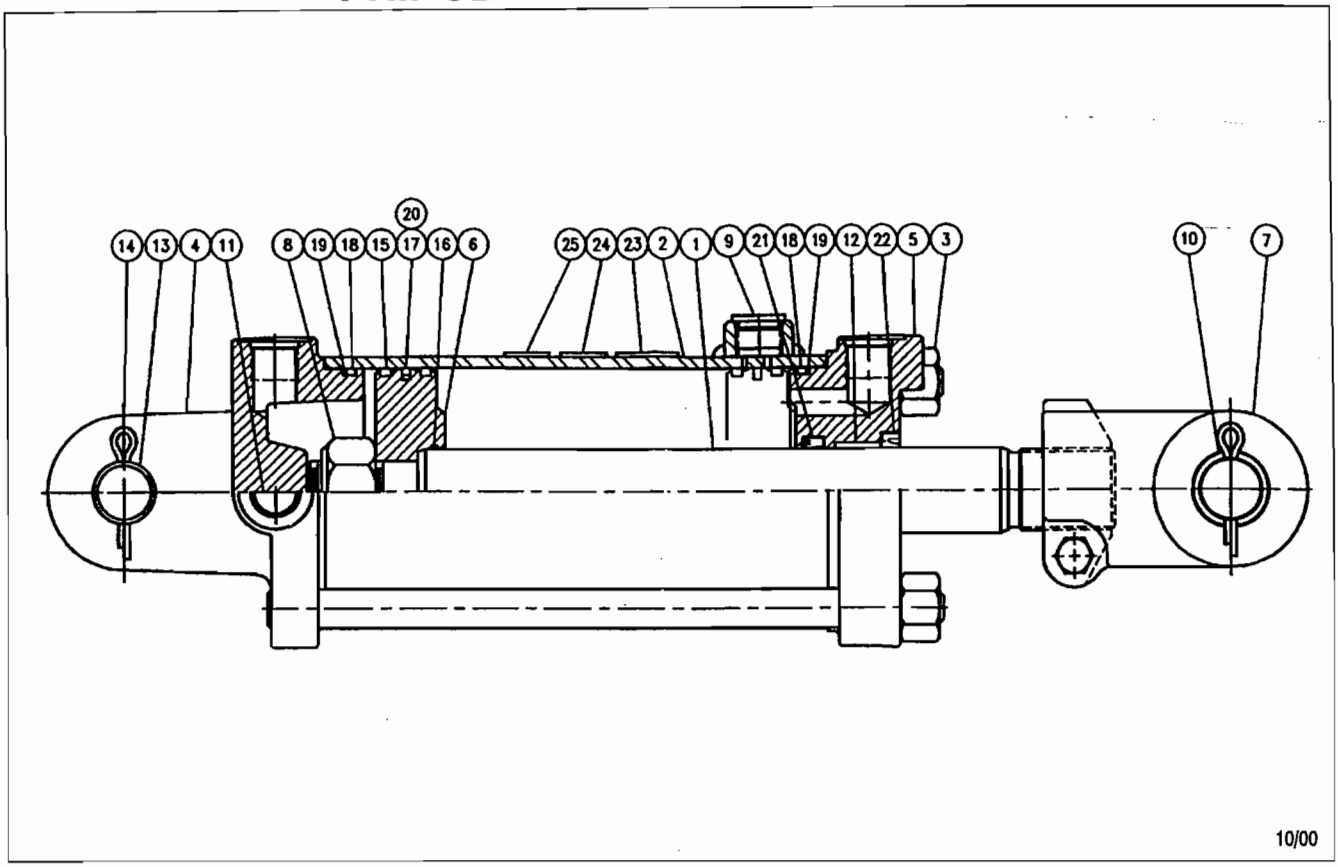



10/00

**21-1012 4" X 12" PRINCE HYDRAULIC CYLINDER ASSEMBLY (Series) 1/05**
**Retracted - 24-1/4" Extended - 36-1/4" Stroke - 12" Rod Diameter - 1-3/8"**

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| 1 | 21-2137 | Piston Rod | 1 |
| 2 | 21-2138 | Tube Assembly | 1 |
| 3 | 21-2111 | Tie Rod Assembly | 4 |
| 4 | 21-337 | Butt | 1 |
| 5 | 21-810 | Gland | 1 |
| 6 | 21-811 | Piston | 1 |
| 7 | 21-2126 | Clevis Assembly | 1 |
| 8 | 63-119 | Lock Nut | 1 |
| 9 | 21-702 | Port Plug | 1 |
| 10 | 21-2127 | Bushing | 2 |
| 11 | 21-404 | Port Plug | 3 |
| 12 | 21-807 | Bushing | 1 |
| 13 | 21-376 | Clevis Pin | 2 |
| 14 | | 3/16"DIA. x 1-3/4" Cotter Pin | 4 |
| 15 | ★ | Bearing Ring | 2 |
| 16 | ★ | O-Ring | 1 |
| 17 | ★ | O-Ring | 1 |
| 18 | ★ | O-Ring | 2 |
| 19 | ★ | Back-Up Washer | 2 |
| 20 | ★ | Teflon Seal | 1 |
| 21 | ★ | U-Cup | 1 |
| 22 | ★ | Wiper | 1 |
| 23 | 21-443 | Series Caution Decal | 1 |
| 24 | 74-556 | Seal Kit Decal | 1 |
| 25 | 74-113 | Cylinder WARNING Decal | 1 |
| | 21-2059 | Seal Kit (★ Items Included in Kit) | |

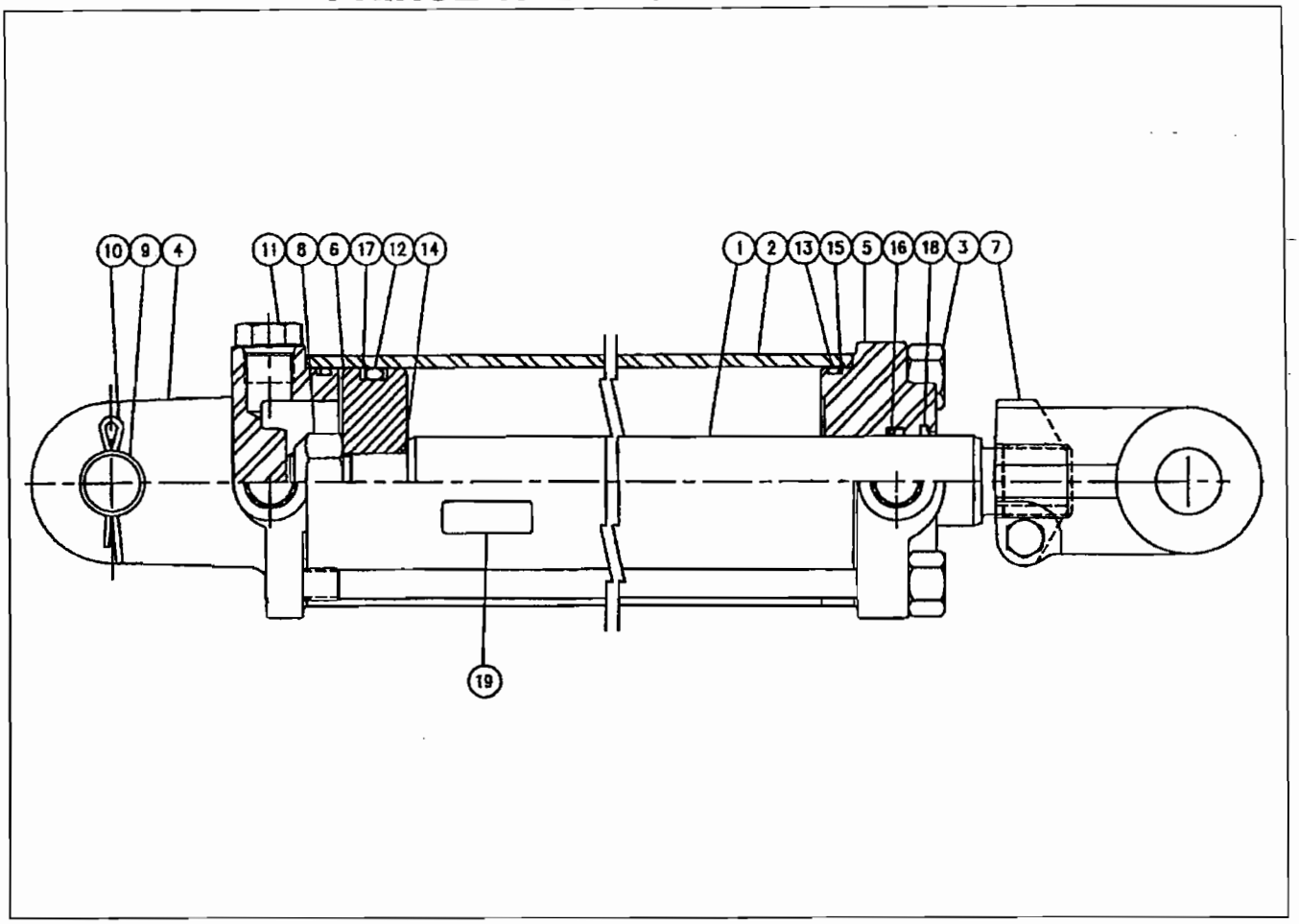
# PRINCE HYDRAULIC CYLINDER




**21-1011 3-3/4" X 12" PRINCE HYDRAULIC CYLINDER ASSEMBLY (Series) 1/05**
**Retracted - 24-1/4" Extended - 36-1/4" Stroke - 12" Rod Diameter - 1-3/8"**

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| 1 | 21-2137 | Piston Rod | 1 |
| 2 | 21-2136 | Tube Assembly | 1 |
| 3 | 21-2111 | Tie Rod Assembly | 4 |
| 4 | 21-348 | Butt | 1 |
| 5 | 21-803 | Gland | 1 |
| 6 | 21-804 | Piston | 1 |
| 7 | 21-2066 | Clevis Assembly | 1 |
| 8 | 63-119 | Lock Nut | 1 |
| 9 | 21-702 | Port Plug | 1 |
| 10 | 21-404 | Port Plug | 3 |
| 11 | 21-807 | Bushing | 1 |
| 12 | 21-260 | Clevis Pin | 2 |
| 13 | | 3/16"DIA. x 1-3/4" Cotter Pin | 4 |
| 14 | ★ | Bearing Ring | 2 |
| 15 | ★ | O-Ring | 1 |
| 16 | ★ | O-Ring | 1 |
| 17 | ★ | O-Ring | 2 |
| 18 | ★ | Back-Up Washer | 2 |
| 19 | ★ | Teflon Seal | 1 |
| 20 | ★ | U-Cup | 1 |
| 21 | ★ | Wiper | 1 |
| 22 | 21-443 | Series Caution Decal | 1 |
| 23 | 74-555 | Seal Kit Decal | 1 |
| 24 | 74-113 | Cylinder WARNING Decal | 1 |
| | 21-808 | Seal Kit (★ Items Included in Kit) | |

# PRINCE HYDRAULIC CYLINDER

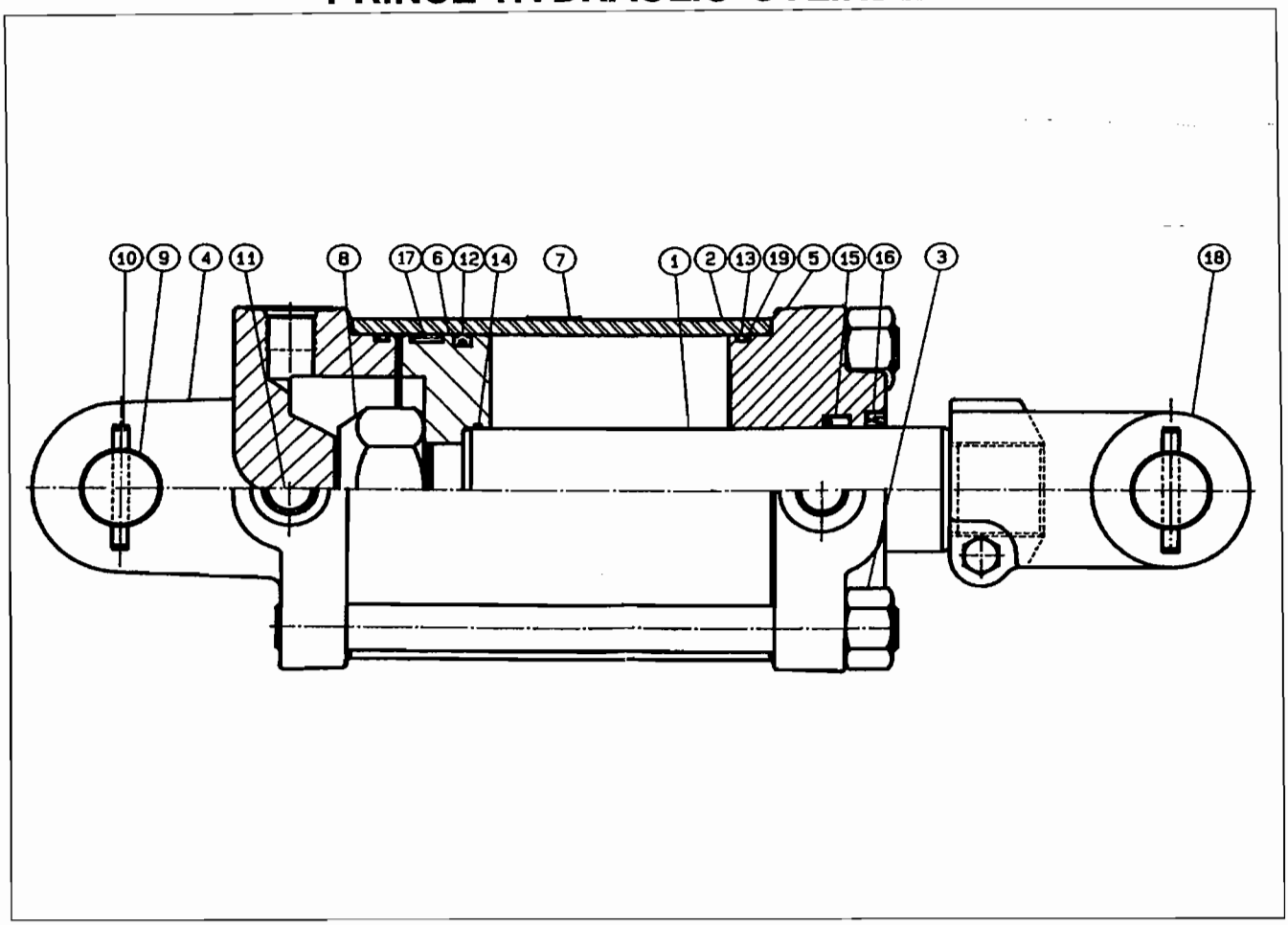



**21-157 3-1/2" X 18" PRINCE HYDRAULIC CYLINDER ASSEMBLY (STD.PS) 3/02**
**Retracted - 28-1/4" Extended - 46-1/4" Stroke - 18" Rod Diameter - 1-3/8"**

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| 1 | 21-724 | Piston Rod | 1 |
| 2 | 21-725 | Tube | 1 |
| 3 | 21-726 | Tie Rod Assembly | 4 |
| 4 | 21-421 | Butt | 1 |
| 5 | 21-727 | Gland | 1 |
| 6 | 21-728 | Piston | 1 |
| 7 | 21-799 | Clevis Assembly | 1 |
| 8 | 21-463 | Lock Nut | 1 |
| 9 | 21-2141 | Clevis Pin | 2 |
| 10 | | Cotter Pin | 4 |
| 11 | 21-404 | #8 SAE Plug | 3 |
| 12 | ★ | O-Ring | 1 |
| 13 | ★ | O-Ring | 2 |
| 14 | ★ | O-Ring | 1 |
| 15 | ★ | Back-Up Washer | 2 |
| 16 | ★ | U-Cup | 1 |
| 17 | ★ | Back-Up Washer | 2 |
| 18 | ★ | Wiper | 1 |
| 19 | 74-113 | Cylinder Warning Decal (not shown) | 1 |
| | • 21-733 | Seal Kit (★ Items Included in Kit) | |
| | | | |

• Not Included in Cylinder Assembly

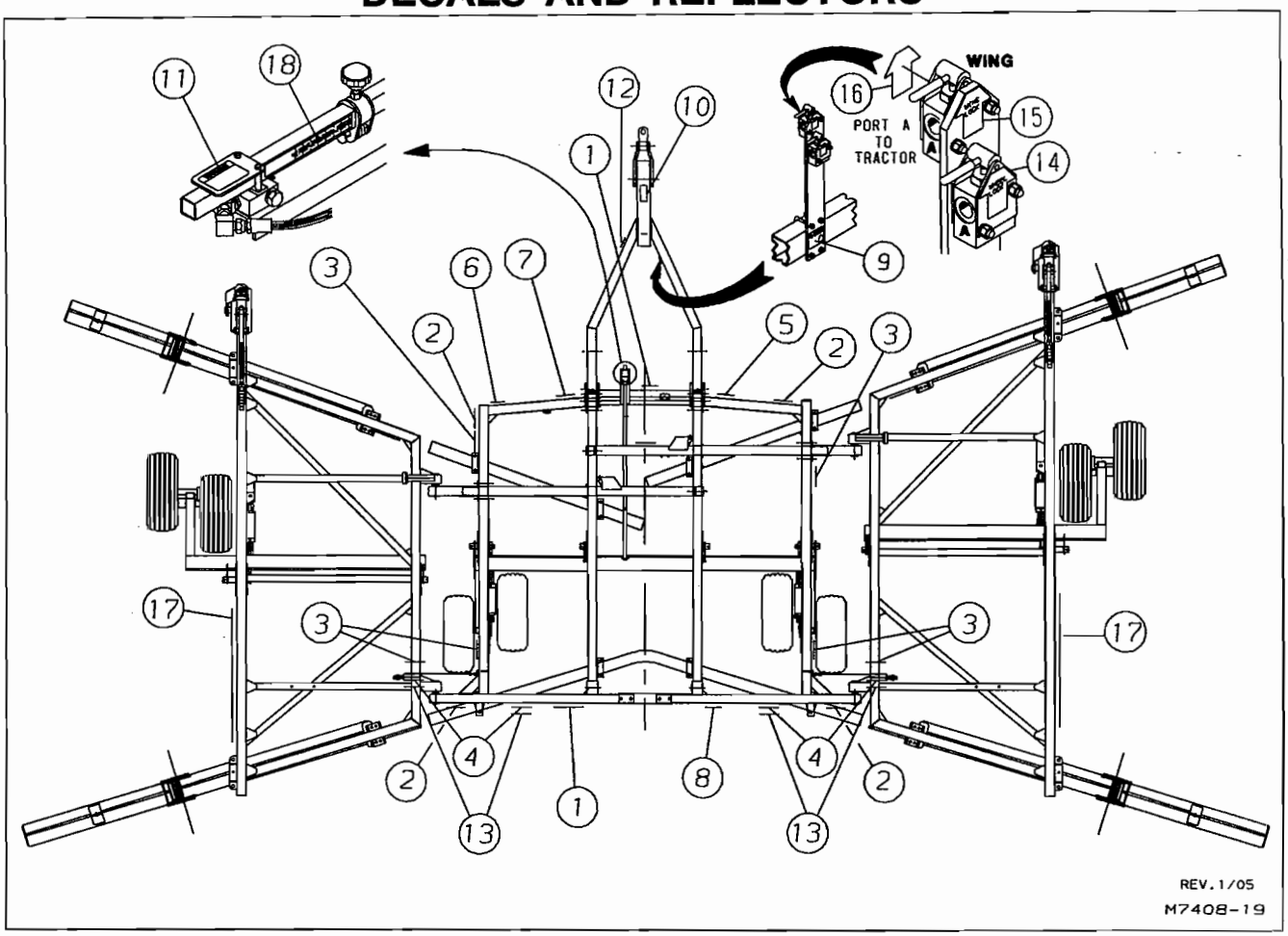
# PRINCE HYDRAULIC CYLINDER




**21-169 5" X 40" PRINCE HYDRAULIC CYLINDER ASSEMBLY** **11/99**
**Retracted - 52-3/4" Stroke - 40" Extended - 92-3/4" Rod Diameter - 2"**

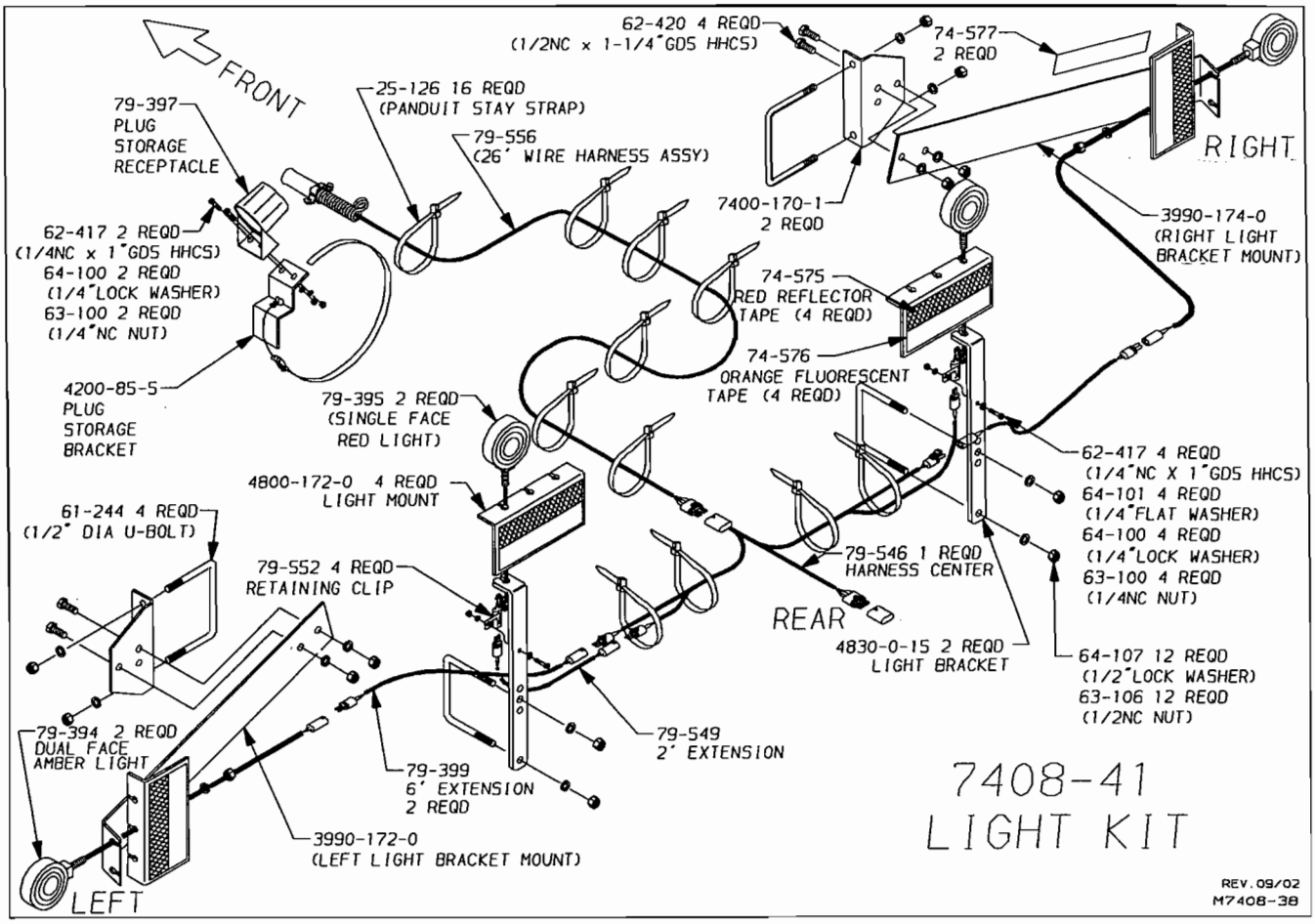
| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| 1 | 21-866 | Piston Rod | 1 |
| 2 | 21-277 | Tube | 1 |
| 3 | 21-867 | Tie Rod Assembly | 4 |
| 4 | 21-868 | Butt | 1 |
| 5 | 21-869 | Gland | 1 |
| 6 | 21-870 | Piston | 1 |
| 7 | 74-113 | Cylinder Warning Decal | 1 |
| 8 | 21-871 | Lock Nut | 1 |
| 9 | 21-872 | Clevis Pin | 2 |
| 10 | | 1/4" DIA. x 2" Roll Pin | 4 |
| 11 | 21-404 | #8 SAE Plug (not shown) | 1 |
| 12 | ★ | Crown Seal | 2 |
| 13 | ★ | O-Ring | 2 |
| 14 | ★ | O-Ring | 1 |
| 15 | ★ | U-Cup | 1 |
| 16 | ★ | Wiper | 1 |
| 17 | ★ | Bearing Ring | 1 |
| 18 | 21-685 | Clevis Assembly | 1 |
| 19 | ★ | Back-Up Washer | 2 |
| | | | |
| | • 21-858 | Seal Kit ( ★ Items Included in Kit) | |
| • Not Included in Cylinder Assembly | | | |

