

# ***PARMA***<sup>®</sup>

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**ROLLAHARROW**  
**Folding Model**  
**OWNER'S MANUAL/PARTS BOOK**

Manual Number 12162014-FRH

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***PARMA***  
***COMPANY***

P.O. BOX 190

PARMA, IDAHO 83660

PHONE (208) 722-5116 FAX (208) 722-6012

E-Mail: [www.parmacompany.com](http://www.parmacompany.com)



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# INTRODUCTION

This manual has been prepared to acquaint you with the operation and maintenance of your **PARMA Rollaharrow**, and to provide important safety information. We urge you to read this manual carefully. The recommendations will help assure the safe and trouble free operation of your machine.

When it comes to service, keep in mind that your dealer knows your Rollaharrow well and is interested in your complete satisfaction. Your dealer invites you to call him for your service needs both during and after the warranty period.

We thank you for choosing a PARMA product and want to assure you of our continuing interest in your satisfaction. You have purchased a very good machine and with proper care it will give you good service.



## **SAFETY: THE MOST IMPORTANT SUBJECT OF ALL...YOU CAN LIVE WITH IT!**

The Following safety instructions are provided to help assure that all operators of this equipment are trained in its operation and are familiar with the importance of safety in its use.



## **WITH OWNERSHIP COMES RESPONSIBILITY!**

Many times the owner of this equipment is not the operator. The manufacturer delivers the equipment to a dealer, who in turn sells it to an owner. The owner may then assign another person to operate it. With each of these steps it is the duty of the one in possession of the equipment to be sure that the safe operation of the machine is fully explained to the person, or persons, actually operating it. **Do not allow this machine to be used until the following safety material has been reviewed.**

**REMEMBER: One of the most common causes of injury or death around this type of equipment is because the operator does not shut the tractor engine off and remove the key when maintenance, adjustments, or cleaning of the machine is conducted!**



## **SAFETY.... YOU CAN LIVE WITH IT!**

# SAFETY PRECAUTIONS

**TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGH OUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.**



THIS SYMBOL MEANS

**-ATTENTION!**

**-BECOME ALERT!**

**- YOUR SAFETY IS INVOLVED!**

## **SIGNAL WORDS:**

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

**DANGER:** Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components for which functional purposes cannot be guarded.

**WARNING:** Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

**CAUTION:** Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices, and possible equipment damage.

If you have questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer.

**SAFETY.... YOU CAN LIVE WITH IT**



## **SAFETY... YOU CAN LIVE WITH IT**



### **EQUIPMENT SAFETY GUIDELINES**

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.

In order to provide maximum safety to the operator or other persons around this machine, various shields and covers have been installed. Keep all shields and covers in place. If shield removal becomes necessary for repairs or any other reason, replace the shield prior to use.

Replace any CAUTION, WARNING, DANGER or instruction safety decal that is not readable or is missing. Location of such decals is indicated in this manual.

Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.**

Do not paint over, remove or deface any safety signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely is in question – **DON'T TRY IT.**



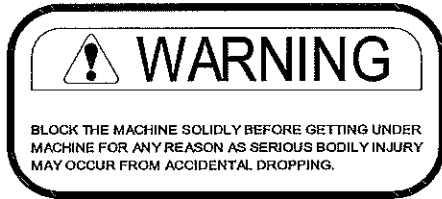
### **LIGHTING AND MARKING**

It is the responsibility of the customer to know the lighting and marking requirements of the local highway authorities and to install and maintain the equipment to provide compliance with the regulations. Add extra lights when transporting at night or during periods of limited visibility.

Lighting kits are available from your dealer or from the manufacturer.

## SAFETY SIGN LOCATIONS

The types of Safety Sign on the equipment are shown below. Their locations are shown in the parts section of this manual. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area that requires your SAFETY AWARENESS.



100404



521000



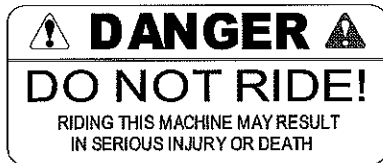
100406



100311



100408



265933



522457

**REMEMBER:** If Safety Signs have been damaged, removed, become illegible or parts replaced without decals, new decals must be applied. New decals are available from your authorized dealer or manufacturer.



### **SAFETY SIGN CARE**

- Keep safety signs clean and legible at all times
- Replace safety signs that are missing or have become illegible
- Replaced parts that displayed a safety sign should also display the current sign
- Safety signs are available from your Dealer Parts Department or the Manufacturer

#### **How to Install Safety Signs:**

- Be sure that the installation area is clean and dry
- Decide on the exact position before you remove the backing paper
- Remove the smallest portion of the split backing paper
- Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place
- Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper



### **REMEMBER!**

Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or the manufacturer.



### **BEFORE OPERATING:**

- Carefully study and understand this manual
- Do not wear loose-fitting clothing which may catch in moving parts
- Always wear protective clothing and substantial shoes
- Assure that agricultural implement tires are inflated evenly
- Inspect the unit for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual
- Be sure that there are no tools lying on or in the equipment
- Do not use the unit until you are sure that the area is clear, especially children and animals



- Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with you new equipment
- Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operation before using



#### DURING OPERATION:

- **NO PASSENGERS ALLOWED** – Do not allow any passengers to ride on the equipment at any time
- Keep hands and clothing clear of moving parts
- **DO NOT** clean, lubricate or adjust your equipment **while** it is in motion
- When halting operation, even periodically, disengage the PTO, **shut off the tractor engine and remove the ignition key**
- Be especially observant of the operating area and terrain – watch for holes, rocks or other hidden hazards.
- **DO NOT** work under raised components or attachments unless securely positioned and blocked
- Keep all bystanders, pets and livestock clear of the work area
- As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures



#### FOLLOWING OPERATION:

- Following operation, or when unhitching, stop the tractor, set the brakes, disengage the PTO, **shut off the engine and remove the ignition key**
- Store the unit in an area away from human activity
- Do not permit children to play on or around the stored unit
- Make sure all parked machines are on a hard, level surface and engage all safety devices



#### HIGHWAY AND TRANSPORT OPERATIONS:

- Adopt safe driving practices:

Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency to stop to be safe and secure. Keep speed to a minimum

Reduce speed prior to turns to avoid the risk of overturning



## Highway and Transport Operations Cont....

Always keep the tractor in gear to provide engine braking when going downhill. Do not coast

### **Do not drink and drive!**

- Comply with state and local laws governing highway safety and movement of farm machinery on public roads
- Use Transport Locks as provided
- Use approved accessory lighting flags and necessary warning devices to protect operators of other vehicles on the highway, during daylight and nighttime transport, in accordance with State Department of Transportation specifications. Various safety lights and devices are available from your Dealer
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements
- Be a safe and courteous driver. **Always** yield to oncoming traffic in all situations, including narrow bridges, intersections, etc
- Be observant of bridge load ratings. Do not cross bridges rated lower than the gross weight at which you are operating. **Always** be aware of bridge width and machine width
- Watch for obstructions overhead and to the side while transporting
- Always operate equipment in a position to provide maximum visibility at all times.



## PERFORMING MAINTENANCE:

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble
- Before working on this machine, disengage the PTO, **shut off the tractor engine and remove the ignition key**
- Be certain all moving parts have come to a complete stop before attempting to perform maintenance
- **Always** use a safety support. Never use a jack to support the machine
- Always use the proper tools or equipment for the job at hand
- Use extreme caution when making adjustments
- Follow the torque chart in this manual when tightening bolts and nuts
- **Never** use your hands to locate a hydraulic leak on attachments. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate the skin



### **Performing Maintenance Cont....**

- When disconnecting hydraulic lines, shut off hydraulic supply and relieve all hydraulic pressure
- Openings in the skin and minor cuts are susceptible to infection from hydraulic fluid. **If injured by escaping hydraulic fluid, see a doctor at once. Gangrene can result. Without immediate medical treatment, serious infection and reactions can occur**
- Replace **all shields and guards** after servicing and before moving
- After servicing, be sure all tools, parts and service equipment are removed
- Never replace hex bolts with less than grade five bolts unless otherwise specified. Refer to bolt torque chart for head identification marking
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts are recommended to restore your equipment to original specifications. The manufacturer will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use
- If equipment has been altered in any way from original design, the manufacturer does not accept any liability for injury or warranty

## **CUSTOMER AND DEALER CHECKLIST**

After the machine has been completely assembled, inspect it thoroughly to be certain it is in operating condition before delivering it to a customer. The following checklist is a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

### **PRE-DELIVERY:**

- \_\_\_ **The pressure required to lift the wings on the unit is 2750 PSI MINIMUM. Be sure the customer is aware of this and the tractor he uses is capable of this requirement.**
- \_\_\_ Check all bolts and nuts to be sure they are tight. **Double check the carrier wheel lug bolts.**
- \_\_\_ Make sure all bearing lock collars are set correctly and tightened (see pg.12).
- \_\_\_ Inspect and, if necessary, grease at all lubrication points; making sure all bearings are taking grease (see pg.11).
- \_\_\_ Check all moving parts for smooth operation.
- \_\_\_ Check to see that all hydraulic fittings and cylinders are tight and free of leaks (see pg.12).

### **DELIVERY:**

- \_\_\_ Complete the Delivery and Warranty Registration Forms, listing the serial number of the machine.
- \_\_\_ **Remove all transport locks on cylinders.**

### **\_\_\_ Delivery Check List Cont....**

- \_\_\_ Have the dealer and customer sign the form. Explain warranty policy on the Warranty Registration Form. Return the factory copy of the form to Parma Company.
- \_\_\_ **Be sure the customer is aware of the hydraulic pressure required to lift the wings and that the tractor he uses is capable of this requirement. The wing lift requires 2750 Hydraulic PSI.**
- \_\_\_ Show the customer how to operate the Rollaharrow.
- \_\_\_ Explain adjustments and the importance of proper lubrication (see pg.11).
- \_\_\_ Give the operator's manual to the customer and ask him to familiarize himself with all sections of it.
- \_\_\_ Explain to the customer that when the equipment is transported on a road or highway at night or during the day, accessory lights and devices should be used for adequate warning to operators of other vehicles per local regulations.
- \_\_\_ Explain that the wing fold cylinders must be able to float when in the field(see page 17). Having the wings lift remotes disconnected or the remotes locked in the cab, will damage unit.

### **BEFORE EACH SEASON:**

- \_\_\_ Check all cast rings for breakage.
- \_\_\_ Check s-tine chisel points for normal wear.
- \_\_\_ Check all adjustable components for correct setting.
- \_\_\_ Perform complete lubrication of machine (see pg.11).
- \_\_\_ With equipment operating, observe operation of moving parts. Watch for faulty operation, overheated bearings, and unusual sounds.
- \_\_\_ Check for correct adjustment of 1 1/2" wing stop bolts. The lift cylinder shouldn't hold the weight of the wings or damage to the cylinder may occur.
- \_\_\_ Read safety precautions.
- \_\_\_ Read operating instructions.
- \_\_\_ Perform daily checklist.

### **DAILY CHECKLIST:**

- \_\_\_ Remove all debris from s-tines, leveling bar, and rollers.
- \_\_\_ Lubricate (as instructed) all lubrication points (see pg.11).
- \_\_\_ Check for loose or missing bolts or parts (**especially on S-Tines**).
- \_\_\_ Check for undue or excessive wear of parts.

## WARRANTY POLICY

PARMA COMPANY warrants to each purchaser from an authorized dealer of new equipment manufactured by PARMA COMPANY, that such equipment is, at the time of delivery to such purchaser, free from defects in material and workmanship under normal use, if serviced in accordance with the recommendations of the Operator's Manual. All PARMA COMPANY'S *harvesting equipment products* are warranted for 120 days from the first day of use or 800 acres, whichever occurs first. All PARMA COMPANY *soil preparation* products are warranted for 120 days from first day of use or 1600 acres, whichever occurs first. All PARMA COMPANY *water and waste pump products* are warranted for one year from date of purchase. Warranty on defective parts purchased by PARMA COMPANY or produced by other manufacturers for PARMA COMPANY may be allowed only after the approval of the vendor or manufacturer.

PARMA COMPANY'S obligation under this warranty is limited to repairing, or at it's option, replacing any part, that in PARMA COMPANY'S judgment, proved defective. Under the terms of the warranty, PARMA COMPANY assumes no responsibility for labor or travel costs involved in removal of defective parts, of installation of new parts, or of any shop supplies or service charges.

All warranty claims are to be initiated through the authorized PARMA COMPANY dealer and **must be submitted within 30 days of the date of failure**. PARMA COMPANY may ask for defective parts to be returned to the factory; therefore, hold all warranty claim parts until advised if the parts are needed by your dealer.

To make the warranty effective, the owner's **Warranty Registration Form** must be on file at PARMA COMPANY, Parma, Idaho at the time of receipt of the warranty claim.

## DISCLAIMER OF ALL OTHER WARRANTIES AND CONSEQUENTIAL DAMAGES

THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND THERE ARE NO WARRANTIES, WHICH EXTEND BEYOND THE DESCRIPTION OF THE PRODUCTS. THE LIABILITY OF PARMA COMPANY IS EXPRESSLY LIMITED TO REPAIRING, OR AT ITS OPTION, REPLACING ANY PART THAT IS RETURNED, TRANSPORTATION PREPAID, TO PARMA COMPANY, PARMA, IDAHO, THAT IN PARMA'S JUDGEMENT PROVED DEFECTIVE DURING THE WARRANTY PERIOD. NO REPRESENTATIVE OF PARMA COMPANY, NO DEALER OR DEALER'S REPRESENTATIVE OR ANY OTHER PERSON HAS AUTHORITY TO WAIVE, ALTER, VARY OR ADD TO THE TERMS HEREOF WITHOUT PRIOR APPROVAL IN WRITING SIGNED BY AN OFFICER OF PARMA COMPANY. PARMA COMPANY WILL NOT BE LIABLE FOR ANY OTHER EXPENSE, INJURY, LOSS OR DAMAGE WHETHER DIRECT OR CONSEQUENTIAL, ARISING IN CONNECTION WITH THE SALE OR USE OF OR INABILITY TO USE, ANY PRODUCT OF THE COMPANY FOR ANY PURPOSE.

# MAINTENANCE AND FIELD ADJUSTMENTS

## LUBRICATION

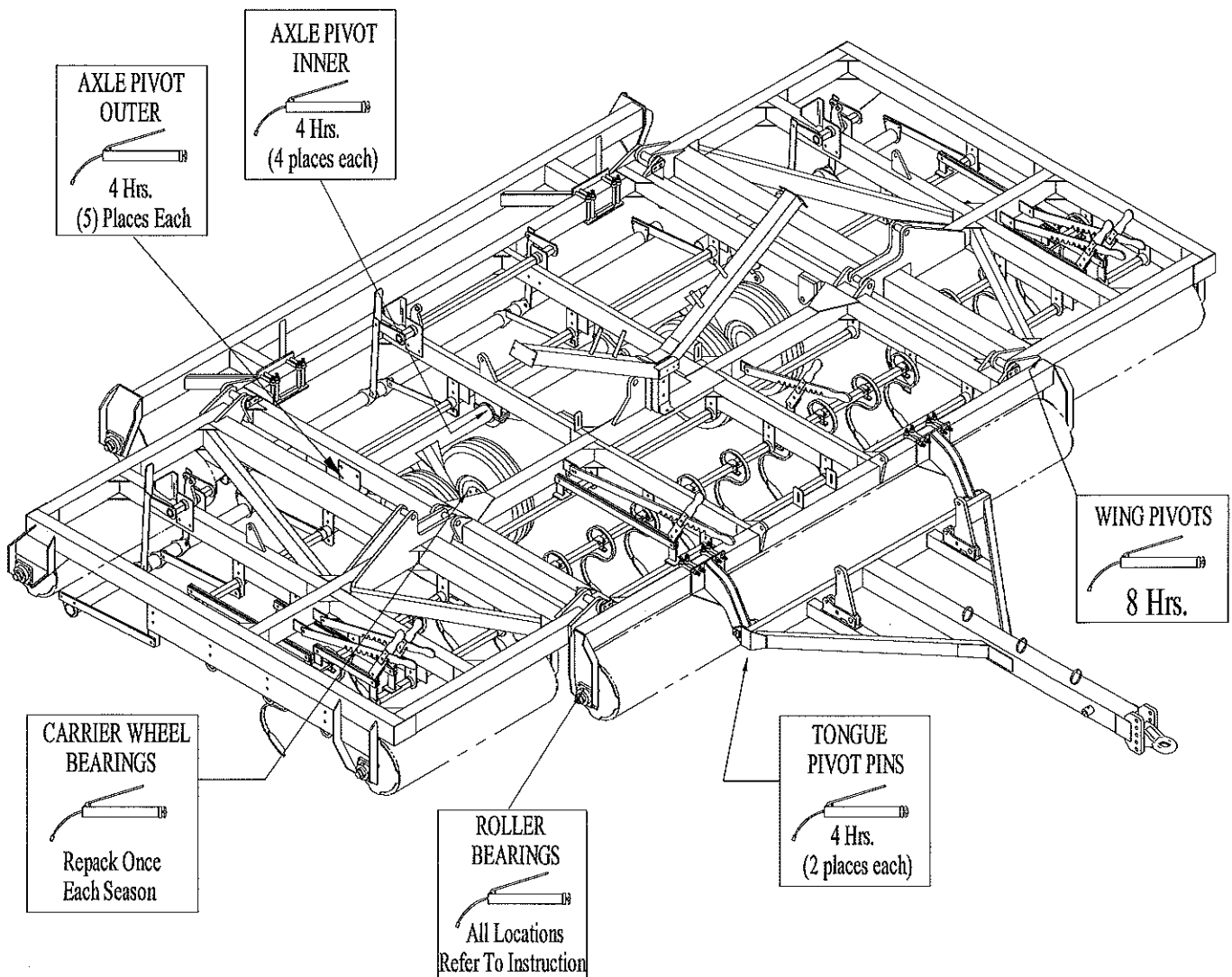
The Rollaharrow flanged bearing units are factory pre-lubricated and do not require supplemental grease before service life begins. Re-lubrication, when administered correctly, can increase the life of a bearing substantially. **Bearing manufacturers recommend that all these bearings be greased weekly**, considering the environmental condition that these machines are exposed to. **NOTE: Over lubrication is a major cause of bearing failures. Please re-lubricate conservatively.** When selecting a bearing lubrication use any lithium based NLGI #2 grease.

