

PARMA[®]

ROLLAHARROW
Folding Model
OWNERS MANUAL

Manual Number 070600-RH

PARMA COMPANY

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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.

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:

- Remove all transport locks on cylinders.
- Check all bolts and nuts to be sure they are tight.
- Check to see that 4-bolt flange bearings are positioned with the grease zerks up.
- Make sure all bearing lock collars are set correctly and tightened (see pg.6).
- Inspect and, if necessary, grease at all lubrication points; making sure all bearings are taking grease (see pg.5).
- Check all moving parts for smooth operation.
- Check to see that all hydraulic fittings and cylinders are tight and free of leaks (see pg.6).

DELIVERY:

- Complete the Delivery and Warranty Registration Forms, listing serial numbers of machine.
- Have the dealer and customer sign the form. Explain warranty policy on the Warranty Registration Form.
- Show the customer how to operate the Rollaharrow.
- Explain adjustments (see pg.5).
- Explain the importance of proper lubrication (see page 5).

DELIVERY CHECKLIST continued.

- ___ 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.

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.5).
- ___ With equipment operating, observe operation of moving parts. Watch for faulty operation, overheated bearings, and unusual sounds.
- ___ 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.5).
- ___ 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.

SAFETY PRECAUTIONS



Look for this symbol to point out important safety precautions.

It means:

**ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!**

!!!Always shut off engine before:

- 1. Leaving Tractor Seat**
- 2. Lubricating**
- 3. Cleaning the machine**
- 4. Adjusting the machine**

Always block wheels before working on or under the machine.

Always use adequate lights or safety warnings when transporting machine on public roads and after dark. Check with your local law enforcement agencies for specific requirements.

Limit towing speed to 20 mph.

Never allow others to ride equipment during operation.

Before roading the machine, check wheel bolts to make certain they are tight.

Before roading or transporting the machine, install an SMV emblem.

Before working under a hydraulically supported assembly, block it securely or lower it to lowest position.

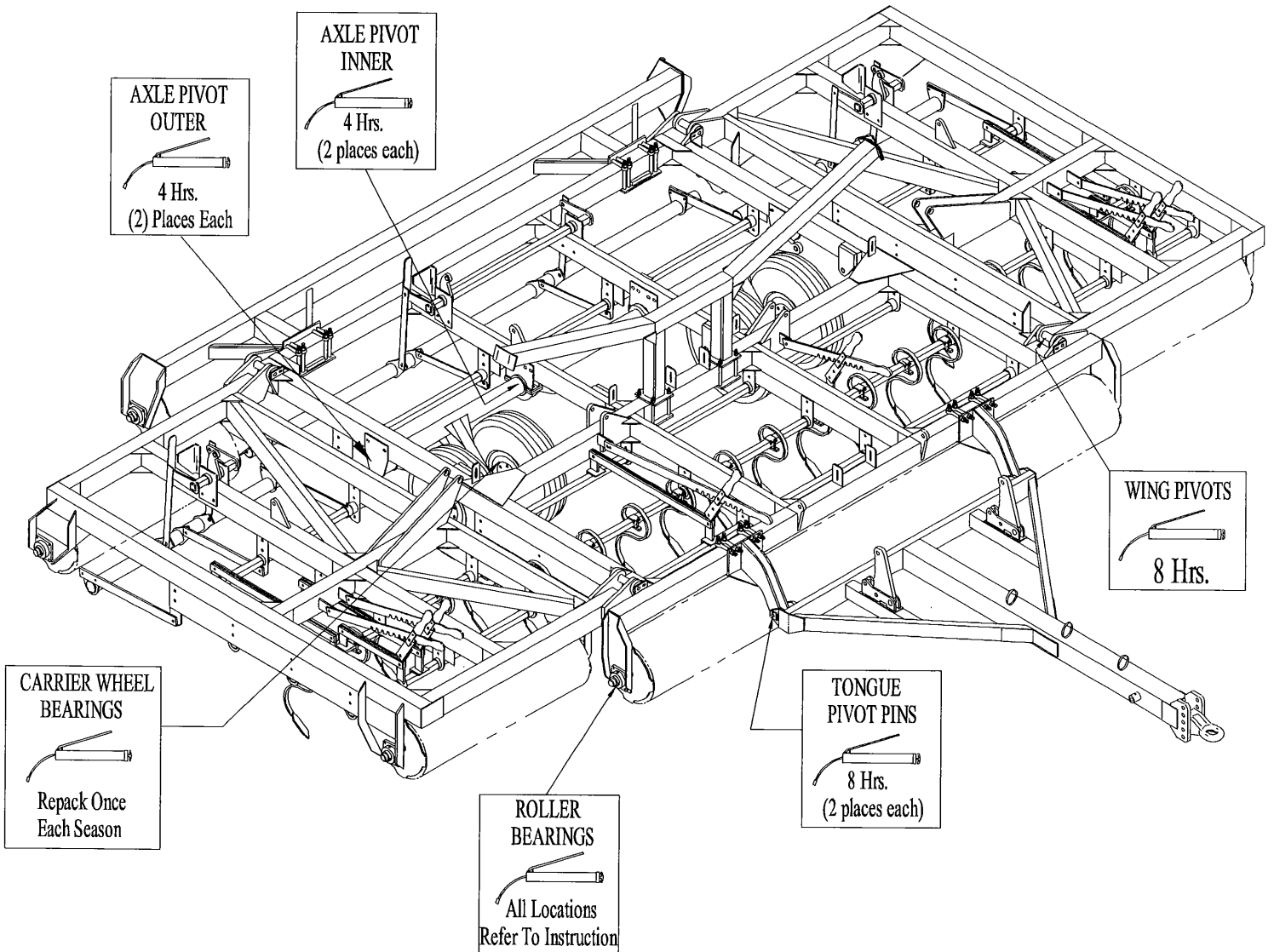
I M P O R T A N T ! !