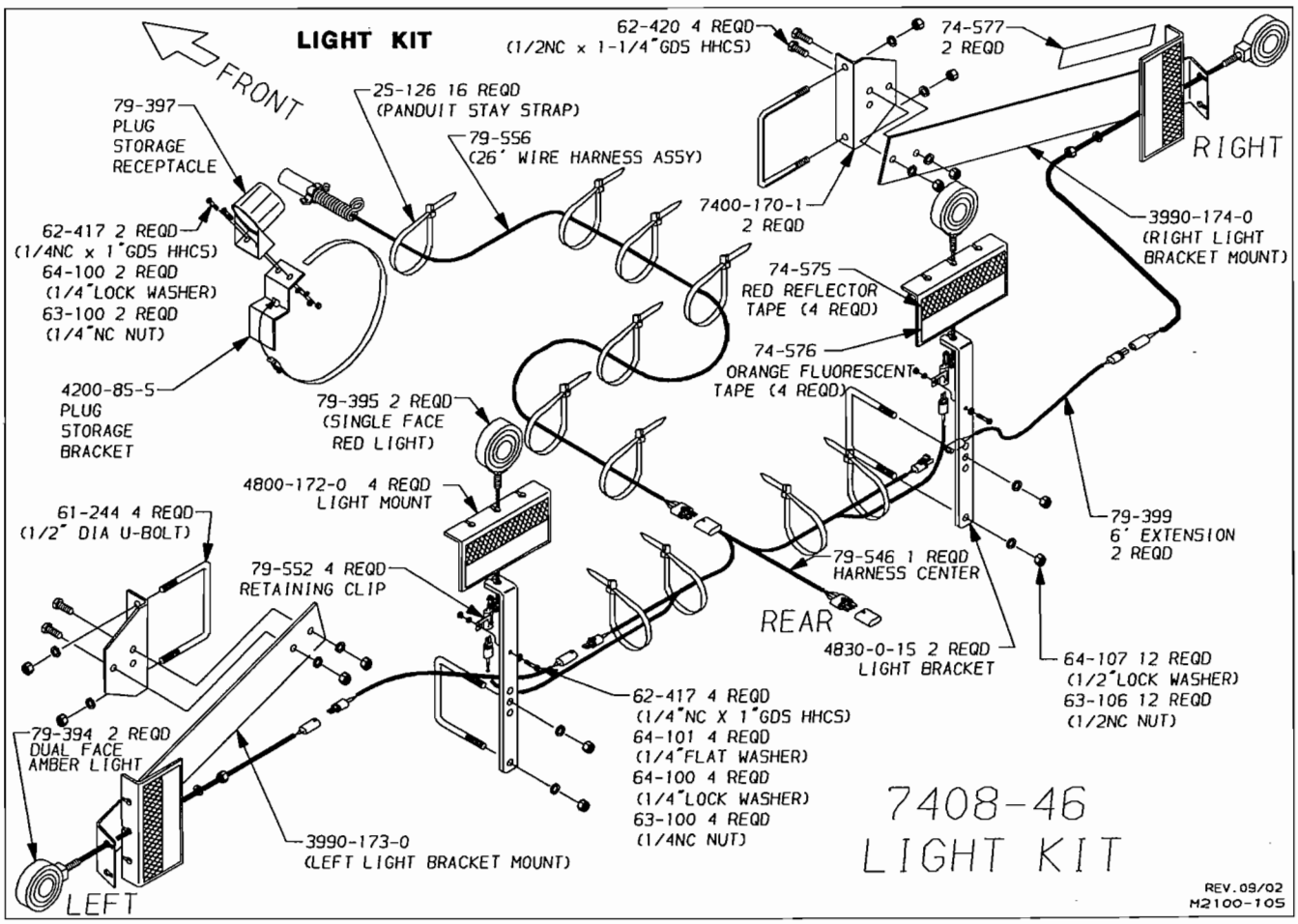
# DECALS AND REFLECTORS




**FOR MODELS -** ALL 1/05

| *Item* | *Part Number* | *Part Description* | *Qty.* |
|---|---|---|---|
| 1 | 74-604 | KRAUSE Decal | 2 |
| 2 | 74-102 | DANGER - Stand Clear of Wing Decal | 4 |
| 3 | 74-577 | Reflector Tape, Yellow | 6 |
| 4 | 74-575 | Reflector Tape, Red | 4 |
| 5 | 74-115 | Name Plate | 1 |
| 6 | 74-117 | Implement Safety Decal | 1 |
| 7 | 74-121 | Width-Height Decal | 1 |
| 8 | 74-545 | 7400 Series Decal | 1 |
| 9 | 74-465 | Transport Lock Valve Decal | 1 |
| 10 | 74-276 | WARNING - Hydraulic Safety Decal | 1 |
| 11 | 74-348 | WARNING - Pinch Point Decal | 1 |
| 12 | 74-158 | Tongue-Light Decal | 1 |
| 13 | 74-576 | Fluorescent Tape, Orange | 4 |
| 14 | 74-574 | Wheel Transport Lock (Left) Decal | 1 |
| 15 | 74-572 | Wing Transport Lock (Left) Decal | 1 |
| 16 | 74-571 | Wing Transport Lock (Right) Decal | 1 |
| 17 | 74-535 | Krause Stripe Decal | 2 |
| 18 | 74-489 | Depth Setting Decal | 1 |


FRONT
62-420 4 REQD
(1/2NC x 1-1/4"GDS HHCS)
74-577
2 REQD
25-126 16 REQD
(PANDUIT STAY STRAP)
79-397
PLUG
STORAGE
RECEPTACLE
79-556
(26' WIRE HARNESS ASSY)
RIGHT
7400-170-1
2 REQD
3990-174-0
(RIGHT LIGHT
BRACKET MOUNT)
62-417 2 REQD
(1/4NC x 1"GDS HHCS)
64-100 2 REQD
(1/4"LOCK WASHER)
63-100 2 REQD
(1/4"NC NUT)
74-575
RED REFLECTOR
TAPE (4 REQD)
74-576
ORANGE FLUORESCENT
TAPE (4 REQD)
4200-85-5
PLUG
STORAGE
BRACKET
79-395 2 REQD
(SINGLE FACE
RED LIGHT)
62-417 4 REQD
(1/4"NC X 1"GDS HHCS)
64-101 4 REQD
(1/4"FLAT WASHER)
64-100 4 REQD
(1/4"LOCK WASHER)
63-100 4 REQD
(1/4NC NUT)
4800-172-0 4 REQD
LIGHT MOUNT
61-244 4 REQD
(1/2" DIA U-BOLT)
79-546 1 REQD
HARNESS CENTER
79-552 4 REQD
RETAINING CLIP
REAR
4830-0-15 2 REQD
LIGHT BRACKET
64-107 12 REQD
(1/2"LOCK WASHER)
63-106 12 REQD
(1/2NC NUT)
79-549
2' EXTENSION
79-394 2 REQD
DUAL FACE
AMBER LIGHT
79-399
6' EXTENSION
2 REQD
3990-172-0
(LEFT LIGHT BRACKET MOUNT)
7408-41
LIGHT KIT
LEFT
REV.09/02
M7408-38


LIGHT KIT
FRONT
62-420 4 REQD
(1/2NC x 1-1/4"GDS HHCS)
74-577
2 REQD
79-397
PLUG
STORAGE
RECEPTACLE
25-126 16 REQD
(PANDUIT STAY STRAP)
79-556
(26' WIRE HARNESS ASSY)
RIGHT
7400-170-1
2 REQD
3990-174-0
(RIGHT LIGHT
BRACKET MOUNT)
62-417 2 REQD
(1/4NC x 1"GDS HHCS)
64-100 2 REQD
(1/4"LOCK WASHER)
63-100 2 REQD
(1/4"NC NUT)
74-575
RED REFLECTOR
TAPE (4 REQD)
74-576
ORANGE FLUORESCENT
TAPE (4 REQD)
4200-85-5
PLUG
STORAGE
BRACKET
79-395 2 REQD
(SINGLE FACE
RED LIGHT)
4800-172-0 4 REQD
LIGHT MOUNT
61-244 4 REQD
(1/2" DIA U-BOLT)
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6' EXTENSION
2 REQD
79-546 1 REQD
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REAR
4830-0-15 2 REQD
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64-107 12 REQD
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(1/4"NC X 1"GDS HHCS)
64-101 4 REQD
(1/4"FLAT WASHER)
64-100 4 REQD
(1/4"LOCK WASHER)
63-100 4 REQD
(1/4NC NUT)
79-394 2 REQD
DUAL FACE
AMBER LIGHT
3990-173-0
(LEFT LIGHT BRACKET MOUNT)
7408-46
LIGHT KIT
LEFT
REV.09/02
M2100-105

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# ASSEMBLY SECTION

THE FOLLOWING SECTION ILLUSTRATES A GENERAL METHOD FOR THE ASSEMBLY OF THIS SERIES KRAUSE TILLAGE TOOL. YOU MUST KNOW THE MODEL NUMBER OF THE UNIT BEING ASSEMBLED WHENEVER MAKING REFERENCE TO THIS SECTION. THE FOLLOWING PICTURES AND DRAWINGS WILL SHOW BOLTS, PINS, NUTS AND ETC., WITH THE DESCRIPTIVE SIZE AND LENGTHS IN THE ACCOMPANYING PARAGRAPH AND A PARTS LISTING REFERENCE PAGE NUMBER. IF ANY DIFFICULTY SHOULD BE ENCOUNTERED DURING THE ASSEMBLY, RECHECK THE ILLUSTRATIONS, ASSEMBLY STEPS AND PARTS LIST DRAWINGS.

# PROPER BOLT USE

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque vales listed are for general use only. Check tightness of fasteners periodically.

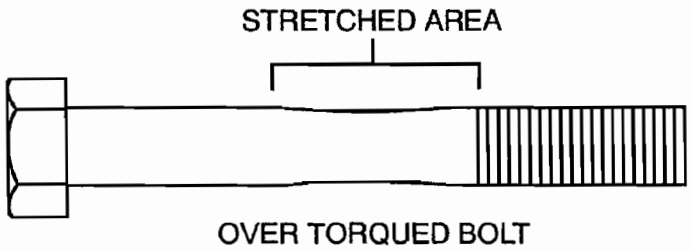
Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

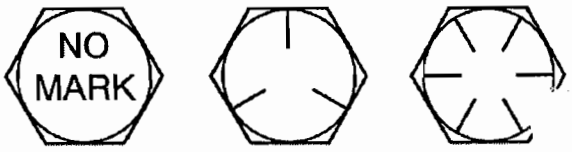
Tighten plastic insert or crimped steel-type lock nuts to approximately 110 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

*NOTE: "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.* ***Tighten lubricated bolts to approximately 80% of dry bolts.***

| BOLT SIZE | WRENCH SIZE | BLACK OR PLATED BOLTS | | |
|---|---|---|---|---|
| | | GRADE 2 | GRADE 5 | GRADE 8 |
| 3/8" | 9/16" | 20 | 33 | 45 |
| 7/16" | 5/8" | 32 | 52 | 70 |
| 1/2" | 3/4" | 50 | 80 | 105 |
| 5/8" | 15/16" | 100 | 150 | 210 |
| 3/4" | 1-1/8" | 160 | 260 | 375 |
| 7/8" | 1-5/16" | 175 | 415 | 600 |
| 1" | 1-1/2" | 250 | 625 | 880 |
| 1-1/8" | 1-11/16" | 375 | 850 | 1400 |
| 1-1/4" | 1-7/8" | 530 | 1100 | 1765 |
| 1-1/2" | 2-1/4" | 930 | 1400 | 2540 |




OVER TORQUED BOLT

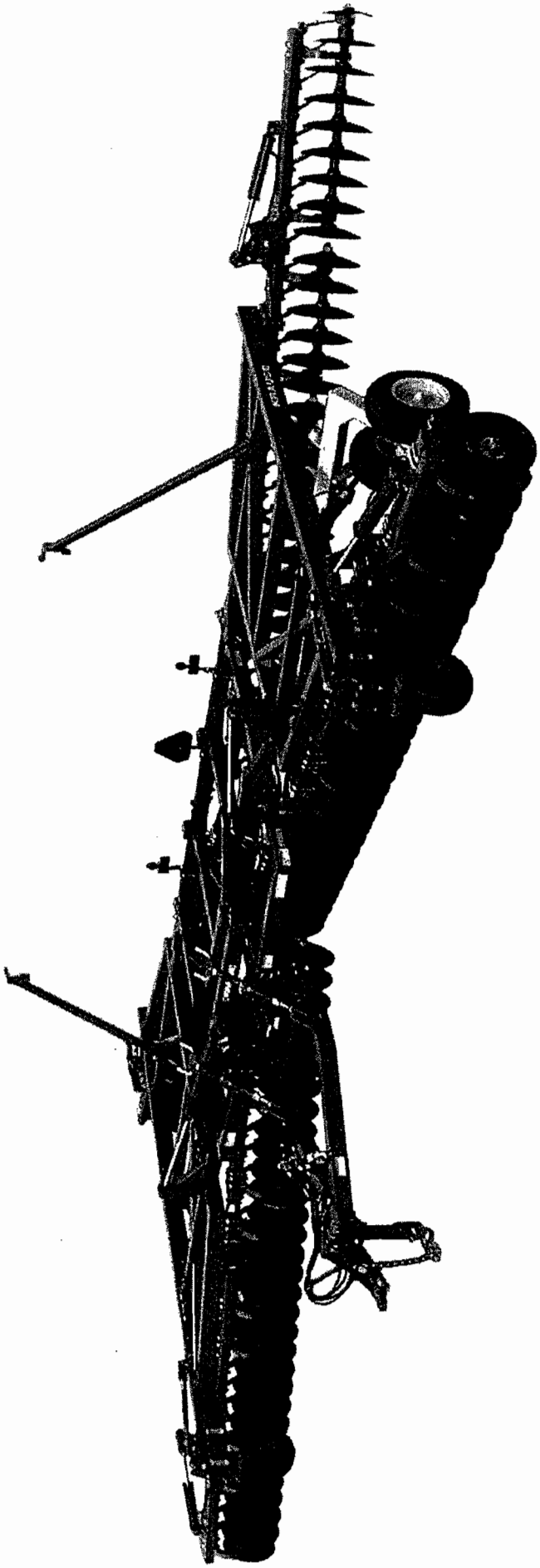



SAE GRADE 2

SAE GRADE 5

SAE GRADE 8

# Notes



# ASSEMBLY INSTRUCTIONS

STUDY THE NAMES AND LOCATIONS OF THE PARTS AND FAMILIARIZE YOURSELF WITH THE FLEX WING DISC BEFORE STARTING THE ASSEMBLY. READING THE STEP BY STEP INSTRUCTIONS THAT FOLLOW WILL BE HELPFUL.

## SAFETY

**READ ALL OF THE SAFETY NOTATIONS IN THE ASSEMBLY INSTRUCTIONS FOR YOUR OWN PROTECTION. ACCIDENTS CAN BE PREVENTED BY RECOGNIZING THE CAUSE OF AN ACCIDENT BEFORE IT CAN HAPPEN.**

## ASSEMBLY

Select an area for the assembly that will be large enough to accommodate the completed flex wing disc. The surface of the work area should be as level as possible. Use the proper hand tools to insure proper bolt tightness. Refer to the page entitled "Proper Bolt Use" for the recommended torque values of different size bolts.

## PART LOCATIONS

FRONT - The front of the frame can be determined by the location of the name plate that has been attached to the front frame member.

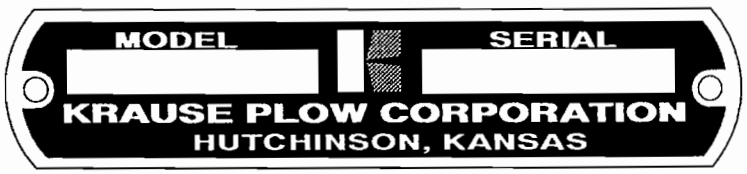
RIGHT and LEFT sides can be established by standing behind the frame looking toward the front, or the direction of travel.

TOP - To be sure that the frame is right side up, position the frame with the front hitch posts of the frame pointing down.

**Warning: Always attach chains securely. If a chain would break, the recoil action could cause the loose end to whip in any direction and injure any person nearby. The proof load rating of chain must equal or exceed 5 times the weight being lifted.**

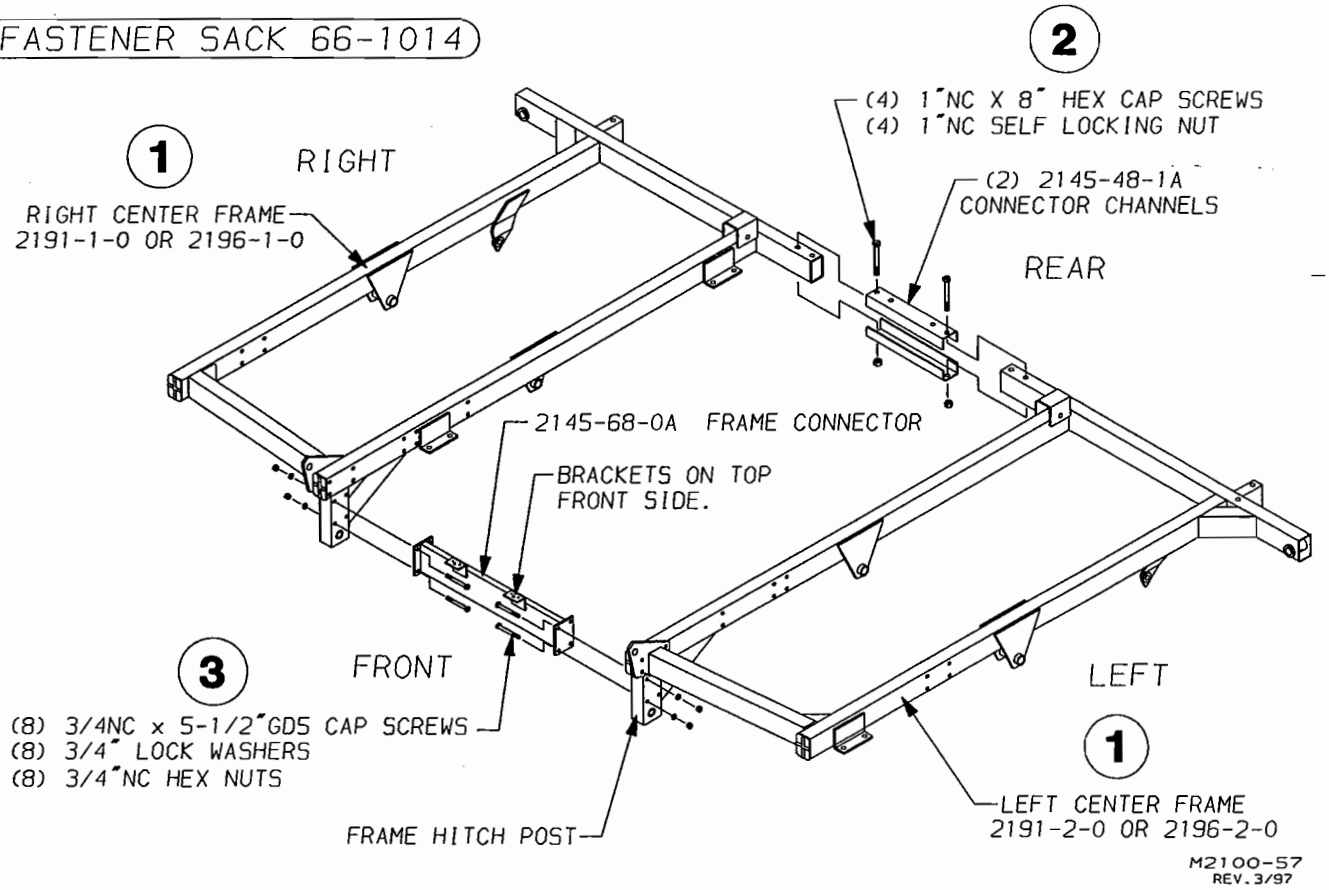
THE HEAVIEST COMPONENT TO BE LIFTED INTO PLACE IS THE CENTER FRAME ASSEMBLY WHICH WEIGHS 1,700 LBS.

## MODEL NUMBER




Know the model number of the disc being assembled. Use the model number whenever referring to the assembly, parts pages or the placement drawings. The number is stamped on the NAME PLATE which is located on the front frame member of the flex wing tandem disc.