The Dodge Quad seal bearing is designed to purge itself of excess grease. However, care must be taken to remove the excess grease from around the sealing surface once grease begins to purge. Dirt and other contaminants mixed with excess grease can cause the seal on the bearing to wear prematurely and bearing failure.

The following illustration shows the lubrication points on the Rollaharrow.

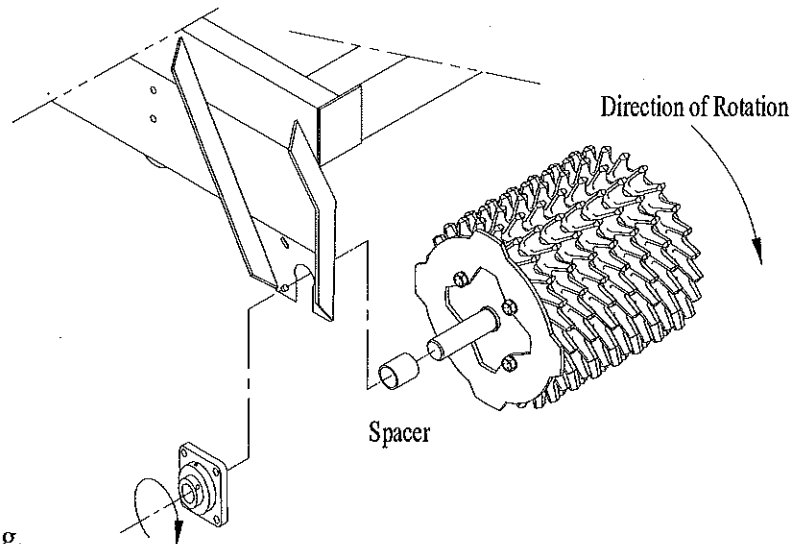


**Always perform maintenance with the tractor engine shut off and the ignition key removed!**



## BEARINGS

When replacing bearings, make sure all bearing lock collars are set correctly and tightened (see below).



### NOTE:

To avoid loosening of the lock collar, always set it in the direction of shaft rotation. Be sure the spacer is installed between the roller and the bearing.

Ball bearings used on the rollers **will not** withstand radial or side load, including working around pivot circles, **ALWAYS** raise the machine before turning or bearing failure will result.

## HYDRAULIC COMPONENTS

Before operating your PARMA Rollaharrow, check all hydraulic components and connections to make sure they are secure and fitting properly. If for any reason you need to replace a hydraulic cylinder or line, before reinstalling the component, make sure the hoses/cylinders are free from any foreign materials. If foreign material is in the line, rinse thoroughly and blow it out.

**ALWAYS** check replacement cylinders to match existing open and closed lengths or damage will result to the machine. If, after reinstalling the components, they do not work, recheck to make sure everything is connected properly. If, after checking, the hydraulic components still do not work, you may have air in the hydraulic lines. To release the air, loosen a fitting slightly at a cylinder, send a small amount of fluid through the lines and then re-tighten. You may have to repeat this process several times. If the problem persists, check or replace the Quick Couplers. Before loosening any fittings, be sure all pressure is relieved and the machine cannot drop.

### RE-PHASING CYLINDERS:

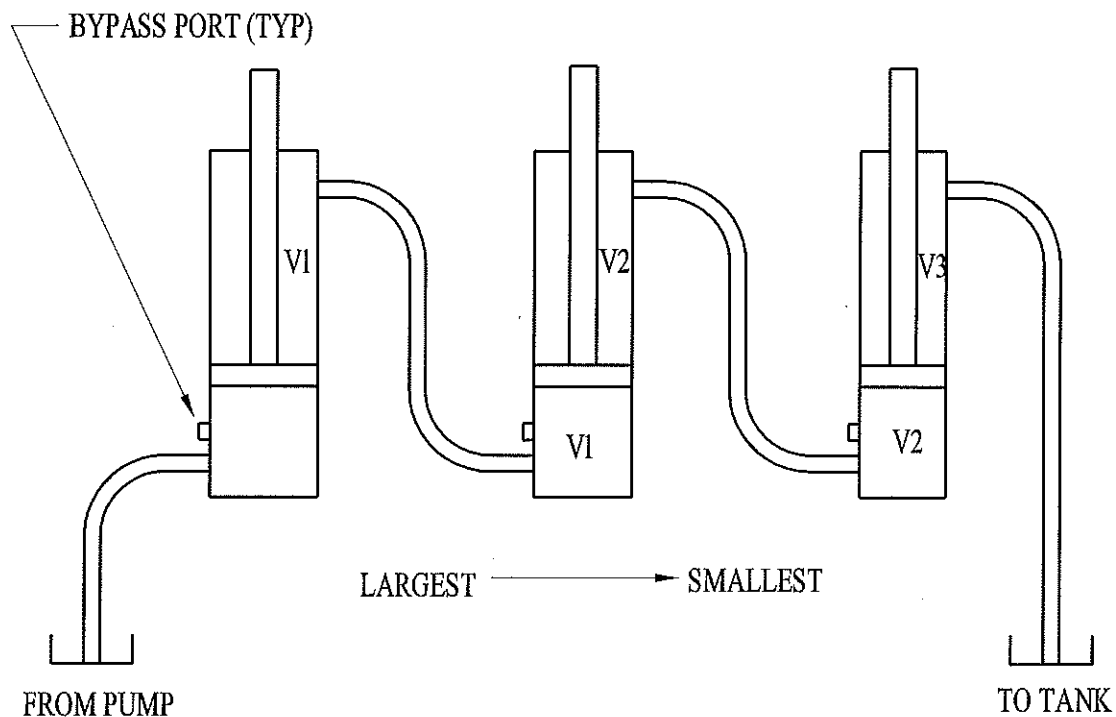
The cylinders that move the rear leveling bars are volumetrically matched to allow synchronized operation of the separate leveling bars. Each cylinder is a different size and connected in series in the hydraulic circuit.

Even though the cylinders are "volumetrically matched", the volume of each cylinder cannot economically be identical. A bypass port is provided in each cylinder that upon full retraction allows a metered amount of fluid to bypass the piston seal and go to the next adjacent cylinder in the system.

It is necessary to have the cylinders installed in the correct order, by size. If one is removed or replaced, it must be replaced in the same position that it was removed. To ensure optimum performance all entrapped air must be purged from the re-phasing cylinder system. When the air is removed, retract all

cylinders completely (hold the tractor valve open for a few seconds to allow all cylinders to index to the same position).

During operation, it is normal for the cylinders to periodically become out of phase. To re-phase, simply retract all cylinders completely and hold the valve open for a few seconds to allow all the cylinders to again index to the same position.



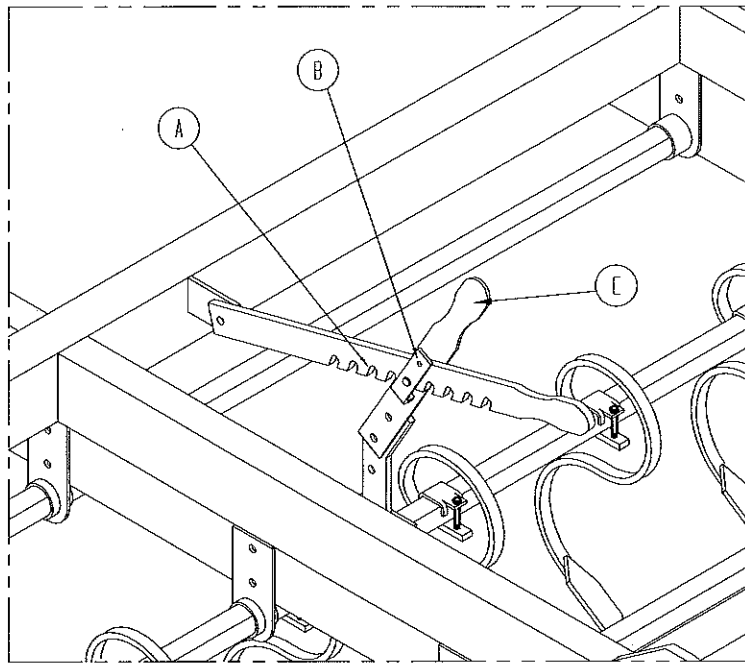
RE-PHASING CYLINDERS

## S-TINES

Under normal usage, the S-Tines may last for several years. Each S-Tine has a removable point that is reversible. Inspect these points regularly to see that they do not wear excessively. Before the worn end reaches the S-Tine, reverse the point for double wear. Always replace the point before damage to the S-Tine occurs. Check bolt tightness regularly to prevent the tines from moving or sliding.

The depth of the S-Tines is set by moving the tool bar control handle (Item C) to the desired notch in the tool bar control ratchet (Item A). **When operating your Rollaharrow in the field, the safety snap pin (Item B) MUST be removed to prevent damage to the tine bars and linkages in the event the Rollaharrow is backed up with the S-Tines down** (See the illustration next page).





For the correct positioning of the S-Tines on the Rollaharrow, refer to page 18.

**\*\*Never lower and park the Rollaharrow on the S-Tines. Damage to the curl of the S-tine will occur.**

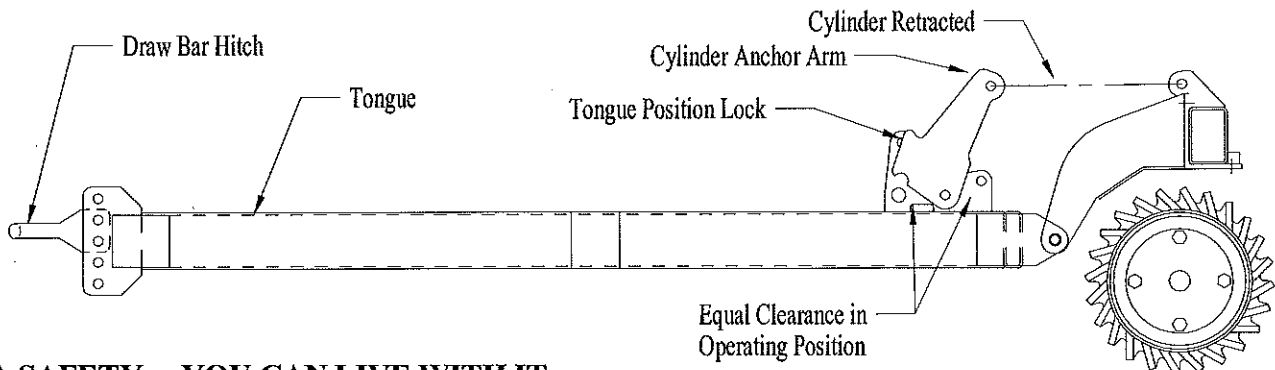
### TONGUE ADJUSTMENT

When connecting your Rollaharrow to the tractor, make sure the tongue can move freely up and down with the tongue cylinder fully retracted.

After connecting the machine to the tractor and with the lift cylinder retracted, the cylinder anchor on the tongue should be positioned so there will be equal movement both forward and back to allow the machine to float during operation. If necessary, adjust the front hitch ring up or down to obtain the correct position. In some conditions, soil will build up under this hydraulic cylinder anchor on the tongue. When this occurs, remove the buildup.

The cylinder anchor arm position can be locked into place to allow the rear of the machine to rise during transport when auxiliary attachments are mounted to the frame. To do this, extend the hydraulic cylinder until the notch in the arm aligns with the hole in the tongue, then insert the pin. This pin is not furnished with the machine from the factory. Do not use the pin if auxiliary attachments are not used.

**\*\*Tongue position lock pins MUST be removed for field operation.**



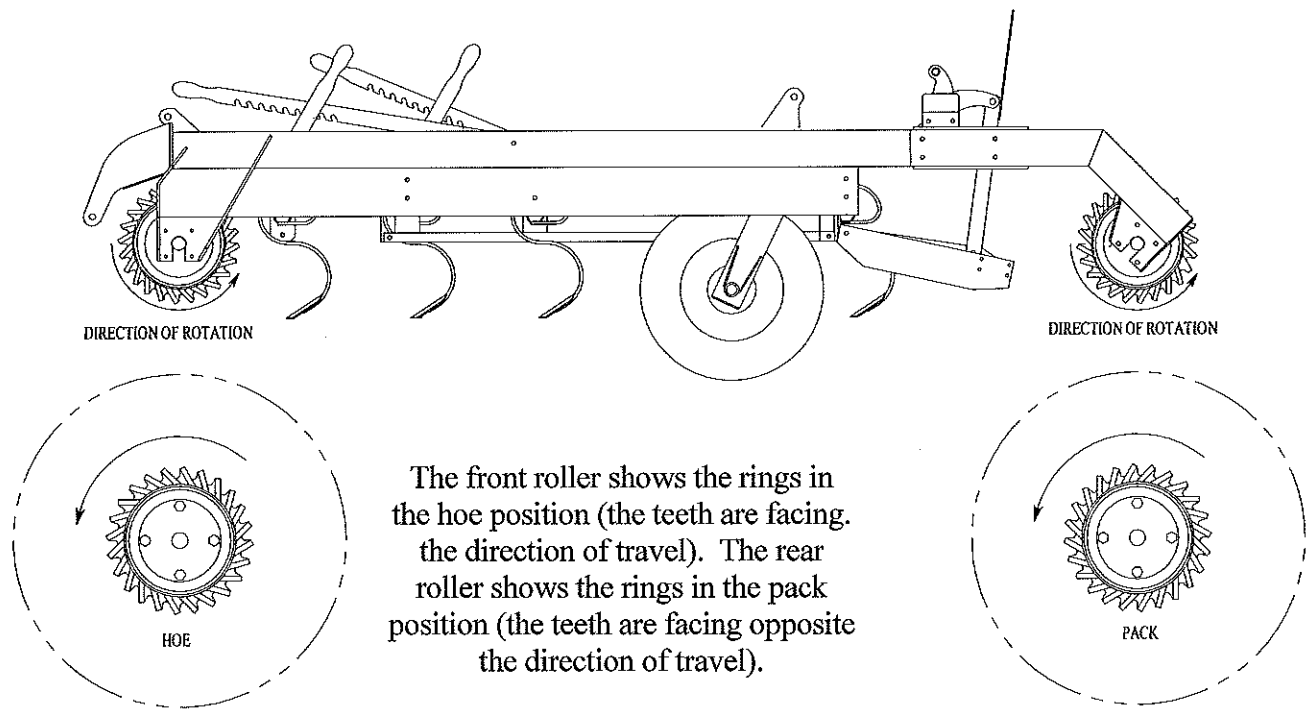
**SAFETY... YOU CAN LIVE WITH IT**

## ROLLER RINGS

After some usage of your machine, the side of roller rings will wear, creating a gap between the rings on the roller tube. When this occurs, simply add enough new rings to partially fill this gap. Leave 3 to 4" of total gap, so the rings move freely.

**When adding the rings, leave some gap so the rings can move freely.**

The roller rings can be positioned to mulch (hoe) the soil or to pack the soil. The front ring roller is normally set to mulch (hoe) the soil and the rear ring roller is normally set to pack the soil, however, this can be changed to accommodate different needs. See illustration below.



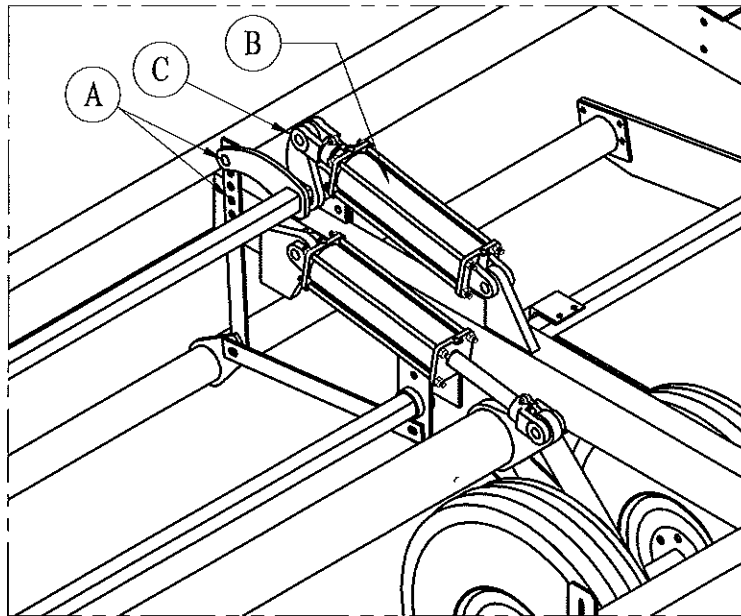
The front roller shows the rings in the hoe position (the teeth are facing the direction of travel). The rear roller shows the rings in the pack position (the teeth are facing opposite the direction of travel).