FOR YOUR SAFETY, PARMA ROLLAHARROW IS EQUIPPED WITH VARIOUS SAFETY DECALS. IF ANY OF THESE DECALS SHOULD BECOME LOST OR WORN, THEY SHOULD BE REPLACED. YOU CAN FIND THE DECAL, LOCATION, AND THEIR RESPECTIVE PART NUMBERS FOR ORDERING IN YOUR PARTS BOOK.

MAINTENANCE AND FIELD ADJUSTMENTS

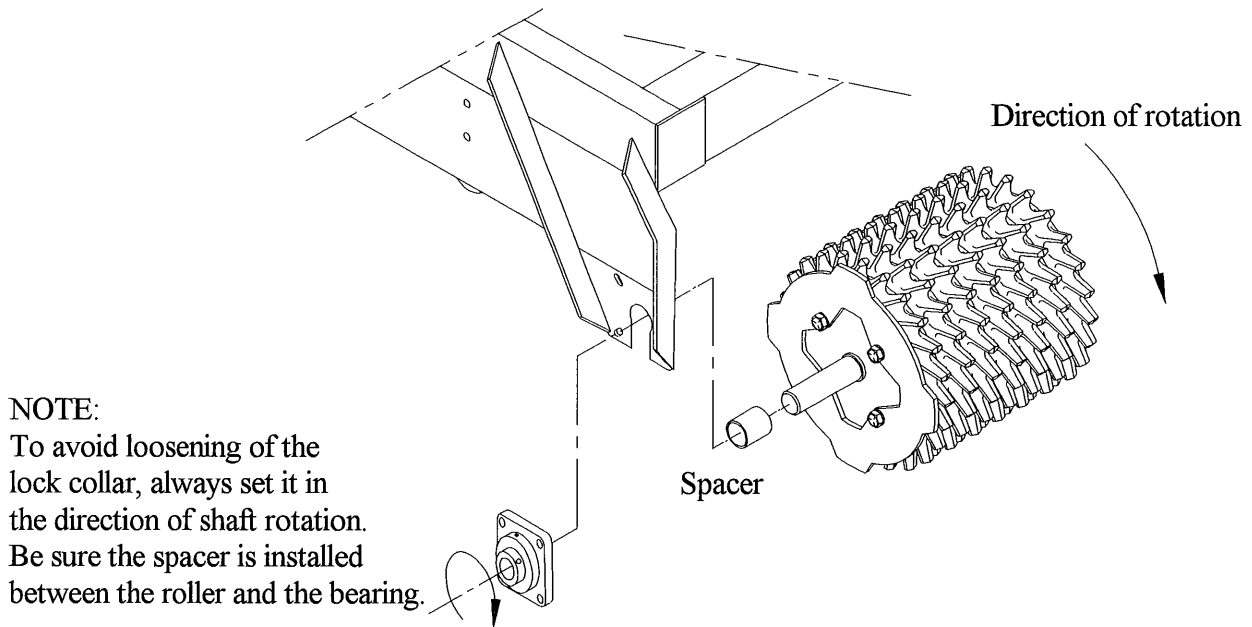
LUBRICATION

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 daily to 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 following illustration shows the lubrication points on the Rollaharrow.



BEARINGS

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



HYDRAULIC COMPONENTS

Before operating your PARMA Rolla-Harrow, 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.

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.

RE-PHASING CYLINDERS:

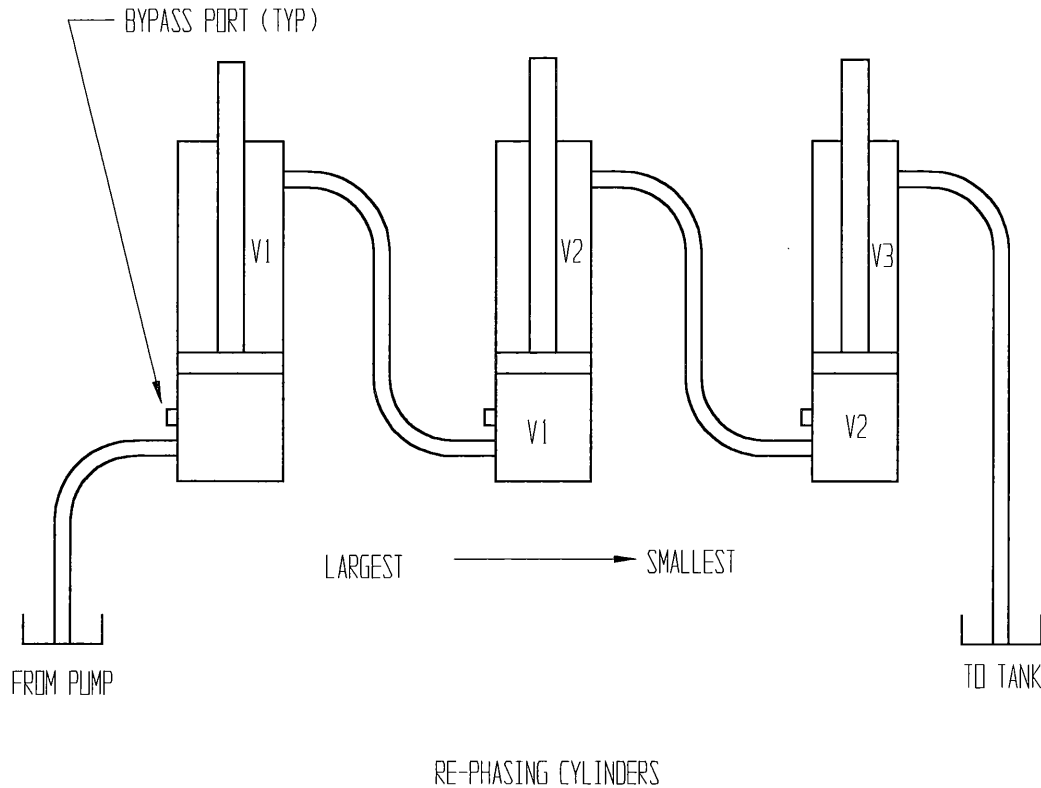
The cylinders that move the rear leveling bars are volumetrically matched to allow synchronized operation of the separate leveling bars. Each cylinder is a different size and connected in series in the hydraulic circuit.