## FASTENER SACK 66-1014

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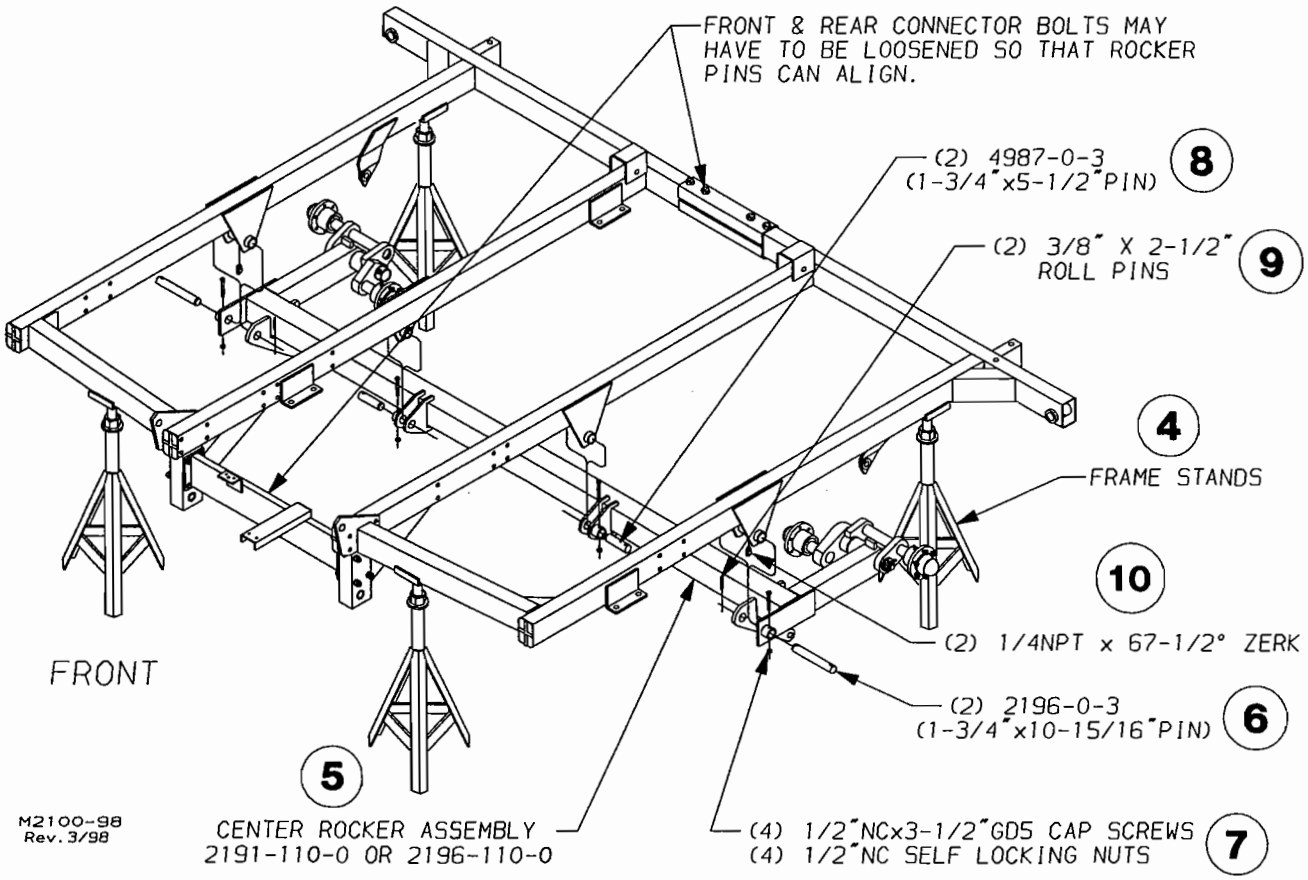
REV. 3/97

## PARTS SACK 2191-62-0

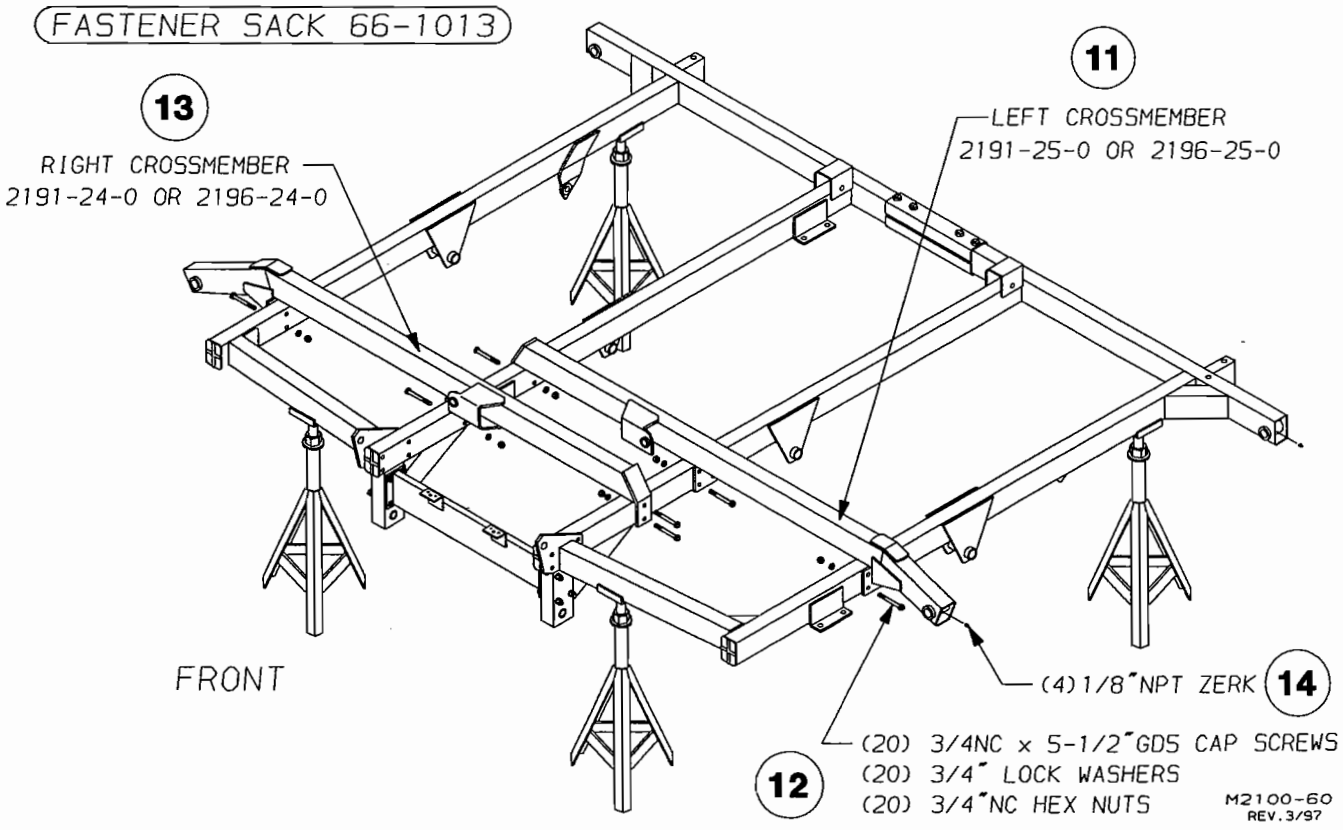



M2100-98
Rev. 3/98

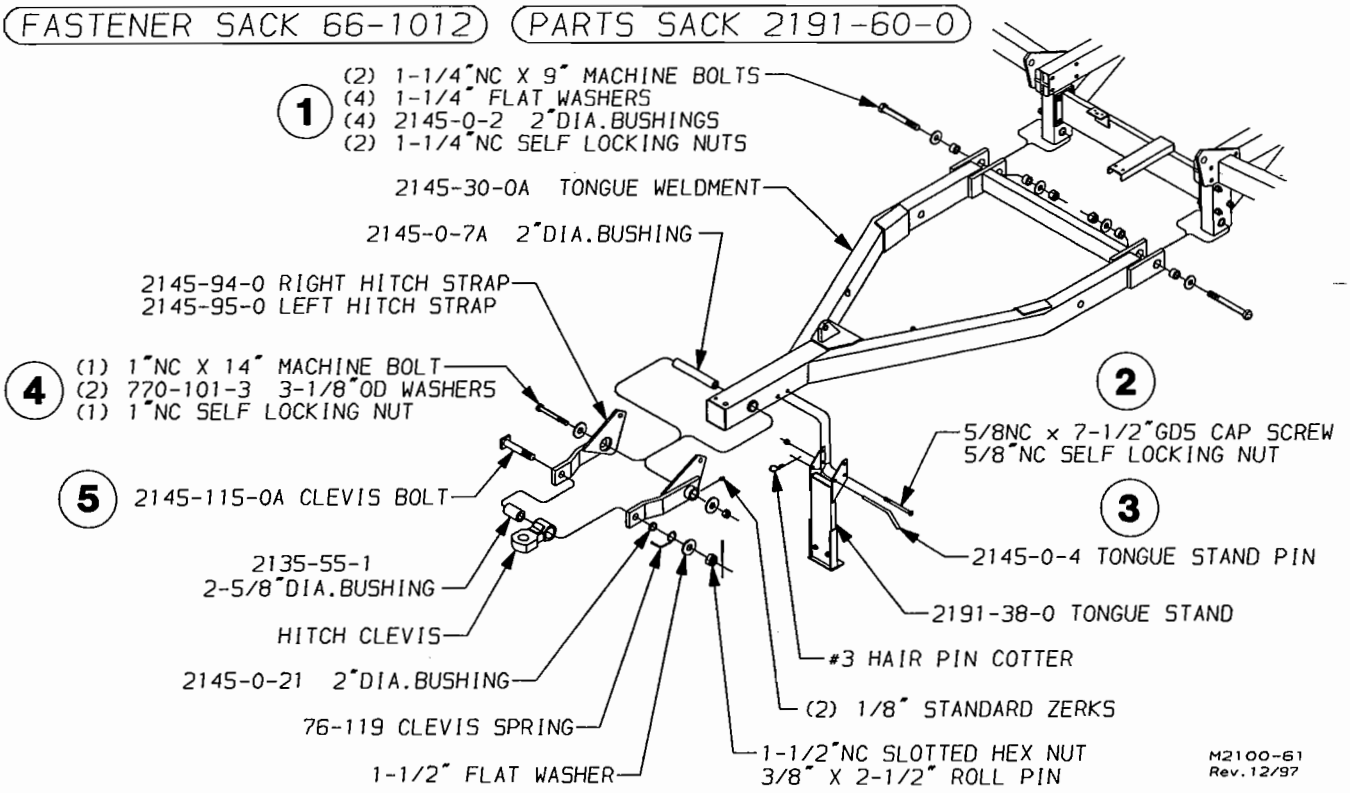
# I. CENTER FRAME ASSEMBLY

1. Place the two center frame halves on the ground opposing each other.
2. Fasten the rear frame members together with (2) Connector Channels.
3. Bolt the front together with a Frame Connector Weldment.
4. Place the CENTER FRAME ASSEMBLY on (4) stands approximately 44" high in the center of the assembly area, facing a direction that will permit future hitching to a tractor.

   **NOTE: The stands required to support the assembly that will weigh approximately 10,000 lbs. before the tool will be self-supporting.**
5. Slide the Center Rocker Assembly under the frame with the wheel arms toward the front as shown.
6. Pin the outer ends to the center frame with (2) 2196-0-7 pins.
7. Retain the pins with 1/2NC x 3-1/2" GD.5 Cap Screws.
8. Pin the inside frame members to the rocker with (2) 4987-0-3 Pins. Retain the pins with 1/2NC x 3-1/2" GD.5 Cap Screws.
9. Drive a 3/8" DIA. x 2-1/2" Roll Pins into each 2196-0-7 Pivot Pin.
10. Screw an 1/8NPT x 45 Zerk into each outer end rocker pivot tube.
11. Position the Left Cross member on top of the frame.
12. Fasten it with (10) 3/4NC x 5-1/2" Cap Screws, Lock Washers and Hex Nuts.
13. Fasten the Right Cross member with the same hardware.
14. Screw a 1/8NPT Zerk into each of the (4) Wing Hinge Tubes.



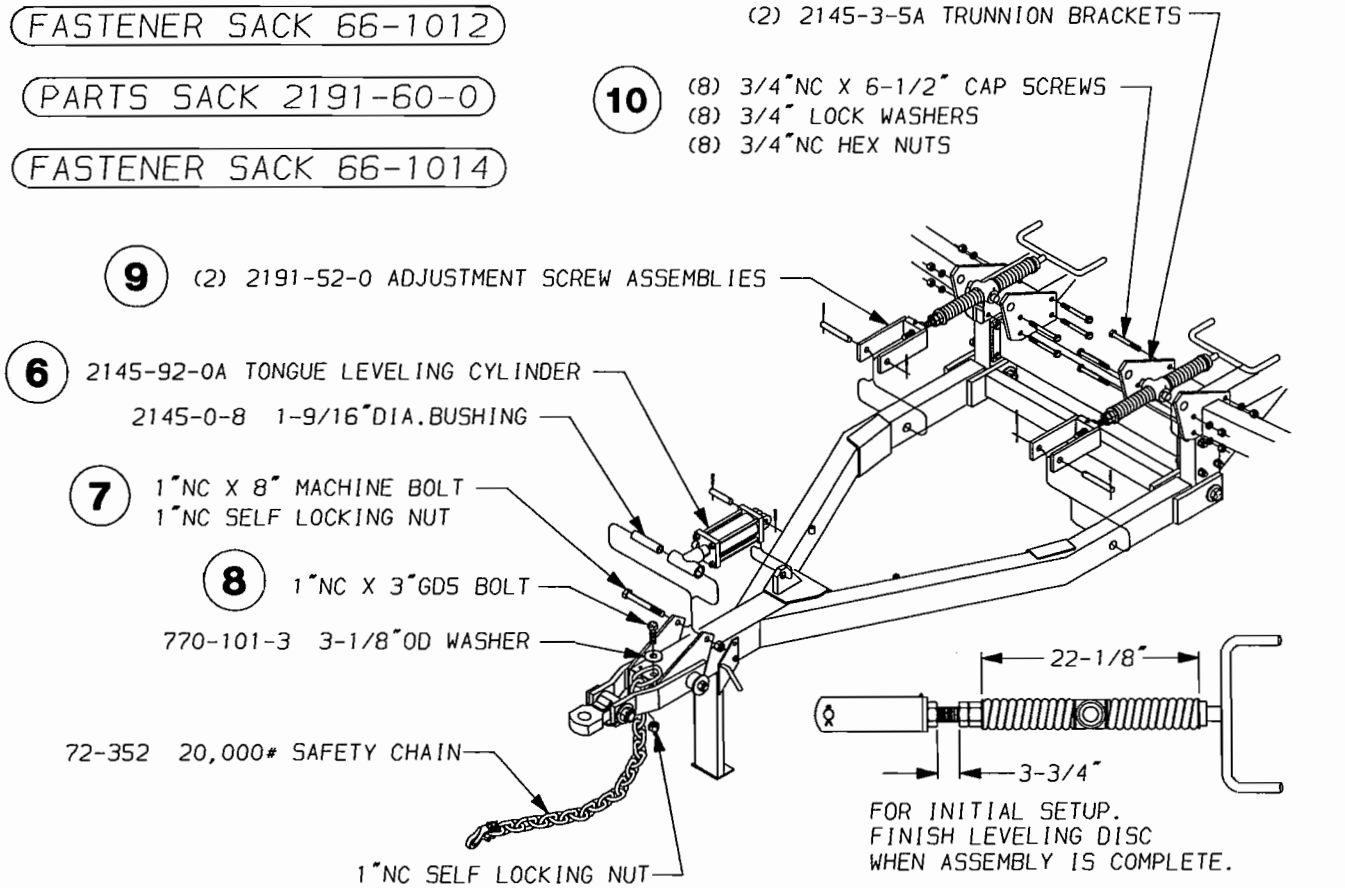
FASTENER SACK 66-1012 PARTS SACK 2191-60-0




FASTENER SACK 66-1012

PARTS SACK 2191-60-0

FASTENER SACK 66-1014



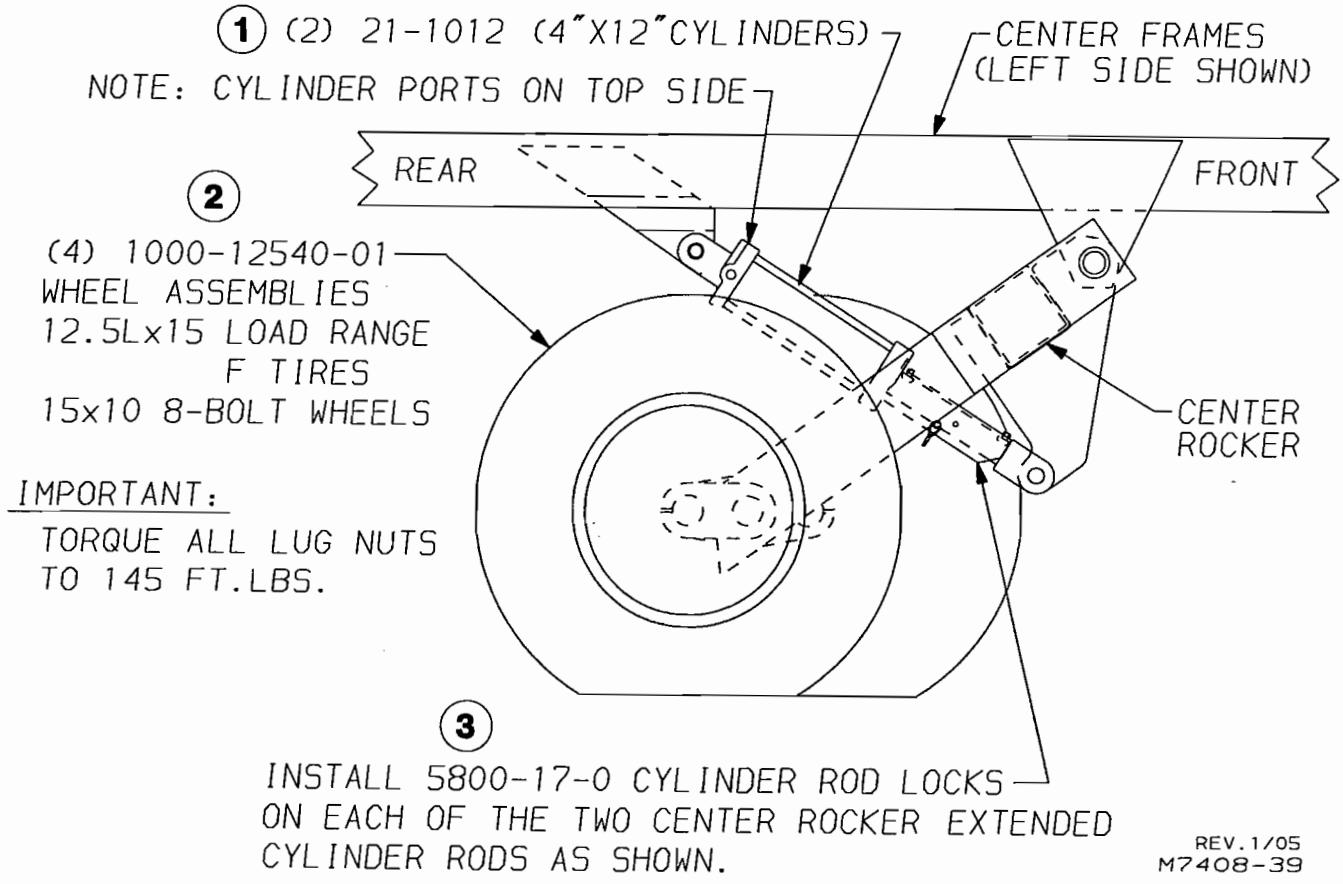

REV.3/97
M2100-62

## II. TONGUE ASSEMBLY

1. Bolt the Tongue Weldment to the Center Frame.
2. Bolt the Tongue Stand to the Tongue Weldment.
3. Pin the Stand in the vertical position.
4. Assemble the Right and Left Hitch Strap to the Tongue Weldment.
5. Fasten the Hitch Clevis and Clevis Spring to the Hitch Straps.
6. Pin the base end of the Tongue Cylinder to the Tongue Lug.
7. Bolt the rod end of the Tongue Cylinder to the Hitch Straps.
8. Attach the Safety Chain to the Tongue as shown.
9. Check the dimensions of each Adjustment Screw Assembly and then pin the clevis end to the Tongue Weldment.
10. Clamp the Adjustment Screw Cast Trunnion to the Center Frame using a 2145-3-5A Trunnion Bracket Plate.

## III. CENTER CYLINDERS, WHEELS & GANG BEAMS

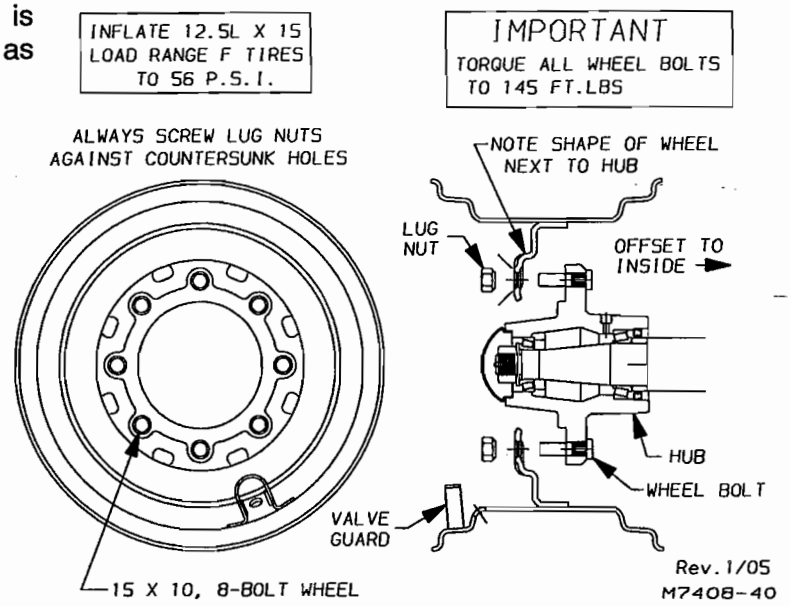
1. Pin the (2) 4 X 12 Cylinders to the center rocker with the ports up.
2. Assemble (4) 12.5L x 15, Load Range F Tires and Wheels to the center rocker walking beam hubs.



Make sure that the wheel is assembled with the offset as illustrated.

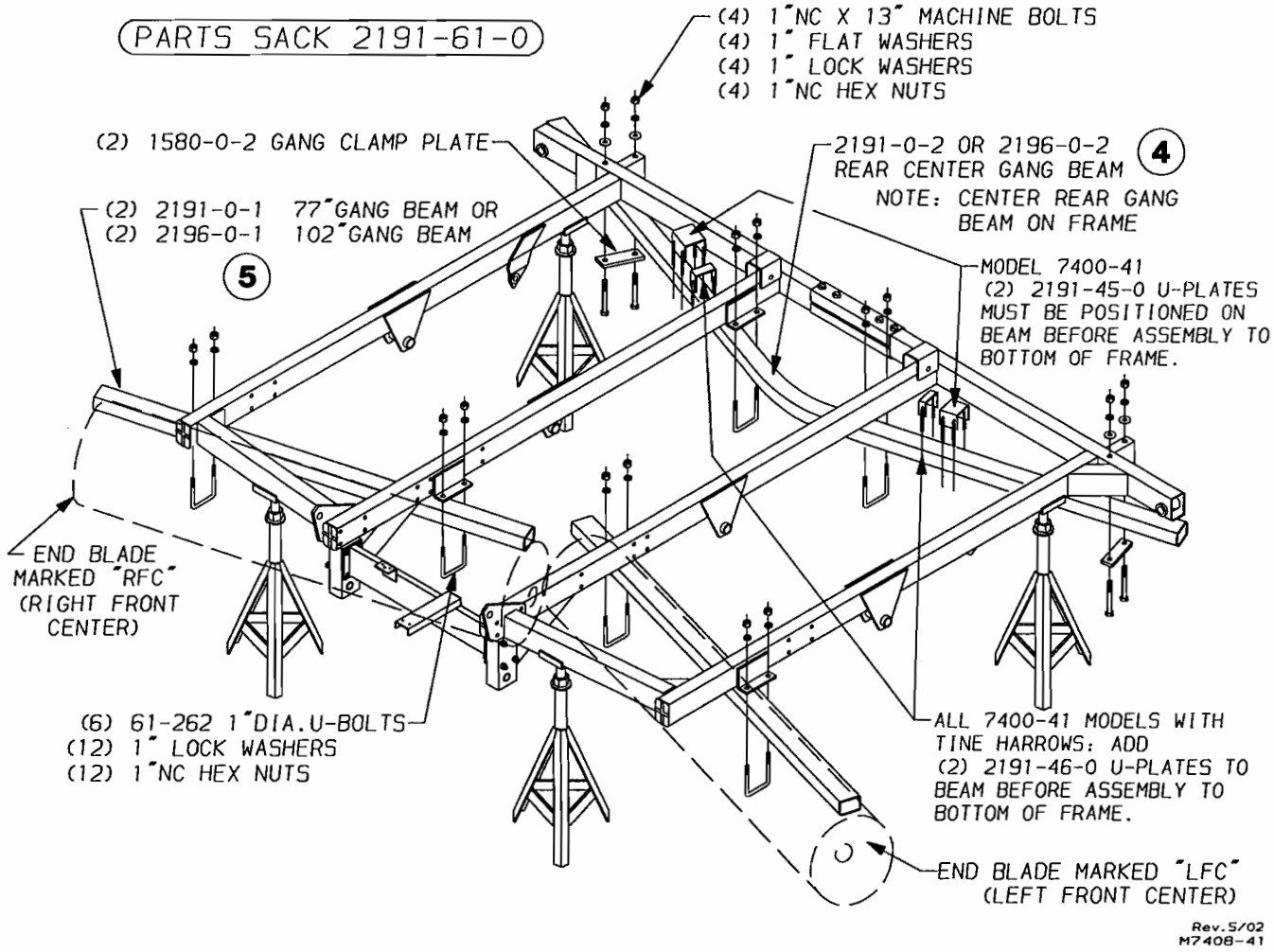
Inflate the Load Range F tires to 56 P.S.I.

Make sure all Lug Nuts are torqued to 145 Ft. Lbs.

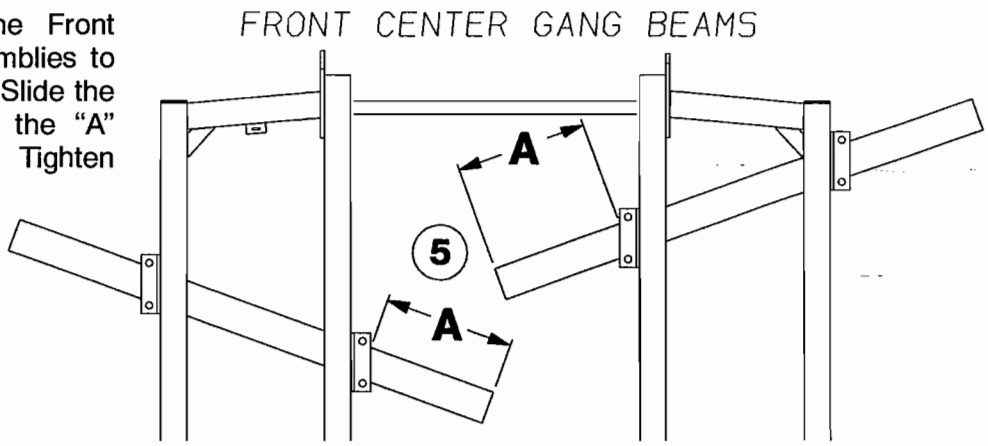



3. Install 5800-17-0 Cylinder Locks on each of the center cylinder rods, raise the frame and remove the center stands. The center section should now be free standing.