**AVOID SERIOUS INJURY – EXERCISE CARE WHEN LIFTING HEAVY PARTS**

## LEVELING BAR

During operation, the leveling bar height should be set to smooth out ridges and carry enough dirt to fill low spots only. **Never “dig” below** the soil surface or damage to the bar and linkage may occur, also this will leave piles of dirt upon raising the machine. See the illustration on the next page.



### LEVELING BAR ADJUSTMENT

To adjust the leveling bar height, position the lift arm (Item A) to the desired hole by activating the hydraulic cylinder (Item B). The cylinder clevis may also be incrementally adjusted (Item C).

### OPERATING INSTRUCTIONS

Under normal conditions (after plowing or disking) you can pull your PARMA Rollaharrow through the field at speeds up to 6mph.

The minimum required hydraulic pressure for the wing lift is 2750 PSI.  
Recommend minimum 70 PSI air in the bias ply tires and 50 PSI in Radial Tires.

**Do not** use the tires and wheels on your Rollaharrow as gauge wheels while operating the machine in the field. They are designed for transporting the machine only.

**Always** lift your Rollaharrow before turning. **Failure to lift the machine while turning causes excessive side thrust on rollers and bearings, BEARING FAILURE WILL RESULT, and other parts will fail.**

**Always** lift your Rollaharrow before backing up. **Failure to do so can result in the damage of the s-tine bars and control linkages.**

**Always** transport your Rollaharrow at speeds less than 20 mph. **The implement rated tires are for minimal transportation use only.** Not doing so can result in premature tire failure.

**Always** remember to remove the transport lock bars from the axle and flip locks over on cylinders when done transporting the machine. Failure to do this will cause damage to the axle and cylinders when the cylinders are activated.



**SAFETY....YOU CAN LIVE WITH IT!**

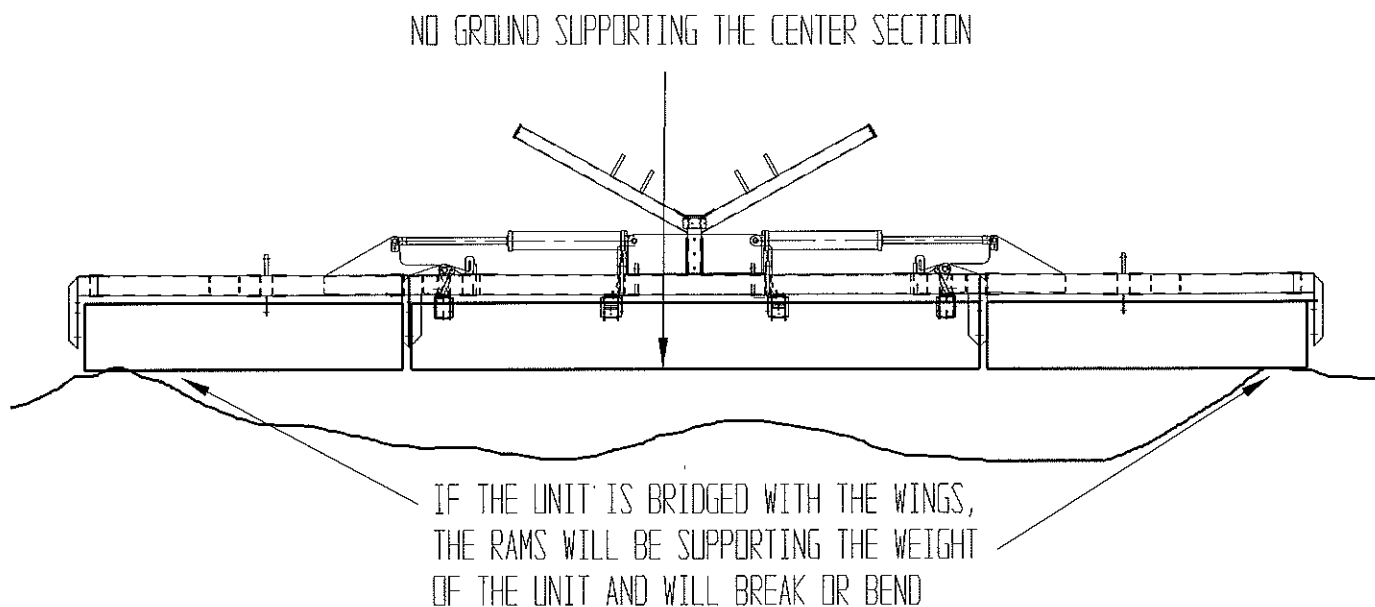


## ATTENTION

When operating the Folding Rollaharrow units in uneven terrain, it is very important to run the hydraulics for the **wing lift in the float position**. Failure to do so can result in the unit being “bridged” causing the weight of the machine to ride on the hydraulic wing lift rams. This can result in a breakage or bending of the hydraulic ram.

**If you drop the wing fold hoses to open a remote for the grain drill or other attachment, you must couple the wing fold hoses together to prevent hydraulic lock on the wing cylinders.**

**The Wing Stop Bolts must also be adjusted correctly** so the wings rest on the bolt head and not be suspended by the hydraulic ram. If there are questions or concerns, please do not hesitate to call your dealer.



\*\*\*THIS IS SHOWN OVER EXAGGERATED FOR ILLUSTRATIVE PURPOSES ONLY\*\*\*

# BOLT TORQUE

## Checking Bolt Torque

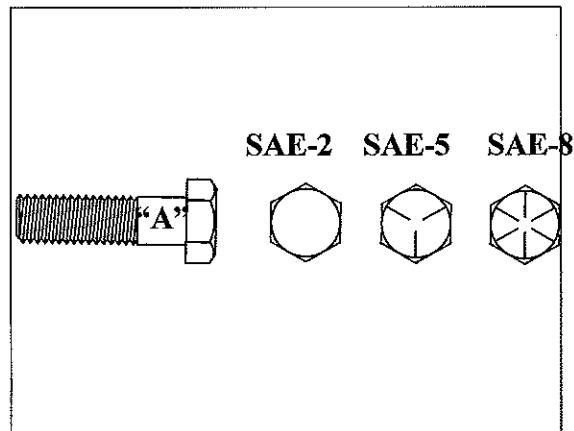
The table shown below gives correct torque values for various bolts and cap screws. Tighten all bolts to the torques specified in the chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt

## Torque specifications

Bolt Size "A"	SAE 2 Torque lb/ft	SAE 5 Torque lb/ft	SAE 8 Torque lb/ft
1/4	6	9	12
5/16	10	19	27
3/8	20	33	45
7/16	30	53	75
1/2	45	80	115
9/16	70	115	15
5/8	95	160	220
3/4	165	290	400
7/8	170	410	650
1	225	630	970

Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual. When using locking elements, increase torque values by 5%

- Torque value for bolts and cap screws are identified by their head markings





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## **Rollharrow**

**Folding Model  
PARTS SECTION**

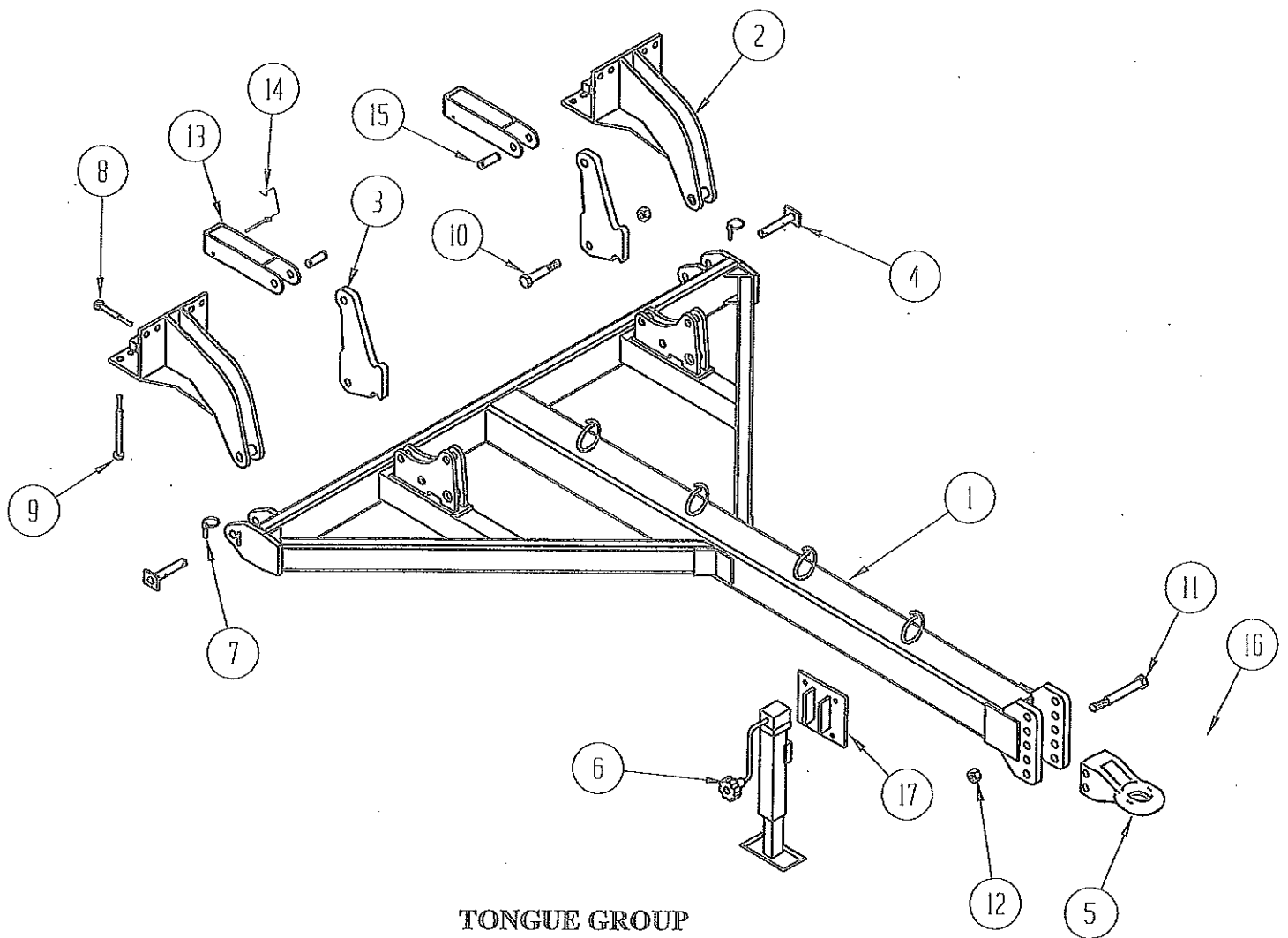
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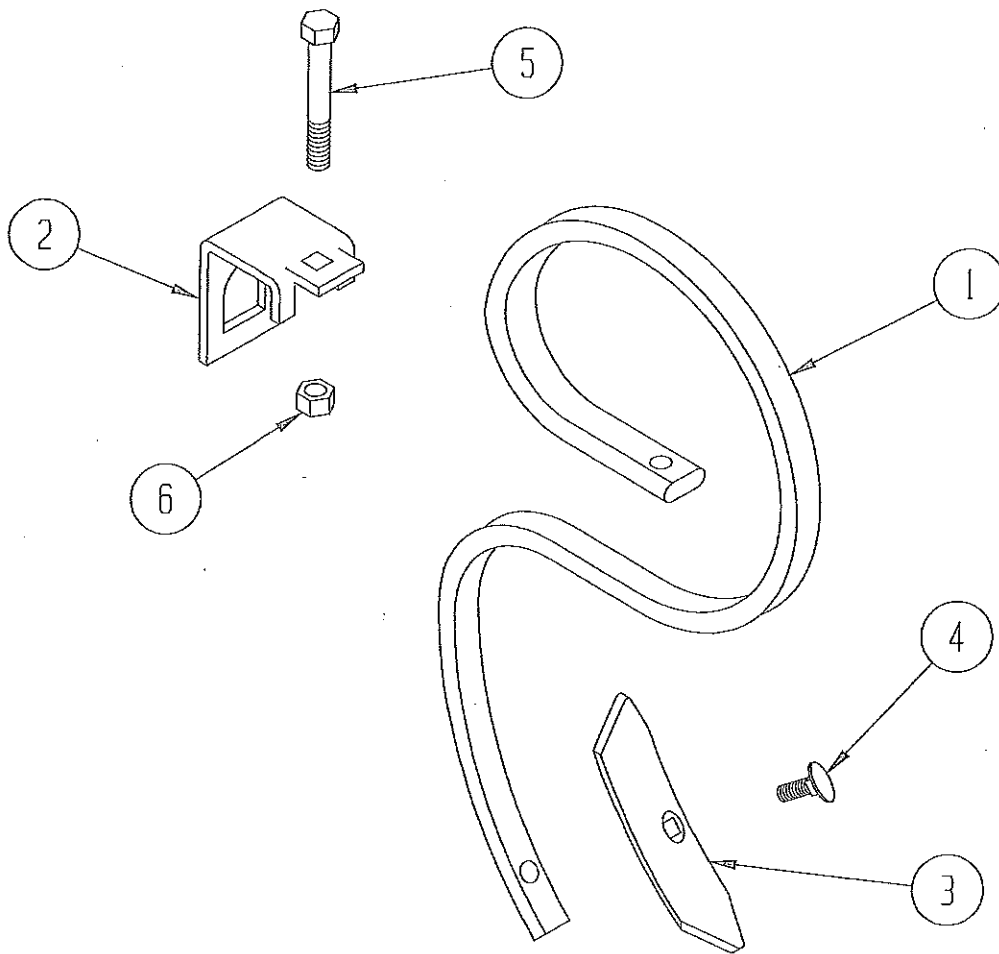
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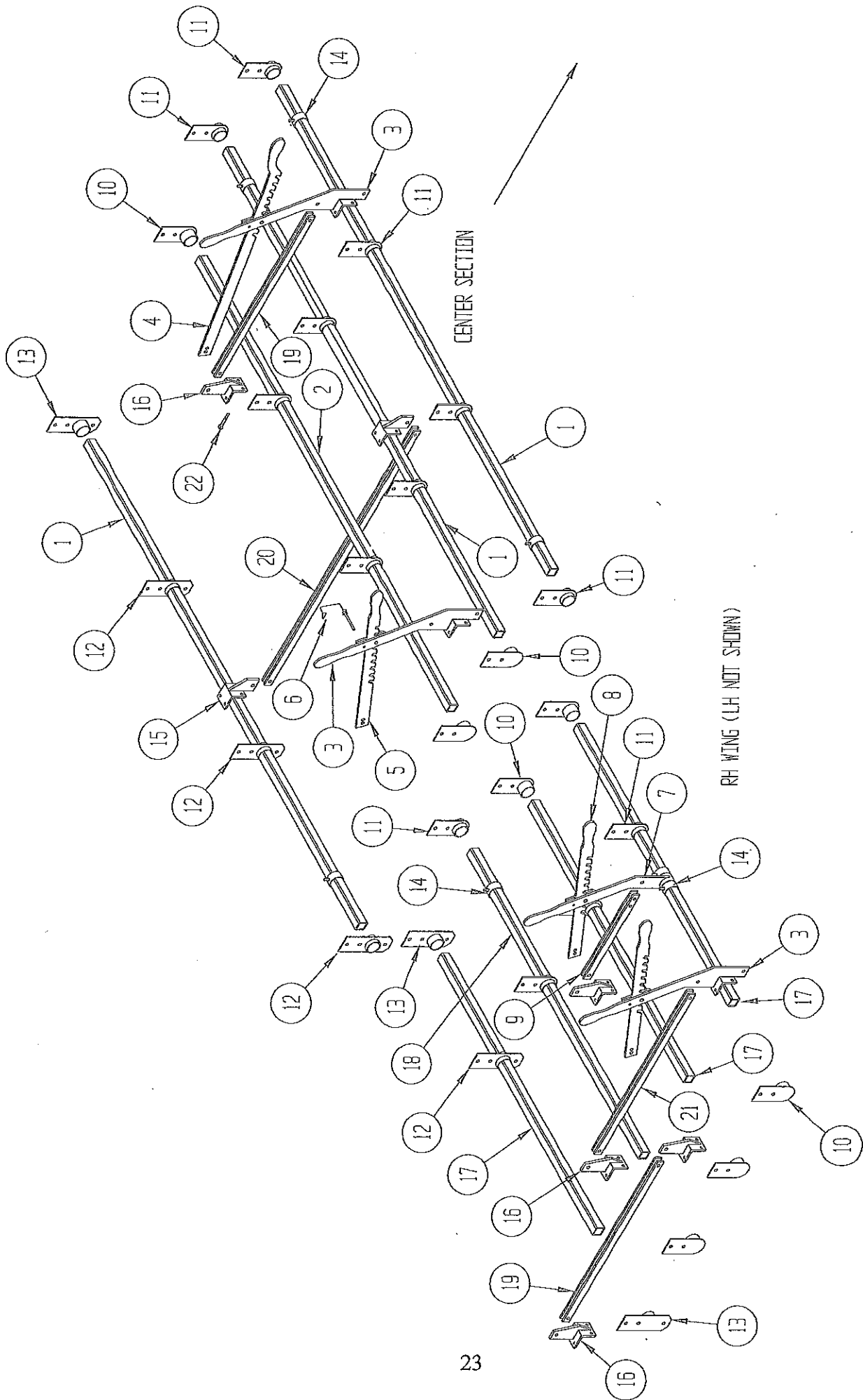
TONGUE GROUP