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 rephasing 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).

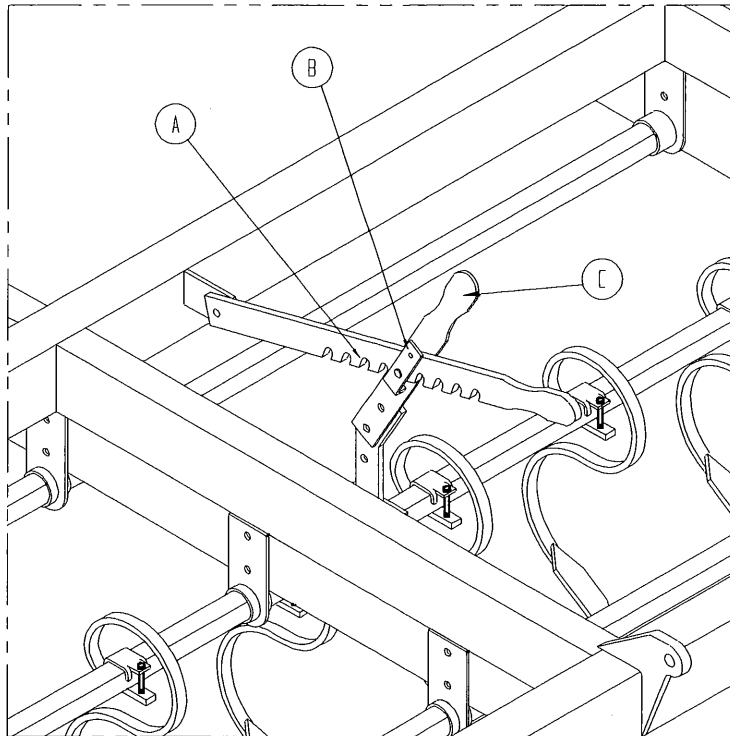
During operation, it is normal for the cylinders to periodically become out of phase. To re-phase, simply retract all cylinders completely and hold the valve open for a few seconds to allow all the cylinders to again index to the same position.



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.

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) should 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).

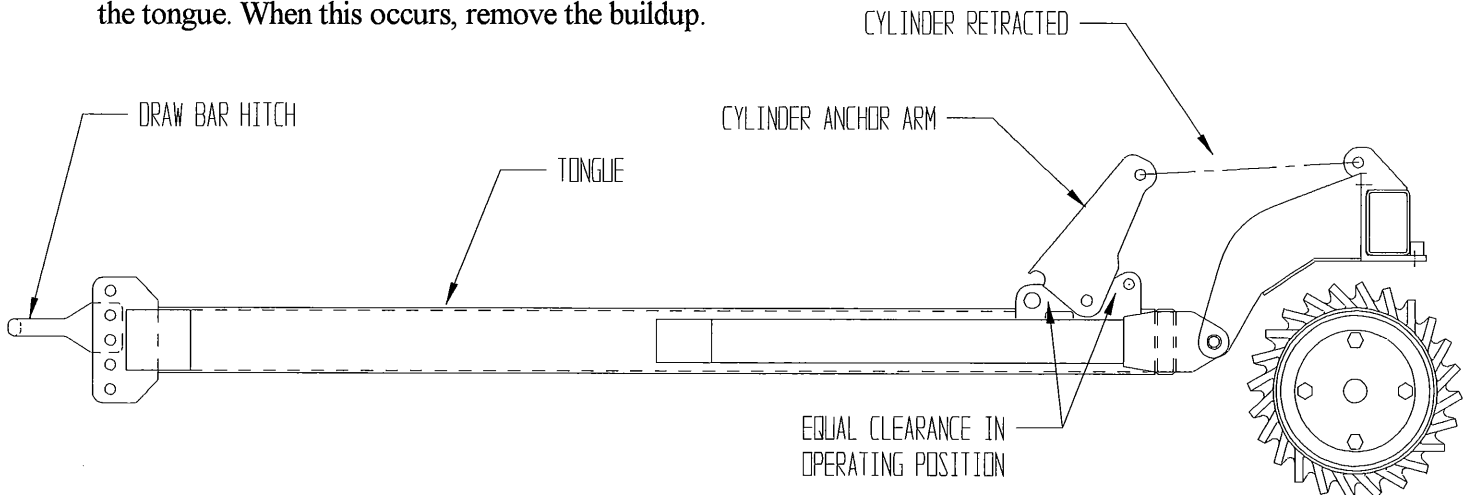


For the correct positioning of the S-Tines on the Rollaharrow, refer to page 11.

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.