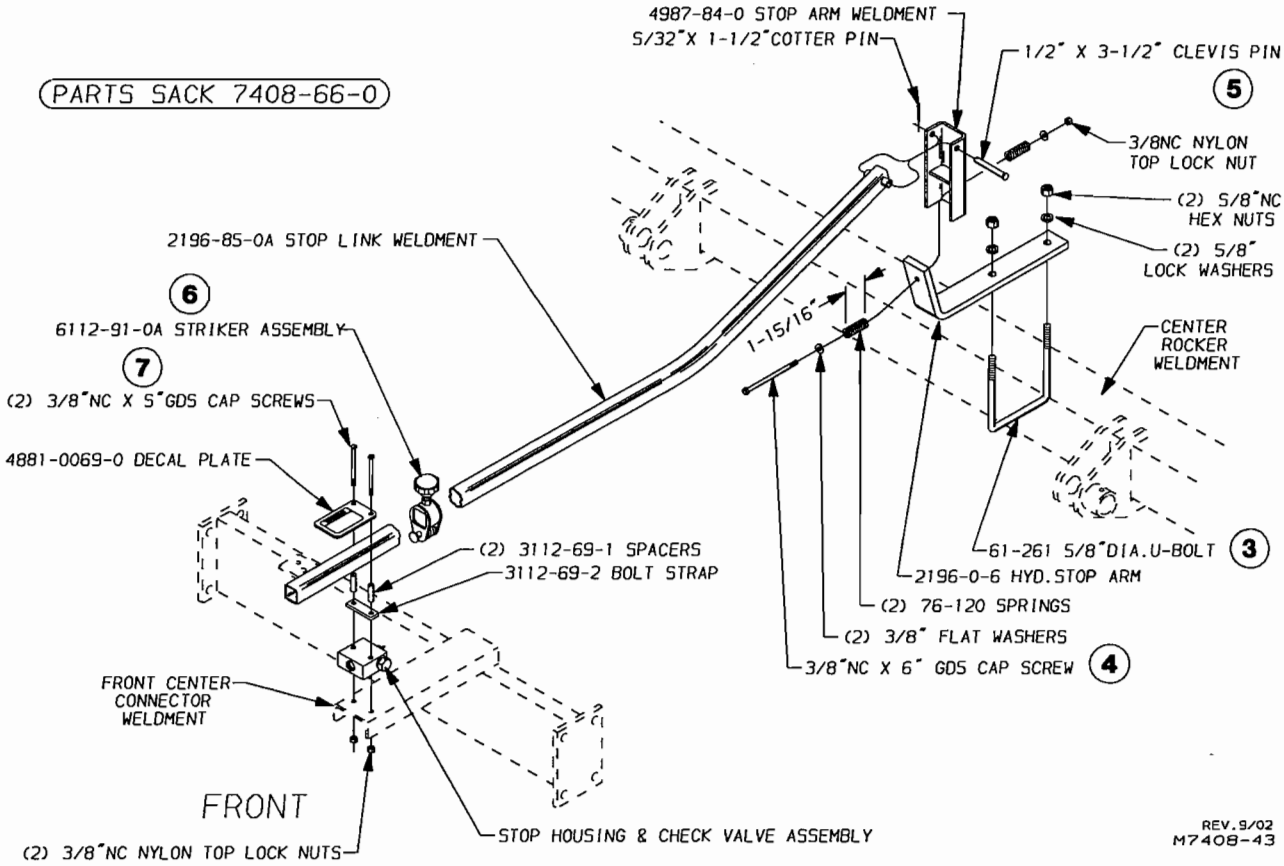
4. Center the Rear Gang Beam under the center frame and fasten it with the Bolts and U-Bolts shown below.



5. Loosely attach the Front Gang Beam Assemblies to the center frame. Slide the gang beams until the "A" dimension is 19". Tighten all gang bolts.




## IV. DEPTH STOP ASSEMBLY




1. Loosely assemble the 2196-0-6 Hydraulic Stop Arm to the center rocker with a 61-261 5/8" DIA. U-Bolt. Slide the arm along the rocker until it aligns with the Valve Mounting bracket on the front center connector weldment. Tighten U-Bolt when aligned.
2. Attach the 4987-84-0 Stop Arm Weldment to the Hydraulic Stop Arm as shown. Tighten the 3/8NC x 6" GD.5 Bolt until each spring measures 1-15/16" Long.
3. Fasten the 2196-85-0 Stop Link Weldment to the Stop Arm.
4. Slide the 6112-91-0 Striker Assembly onto the Stop Link Tube with the clevis pin head toward the Stop Valve Housing.
5. Assemble the Stop Housing Valve and Decal Plate to the Front Center Connector Weldment.

# V. REAR CENTER DISC GANG ASSEMBLY

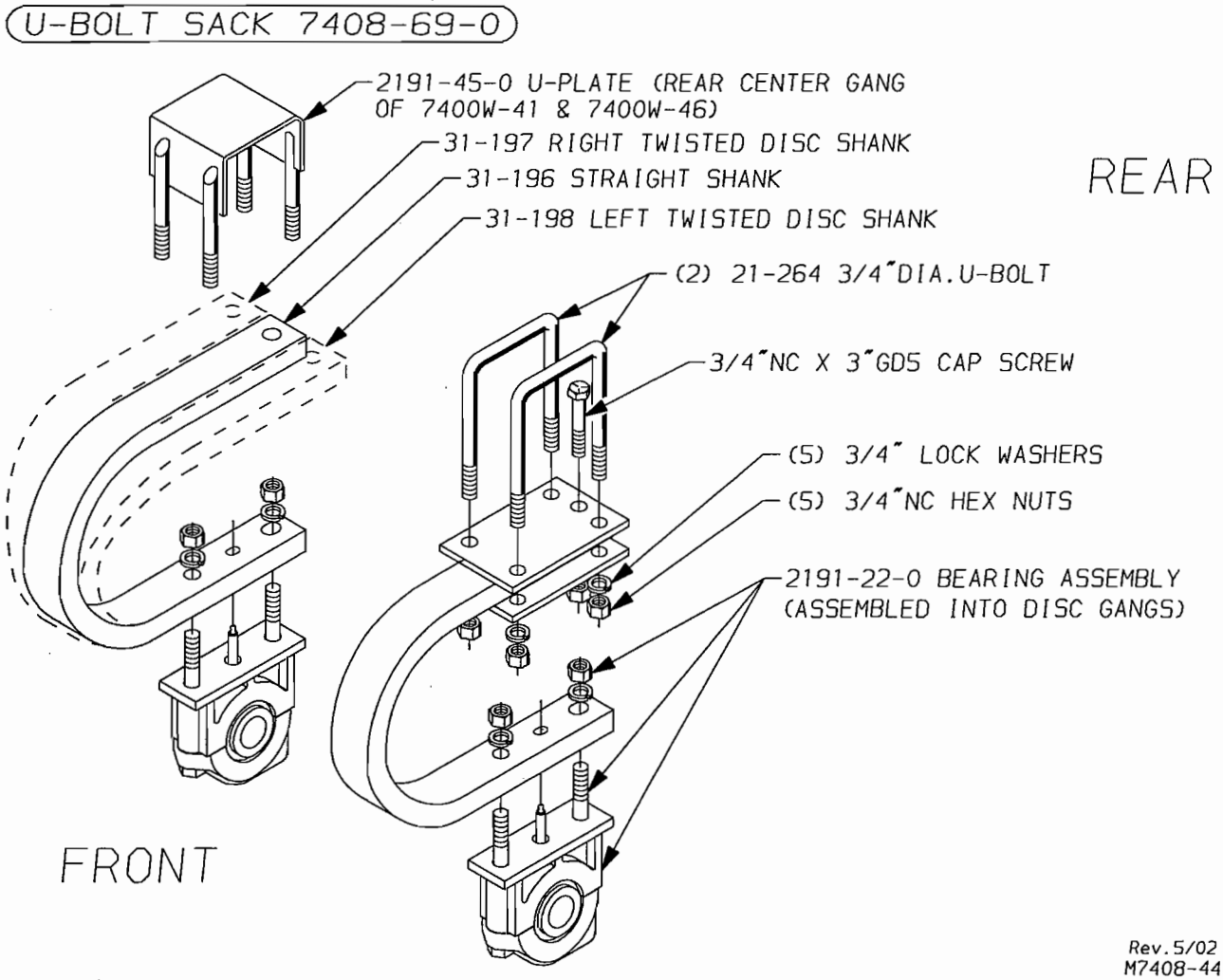
**Danger: Due to their sharpness and weight, serious injury can be inflicted by blades and disc gangs if not handled safely. Watch for unsafe conditions, and be aware of the unexpected. Keep your co-workers safety in mind. Should personal injury occur, have medical treatment administered immediately.**

1. A placement drawing is furnished between pages A26 thru A29 that will serve as a guide for proper gang assembly, location, and adjustments for each models in the series. Turn to the placement drawing that reflects the model number stamped on the name plate and study the information for the model being assembled.

2. Identifying the Rear Disc Gang Assemblies.

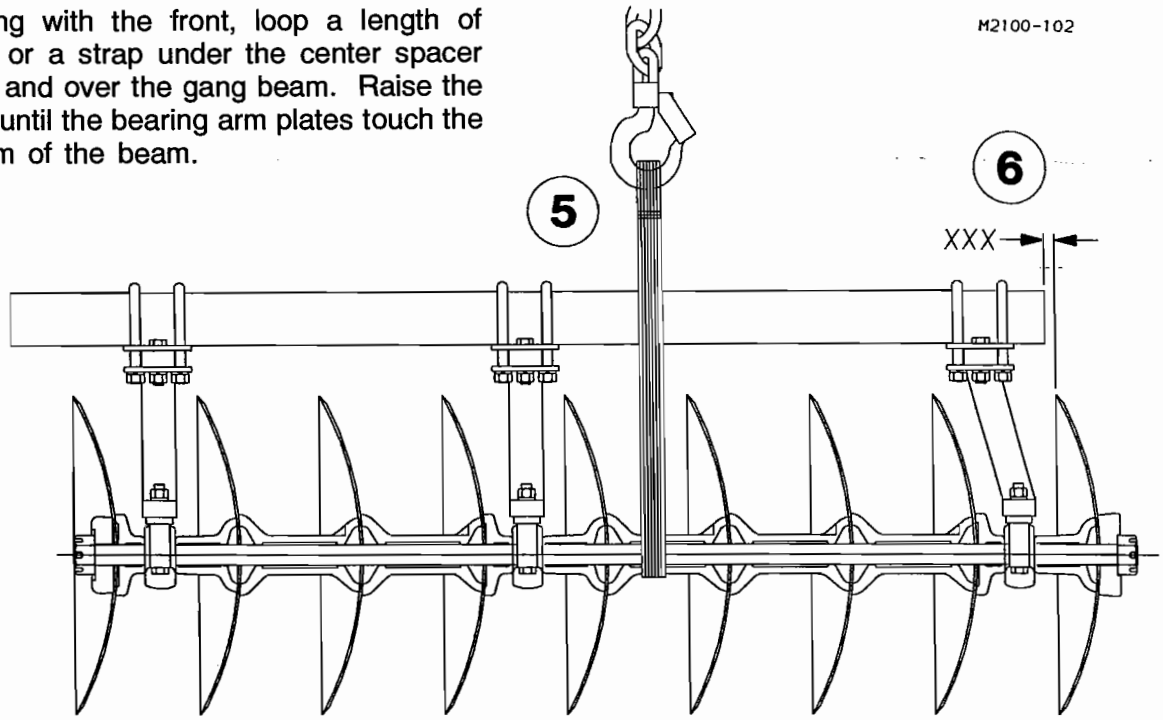
   View the GANG ASSEMBLIES FROM BEHIND.

   → **The Rear Gangs will have the *concave* side of the disc blade toward the center.**




3. Using the placement page for your disc, position the correct disc gangs under the frame. Pay close attention to bearing arm and disc blade locations.

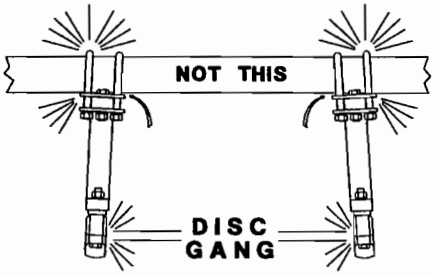
4. Starting with the front, loop a length of chain or a strap under the center spacer spool and over the gang beam. Raise the gang until the bearing arm plates touch the bottom of the beam.




5. Fasten the bearing arms to the gang beam with U-Bolts as shown on page A10.

   **NOTE:** Do not fully tighten bolts until the gang is the correct distance from the end of the gang beam as shown on the placement pages.

   As the U-Bolts are drawn up tight, be sure that the top plate raises flat against the gang beam and not tilted to one side, causing a lever action that preloads the bearings.

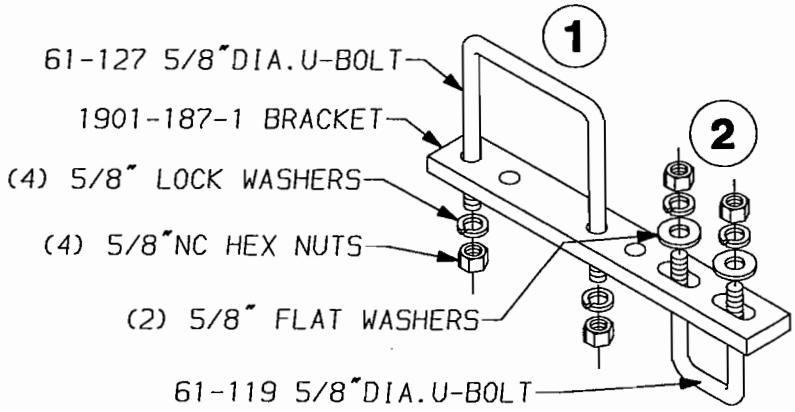



BE SURE THE BEARING ARMS ARE PERPENDICULAR TO THE GANG BEAM BEFORE TIGHTENING THE U-BOLTS.

M2100-103

## VI. RIGID SCRAPER ASSEMBLY

1. The placement drawing will show scraper bracket locations. Mark these locations on the frames and attach a bracket at each mark with the large U-Bolt.




MODEL 7400-41
7408-69-0 U-BOLT SACK

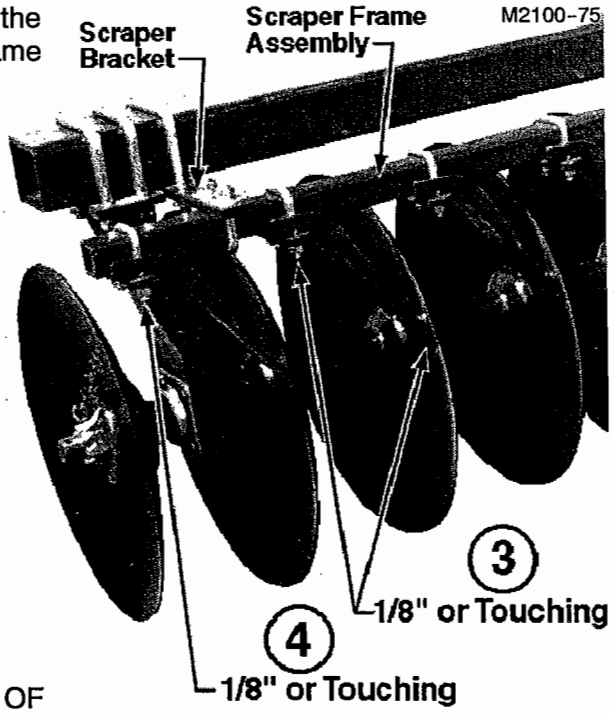
MODEL 7400-46
7408-69-0 U-BOLT SACK
7409-76-0 U-BOLT SACK

M7408-21

2. Remove the small U-Bolts at the back of the brackets and attach the correct scraper frame assembly loosely under the brackets as shown making sure each disc blade is scraped except the two front outside wing taper blades, and the two rear center disc blades. The two outside scraper frames will have extension trash bar loops.

3. Adjust each scraper frame in the brackets by moving the frame toward the concave side of the disc blades until a scraper touches a disc blade. Align the brackets on the disc frame and tighten the large U-Bolts. Recheck the same scraper to be sure it is touching or is within 1/8" from the disc blade and tighten the smaller U-Bolts.

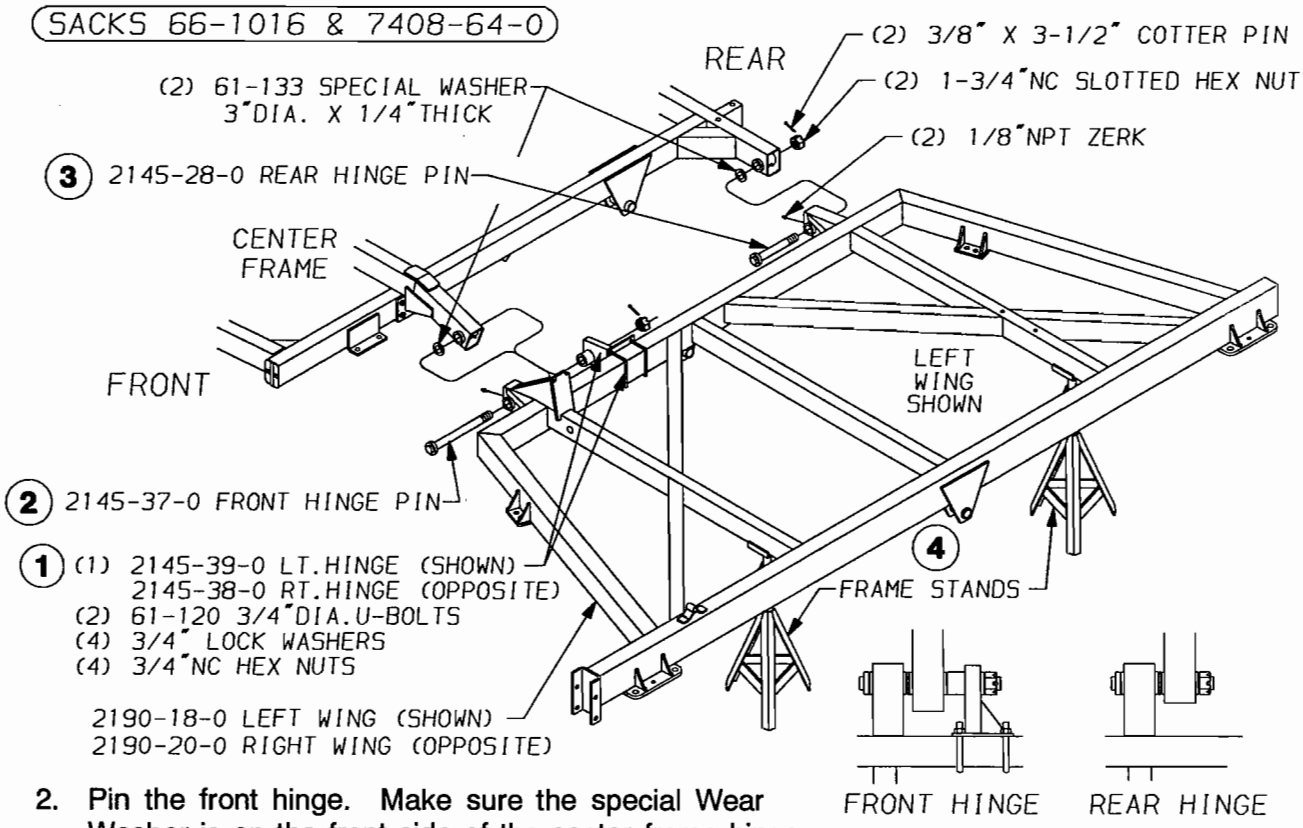
4. Adjust each scraper blade if not within 1/8" or touching the disc blade by loosening the individual scraper U-Bolt.




IMPORTANT: DO NOT RESTRICT ROTATION OF THE DISC GANG BY FORCING THE SCRAPER BLADES AGAINST THE DISC BLADES.

## VII. WING FRAME ASSEMBLY

1. Fasten the Support Hinge to the inside frame box with (2) 3/4" DIA. U-Bolts. Do not tighten U-Bolts until the Hinge Pin has been assembled.

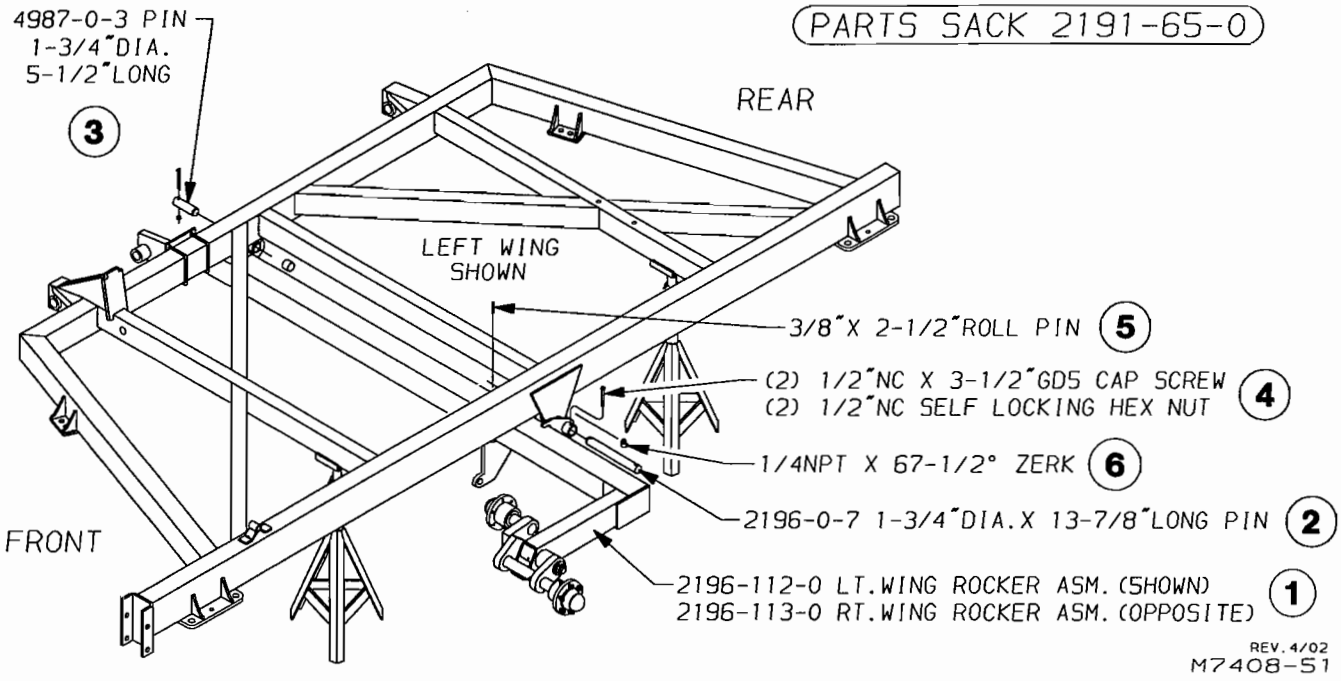



2. Pin the front hinge. Make sure the special Wear Washer is on the front side of the center frame hinge as shown. Screw the Slotted Hex Nut onto the pin. Tighten until the end play is gone and then back it off to the first slot before inserting the Cotter Pin.