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	523118	Tongue Weldment
2	2	523124	Tongue Pull Bracket
	2	524660	Tongue Pull Bracket(18' Center)
3	2	523312	Cylinder Anchor
4	2	523159	Tongue Pin
5	1	521104	Ring Hitch, Category 3
6	1	524369	Jack
7	2	530053	Lynch Pin
8	8	997903	Eye Bolt, 3/4 x 6
9	8	-----	Hex Bolt, 3/4 x 8 1/2 Grade 5
10	2	-----	Hex Bolt, 1" x 4 Grade 5
11	2	-----	Hex Bolt, 1" x 7 1/2 Grade 5
12	4	-----	Hex Locknut, 1"
13	2	523152	Lift Stop
14	2	523279	Safety Lock Pin
15	2	524208	Cylinder Pin
16	1	524923	Safety Chain(not shown)
17	1	524364	Mounting, Jack (Part of item 6)



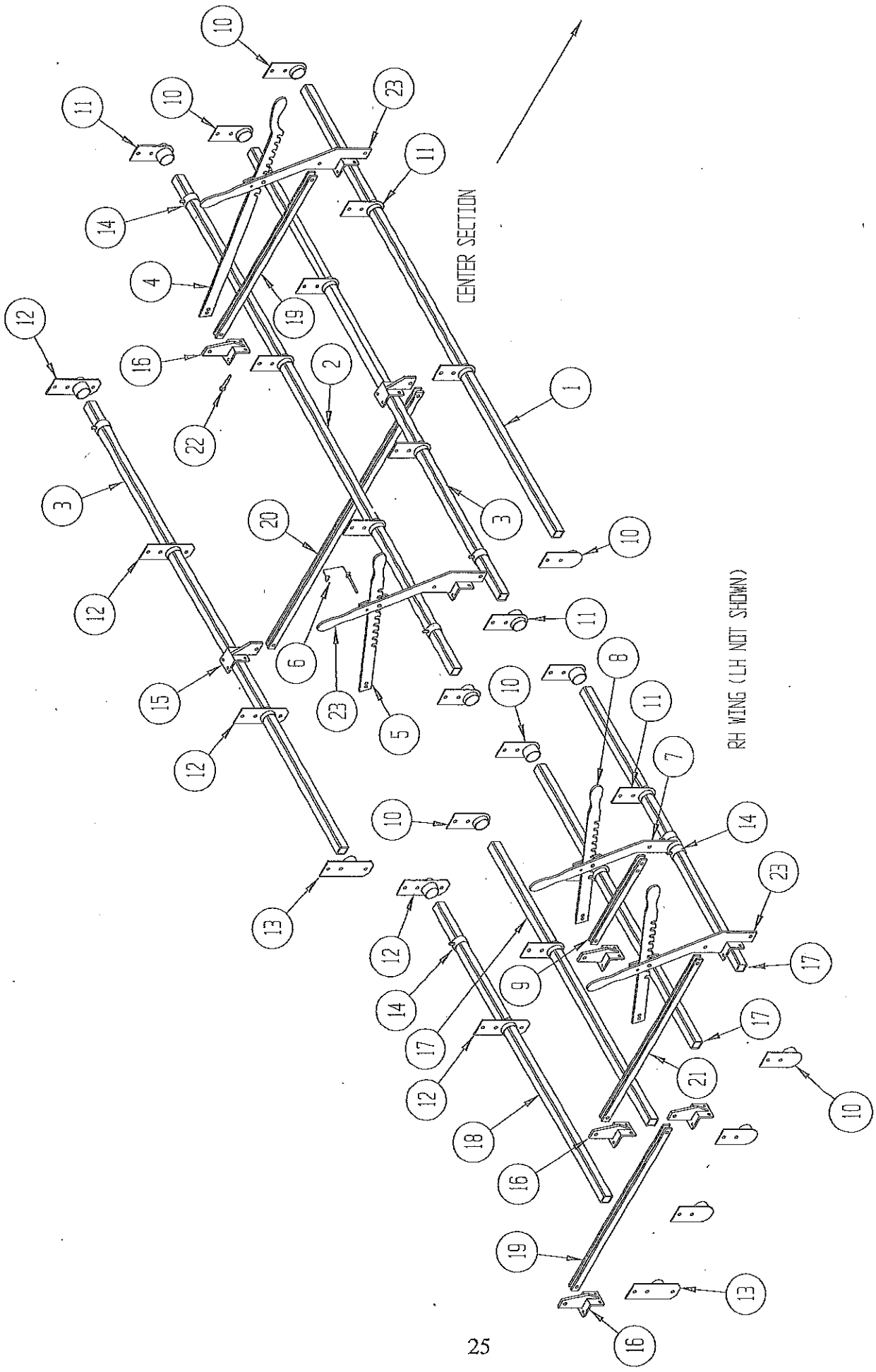
### S-TINE GROUP

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	521483	S-tine, HD
2	1	521485	S-tine Clamp
3	1	521484	Chisel Point
		521560	Chisel Point, Heavy Duty (Optional)
4	1	530052	Cultivator Bolt, 3/8 x 1 1/2
5	1	-----	Hex Bolt, 1/2 x 3 1/2
6	1	-----	Hex Locknut, 1/2"



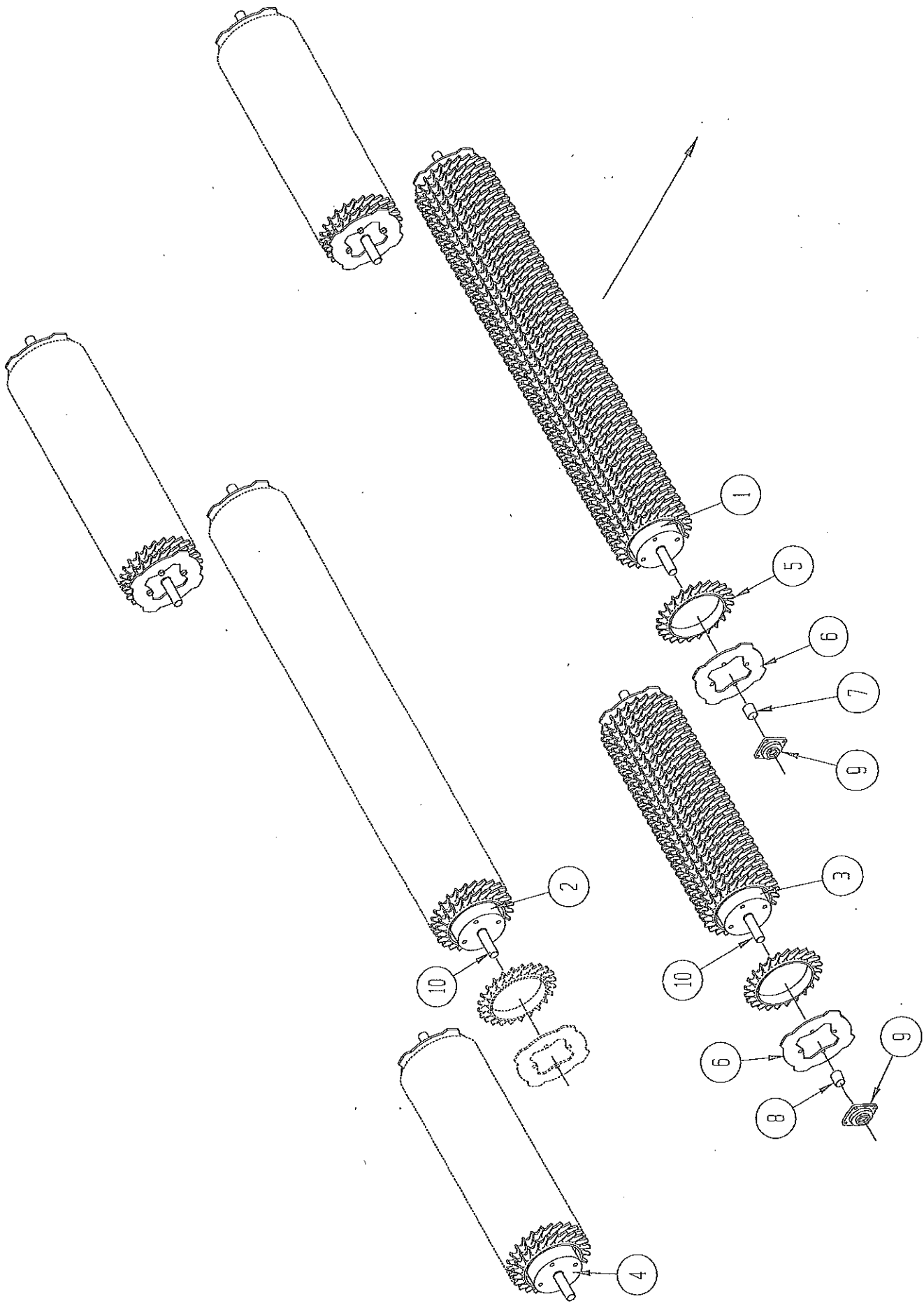
TINE BAR GROUP 26' & 24'  
(4 Bar)

ITEM NO.	QTY 26'	QTY 24'	PART NO.	DESCRIPTION
1	3	3	522366	Tine Bar, 132"
2	1	1	522367	Tine Bar, 122 3/4"
3	4	4	522038	Control Handle
4	1	1	524554	Ratchet Handle, Long
5	1	1	524553	Ratchet Handle, Short
6	6	6	521442	Safety Snap Pin
7	2	2	522648	Control Handle
8	4	4	524555	Ratchet Handle
9	2	2	521260	Control Linkage
10	13	13	524536	Mounting Bracket, Outer
11	11	17	524535	Mounting Bracket, Inner
12	3	5	524537	Mounting Bracket, Inner
13	5	5	524538	Mounting Bracket, Outer
14	10	10	522259	Stop Collar
15	2	2	521513	Control Clamp
16	9	9	521495	Control Clamp
17	-	3	522372	Tine Bar, 75 1/4"
	3	-	522331	Tine Bar, 87 1/4"
18	-	1	522371	Tine Bar, 80"
	1	-	522332	Tine Bar, 92"
19	3	3	521489	Control Linkage, 44" Overall
20	1	1	523129	Control Linkage, 76" Overall
21	2	2	522043	Control Linkage, 42" Overall
22	30	30	521099	Eye Bolt, 1/2 x 3 1/2



TINE BAR GROUP 28' -40'  
(4 Bar)

ITEM NO.	QTY 28'	QTY 30'	QTY 32-40'	PART NO.	DESCRIPTION
1	1	1		522329	Tine Bar, 146 3/4"
2	1	1		522337	Tine Bar, 164"
3	2	2		522338	Tine Bar, 151 1/2"
			1	-----	Tine Bar, 87 7/8"(18' Center)
			1	-----	Tine Bar, 126 3/8"(18' Center)
			1	-----	Tine Bar, 121 1/2"(18' Center)
			2	-----	Tine Bar, 73 1/8"(2)(18' Center)
			2	525146	Tine Bar, 85 1/8"(20' Center)
			2	525147	Tine Bar, 133 1/2"(20' Center)
			1	525148	Tine Bar, 138 3/8" (20' Center)
			1	525149	Tine Bar, 93 7/8"(20' Center)
4	1	1	1	524554	Ratchet Handle, Long
5	1	1	1	524555	Ratchet Handle, Short
6	6	6	6	521442	Safety Snap Pin
7	2	2	4	522648	Control Handle
8	4	4	6	524555	Ratchet Handle
9	2	2	4	521260	Control Linkage
10	15	15	15	524536	Mounting Bracket, Outer
11	15	15	18	524535	Mounting Bracket, Inner
12	7	7	9	524537	Mounting Bracket, Inner
13	3	3	3	524538	Mounting Bracket, Outer
			3	524539	Mounting Bracket, Split(18'-20' Center)
14	10	10	11	522259	Stop Collar
15	2	2	2	521513	Control Clamp
16	9	9	9	521495	Control Clamp
17	-	6		522910	Tine Bar, 99 1/4"
	6	-		522331	Tine Bar, 87 1/4"
			3	524654	Tine Bar, 116" (9' Wing)
			3	524936	Tine Bar, 128" (10' Wing)
18	-	2		522911	Tine Bar, 104"
	2	-		522332	Tine Bar, 92"
			1	524654	Tine Bar, 111 1/4" (9' Wing)
			1	524935	Tine Bar, 123 1/4" (10' Wing)
19	3	3	4	521489	Control Linkage, 44" Overall
20	1	1	2	523129	Control Linkage, 76" Overall
21	2	2	2	522043	Control Linkage, 42" Overall
22	30	30	30	521099	Eye Bolt, 1/2 x 3 1/2
23	4	4	6	522038	Control Handle





## 10" ROLLER ASSEMBLIES

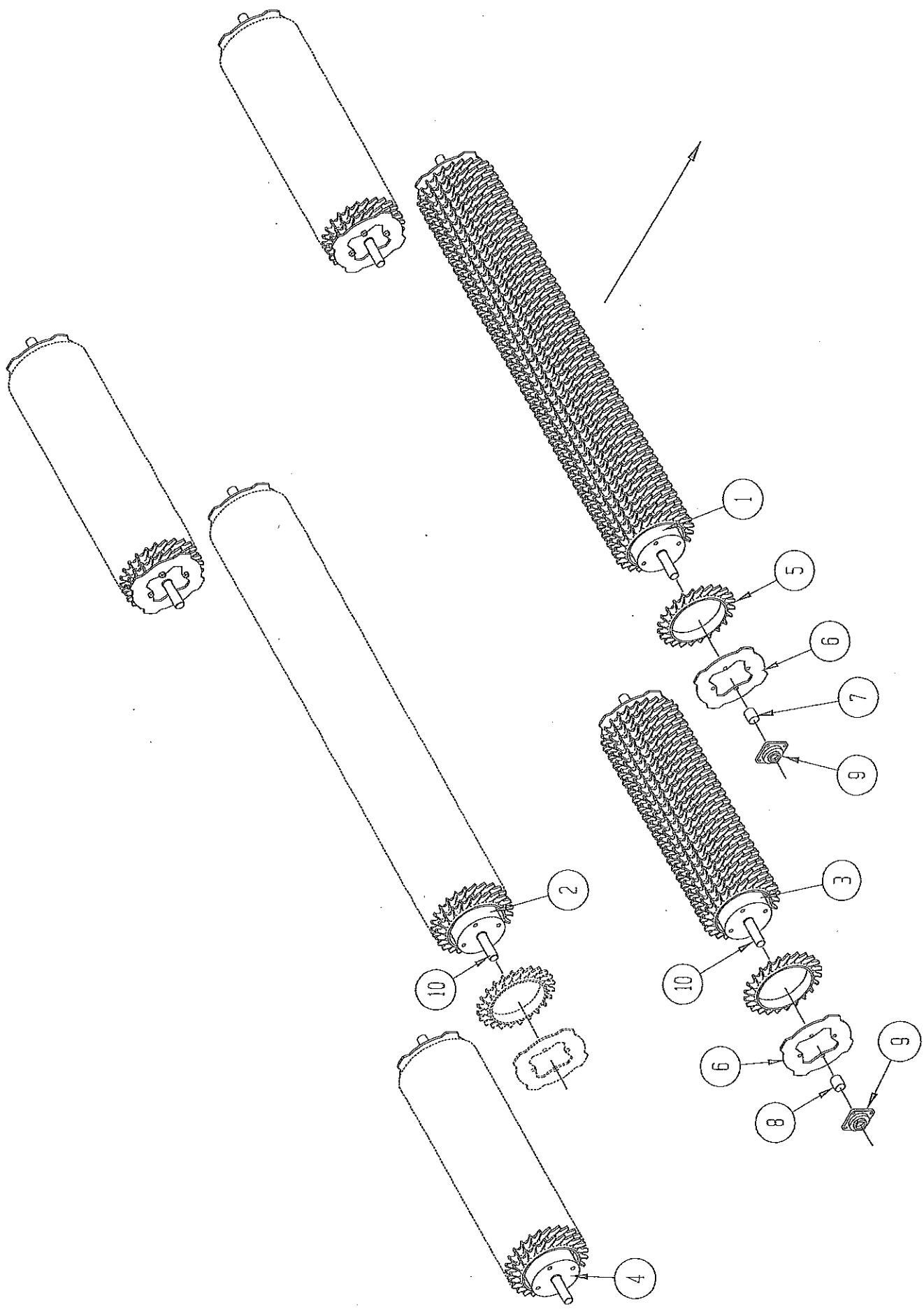
ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	523343	Roller Weldment, 12' (26' & 24' Units)
	1	523345	Roller Weldment, 14' (28' & 30' Units)
2	1	523344	Roller Weldment, 13' (26' & 24' Units)
	1	523346	Roller Weldment, 15' (28' & 30' Units)
3	2	523332	Roller Weldment, 4' (20' Unit)
	2	523334	Roller Weldment, 6' (24' Unit)
	2	523336	Roller Weldment, 7' (28' & 26' Unit)
	2	523338	Roller Weldment, 8' (30' Unit)
4	2	523333	Roller Weldment, 4' 6" (20' Unit)
	2	523335	Roller Weldment, 6' 6" (24' Unit)
	2	523337	Roller Weldment, 7' 6" (28' & 26' Unit)
	2	523339	Roller Weldment, 8' 6" (30' Unit)
5	**	521566	Cast Ring, 10-12-16 Standard
	**	521639	Cast Ring, 10-12-16 Ductile
	**	521640	Cast Ring, 10-12-16 Domestic
	**	521590	Cast Ring, 10-12-17 Standard
	**	521641	Cast Ring, 10-12-17 Ductile
	**	521642	Cast Ring, 10-12-17 Domestic
6	12	521496	Roller End Plate
7	4	523781	Spacer, Center Bearing
8	8	523782	Spacer, Wing Bearing
9	12	524884	Bearing, Double Roller Spherical 2 3/16"
10	12	523327	Stub Shaft, Long

\*\* See table for approximate quantities due to rough castings

### ROLLER LGTH    RING QTY

4'	19
4' 6"	21
6'	28
6' 6"	31
7'	33
7' 6"	36
8'	38
8' 6"	40
12'	57
13'	63
14'	68
15'	73

DO NOT PACK ROLLERS TIGHT!