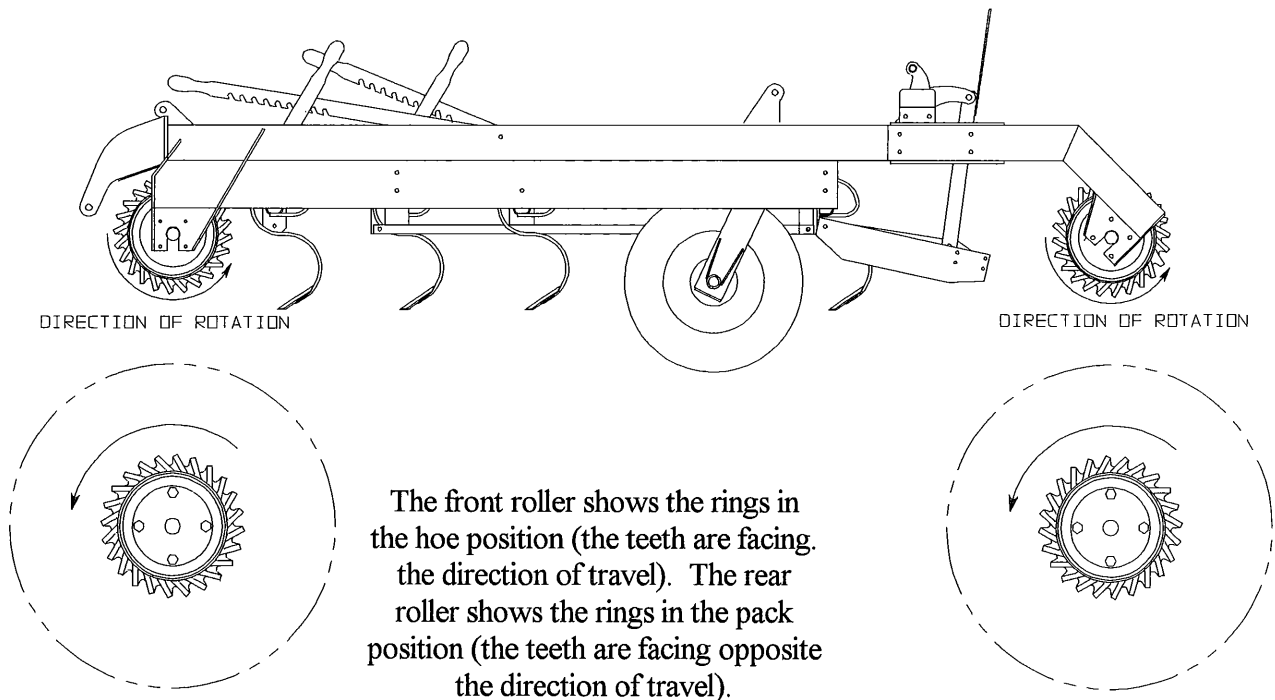
After connecting the machine to the tractor and with the lift cylinder retracted, the cylinder anchor on the tongue should be positioned so there will be equal movement both forward and back to allow the machine to float during operation. If necessary, adjust the front hitch ring up or down to obtain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



ROLLER RINGS

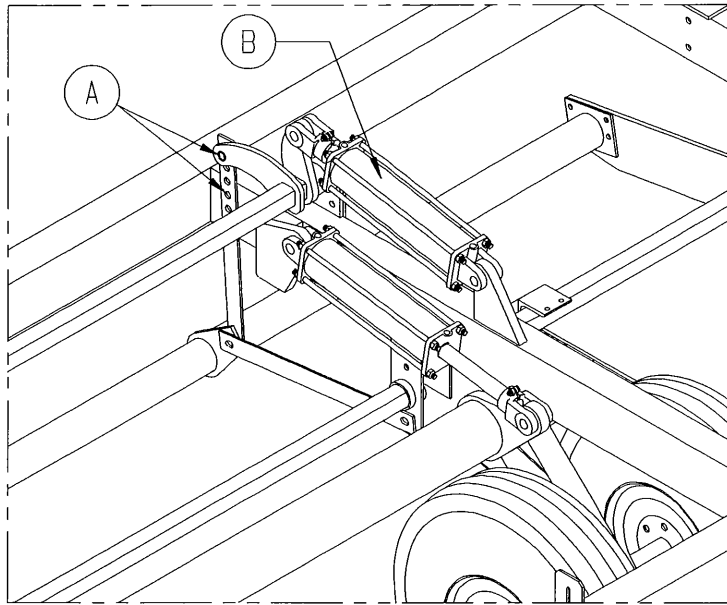
After some usage of your machine, the side of roller rings will wear, creating a gap between the rings on the roller tube. When this occurs, simply add enough new rings to fill this gap. If you do not add more rings to fill in the gap, your existing rings will wear out at an accelerated rate and breakage will be more frequent. 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.



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. 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).

OPERATING INSTRUCTIONS

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

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.

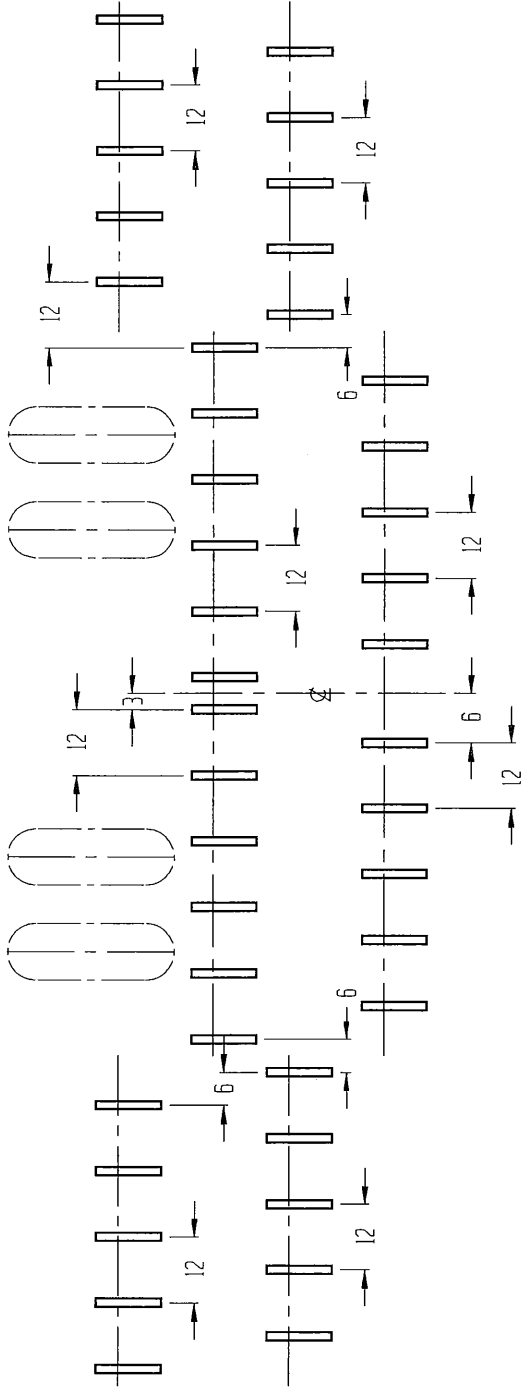
Always lift your Rolla-Harrow before turning. Failure to lift the machine while turning causes excessive side thrust on rollers and bearings, resulting in the breakage of parts.