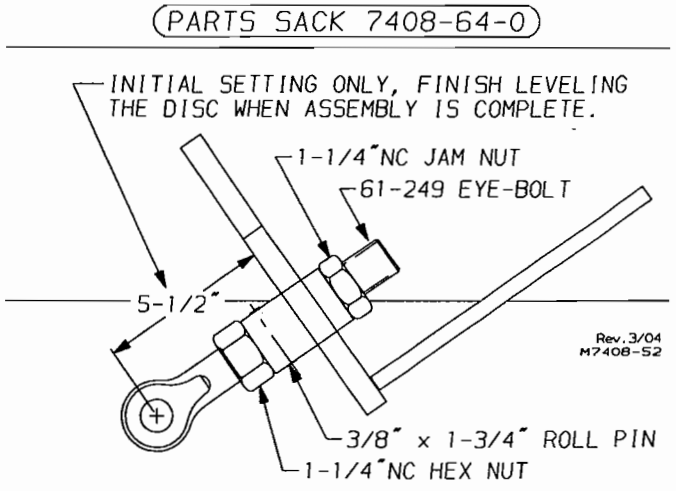
3. Assemble the Rear Hinge Pin with the special Wear Washer in front of the center frame hinge. The Support Hinge U-Bolts can now be tightened.
4. Support the outer end frame tubes with stands.

## VIII. WING ROCKER ASSEMBLY

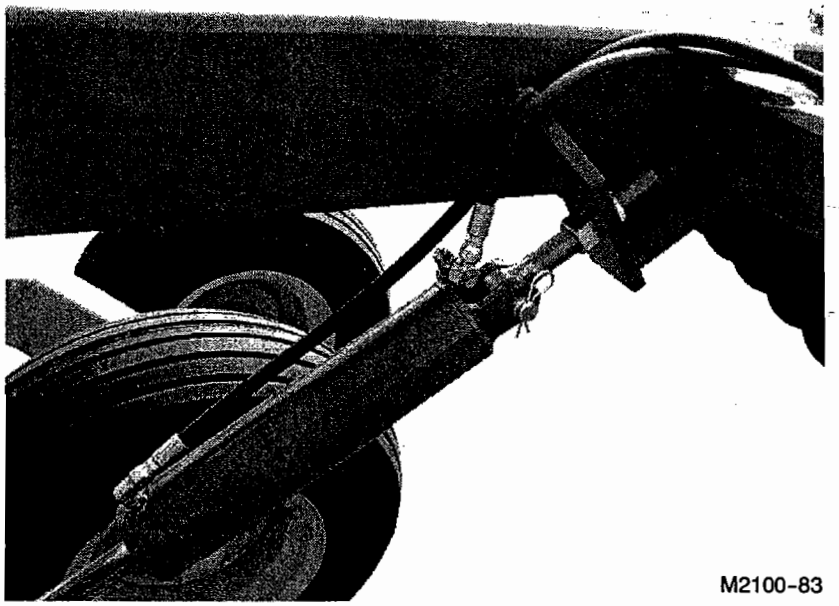
1. Identify the Right and Left Wing Rocker Assemblies. Slide the correct Rocker into position under the wing frame with the wheel arm toward the front.
2. Pin the outer end with a 2196-0-7 Pivot Pin.
3. Pin the inside end with a 4987-0-3 Pivot Pin.
4. Fasten each Pivot Pin in place with a 1/2NC x 3-1/2" GD.5 Cap Screw and Lock Nut.




5. Drive a 3/8" DIA. x 2-1/2" Roll Pin into the Outer Pivot Pin.
6. Screw in an 1/8" x 45° Zerk into the bottom side of the outer end Pivot Tube.
7. Assemble the 12.5L x 16, 14-Ply Tire Assemblies to the Wing Walking Beam Hubs as described on page A8.
8. Screw a 1-1/4NC Hex Nut onto the wing rocker adjustment Eye-bolt. Set the nut at 5-1/2" as shown below.
9. Insert the eye-bolt into the wing frame plate and tighten a 1-1/4NC Jam Nut to lock it into place.



10. Assemble a 3-3/4" x 12" Series Cylinder (22-128) to the Eye-Bolt and the wing rocker lug with the ports up.



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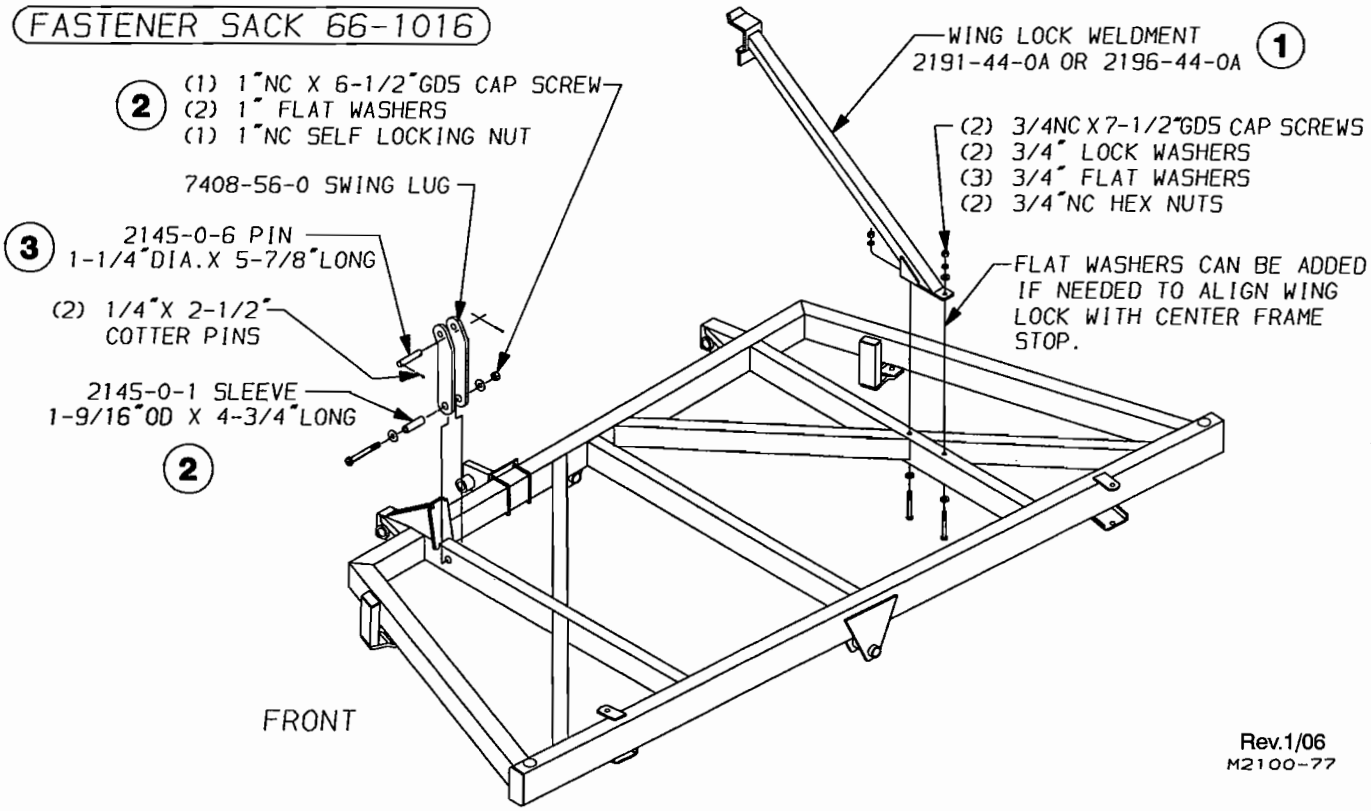
## X. WING LOCK & SWING LUG ASSEMBLY

1. Bolt the Wing Lock Weldment to the Wing Frame with 3/4NC x 7-1/2" GD5 Bolts.

**NOTE:** The Wing Lock Bolts may have to be loosened and repositioned later to align the Wing Lock to the center frame stop. This cannot be checked until assembly has been completed and the hydraulic system is full of oil so that the wings can be folded.

2. Fasten the 2145-66-0 Swing Lug to the Wing Frame with a 1NC x 6-1/2" GD5 Cap Screw and a 2145-0-1 Sleeve.

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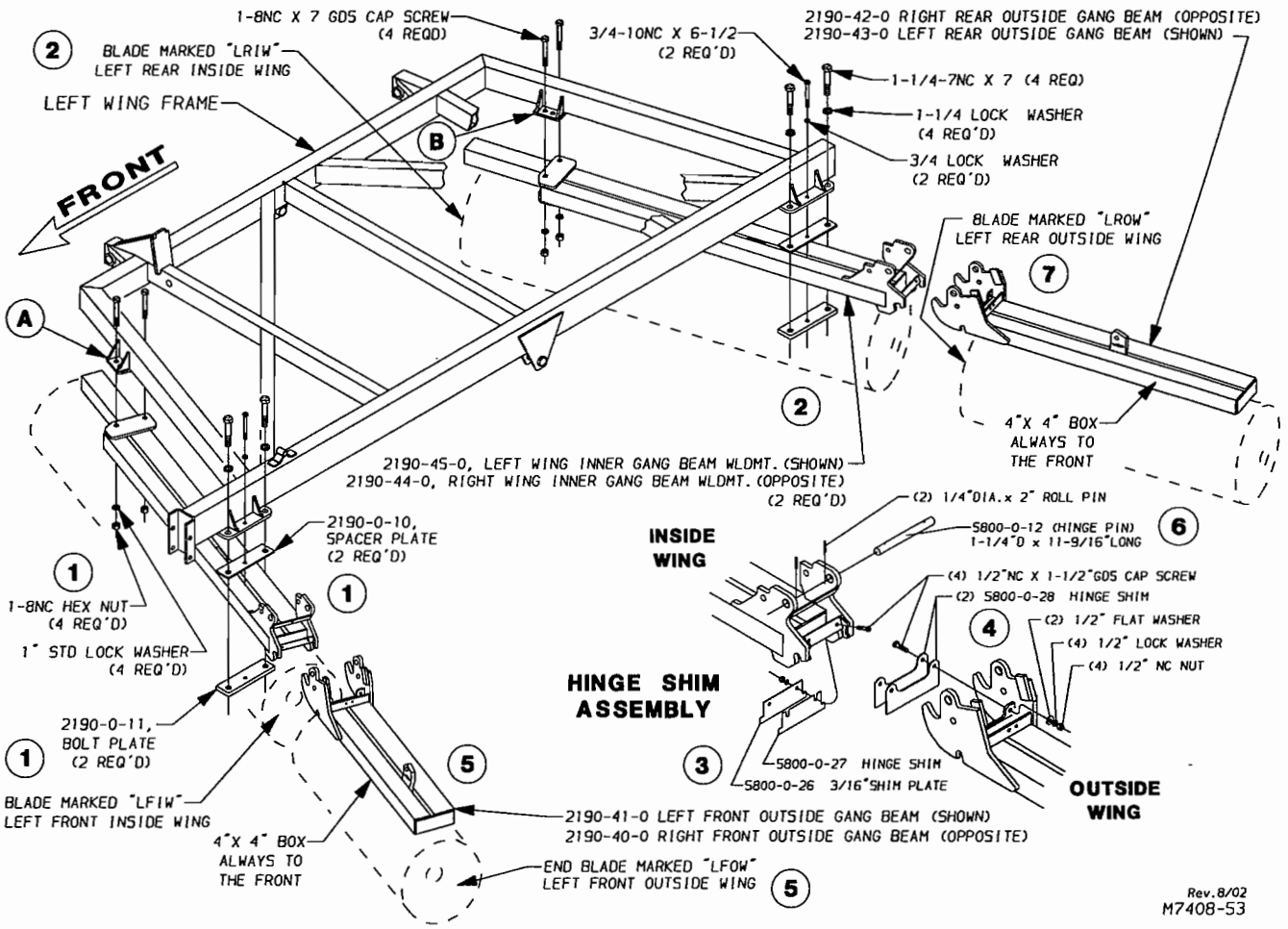
M2100-77

3. The Wing Lug Cylinder Pin can be assembled, but do not spread cotter pins until the Wing Fold Cylinder rod end has been assembled.

# X. WING GANG & HINGE SHIM ASSEMBLY

1. Identify the gang assembly marked "LFIW" (Left Front Inside Wing). Fasten it to bracket "A" using the holes as per placement drawings in back of manual.
2. Assemble the "LRIW" (Left Rear Inside Wing) gang to bracket "B" also per placement drawings.
3. Assemble the inside wing shim and shim plate to the inside wing hinges.
4. Assemble the outer wing hinge shims before attaching them to the inner gang beams.
5. Identify the "LFOW".
6. Pin the outer wing to the inner wing.
7. Assemble the "LROW" to the rear inside wing hinge.
8. See page O10 in the Operating Section in the front of this manual to level the outer wings.
9. U-Bolt the remaining shims to the wing frame.

SACK 7408-63-0
SACK 5800-61-0
SACK 5800-68-0

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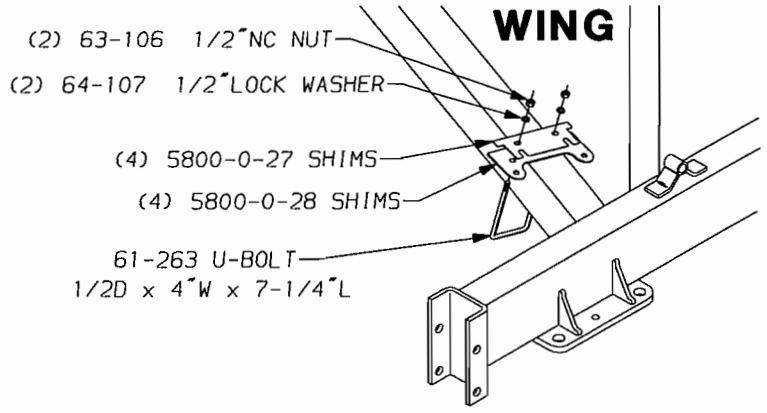


**HINGE SHIM STORAGE LOCATION**

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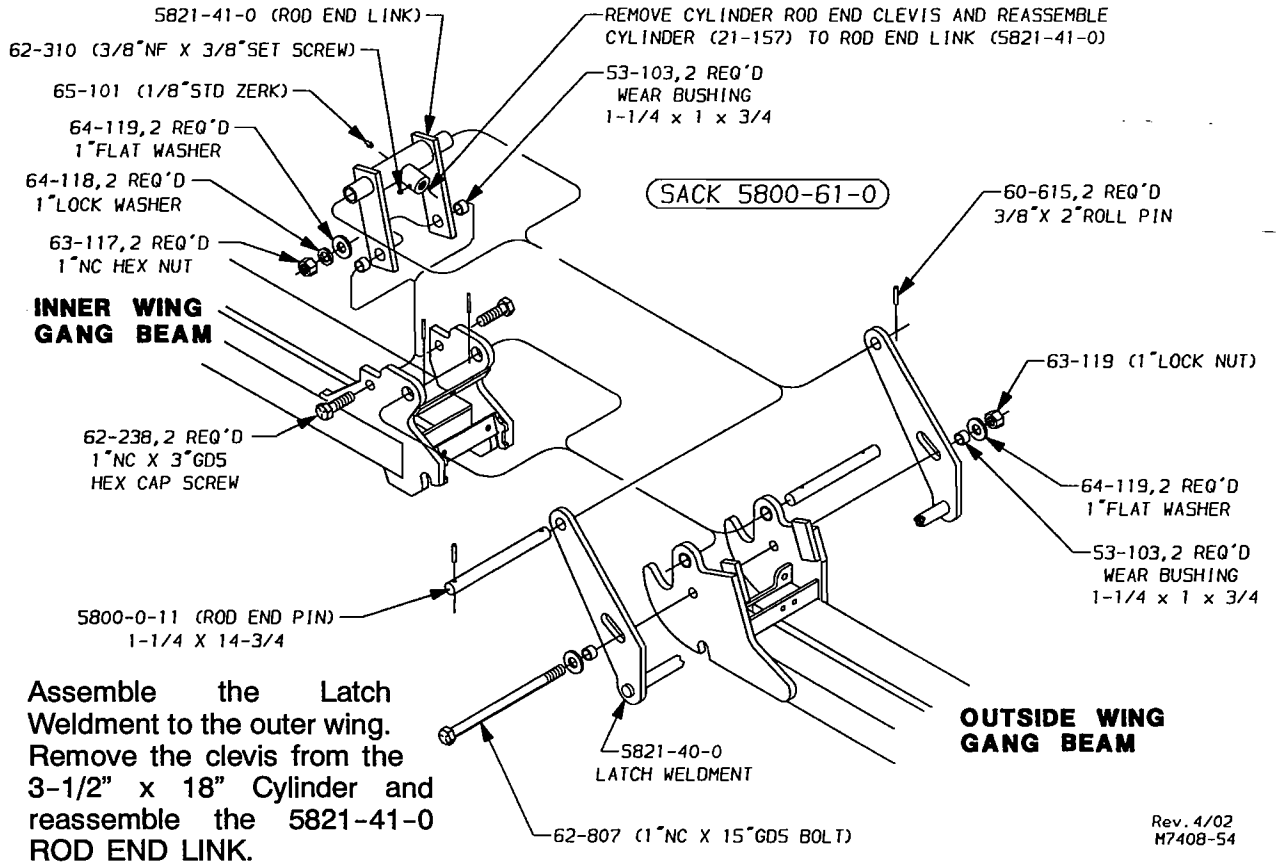
# XI. OUTER WING LATCH & CYLINDER ASSEMBLY

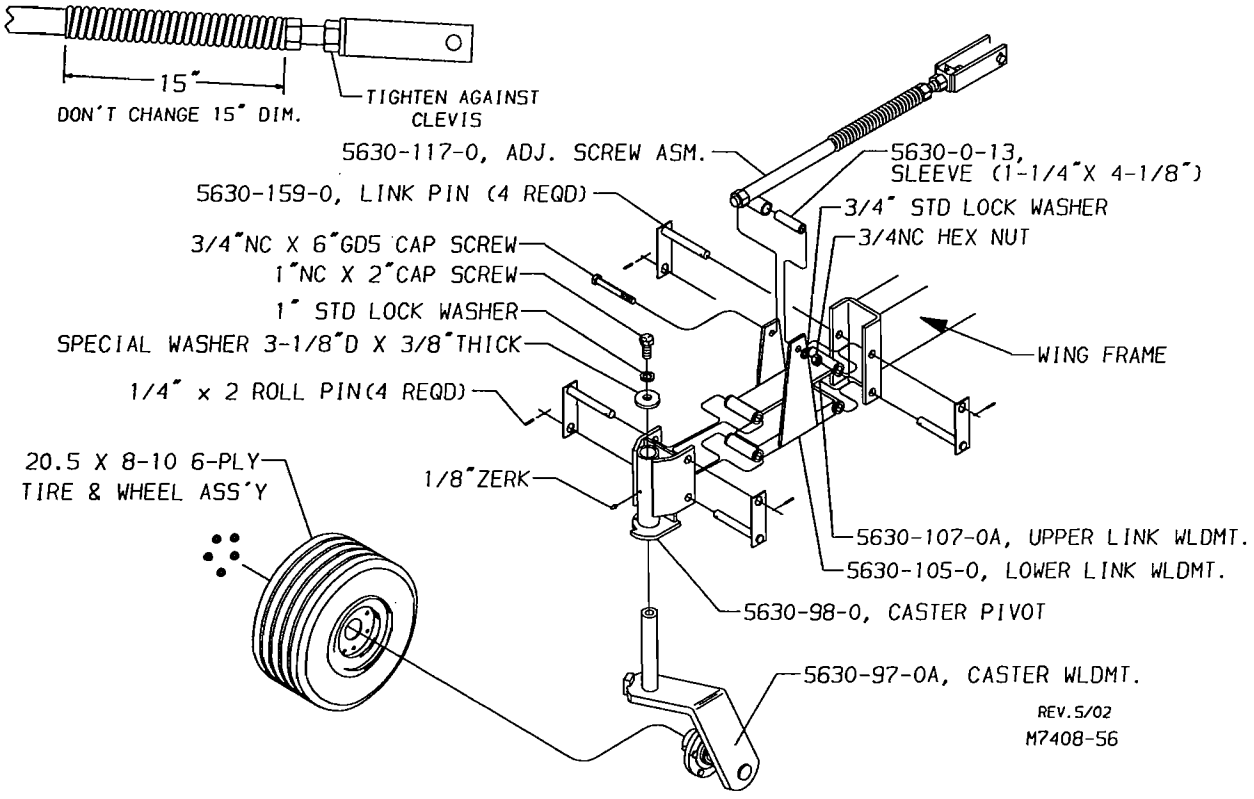



1. Assemble the Latch Weldment to the outer wing.
2. Remove the clevis from the 3-1/2" x 18" Cylinder and reassemble the 5821-41-0 ROD END LINK.
3. Pin the base end of the cylinder to the outer wing lug. Assemble the rod end link to the inner wing hinge as shown above.

# XII. FRONT GAUGE WHEEL ASSEMBLY

Assemble gauge wheels as shown below.

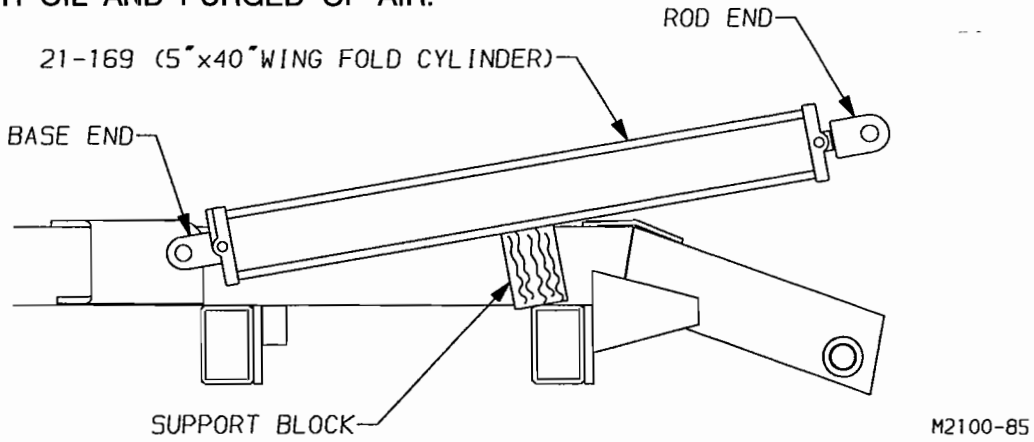
SACK 7408-67-0



# XIII. HYDRAULICS

**Caution: Use only hose that meets or exceeds 3,000 P.S.I. working pressure.**

IMPORTANT: DO NOT PIN THE ROD END OF THE 5" x 40" WING FOLD CYLINDERS UNTIL ALL HYDRAULIC ASSEMBLY IS COMPLETE AND THE SYSTEM HAS BEEN FILLED WITH OIL AND PURGED OF AIR.