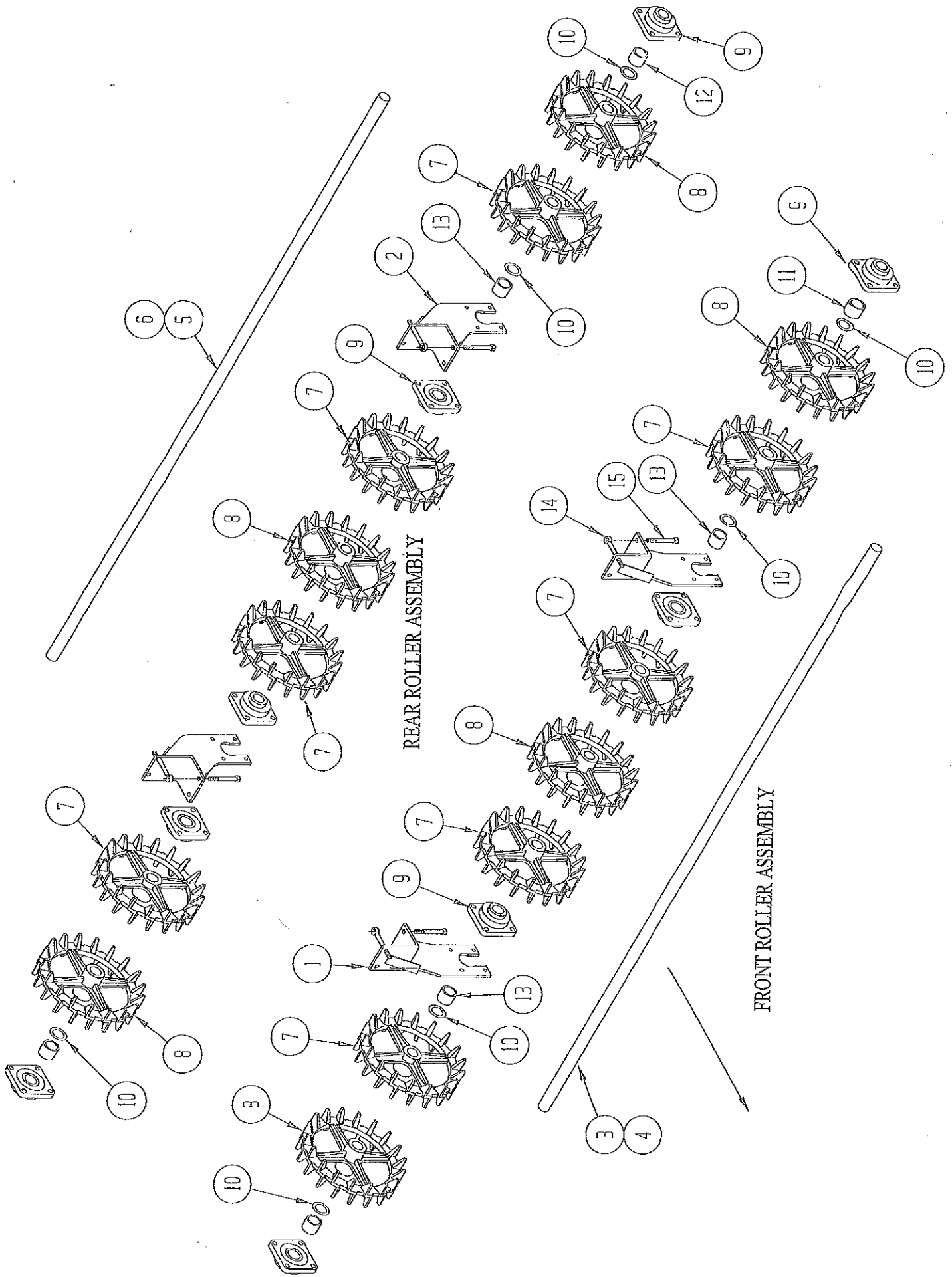
## 12" ROLLER ASSEMBLIES

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	523378	Roller Weldment, 12' (26' & 24' Units)
	1	523380	Roller Weldment, 14' (28' & 30' Units)
2	1	523379	Roller Weldment, 13' (26' & 24' Units)
	1	523381	Roller Weldment, 15' (28' & 30' Units)
	1	523688	Roller Weldment, 18' Split
	1	523385	Roller Weldment, 19'
3	2	523375	Roller Weldment, 9' (36' Unit)
	2	523369	Roller Weldment, 6' (24' Unit)
	2	523371	Roller Weldment, 7' (28' & 26' Unit)
	2	523373	Roller Weldment, 8' (30' Unit)
4	2	524668	Roller Weldment, 9' 6" (36' Unit)
	2	523370	Roller Weldment, 6' 6" (24' Unit)
	2	523372	Roller Weldment, 7' 6" (28' & 26' Unit)
	2	523374	Roller Weldment, 8' 6" (30' Unit)
5	**	521592	Cast Ring, 12-14-20 Standard
	**	521643	Cast Ring, 12-14-20 Ductile
	**	521644	Cast Ring, 12-14-20 Domestic
6	12	521447	Roller End Plate
7	4	523781	Spacer, Center Bearing
8	8	523782	Spacer, Wing Bearing
9	12	524884	Bearing, Double Roller, 2 3/16"
	14	524884	Bearing, Double Roller, 2 3/16"
10	12	523364	Stub Shaft, Long

### ROLLER LGTH RING QTY

6'	28
6' 6"	31
7'	33
7' 6"	36
8'	38
8' 6"	40
9'	43
9' 6"	46
10'	48
10' 6"	51
12'	57
13'	63
14'	68
15'	73
18'	84
19'	92

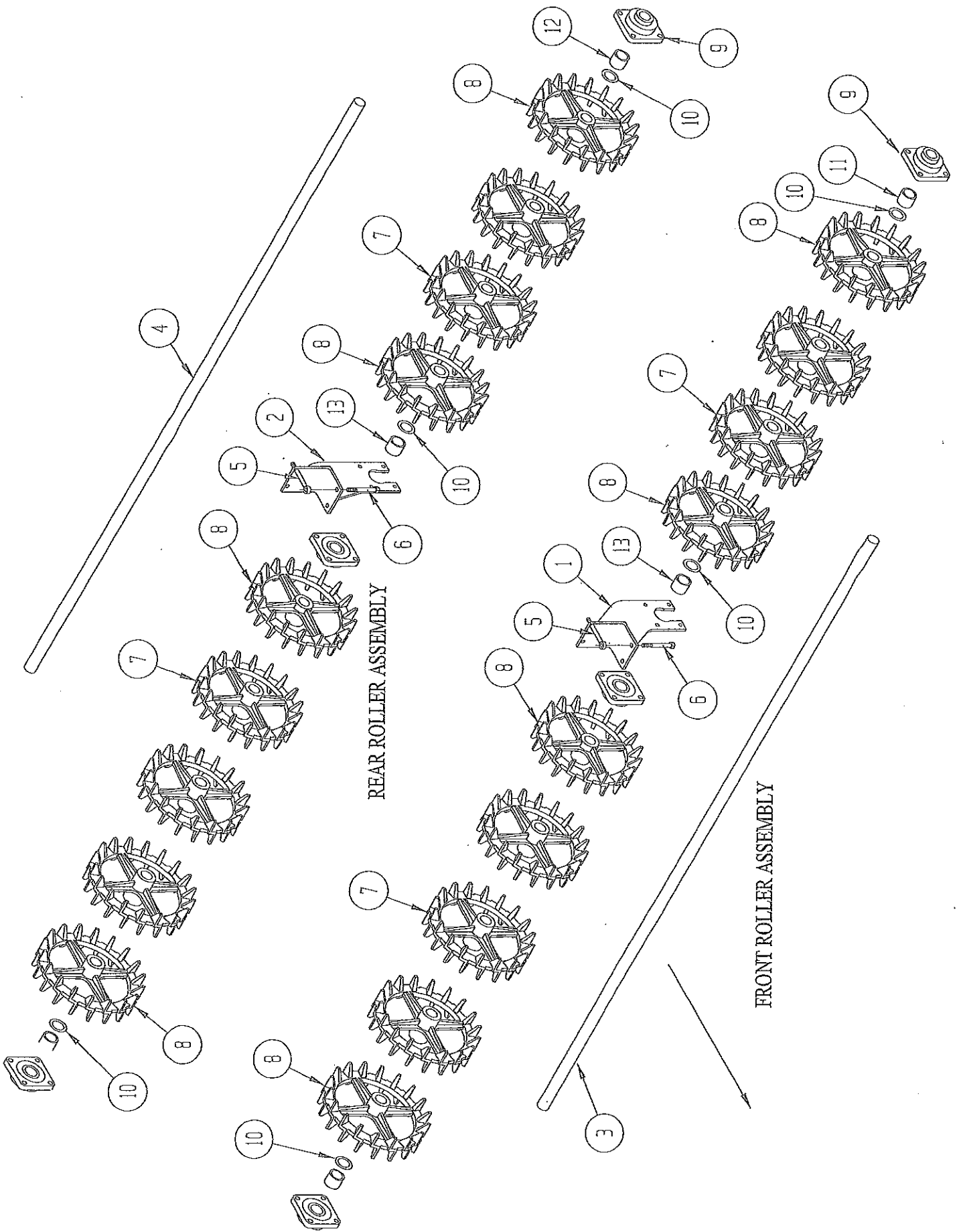
DO NOT PACK ROLLERS TIGHT!



CROWFOOT ROLLER ASSEMBLIES, CENTER SECTION

ITEM NO.	QTY 12'	QTY 14'	PART NO.	DESCRIPTION
1	2	3	524480	Front Shaft Support
2	2	3	524488	Rear Shaft Support
3	1	-	524479	Front Crowfoot Shaft
	-	1	524483	LH Front Crowfoot Shaft
4	-	1	524484	RH Front Crowfoot Shaft
5	1	-	524486	LH Rear Crowfoot Shaft
	-	2	524457	Rear Crowfoot Shaft
6	1	-	524487	RH Rear Crowfoot Shaft
7	As Req'd	As Req'd	524242	Crowfoot w/ Wide Hub
8	As Req'd	As Req'd	524243	Crowfoot w/ Short Hub
9	9	12	980827	4-Hole Flanged Bearing, 2 3/16", Triple Seal
10	As Req'd	As Req'd	524452	Washer
11	2	-	524460	Pipe Spacer
	-	2	524482	Pipe Spacer
12	2	-	524511	Pipe Spacer
	-	2	524482	Pipe Spacer
13	3	4	524450	Pipe Spacer
14	8	12	997903	Eye Bolt, 3/4 x 6 1/2
15	8	12	-----	Hex Bolt, 3/4 x 8 1/2

Note: Quantities are per machine



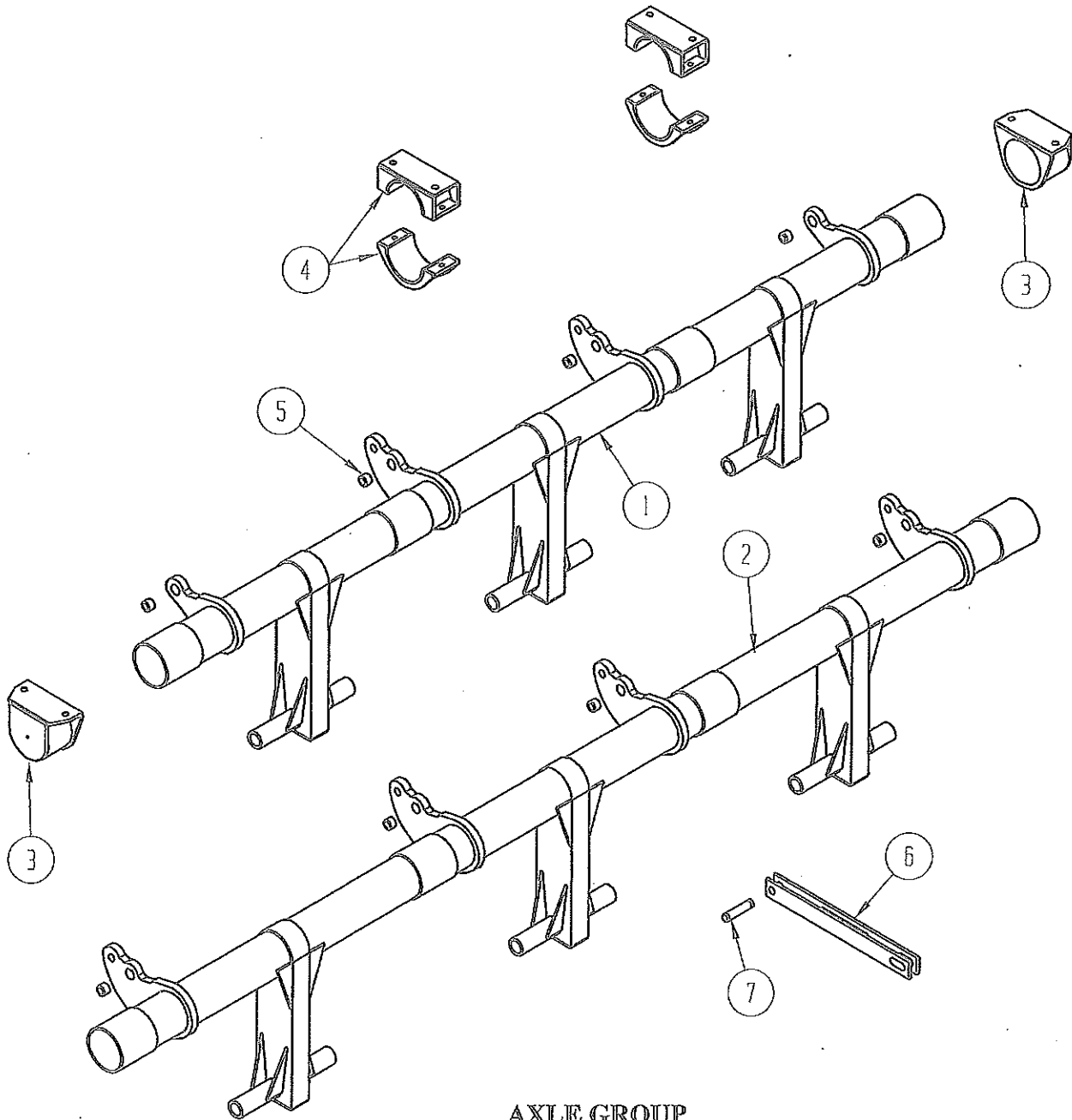
REAR ROLLER ASSEMBLY

FRONT ROLLER ASSEMBLY

CROWFOOT ROLLER ASSEMBLIES - WINGS

ITEM NO.	QTY 4'	QTY 6'	QTY 7'	QTY 8'	PART NO.	DESCRIPTION
1	-	2	2	2	524496	Front Shaft Support
2	-	2	2	2	524501	Rear Shaft Support
3	2	-	-	-	524491	Front Crowfoot Shaft, 4' Wing
	-	2	-	-	524495	Front Crowfoot Shaft, 6' Wing
	-	-	2	-	524457	Front Crowfoot Shaft, 7' Wing
	-	-	-	2	524508	Front Crowfoot Shaft, 8' Wing
4	2	-	-	-	524493	Rear Crowfoot Shaft, 4' Wing
	-	2	-	-	524499	Rear Crowfoot Shaft, 6' Wing
	-	-	2	-	524464	Rear Crowfoot Shaft, 7' Wing
	-	-	-	2	524465	Rear Crowfoot Shaft, 8' Wing
5	-	8	8	8	997903	Eye Bolt, 3/4 x 6 1/2
6	-	8	8	8	-----	Hex Bolt, 3/4 x 8 1/2
7	34	34	42	46	524242	Crowfoot w/ Wide Hub
8	-	16	16	16	524243	Crowfoot w/ Short Hub
9	8	12	12	12	980827	4-Hole Flanged Brg, 2 3/16", Triple Seal
10	8	12	12	12	524452	Washer
11	8	-	-	-	524451	Pipe Spacer
	-	4	-	-	524450	Pipe Spacer
	-	-	8	-	524463	Pipe Spacer
	-	-	-	4	524509	Pipe Spacer
12	-	8	-	-	524500	Pipe Spacer
	-	-	8	-	524504	Pipe Spacer
	-	-	-	4	524509	Pipe Spacer
13	-	4	4	4	524450	Pipe Spacer