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

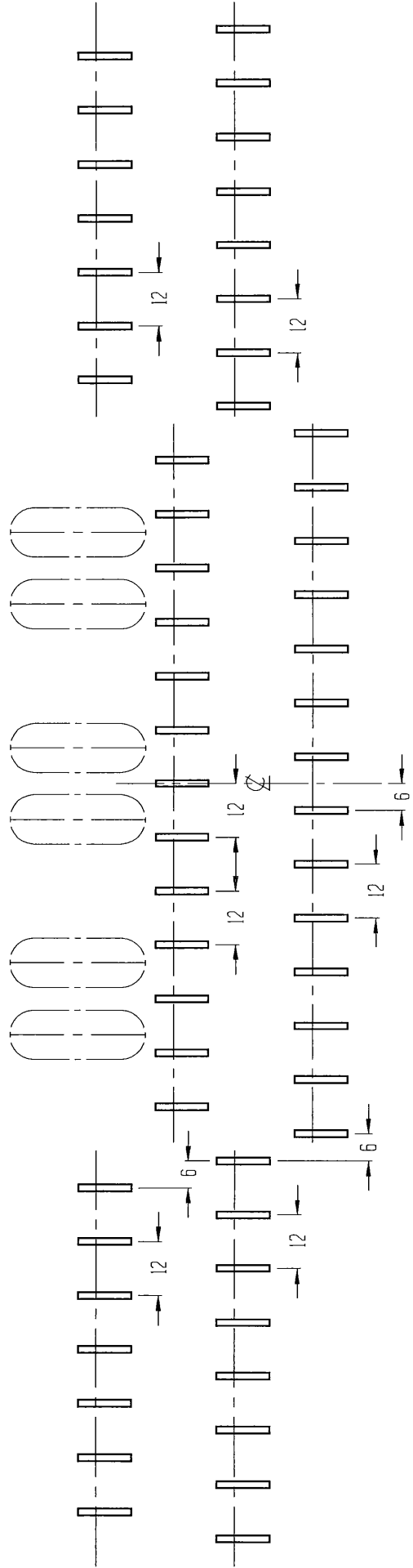
Always transport your Rollaharrow at speeds less than 20 mph. The implement rated tires are for minimal transportation use only. Not doing so can result in premature tire failure.