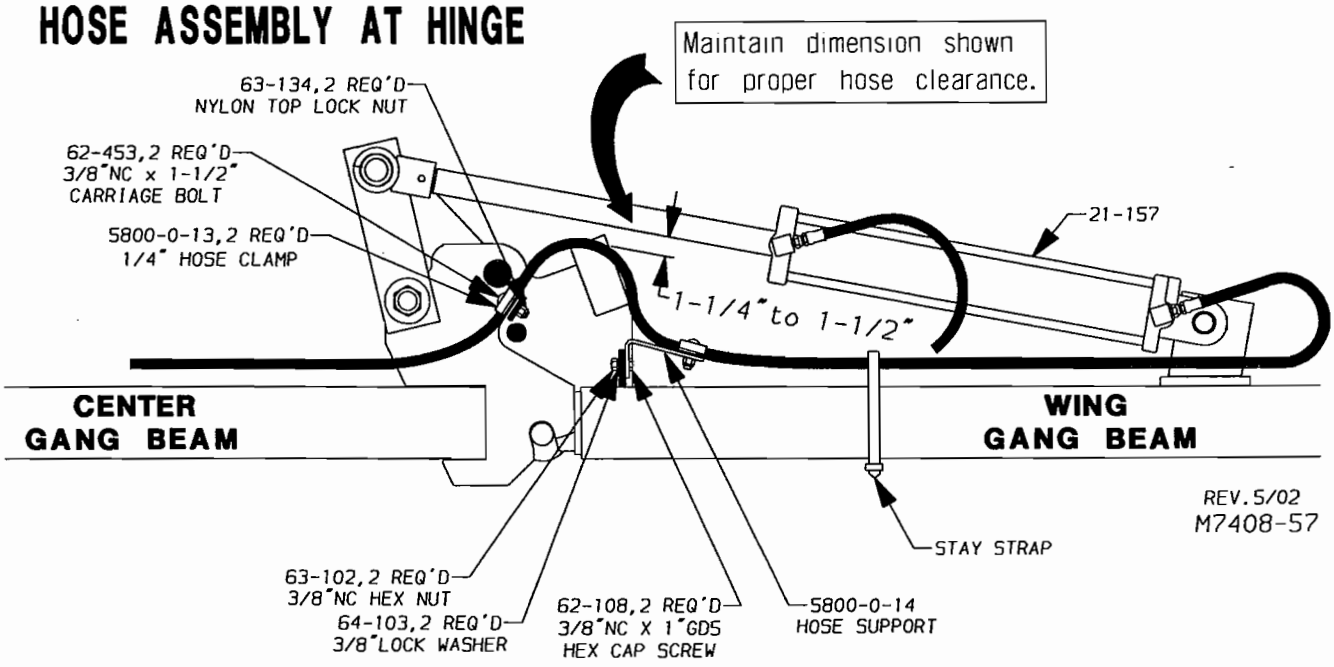

1. Pin the base end of the (2) 21-169 5" x 40" Wing Lift Cylinders to the center frame lugs, and block up the rod ends to that it will extend above the wing swing lugs.
2. PLUMBING-

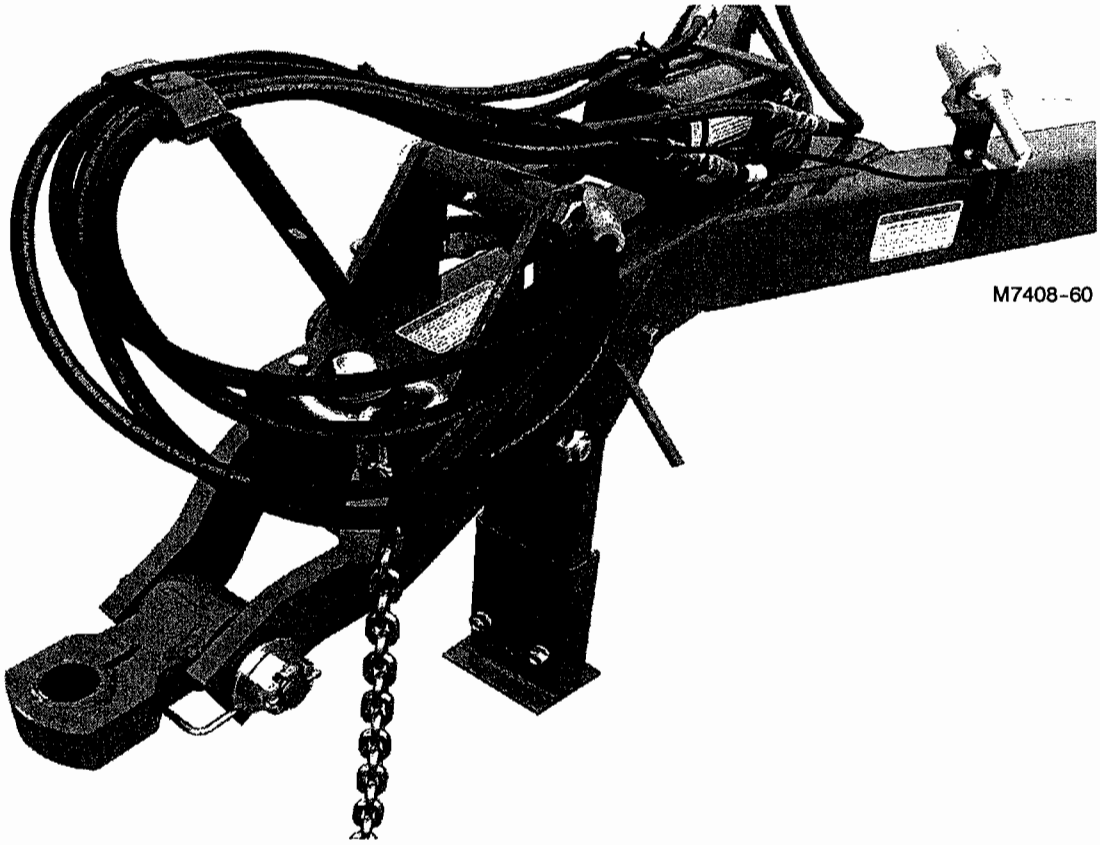
   **NOTE:** No tape or sealant is necessary for O-Ring or 37° Fittings.

   Refer to the Parts Section Hydraulic Hose Plumbing on pages P22 through P29 and the following photographs for the correct assembly of hoses, fittings, and hose clamps.

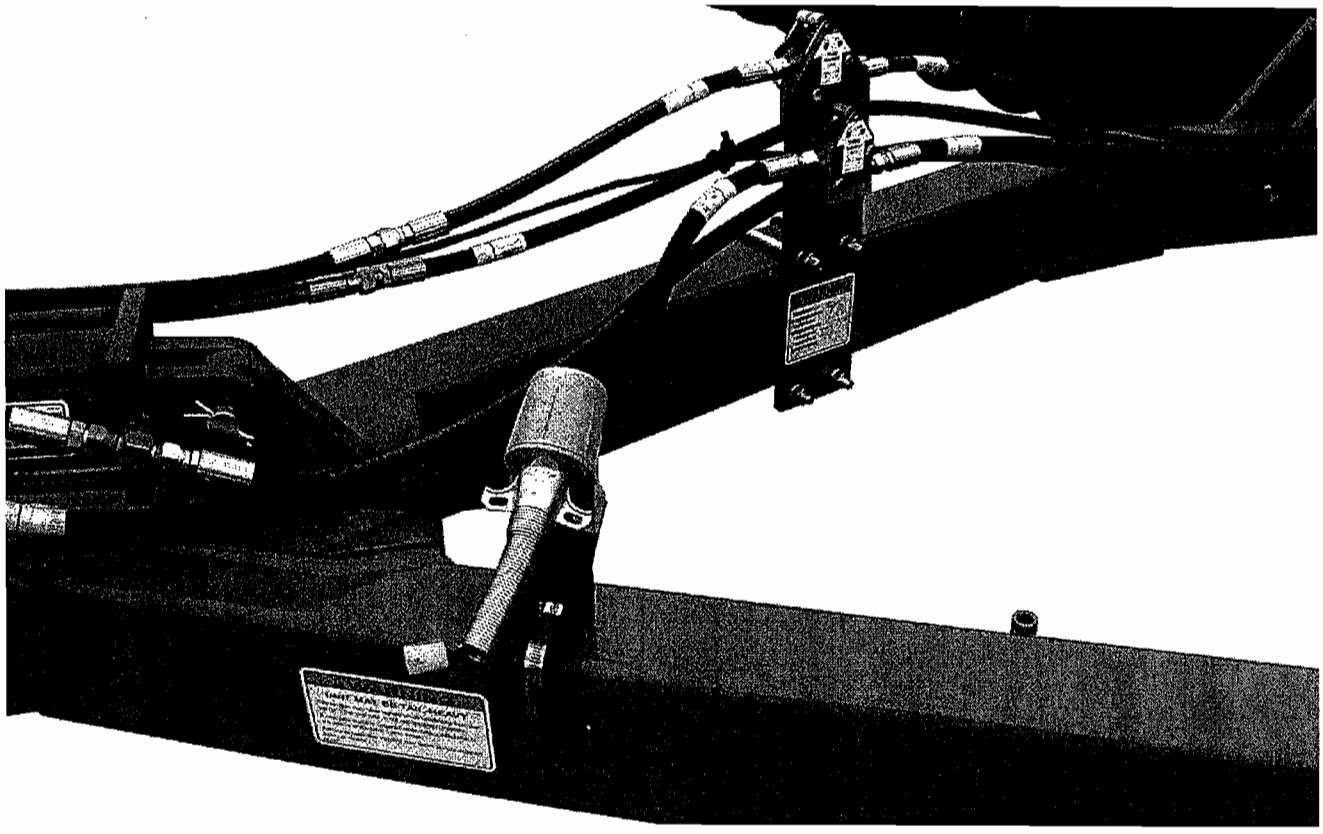
   IMPORTANT: A 90° RESTRICTOR SHOULD BE ASSEMBLED INTO ROD END PORTS OF EACH WING LIFT CYLINDER. THE RESTRICTOR CAN BE IDENTIFIED BY A TAG ATTACHED TO IT. PROPER LOCATION OF THESE FITTINGS IS IMPORTANT TO PREVENT THE IMPLEMENT WINGS FROM FREE-FALLING IF A HYDRAULIC FAILURE SHOULD OCCUR.

## HOSE ASSEMBLY AT HINGE

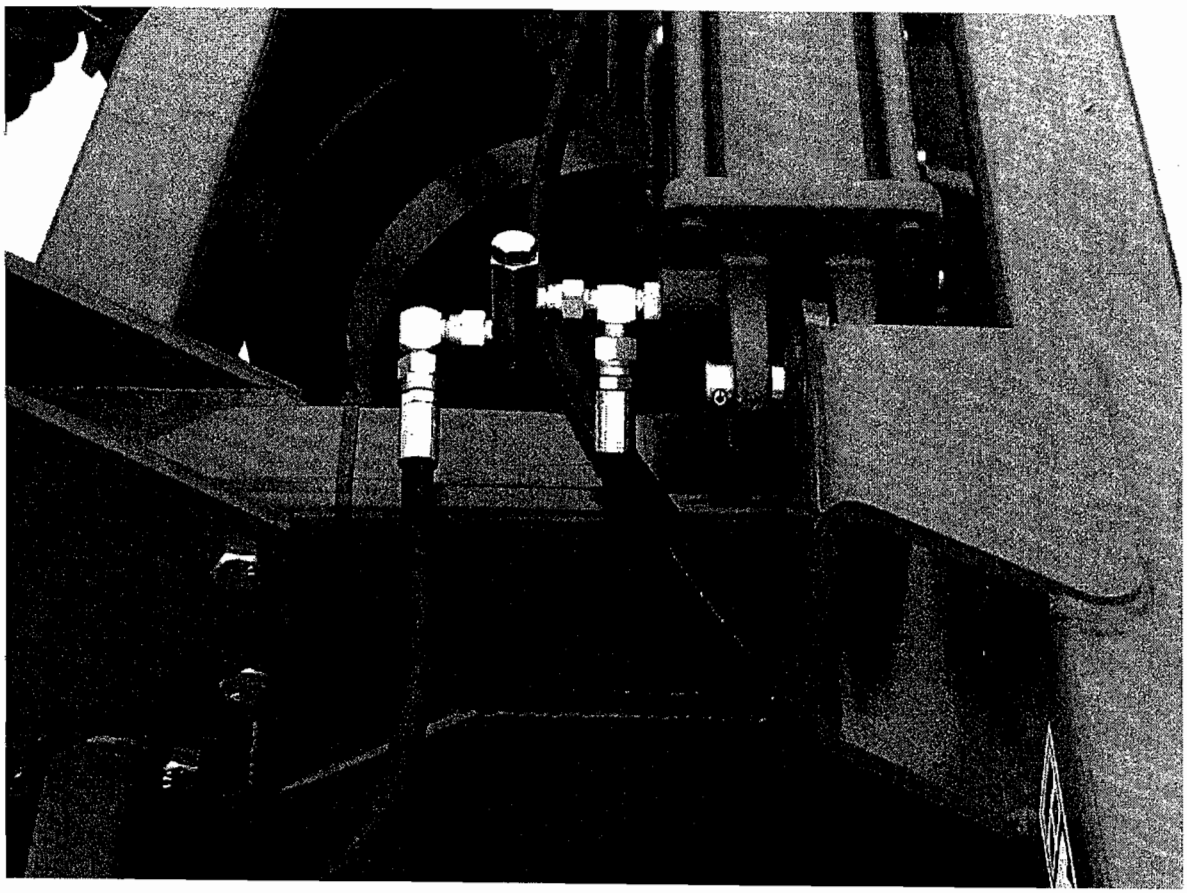




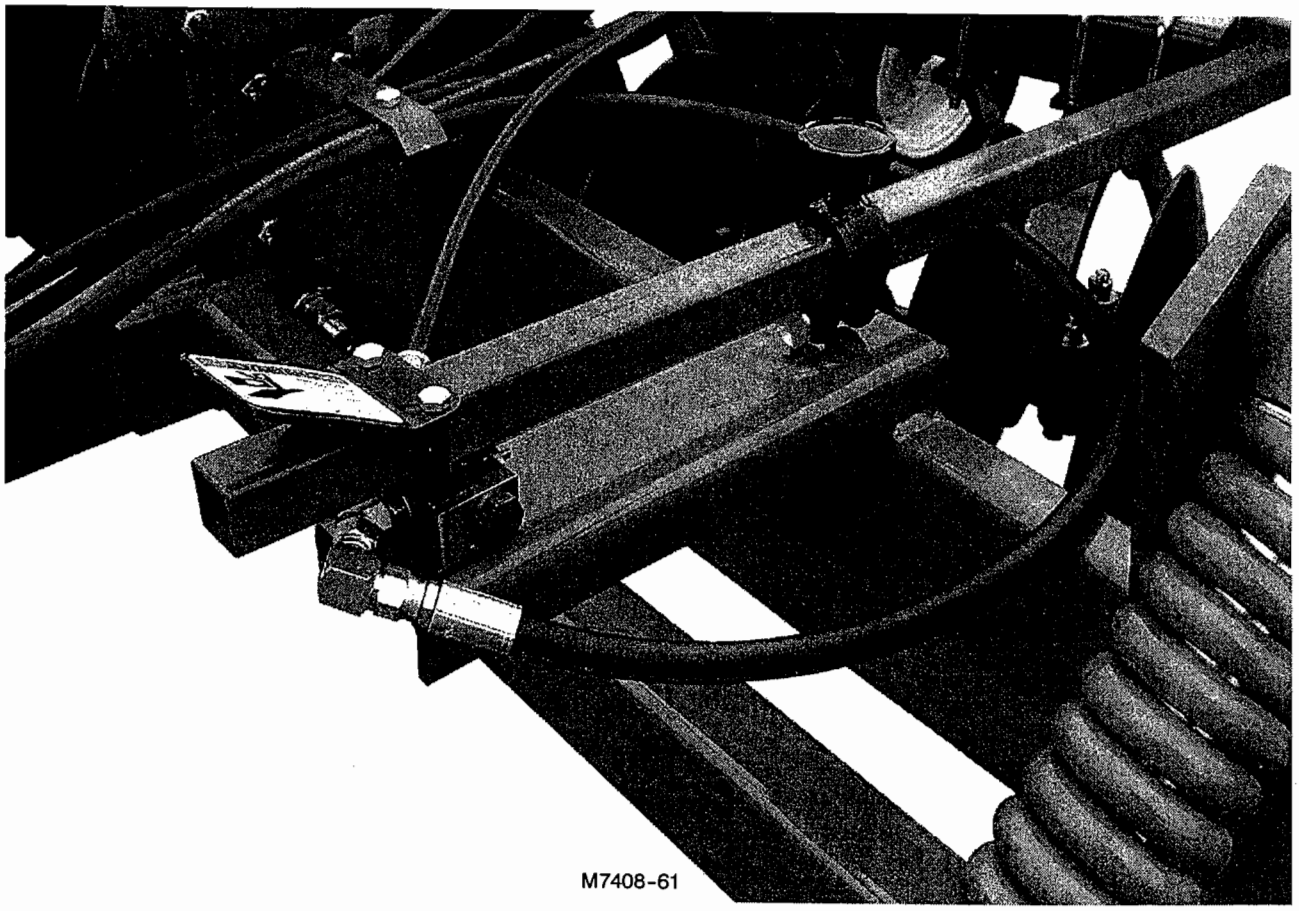
M7408-60



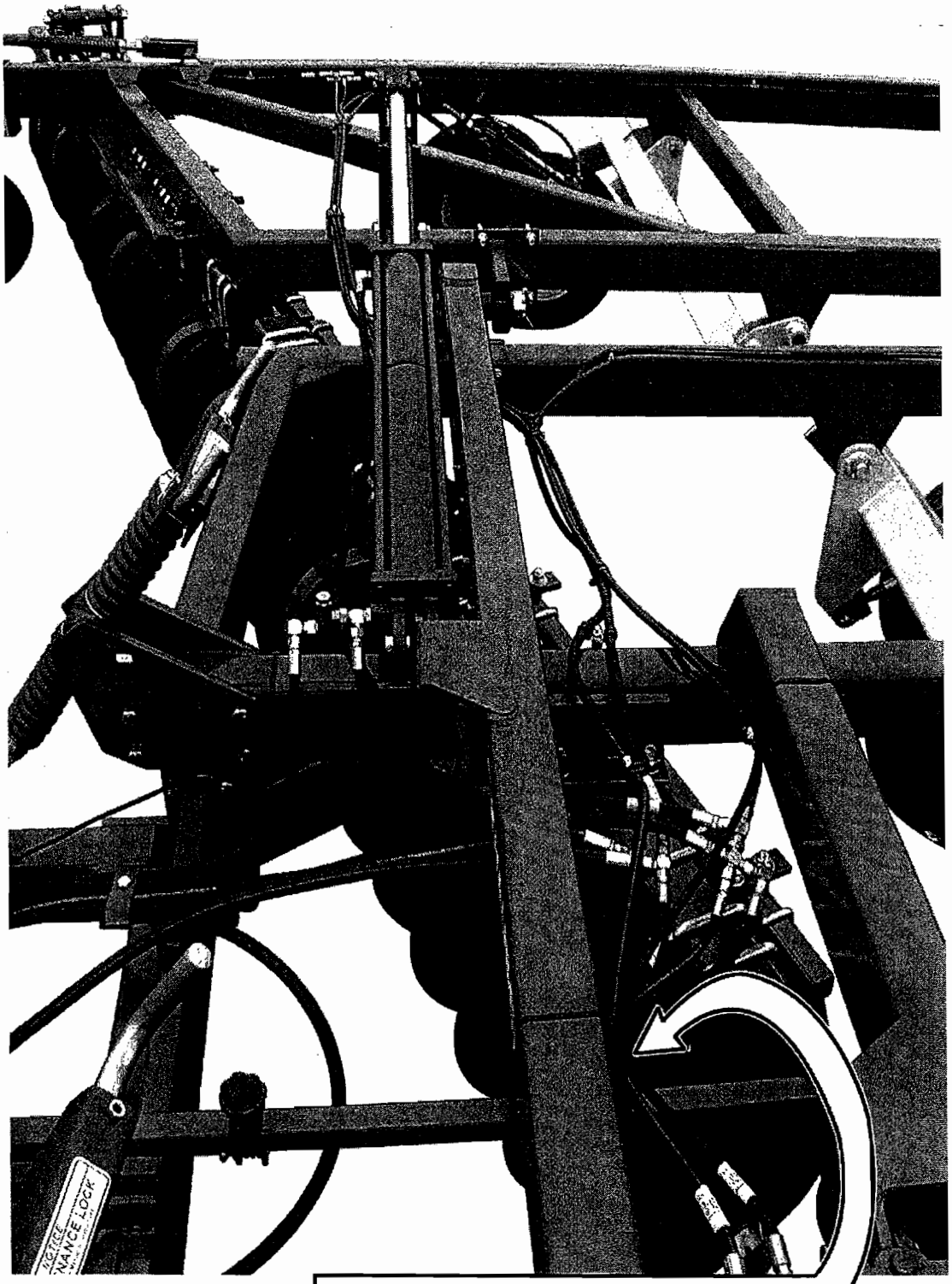
M7408-46



M7408-45



M7408-61

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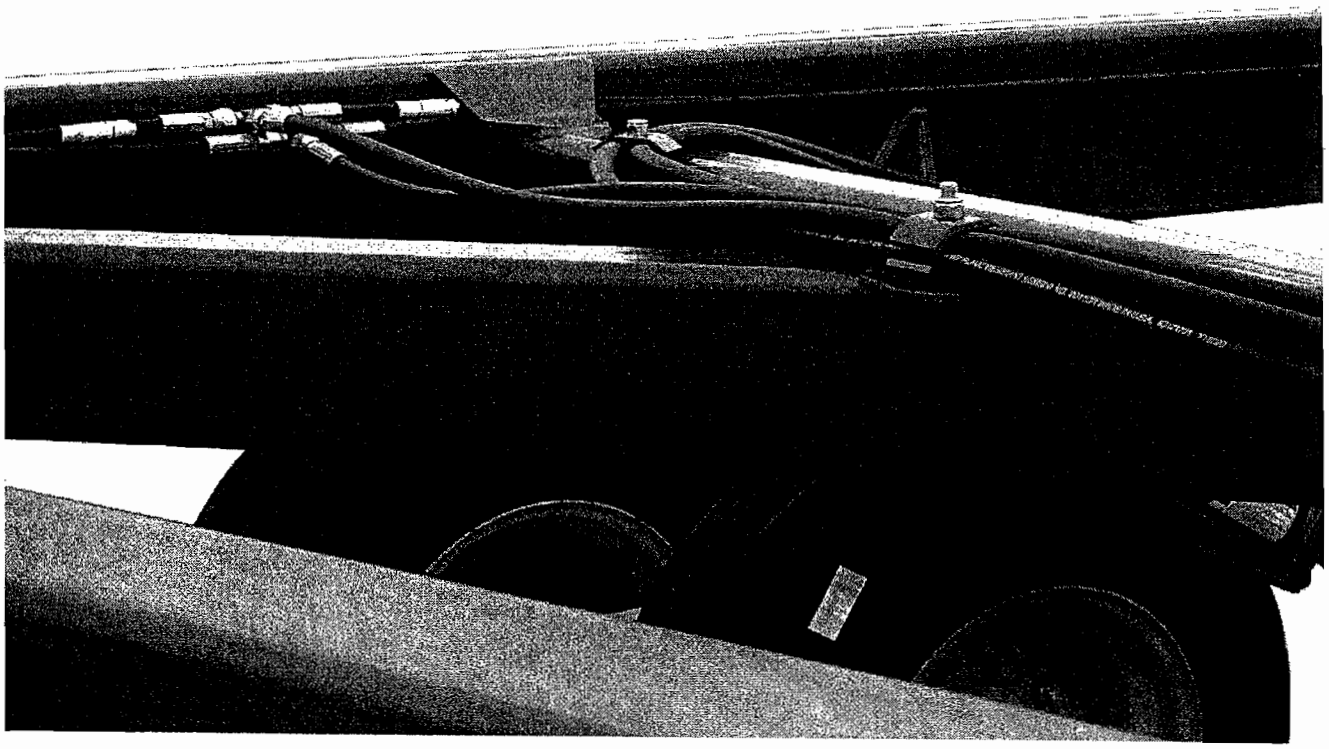
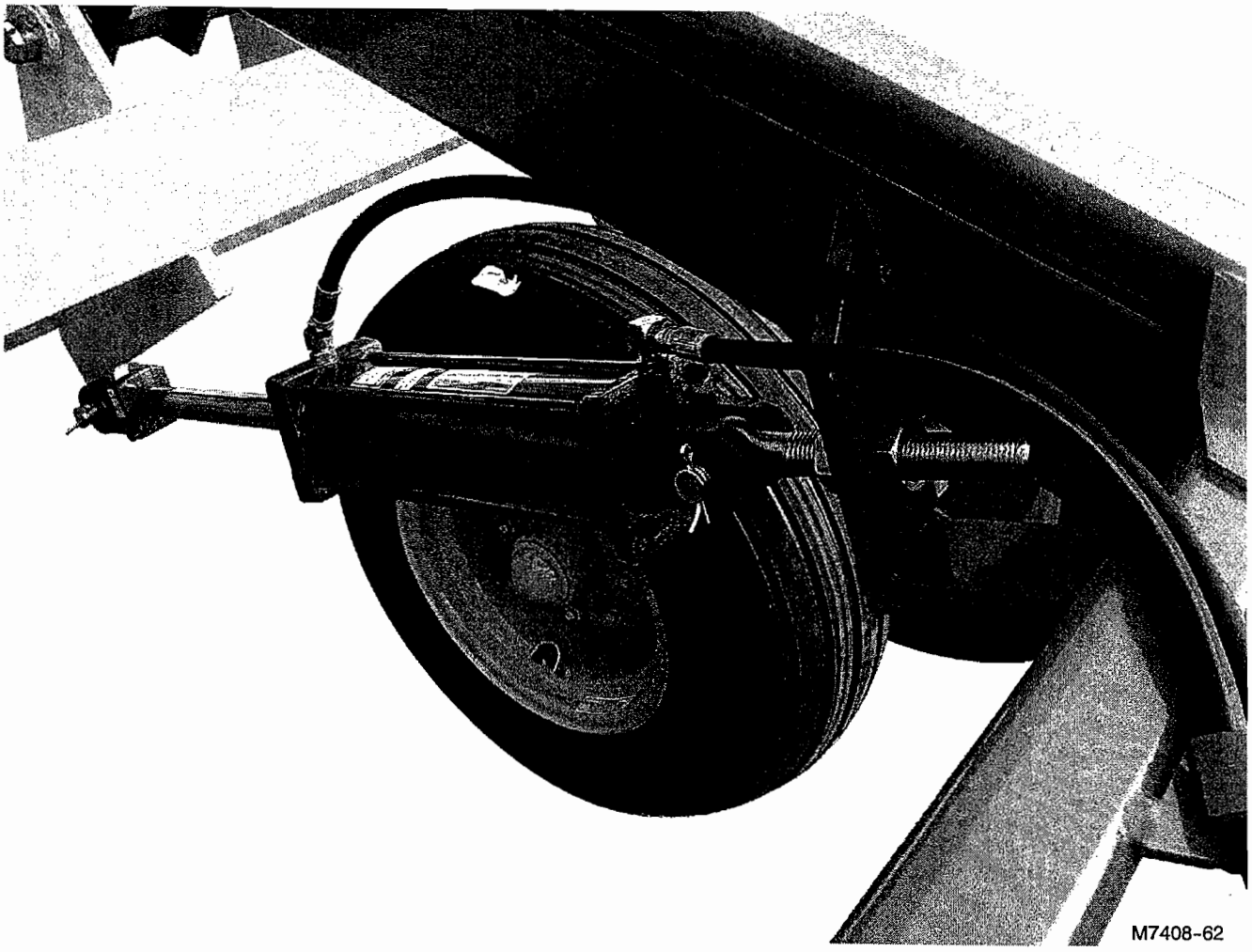
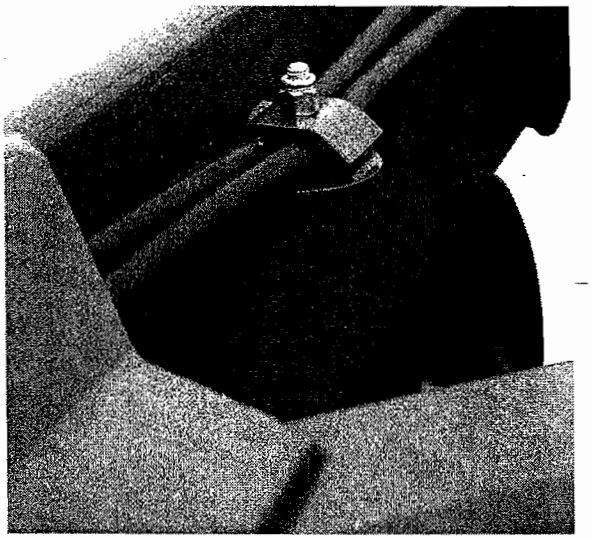