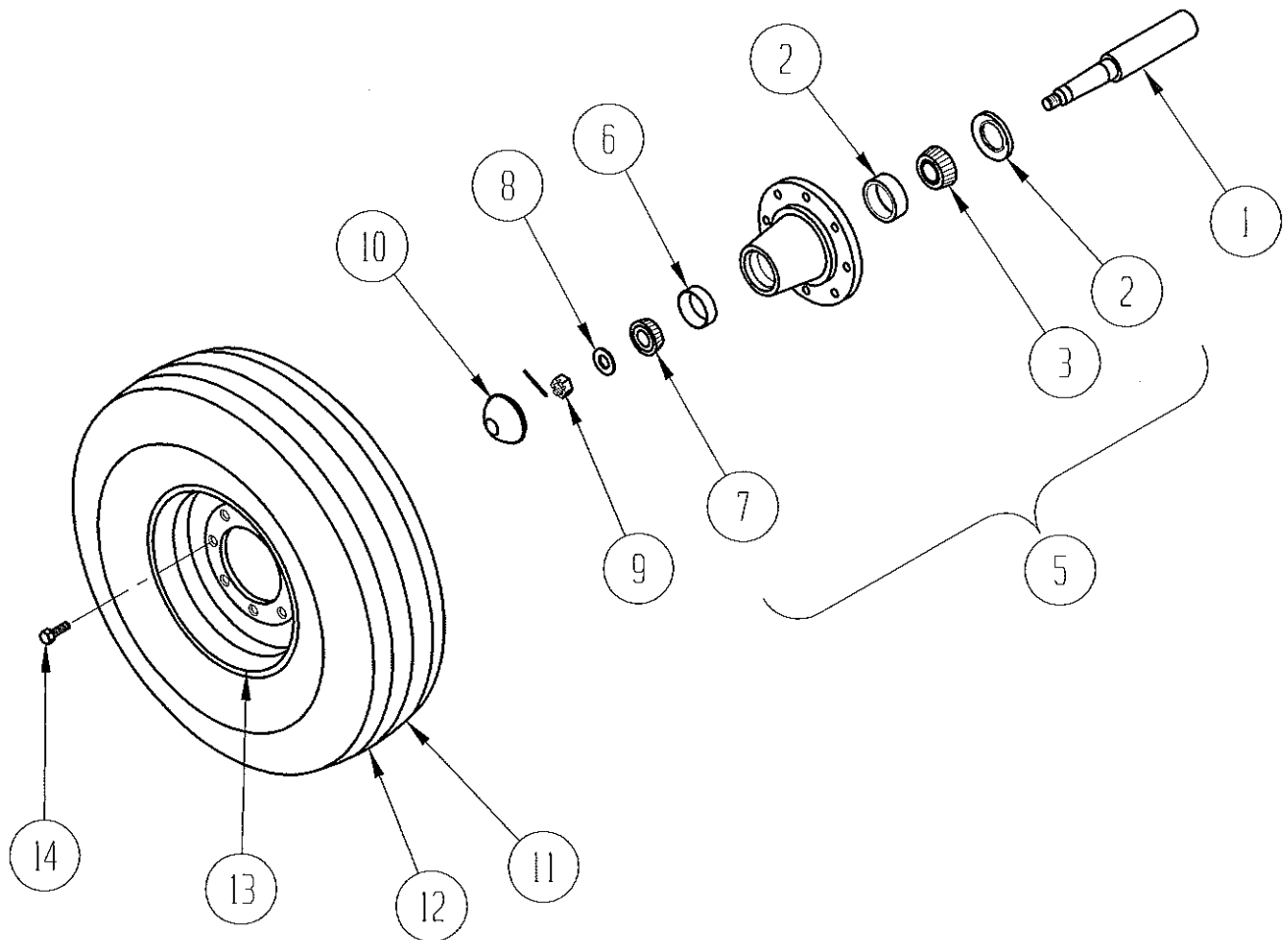
Note: Quantities are per machine



AXLE GROUP

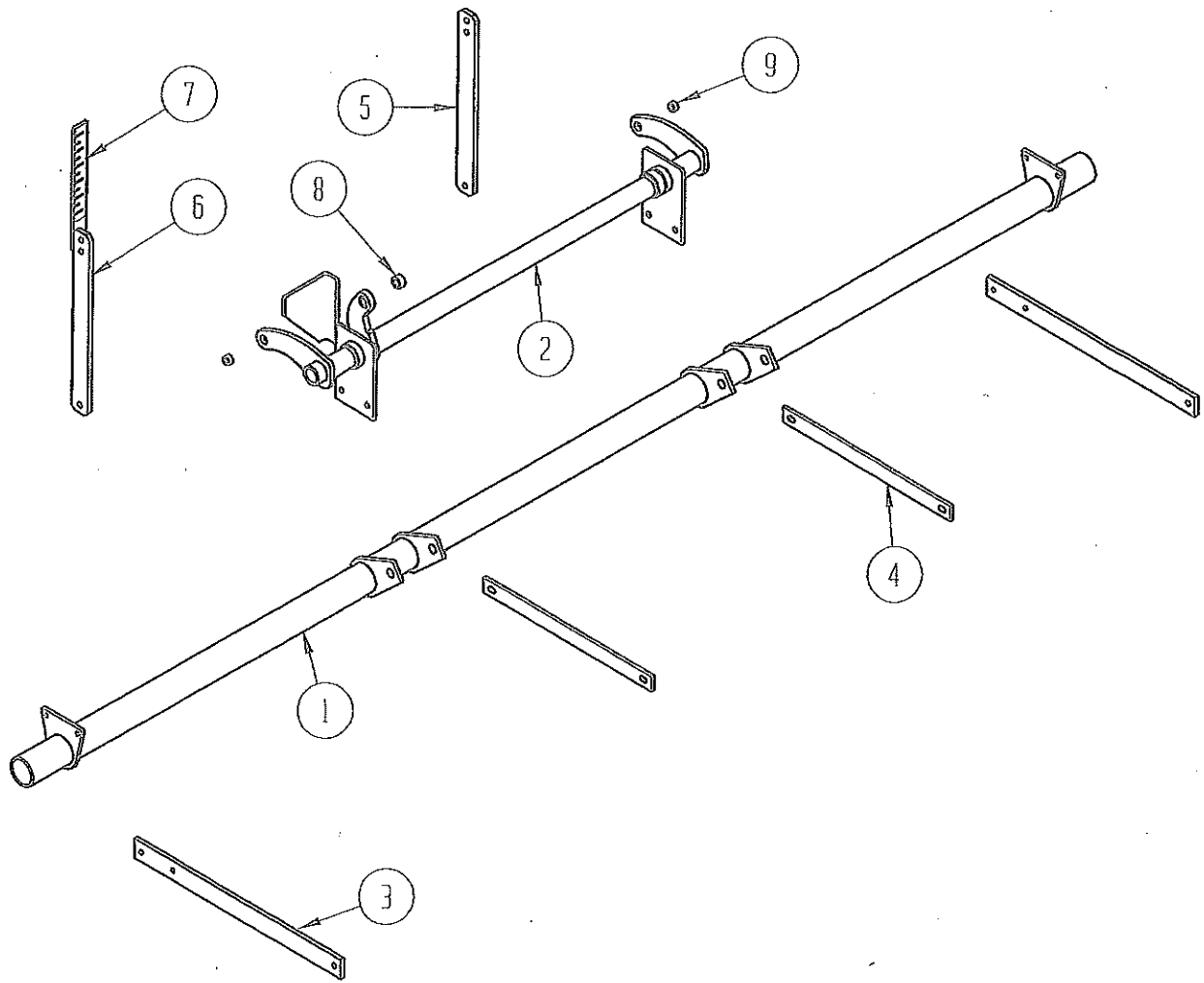
ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	524521	Axle Weldment (26' & 24' Units)
2	1	523105	Axle Weldment (28' & 30' Units)
	1	524642	Axle Weldment (32' to 36' Units)
	1	524948	Axle Weldment(40')
3	2	523107	Axle Bracket, Outer
4	2	522099	Axle Bracket, Inner (Includes top and bottom)
	4	524694	Axle Bracket, Inner (18'-20' Center Section Only)
5	4	521391	Hardened Bushing
6	2 (24'-26')	523149	Transport Lock
	4 (28'-36')	523149	Transport Lock
7	4 (24'-26')	523163	Cylinder Pin
	8 (28'-40')	523163	Cylinder Pin





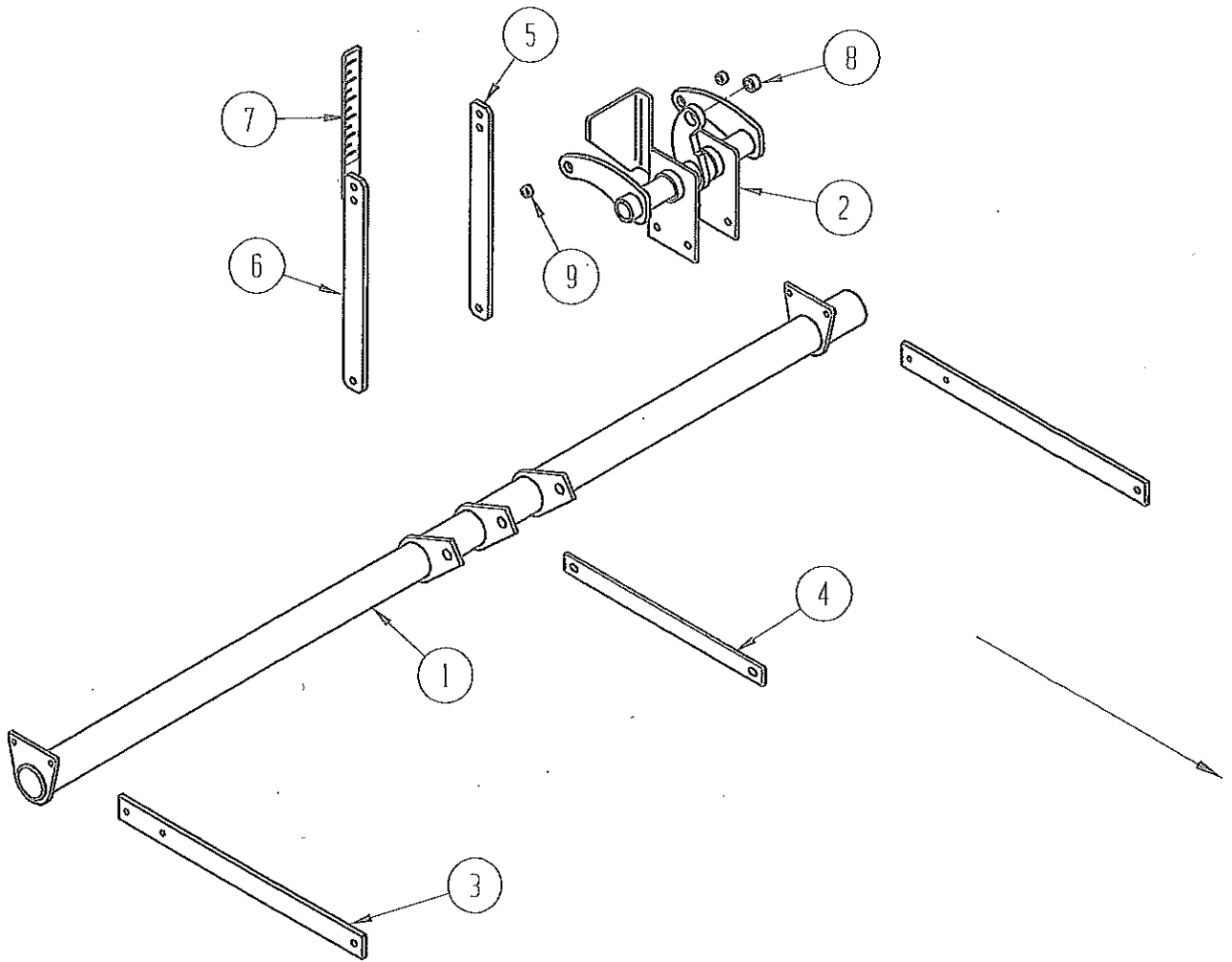
**HUB & WHEEL ASSEMBLY  
522620**

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	521328	Heavy Duty Spindle
2	1	990094	Seal
3	1	990000	Bearing Cone, Inner
4	1	990001	Bearing Cup, Inner
5	1	999981	Hub Asm, complete w/Bearings, Seal, Hub Cap, & Lug Bolts
6	1	990003	Bearing Cup, Outer
7	1	990002	Bearing Cone, Outer
8	1	999965	Flat Washer – 7/8
9	1	999960	Slotted Nut – 7/8 with Cotter Key
10	1	999952	Hub Cap
11	1	521910R	Tire, Radial TL (IF 280/70R15)
12	1	999974.99	Tube, 15"
13	1	999986	Wheel, 15" 8 Hole
14	8	997905	Lug Bolt



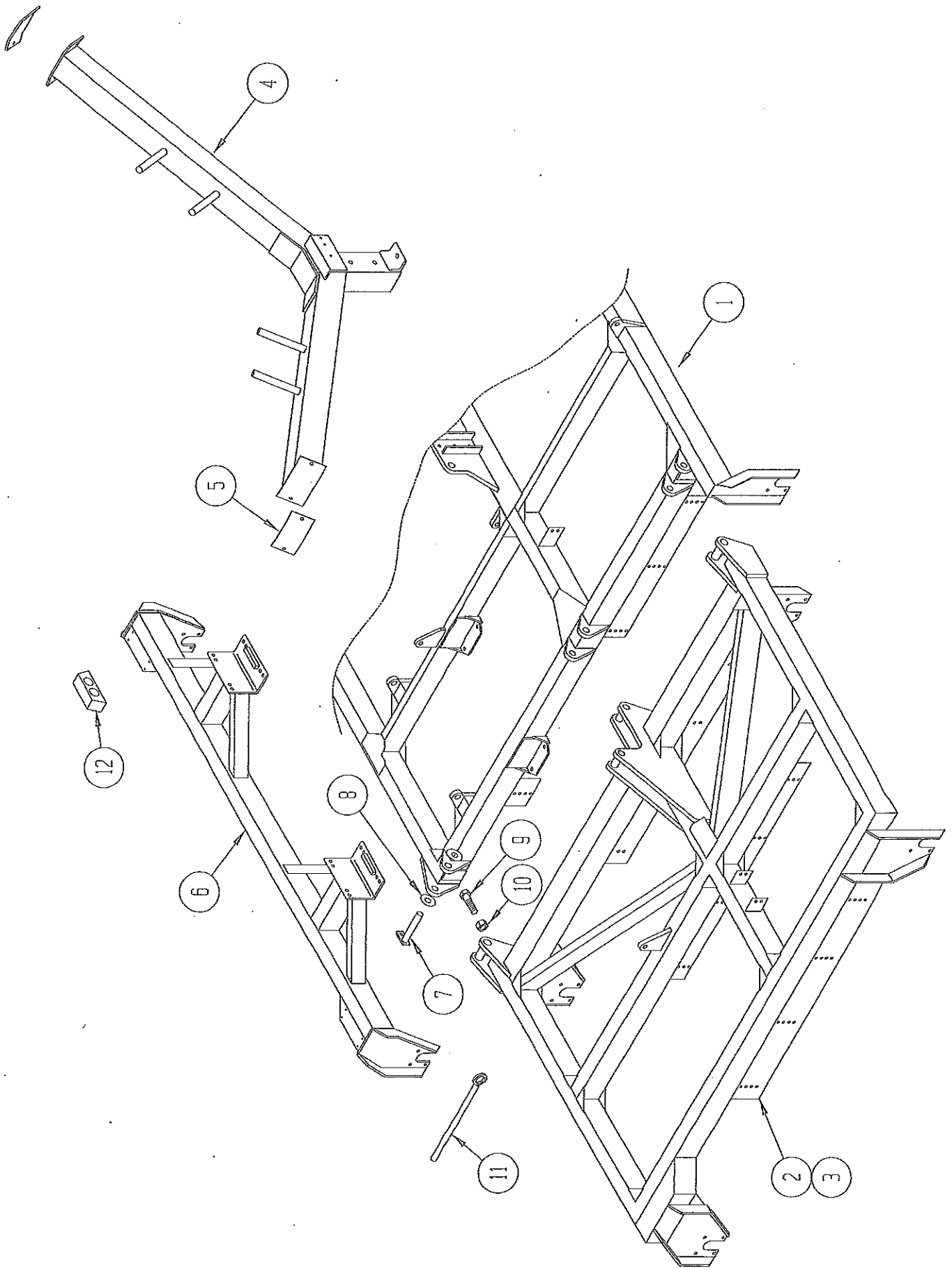
LEVELING BAR & LIFT GROUP (CENTER SECTION)