S-TINE SPACING

20 / 24 FT. TWO BAR

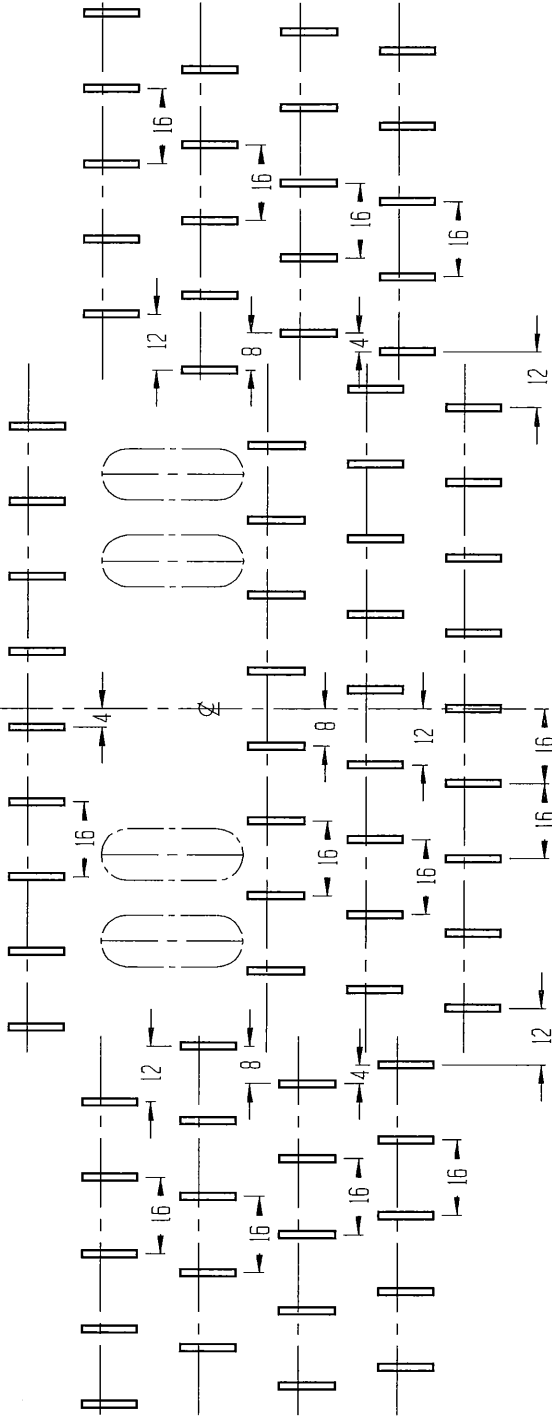


28 / 30 FT. TWO BAR

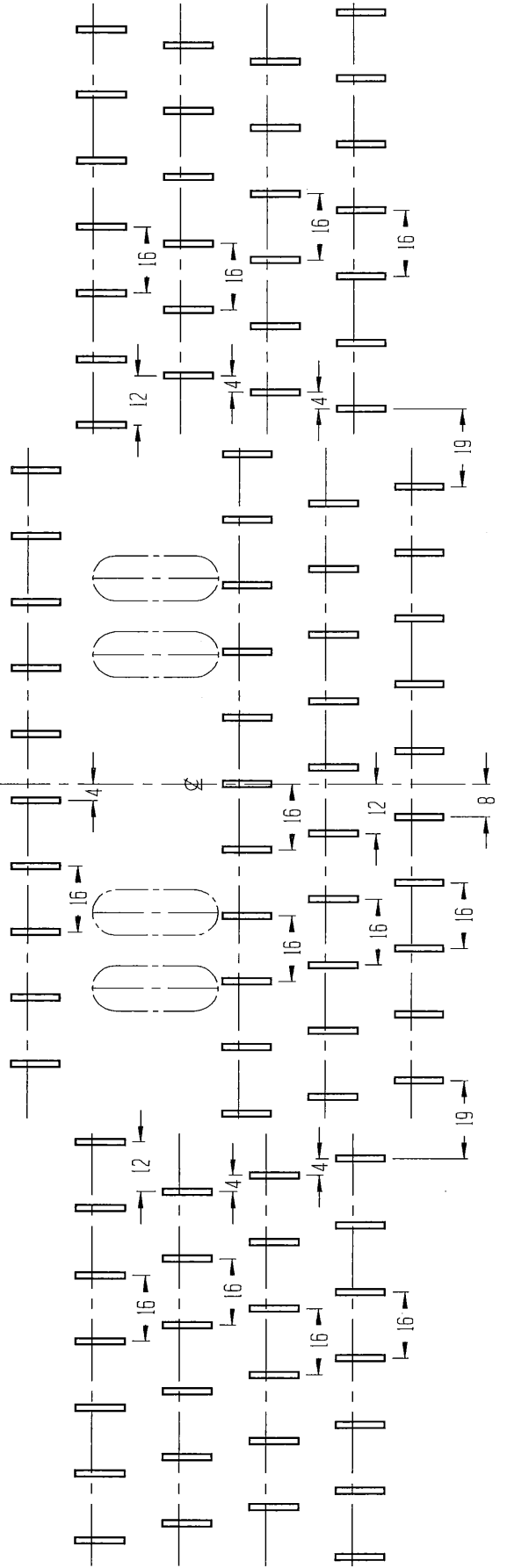


S-TINE SPACING

20 / 24 FT. FOUR BAR



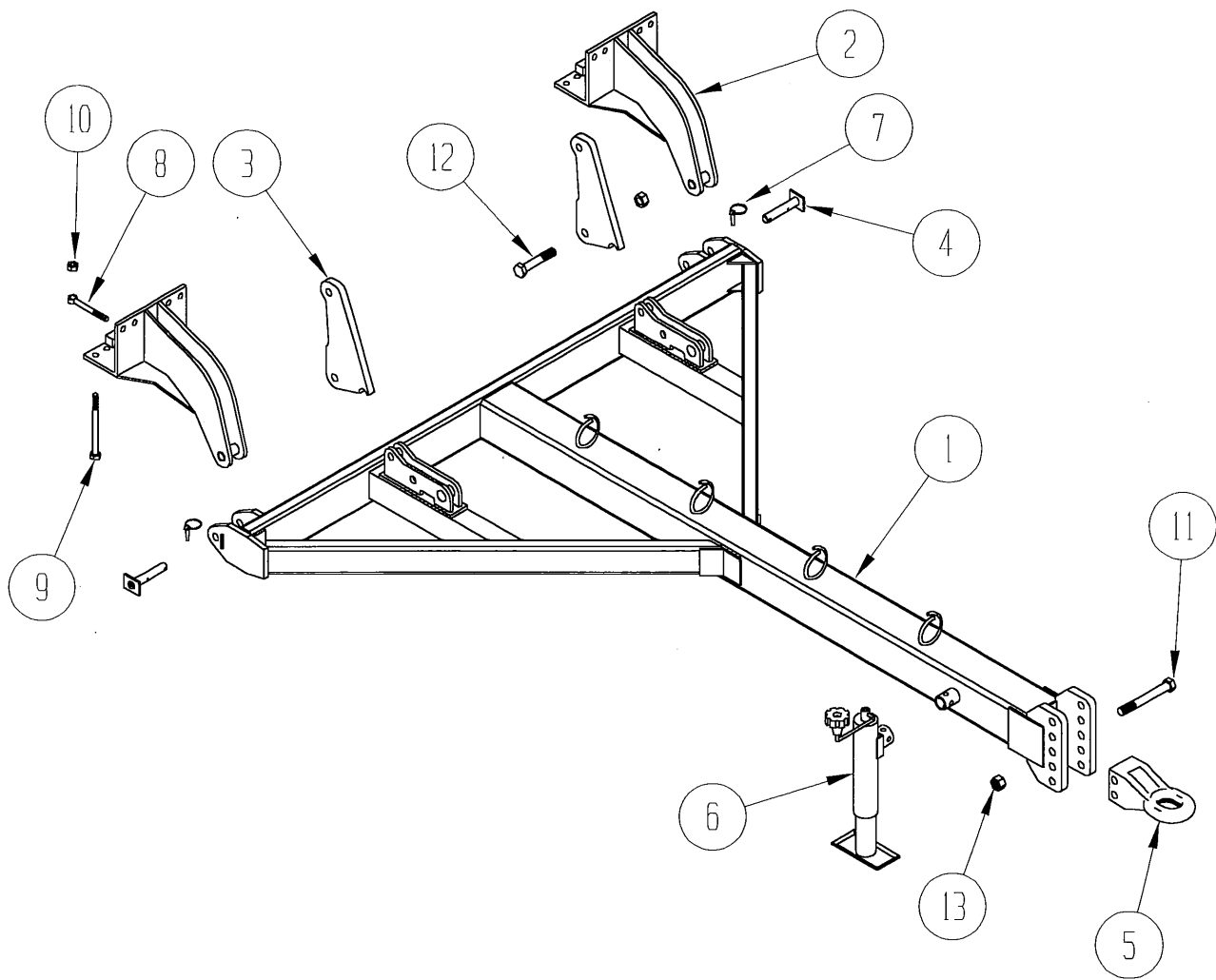
28 / 30 FT. FOUR BAR





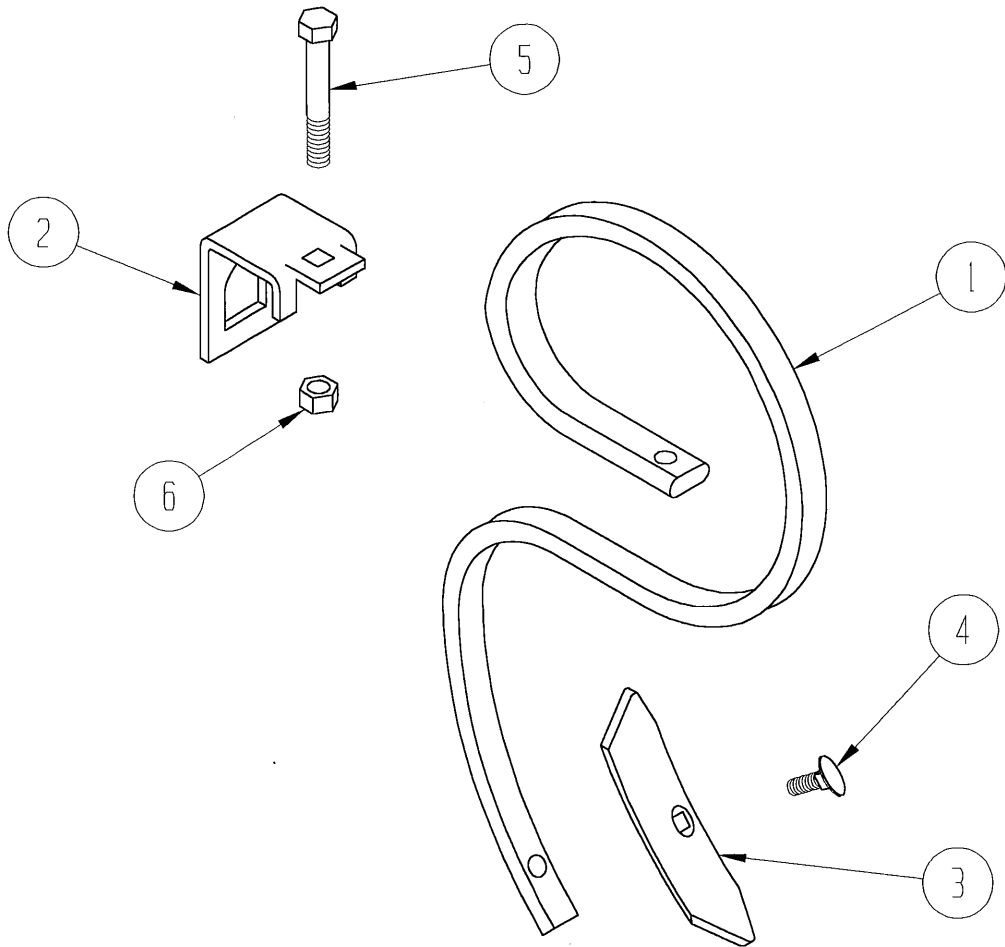
Parts Book Section

Folding Rollaharrow