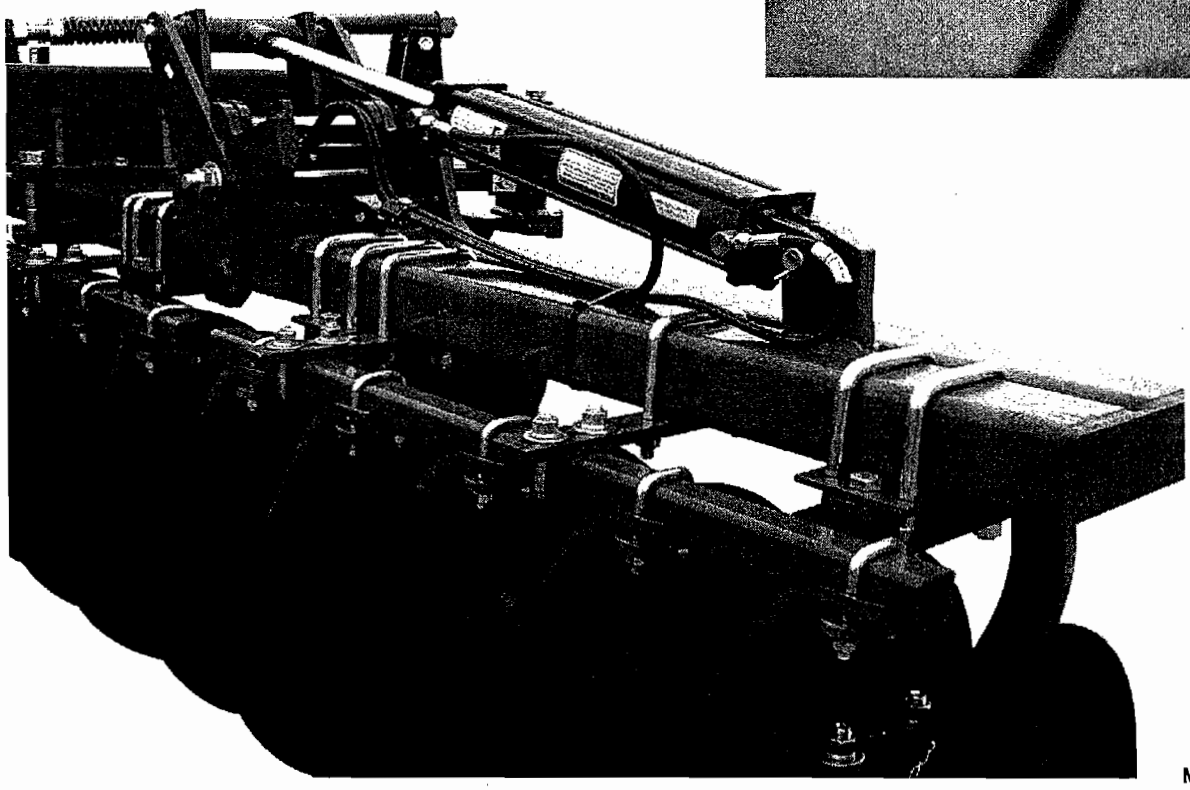
M7408-47



M7408-62



M7408-48



M7408-63

3. CHARGING THE CYLINDERS -

a) After all hose and fittings are assembled, check the blocks under the wing cylinders. Make sure that they are raised high enough to clear any attaching lugs.

b) Attach hydraulic hoses to the tractor. Check the tractor hydraulic reservoir and make sure it is full of the tractor manufacturer's recommended oil.

c) If you are sure all connections are tight and leakproof, begin filling the system by extending and retracting the cylinders.

d) The rocker shaft cylinders have rephasing grooves that will allow the oil to pass by the piston when the disc is fully raised. Open the transport lock valve and raise the unit. Hold the tractor lever in the raised position to fill each rocker shaft cylinder.

e) Cycle the hydraulic cylinders until all air is purged from the system. When cycling the rocker shaft cylinders, hold the lever for 30 to 45 seconds in the fully raised position to rephase the cylinders.

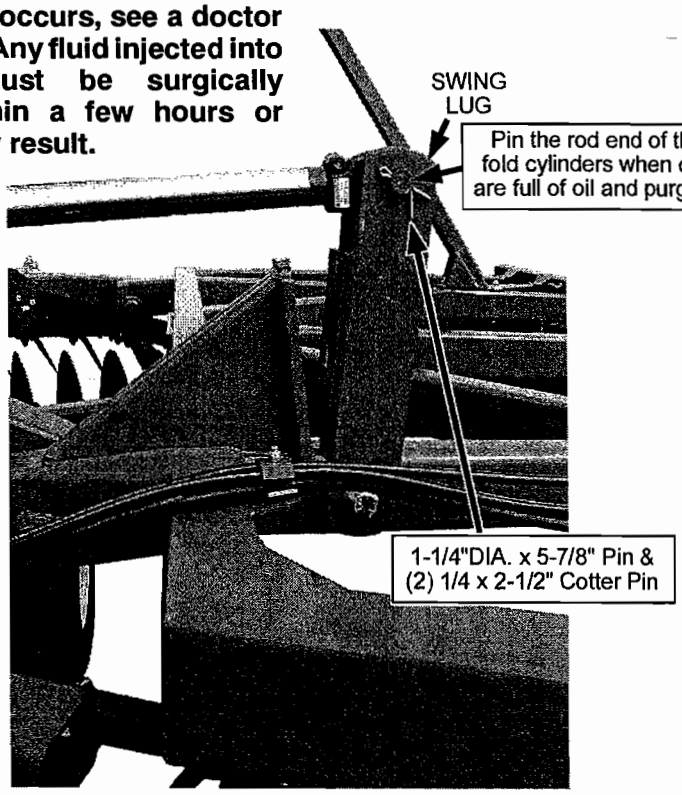
f) Continue the cycles until the cylinders respond with immediate solid actuation.

**Warning:** **Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic 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.**

g) After the cylinders are full, extend them to maximum length and remove the wood blocks.

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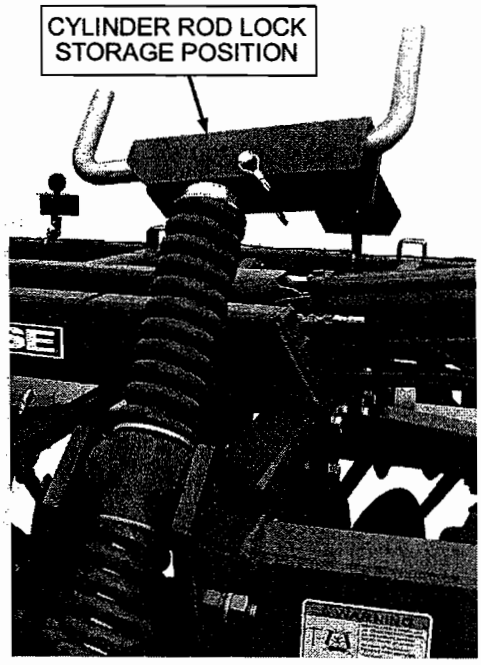
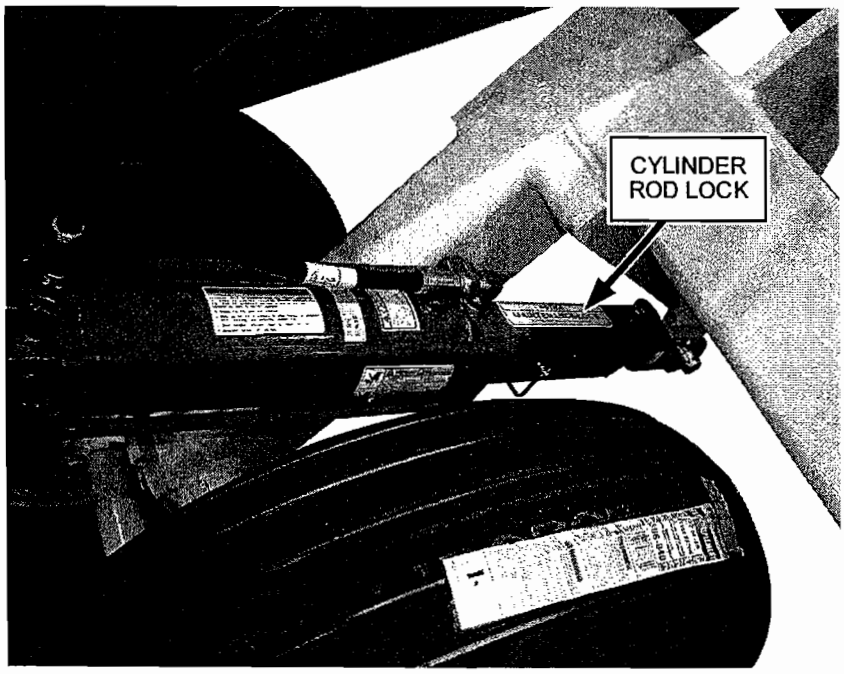
h) Fully extend the center rocker cylinders. Remove both cylinder rod locks and move them to the storage position.




M7408-35




M7408-36

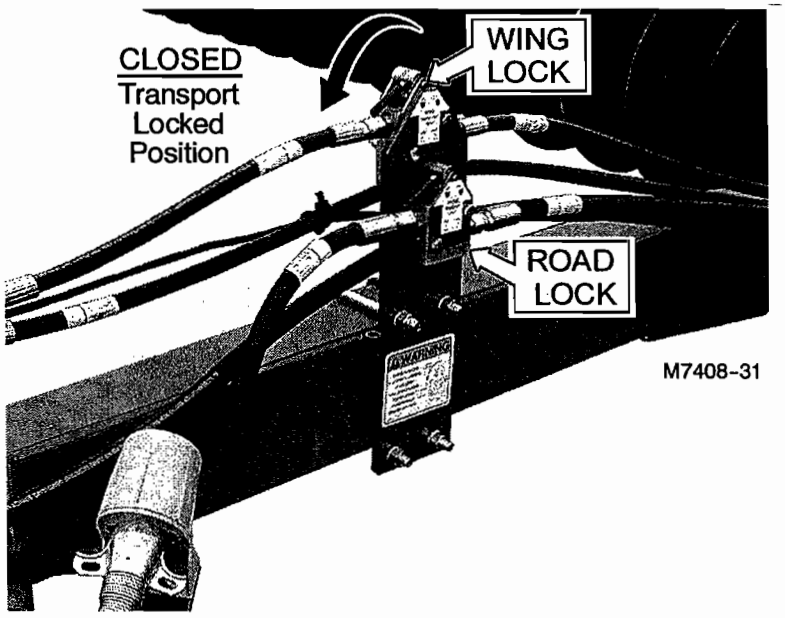
## XIV. DECAL ATTACHMENT & SMV SIGN

It is very important that all decals be placed on the harrow as shown on page P36 in the Parts Section of this manual. These decals, reflectors, safety, and operating messages are just as important as the parts that have been assembled. NOTE: Wipe frame members clean before applying decals for better adhesion. If decals or reflectors should become faded or damaged, be sure to replace them.

Attach the SMV Sign Bracket to the rear of the center frame as near the center of the implement (in transport position) as possible. See page P14 for parts and hardware used.

## XV. TRANSPORT LOCKS

The LOCK VALVES when engaged prevent the return of all oil to the tractor. Turn both handles toward the tractor as shown and raise the unit and wings fully. Verify the unit cannot be unfolded or lowered with the lock valves engaged.




## XVI. LIGHT KITS

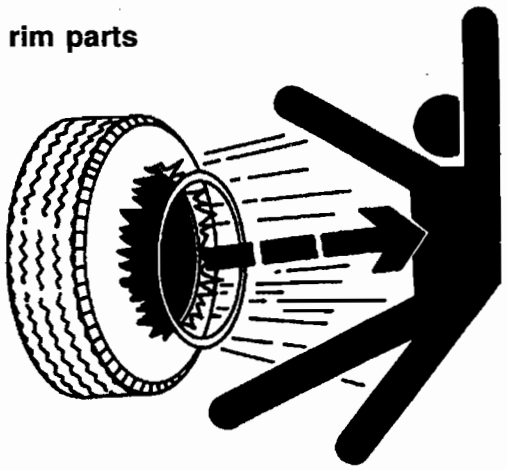
Install the Light Kit as shown on page A25 using parts shown on page P37.

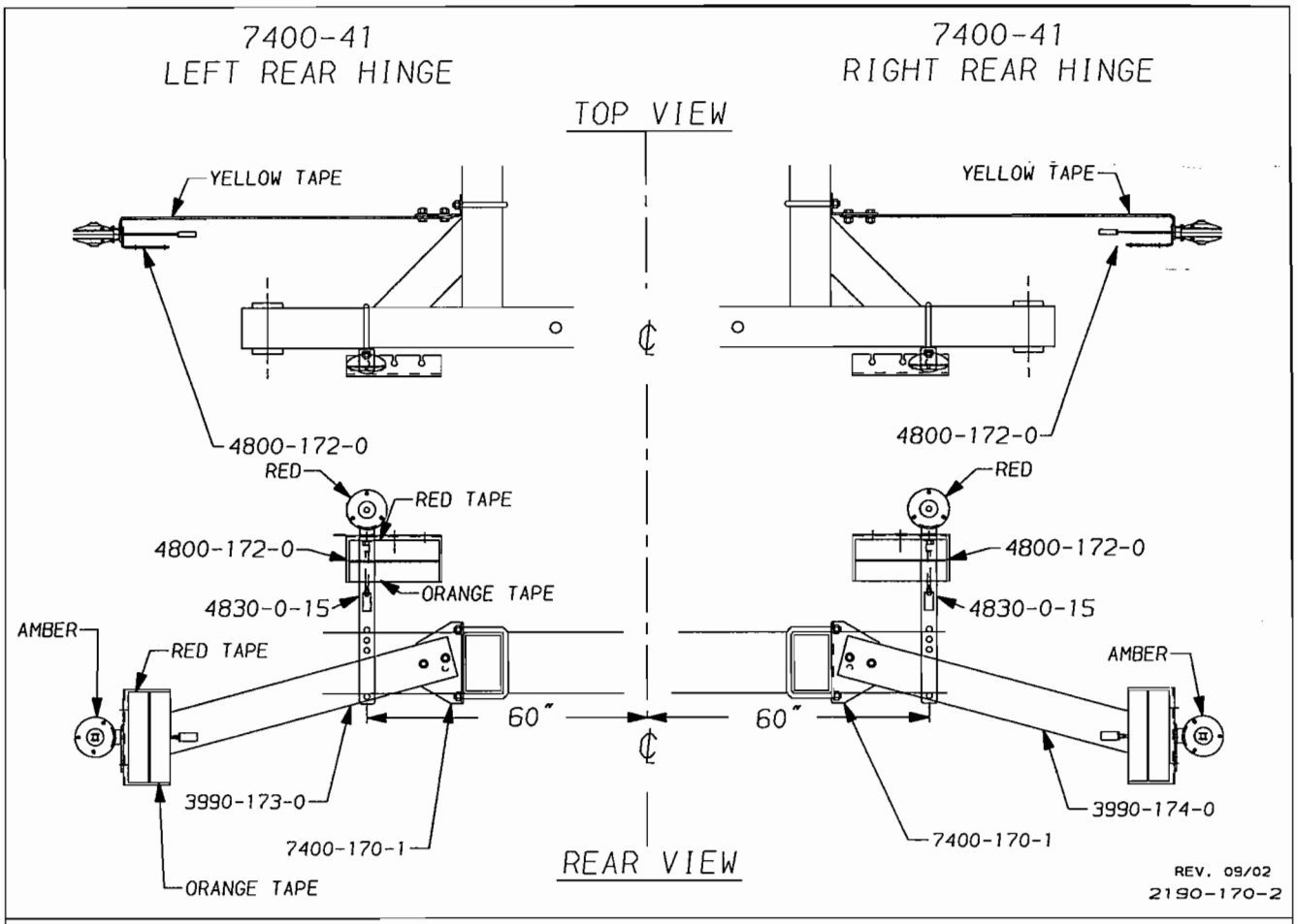
## XVII. FINAL CHECK

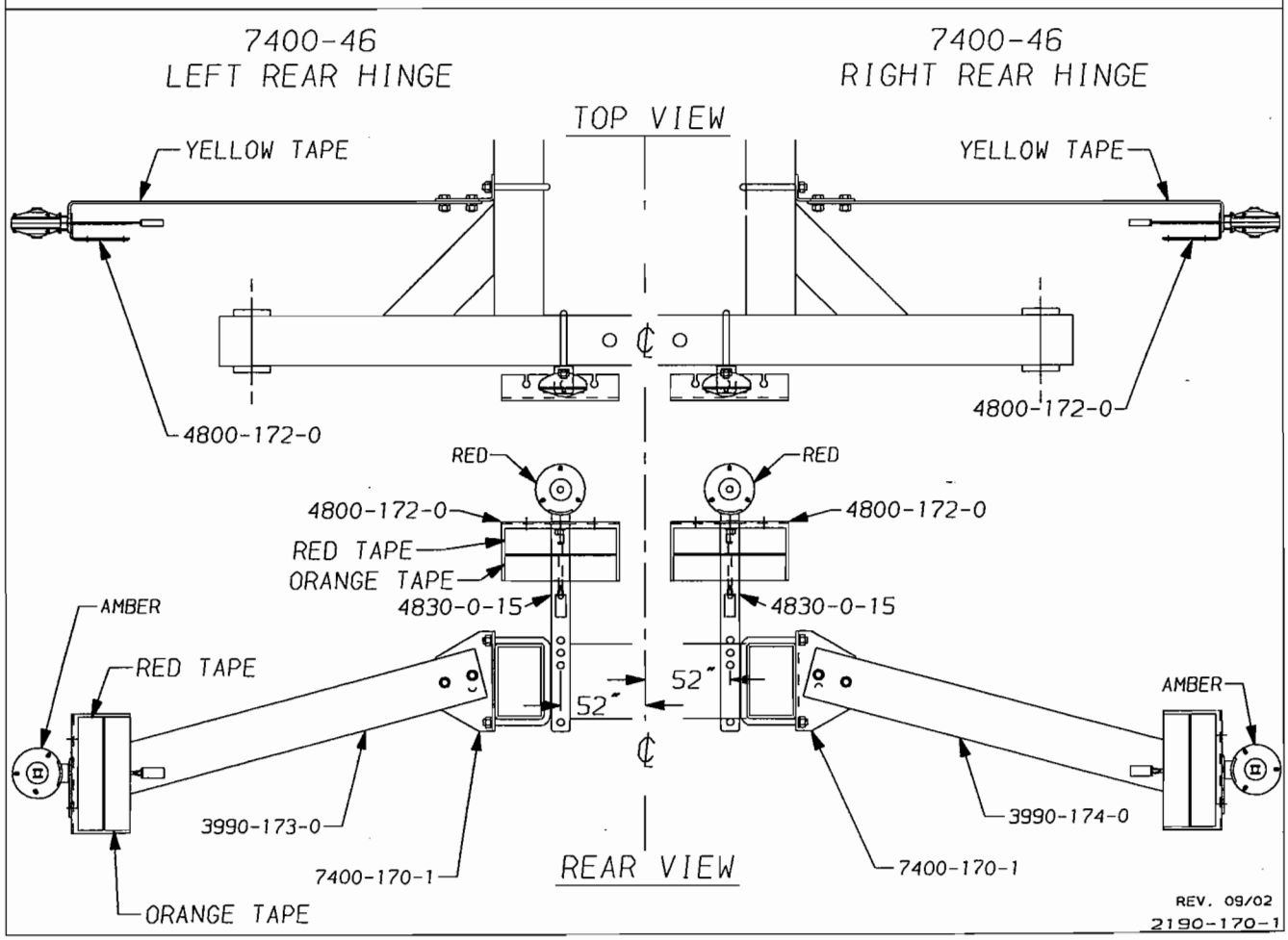
1. Check the hydraulic system for leaks.
2. Lubricate all grease points.
3. Fully extend depth control cylinders. Close transport lock valve.
4. Lower tongue jack.
5. Check tire pressure and wheel bolt torque.
6. Perform final inspection. See Dealer Predelivery Check Sheet (follows Warranty page at the front of this manual)

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

**Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Inspect tires and wheels daily. Do not operate with low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.**