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	524788	Leveling Bar (26' & 24' Units)
	1	524786	Leveling Bar (28' & 30' Units)
	1	524666	Leveling Bar (32' to 36' Units)
	1	524960	Leveling Bar(40' Unit)
2	1	524785	Lifting Bar Weldment (Includes Bushings)
	1	524665	Lifting Bar Weldment (18'-20' Center)
3	2	522654	Pull Link, Side
4	2(4-18')	521374	Pull Link, Inner
5	1	521488	Lift Link
6	1	522029	Lift Link Weldment
7	1	522301	Depth Indicator Decal
8	1	521391	Hardened Bushing
9	2	360098	Spacer Bushing



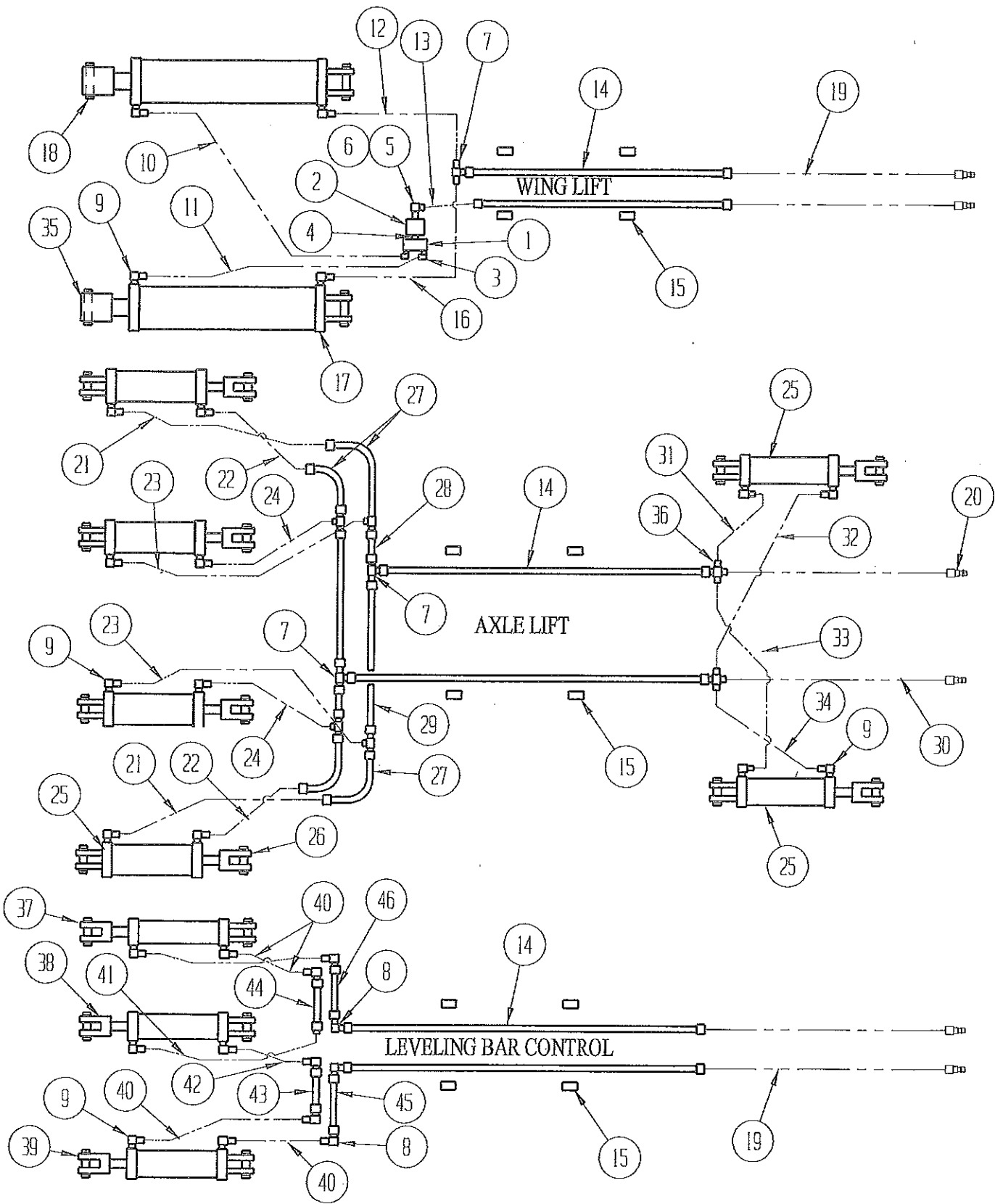
**LEVELING BAR & LIFT GROUP (WINGS)**

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	524800	Leveling Bar, RH Shown (9' Wing)
	1	524801	Leveling Bar, LH Not Shown (9' Wing)
	1	524939	Leveling Bar, RH Shown (10' Wing)
	1	524940	Leveling Bar, LH Not Shown (10' Wing)
	1	524794	Leveling Bar, RH Shown (6' Wing)
	1	524795	Leveling Bar, LH Not Shown (6' Wing)
	1	524796	Leveling Bar, RH Shown (7' Wing)
	1	524797	Leveling Bar, LH Not Shown (7' Wing)
	1	524798	Leveling Bar, RH Shown (8' Wing)
	1	524799	Leveling Bar, LH Not Shown (8' Wing)
2	1	524790	Lifting Bar weldment
3	2	522654	Pull Link, Side
4	1	521374	Pull Link, Center
5	1	521488	Lift Link
6	1	522029	Lift Link Weldment
7	1	522301	Depth Indicator Decal
8	1	521391	Hardened Bushing
9	2	360098	Spacer Bushing



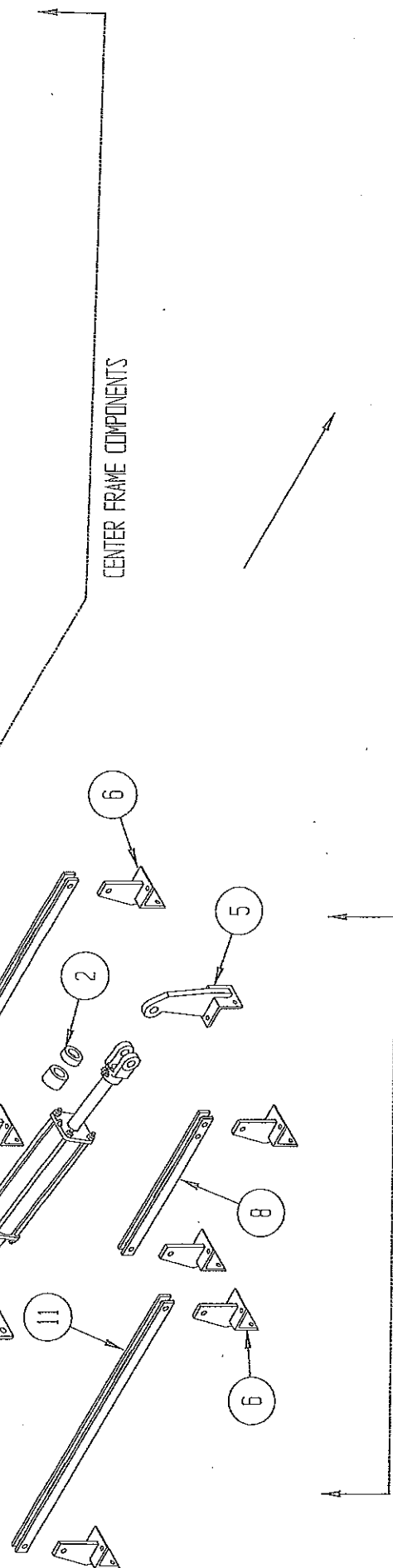
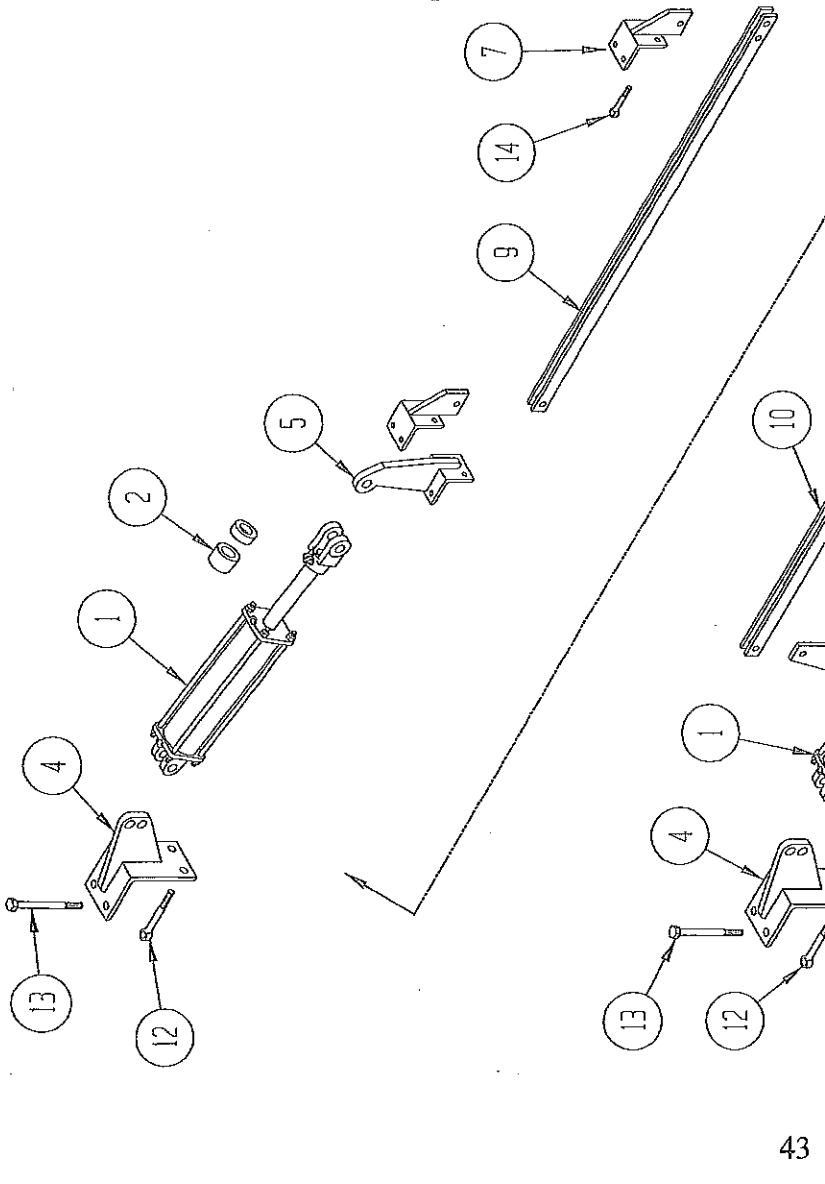
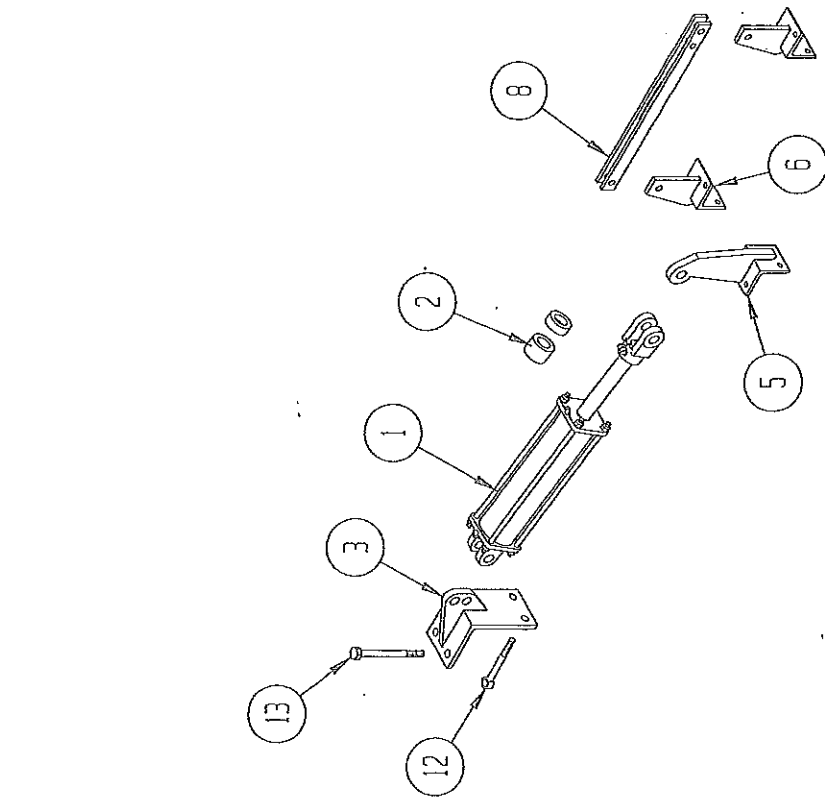
**CENTER FRAME, REAR ROLLER FRAME, AND WING ATTACHING PARTS**

<b>ITEM NO.</b>	<b>QUANTITY</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>
1	1	524787	Center Frame, 12'
	1	524775	Center Frame, 14'
	1	524641	Center Frame, 18'
	1	524945	Center Frame, 20'
2	1	524650	RH Wing, 9'
	1	524933	RH Wing, 10'
	1	524256	RH Wing, 6'
	1	524294	RH Wing, 7'
	1	524305	RH Wing, 8'
3	1	524649	LH Wing, 9' (Not Illustrated)
	1	524934	LH Wing, 10' (Not Illustrated)
	1	524253	LH Wing, 6' (Not Illustrated)
	1	524292	LH Wing, 7' (Not Illustrated)
	1	524303	LH Wing, 8' (Not Illustrated)
4	1	524375	Wing Stop (12' Center Frame)
	1	524371	Wing Stop (14' Center Frame)
	1	524663	Wing Stop (18' Center Frame)
	1	524951	Wing Stop (20' Center Frame)
5	2	522655	Pad
6	1	523783	Rear Roller Frame (12' Center Frame)
	1	523314	Rear Roller Frame (14' Center Frame)
	1	524640	Rear Roller Frame (18' Center Frame)
	1	524950	Rear Roller Frame (20' Center Frame)
7	6	522210	Hinge Pin
8	12	522212	Thrust Washer
9	4	523047	Hex Bolt, 1 1/2 x 5 NF, Full Thread
10	4	525250	Hex Jam Nut, 1 1/2 NF
11	1	524217	Wing Nut Adjusting Wrench
12	1	521268	Warning Light Kit