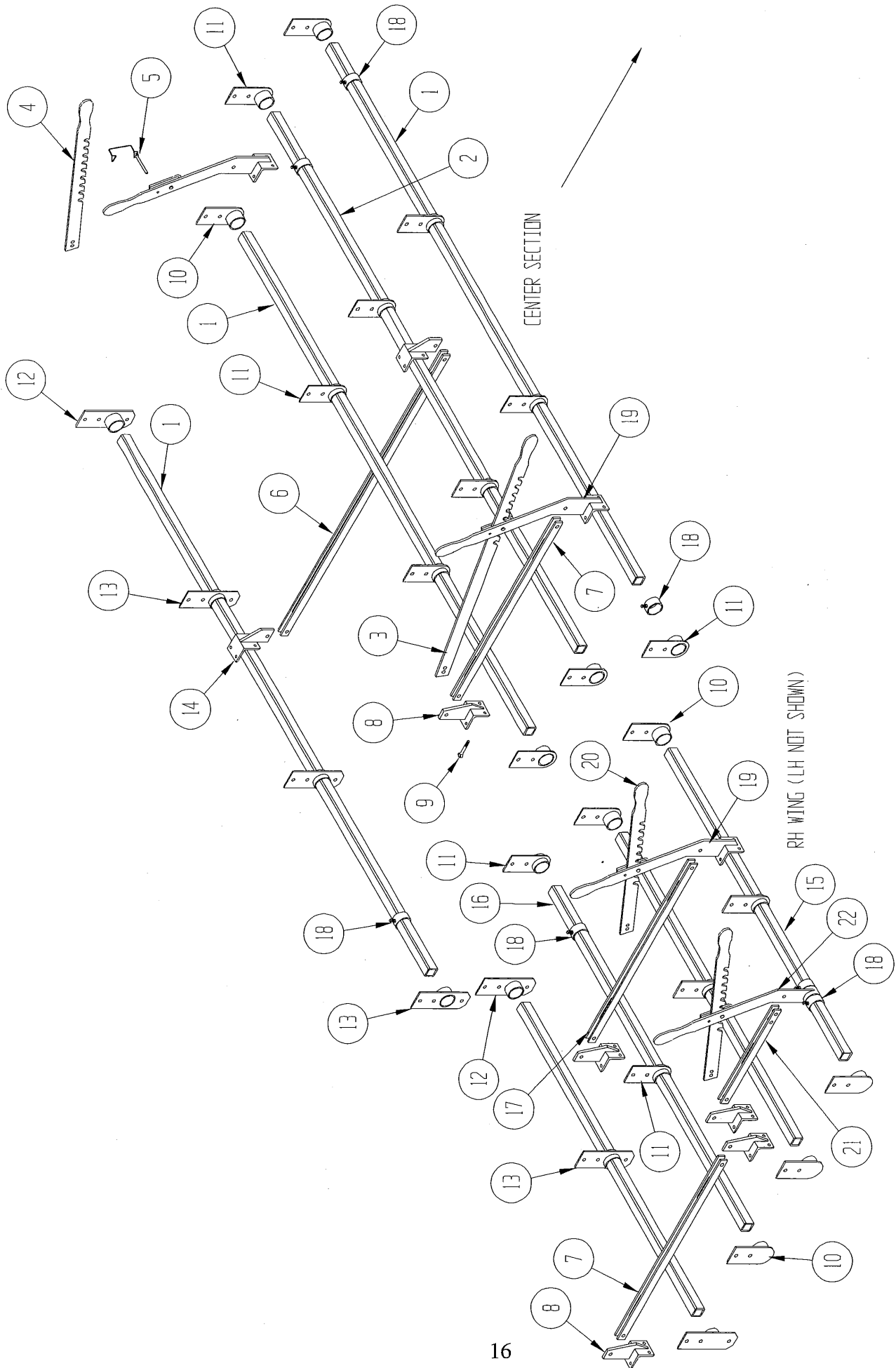
TONGUE GROUP

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	521465	Tongue Weldment
2	2	522205	Tongue Pull Bracket
3	2	522208	Cylinder Anchor
4	2	521434	Tongue Pin
5	1	521104	Ring Hitch, Category 3
6	1	521409	Jack
7	2	530053	Lynch Pin
8	8	997903	Eye Bolt, 3/4 x 6
9	8		Hex Bolt, 3/4 x 9 Grade 5