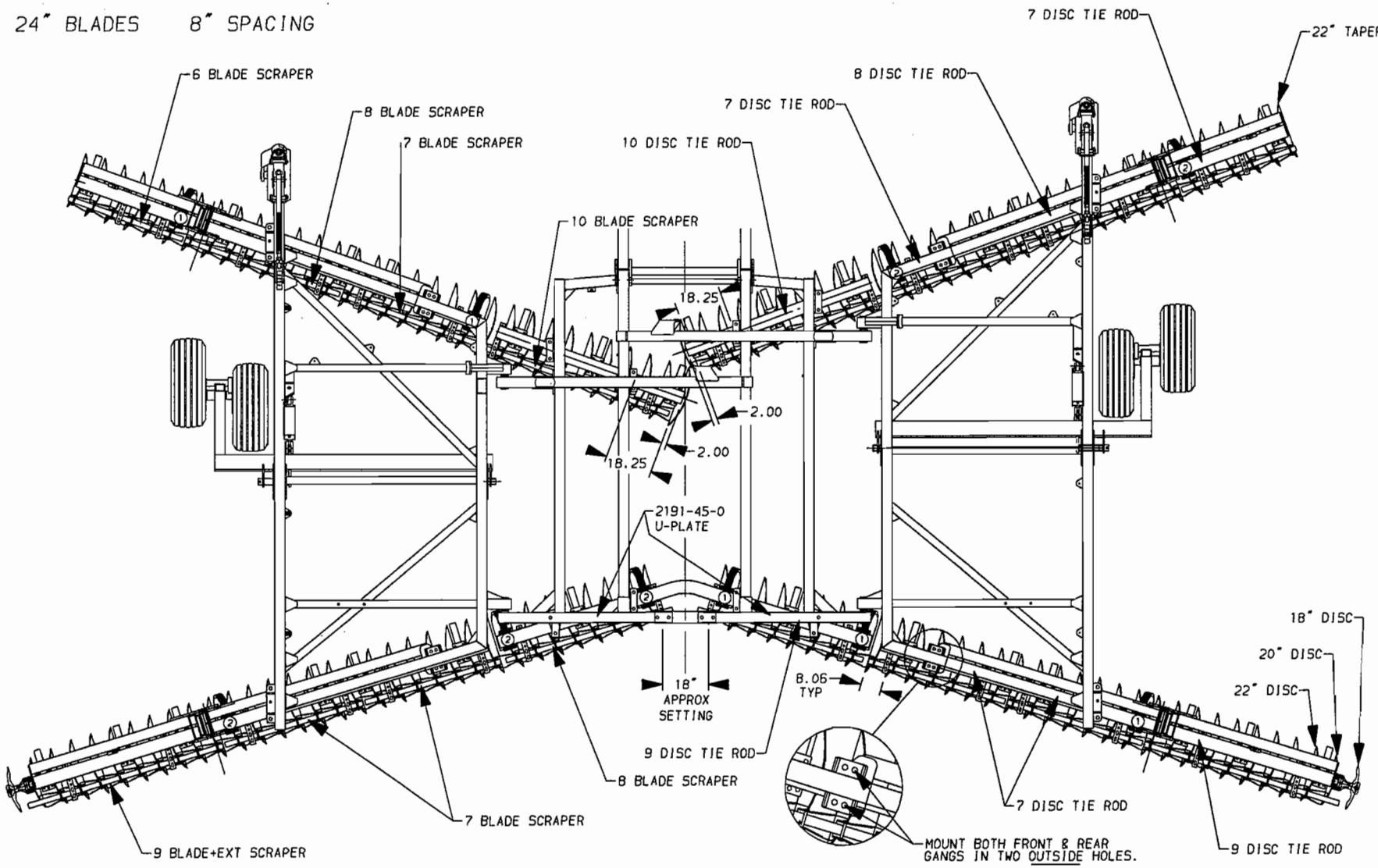



7400-41
LEFT REAR HINGE
7400-41
RIGHT REAR HINGE
TOP VIEW
YELLOW TAPE
YELLOW TAPE
4800-172-0
4800-172-0
RED
RED
RED TAPE
4800-172-0
4800-172-0
ORANGE TAPE
4830-0-15
4830-0-15
AMBER
RED TAPE
AMBER
60"
60"
3990-173-0
3990-174-0
7400-170-1
7400-170-1
ORANGE TAPE
REAR VIEW
REV. 09/02
2190-170-2


7400-46
LEFT REAR HINGE
7400-46
RIGHT REAR HINGE
TOP VIEW
YELLOW TAPE
YELLOW TAPE
4800-172-0
4800-172-0
RED
RED
4800-172-0
4800-172-0
RED TAPE
ORANGE TAPE
4830-0-15
4830-0-15
AMBER
RED TAPE
52"
52"
AMBER
3990-173-0
3990-174-0
7400-170-1
7400-170-1
ORANGE TAPE
REAR VIEW
REV. 09/02
2190-170-1

# MODELS 7400-41N & 41NR

24" BLADES 8" SPACING




1 LEFT FLEX SHANK ASSEMBLY WITH 31-198 SHANK.

2 RIGHT FLEX SHANK ASSEMBLY WITH 31-197 SHANK.

FLEX SHANK ASSEMBLY WITH 31-196 SHANK.

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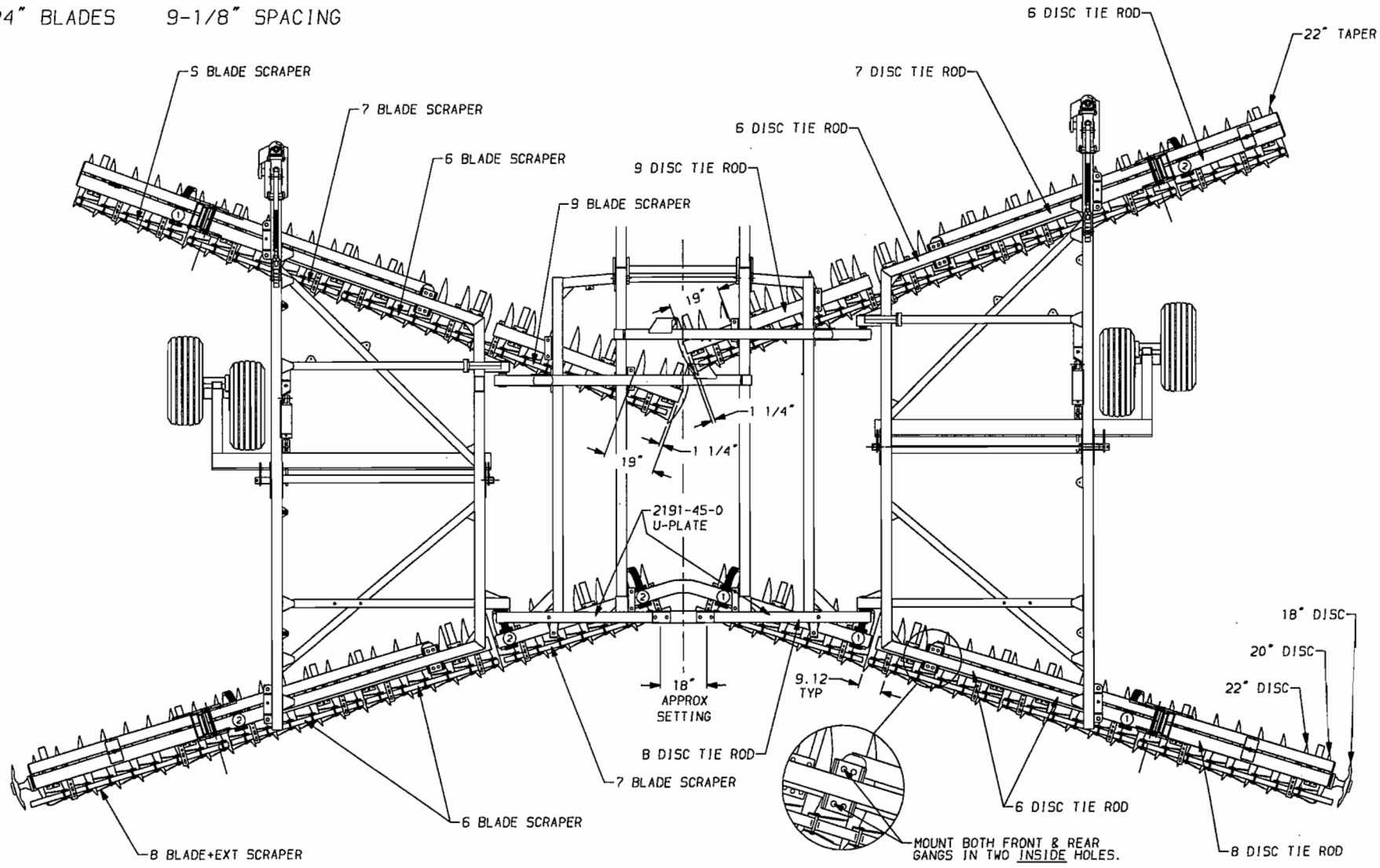
M7408-65

# MODELS 7400-41W & 41WR

24" BLADES 9-1/8" SPACING




1 LEFT FLEX SHANK ASSEMBLY WITH 31-198 SHANK.

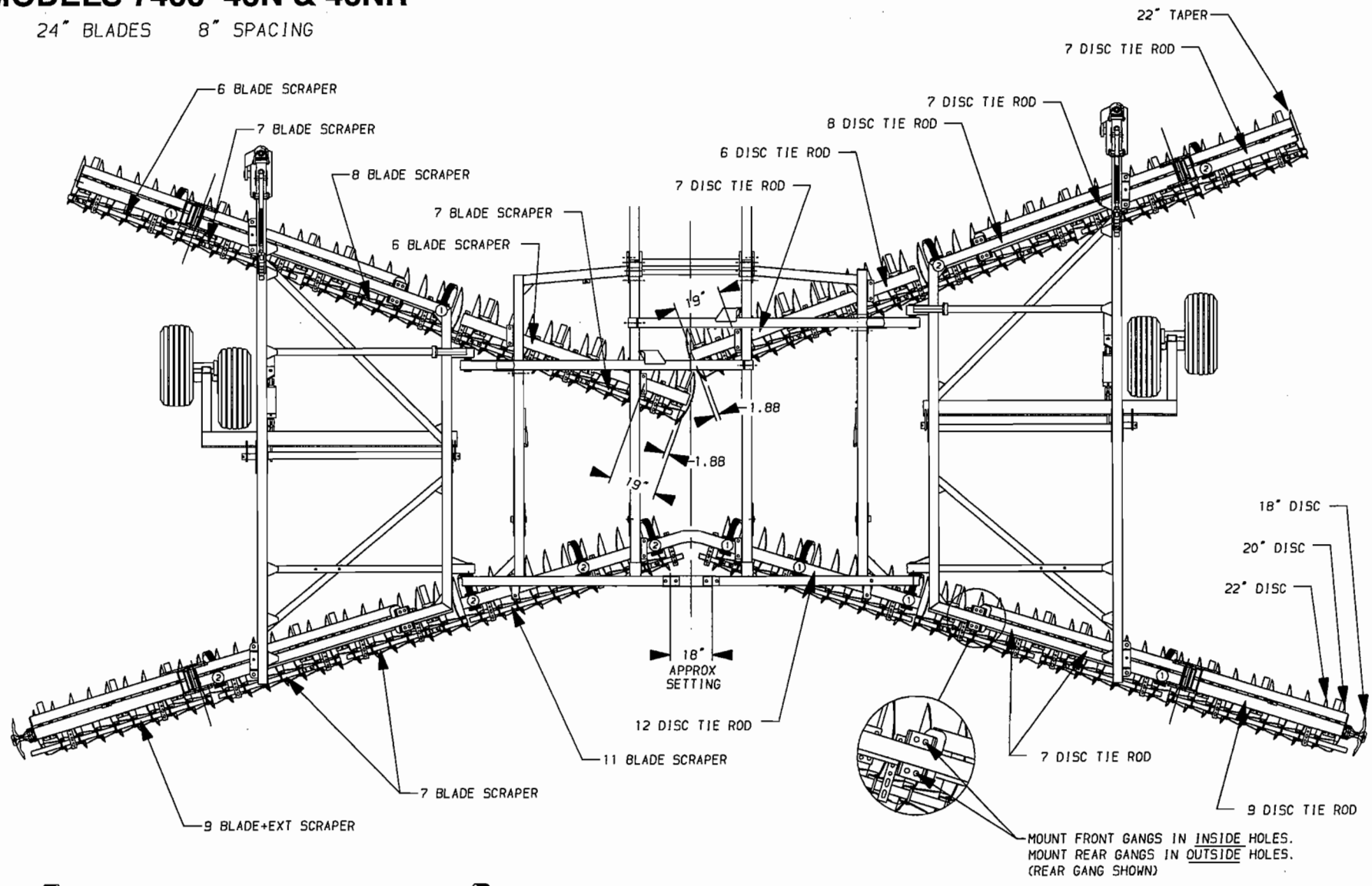
2 RIGHT FLEX SHANK ASSEMBLY WITH 31-197 SHANK.

FLEX SHANK ASSEMBLY WITH 31-196 SHANK.

Rev 5/02
M7408-14

# MODELS 7400-46N & 46NR

24" BLADES 8" SPACING




① LEFT FLEX SHANK ASSEMBLY WITH 31-198 SHANK.

② RIGHT FLEX SHANK ASSEMBLY WITH 31-197 SHANK.

FLEX SHANK ASSEMBLY WITH 31-196 SHANK.

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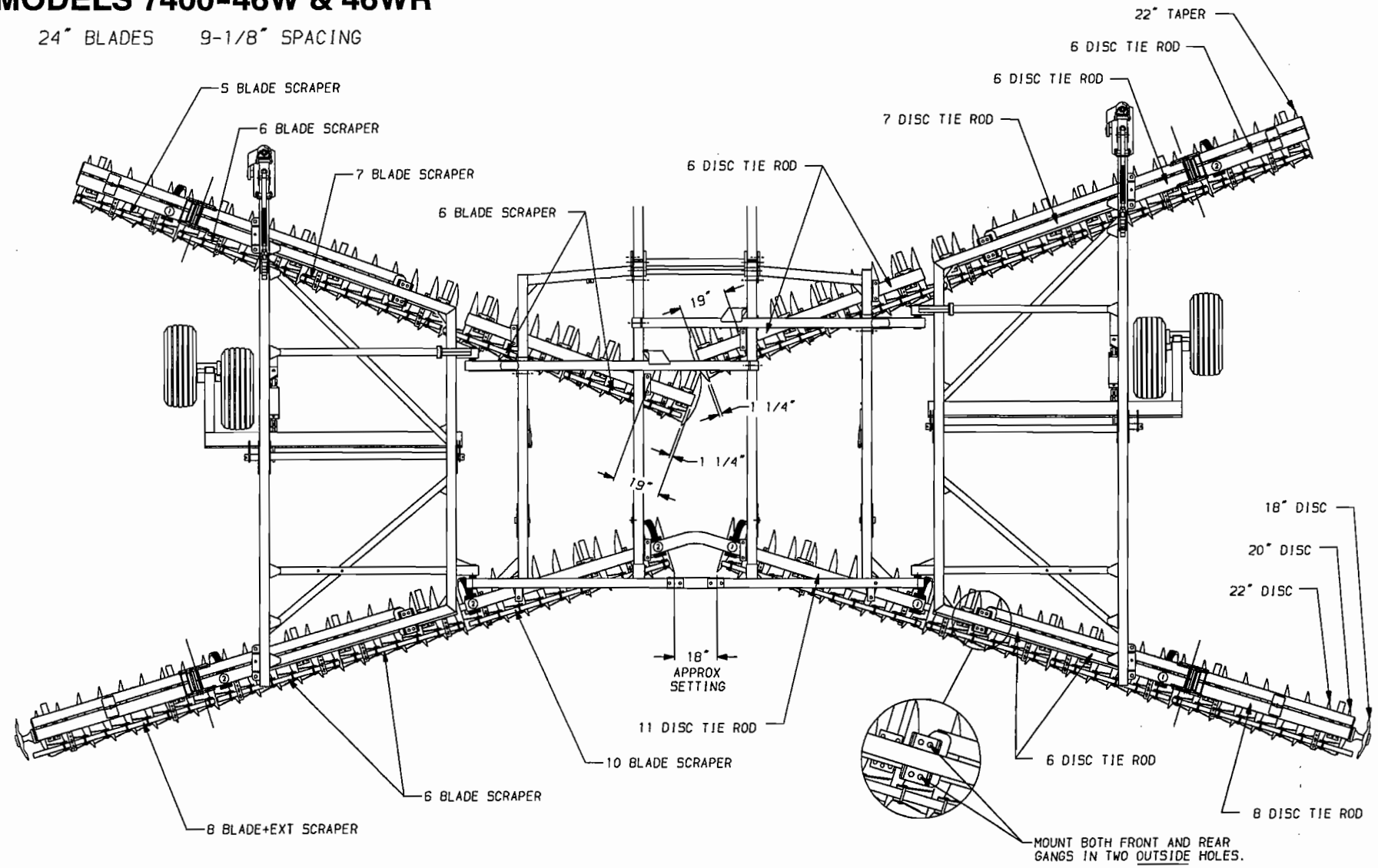
M7408-66

# MODELS 7400-46W & 46WR

24" BLADES 9-1/8" SPACING




① LEFT FLEX SHANK ASSEMBLY WITH 31-198 SHANK.

② RIGHT FLEX SHANK ASSEMBLY WITH 31-197 SHANK.

FLEX SHANK ASSEMBLY WITH 31-196 SHANK.

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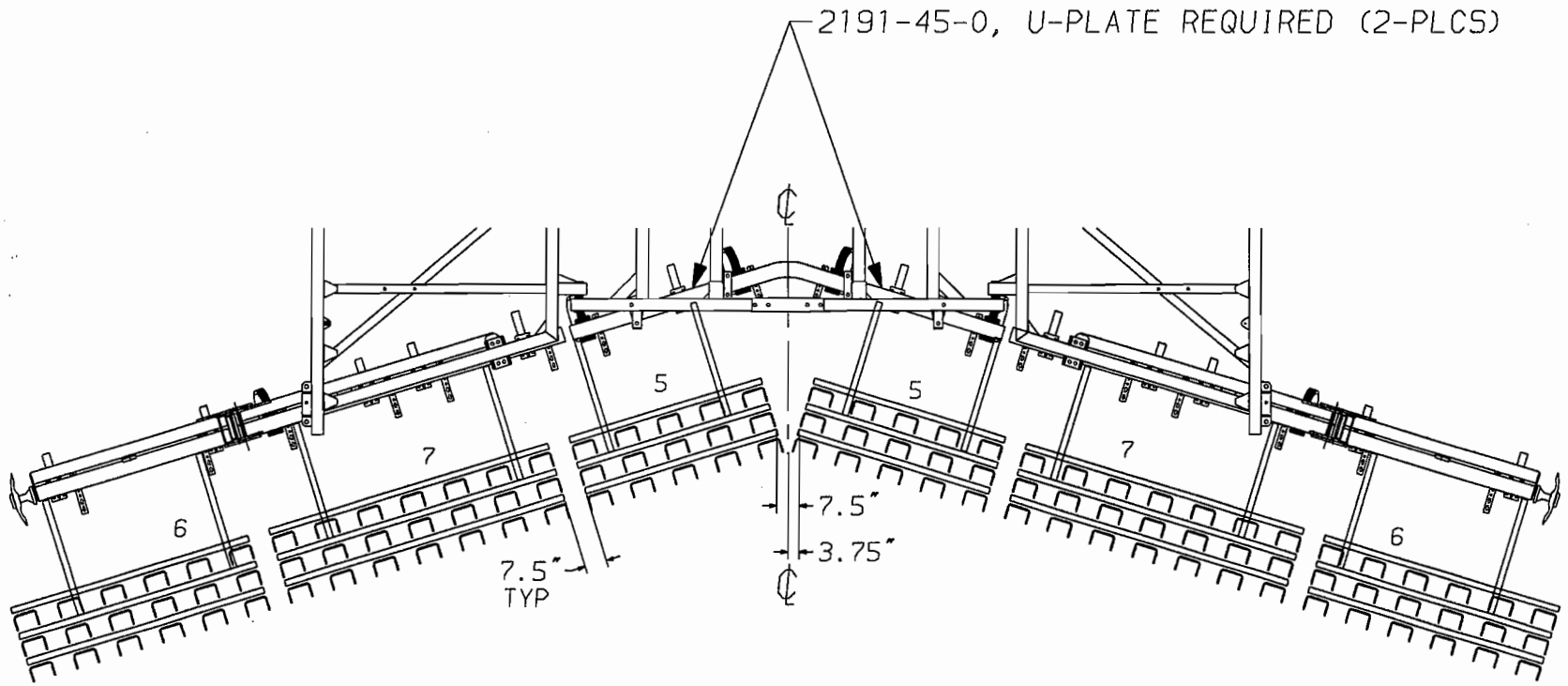
M7408-15

# MODEL 7400-41
# 3 ROW TINES

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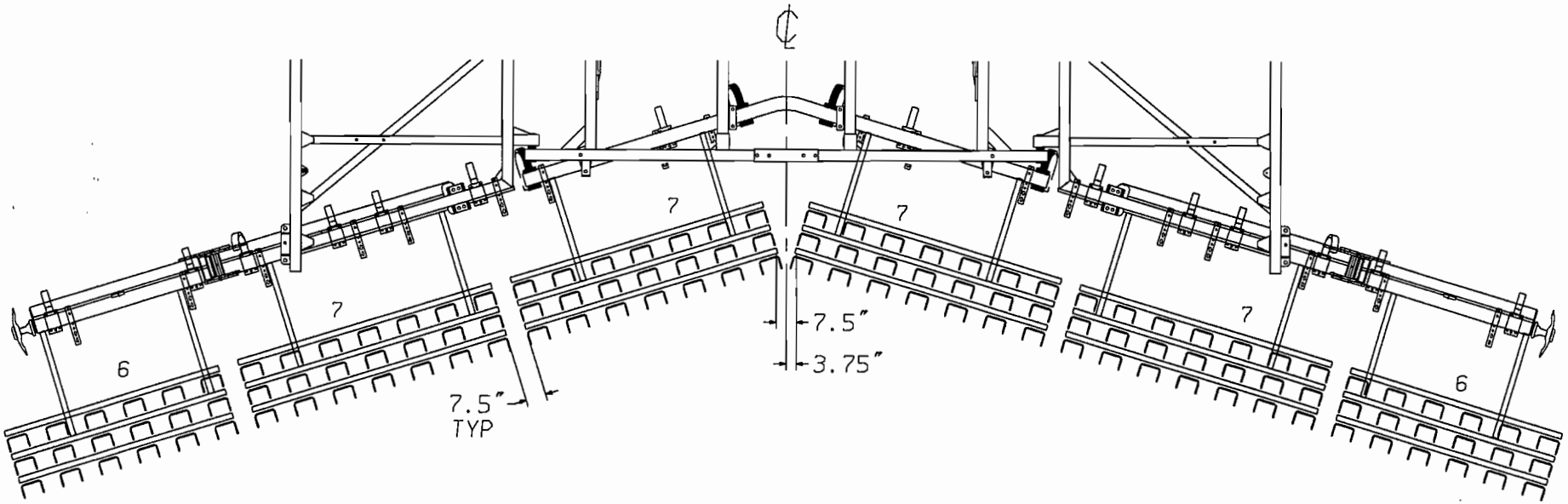
7408-58

# MODEL 7400-46
# 3 ROW TINES

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# SAFETY FIRST

Be observant and safety minded. Recognize and correct or avoid hazardous conditions before an accident can happen. Most accidents can be prevented by practicing simple fundamental safety rules.

1. Read and understand the implement and tractor owner's manuals before operating.
2. Be sure safety decals and reflectors are clean and in place.
3. Do not climb or walk on gangs or frames or tires.
4. Never position yourself under any portion of implement unless the transport lock is engaged or entire unit is lowered to the ground.
5. Stop engine before leaving the operator's position to adjust, lubricate, clean or unclog the machine.
6. Do not stand between the implement and tractor unless the tractor brakes are locked and engine is shut off.
7. Do not stand on or straddle a tongue when unhitching.
8. Always store a winged implement with the wings down.
9. Never remove locking pins until hydraulic cylinders and lines are full of oil and free of air. See Operating Instructions for proper method of removing air.
10. Never use machinery until all safety devices are in place.
11. Release all hydraulic pressure before shutdown periods.
12. Comply with Federal, State and local laws.
13. Use a Slow-Moving-Vehicle (SMV) emblem when transporting.
14. Always use a safety chain of tensile strength equal to the gross weight of the implement and attachments when roading.
15. Towing vehicle weight must exceed weight of towed implement.
16. Check wheel bolts before and during transport.
17. Always use wing locks and road locks to hold raised positions.
18. Never permit riders on implement.
19. Do not road an implement over 15 miles per hour on the best surface conditions. Reduce speed when going up or down hills and when approaching ditches.
20. Keep small children away from farm equipment.
21. Never modify an implement without permission from the Krause Engineering Department.
22. Always use authorized Krause parts.