## HYDRAULIC SCHEMATIC

ITEM NO	QTY 12' CTR	QTY 14' CTR	PART NO	DESCRIPTION
1	1	1	522802	Flow Divider/Combiner, Synchronizing
2	1	1	522804	Flow Restrictor
3	2	2	TF5515-8-12	Elbow, 90° 8-12 O-Ring
4	1	1	6402-0-12-12	Adapter, 12-12 O-ring
5	1	1	6500-10-10	Straight Thread Elbow, 3/4 x 3/4 O-Ring
6	1	1	6504-10-12	Straight Tread Connector, 1/2 x 5/8 O-Ring
7	7	7	2601-10	Union Tee, 5/8
8	8	8	2500-10-10	Elbow, 90° 10-Male JIC
9	22	22	6801-NWO-8-8	Straight Thread Elbow, 1/2 x 1/2 O-Ring
10	1	1	-----	Hydraulic Hose, 1/2 x 61 w/ 1/2 JIC Female Ends
11	2	2	-----	Hydraulic Hose, 1/2 x 78 w/ 1/2 JIC Female Ends
12	1	1	-----	Hydraulic Hose, 1/2 x 38 w/ 1/2 & 5/8 JIC Female Ends
13	1	1	-----	Hydraulic Hose, 1/2 x 28 w/ 1/2 & 5/8 JIC Female Ends
14	6	6	-----	Hydraulic Tube Assembly, 5/8 x 70 Straight
15	16	16	264704	Hydraulic Line Clamp, 5/8 Double
16	1	1	-----	Hydraulic Hose, 1/2 x 32 w/ 1/2 & 5/8 JIC Female Ends
17	2	2	524258	Hydraulic Cylinder, 5 x 30 w/ Hardened Clevis
		(2)	524632	Hydraulic Cylinder, 6 x 30"(18'-20' Center Section Only)
18	2	2	523324	Cylinder Pin (Use 524678 on 18'-20' Center)
19	4	4	-----	Hydraulic Hose, 1/2 x 192 w/1/2 MPT & 5/8 JIC Female Ends
20	6	6	291027	Quick Coupler, Male End
21	2	2	-----	Hydraulic Hose, 1/2 x 55 w/ 1/2 Male & 5/8 Female JIC Ends
22	2	2	-----	Hydraulic Hose, 1/2 x 48 w/ 1/2 Male & 5/8 Female JIC Ends
23	2	2	-----	Hydraulic Hose, 1/2 x 57 w/ 1/2 Male & 5/8 Female JIC Ends
24	2	2	-----	Hydraulic Hose, 1/2 x 43 w/ 1/2 Male & 5/8 Female JIC Ends
25	6	6	267836	Hydraulic Cylinder, 3 1/2 x 8 w/ Hardened Clevis
26		(8)	267836	Hydraulic Cylinder, 3 1/2 x 8 (18'-20' Center Section)
27	4	-	-----	Hydraulic Tube Asm, 5/8 x 40 w/ 90° Bend
	-	4	-----	Hydraulic Tube Asm, 5/8 x 52 w/ 90° Bend
28	2	-	-----	Hydraulic Tube Asm, 5/8 x 12 Straight
29	2	-	-----	Hydraulic Tube Asm, 5/8 x 17 Straight
30	2	-	-----	Hydraulic Hose, 1/2 x 192 w/1/2 MPT & 5/8 JIC Female Ends
31	1	-	-----	Hydraulic Hose, 1/2 x 22 w/ 1/2 & 5/8 Female JIC Ends
32	1	-	-----	Hydraulic Hose, 1/2 x 33 w/ 1/2 & 5/8 Female JIC Ends
33	1	-	-----	Hydraulic Hose, 1/2 x 27 w/ 1/2 & 5/8 Female JIC Ends
34	1	-	-----	Hydraulic Hose, 1/2 x 39 w/ 1/2 & 5/8 Female JIC Ends
35	-	2	525432	Cylinder Clevis, Slotted
36	2	2	2650-10	Cross, 5/8 JIC
37	1	1	522658	Cylinder, Re-phasing 2 1/2 x 8
38	1	1	522659	Cylinder, Re-phasing 2 3/4 x 8
39	1	1	522660	Cylinder, Re-phasing 3 x 8
40	4	-	-----	Hydraulic Hose, 1/2 x 66 w/ 1/2 & 5/8 JIC Female Ends
41	1	1	-----	Hydraulic Hose, 1/2 x 56 w/ 1/2 Female & 5/8 Male JIC Ends
42	1	-	-----	Hydraulic Hose, 1/2 x 39 w/ 1/2 & 5/8 JIC Female Ends
43	1	-	-----	Hydraulic Tube Asm, 5/8 x 39 Straight
	-	1	-----	Hydraulic Tube Asm, 5/8 x 51 1/2 Straight
44	1	-	-----	Hydraulic Tube Asm, 5/8 x 72 Straight
	-	1	-----	Hydraulic Tube Asm, 5/8 x 84 Straight
45	1	-	-----	Hydraulic Tube Asm, 5/8 x 60 Straight
	-	1	-----	Hydraulic Tube Asm, 5/8 x 72 Straight
46	1	-	-----	Hydraulic Tube Asm, 5/8 x 56 Straight
	-	1	-----	Hydraulic Tube Asm, 5/8 x 68 Straight



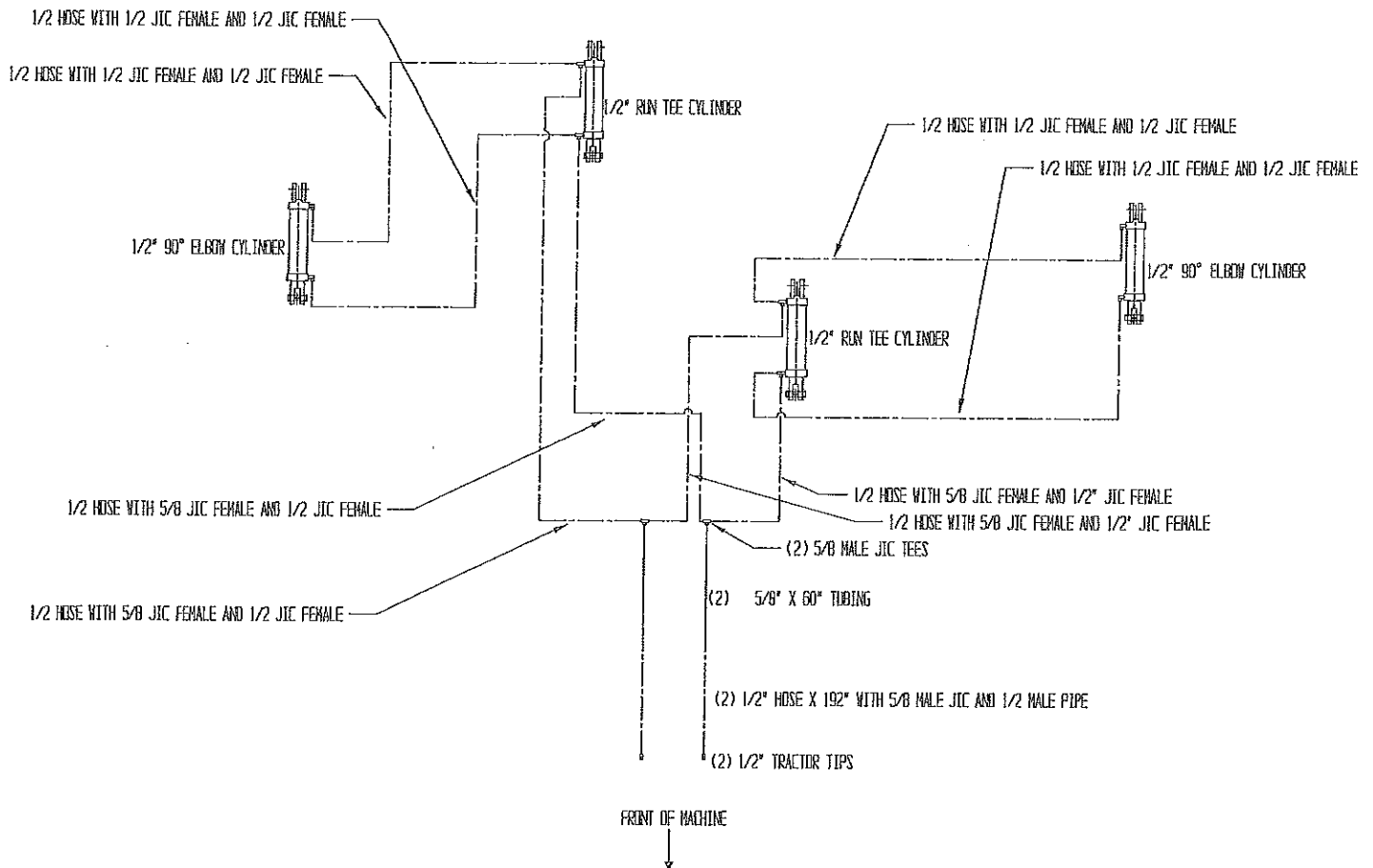
CENTER FRAME COMPONENTS

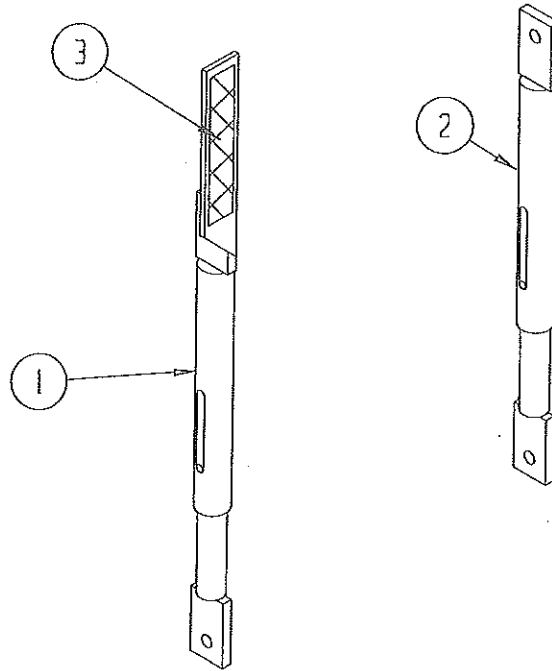
WING COMPONENTS  
(RH WING SHOWN)



## HYDRAULIC TINE BAR CONTROL

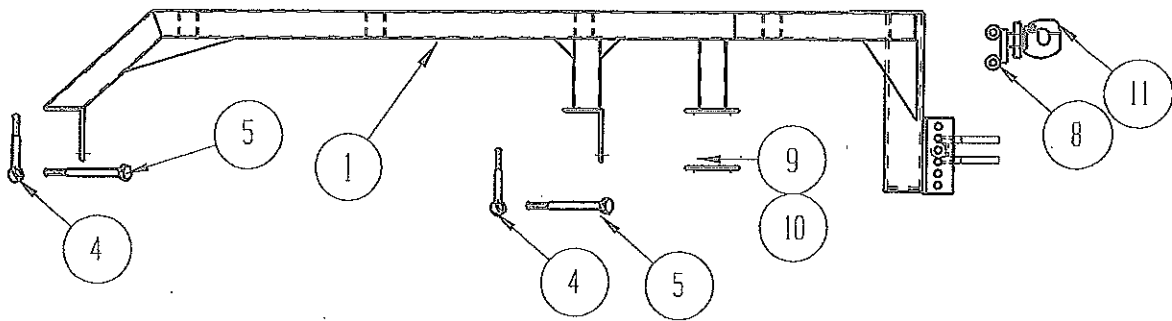
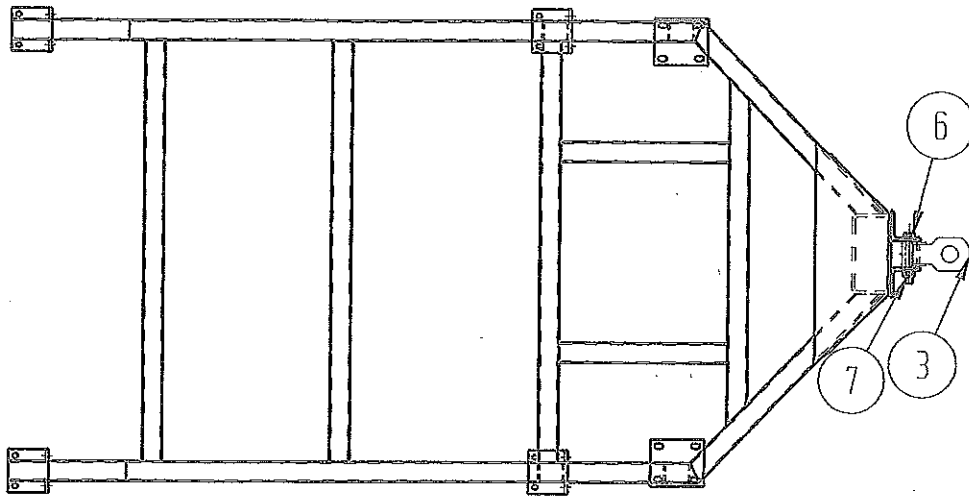
ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	4	998165	Hydraulic Cylinder, 3 x 10
2	4	522012	Stroke Control Kit
3	1	523155	Cylinder Bracket
4	3	523147	Cylinder Bracket
5	4	523000	Cylinder Arm
6	14	521495	Control Clamp
7	2	521513	Control Clamp
8	3	521260	Control Linkage
9	1	523157	Control Linkage
10	2	522043	Control Linkage
11	2	521489	Control Linkage
12	8	997903	Eye Bolt, 3/4 x 6
13	8	-----	Hex Bolt, 3/4 x 8 1/2
14	32	521099	Eye Bolt, 1/2 x 3 1/2



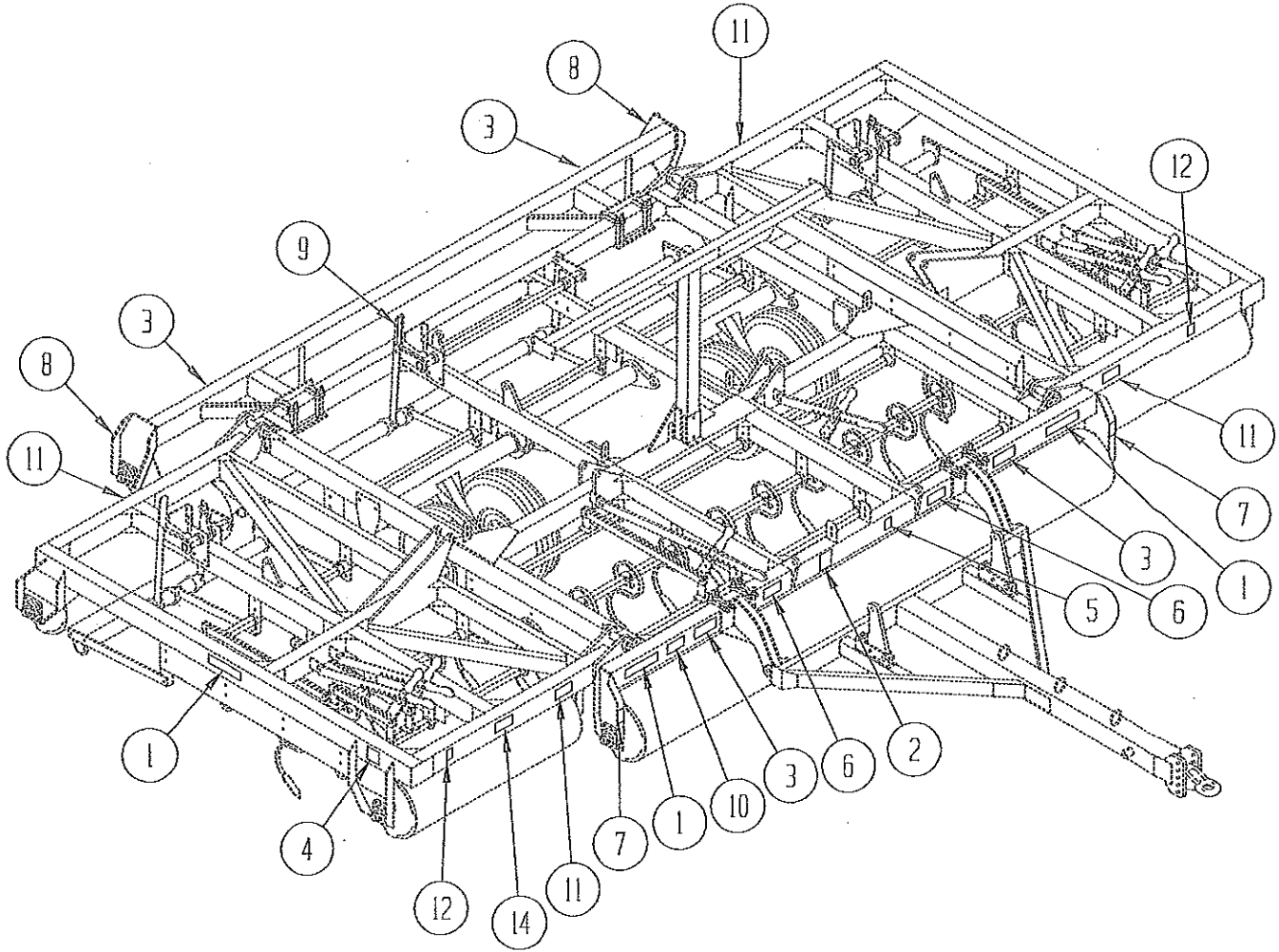


### LEVELING BAR ROCK PROTECTION KIT

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	3	521300	Link Assembly w/ Depth Indicator
2	3	521291	Link Assembly
3	3	522301	Decal Indicator Decal



GRAIN DRILL ASSEMBLIES			
ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	524746	Grain Drill Hitch 24-30'
2	1	524868	Grain Drill Hitch 32-40'
3	1	524744	Hitch Clevis(Optional)
4	8	264151	Eye Bolt, $\frac{3}{4}$ x 8 $\frac{1}{2}$
5	8	-----	Hex Bolt, $\frac{3}{4}$ x 6 $\frac{1}{2}$
6	2	-----	Hex Bolt, 1-8 x 7
7	2	-----	Lock Nut, 1-8
8	1	524928	Pintle Hitch Mount
9	2	524751	Bolt Plate
10	8	-----	Hex Bolt, $\frac{3}{4}$ x 8 $\frac{1}{2}$
11	1	525362	Pintle Hook



## DECAL GROUP

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	6	264797	Decal, Parma
2	1	100406	Decal, General Caution
3	4	100404	Decal, Block Machine
4	2	100311	Decal, Rotating Parts
5	1	100423	Decal, FEMA
6	11	100408	Decal, Hydraulics Pressurized (Not Illustrated)
7	2	264515	Reflector, Amber
8	2	264516	Reflector, Red
9	3	522301	Decal, Depth Indicator
10	1	265933	Decal, Do Not Ride
11	4	522457	Decal, Overhead Wing Hazard
12	4	521000	Decal, Lift
13	1	521268	Warning Light Kit
14	2	524918	Decal, Wing Float

# NOTES