10	16		Hex Nut, 3/4"
11	2		Hex Bolt, 1" x 8 Grade 5
12	2		Hex Bolt, 1" x 4 Grade 5
13	4		Hex Locknut, 1"



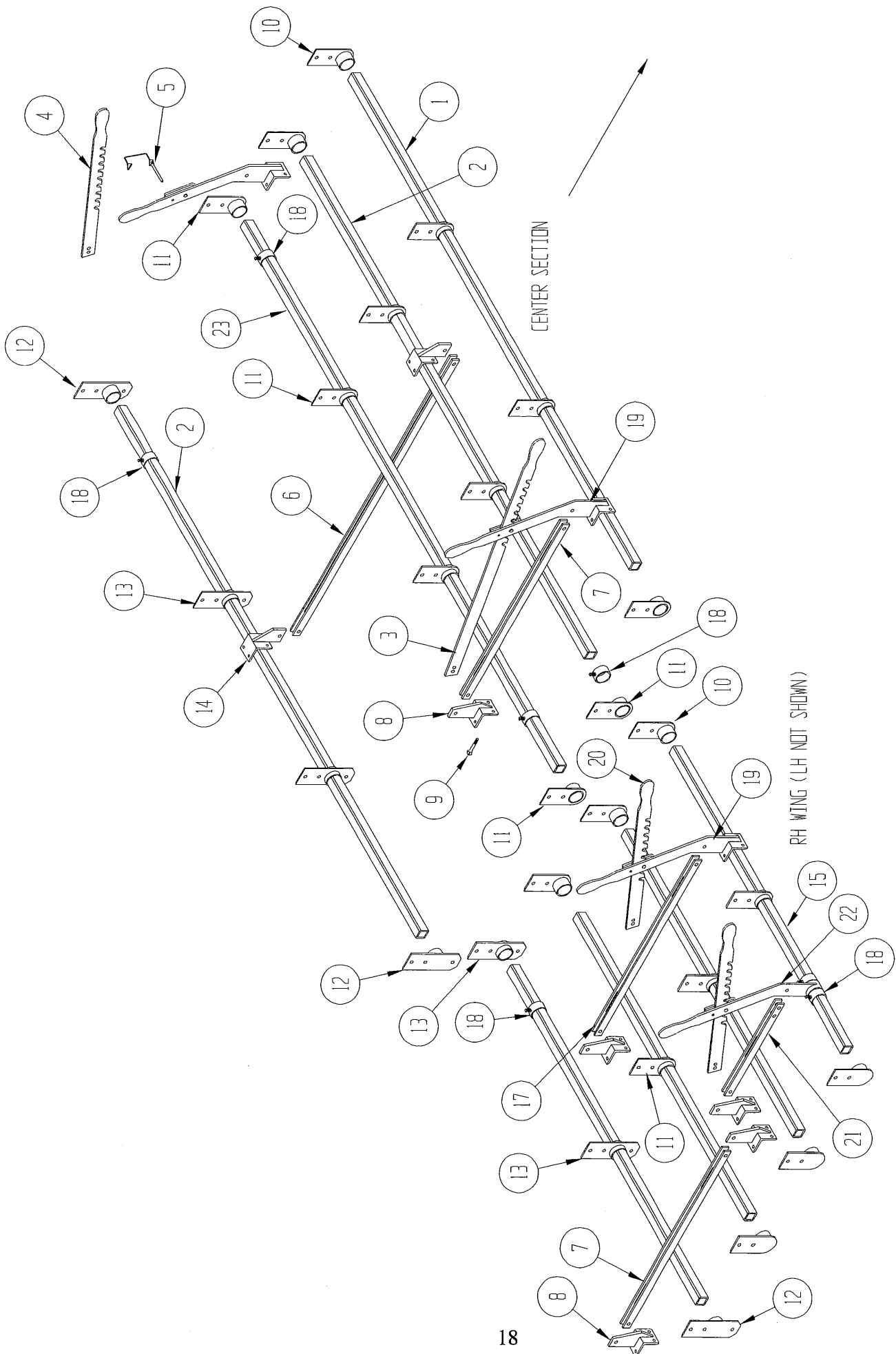
S-TINE GROUP

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	521483	S-tine, Std.
		521564	S-tine, High Clearance (Optional)
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"



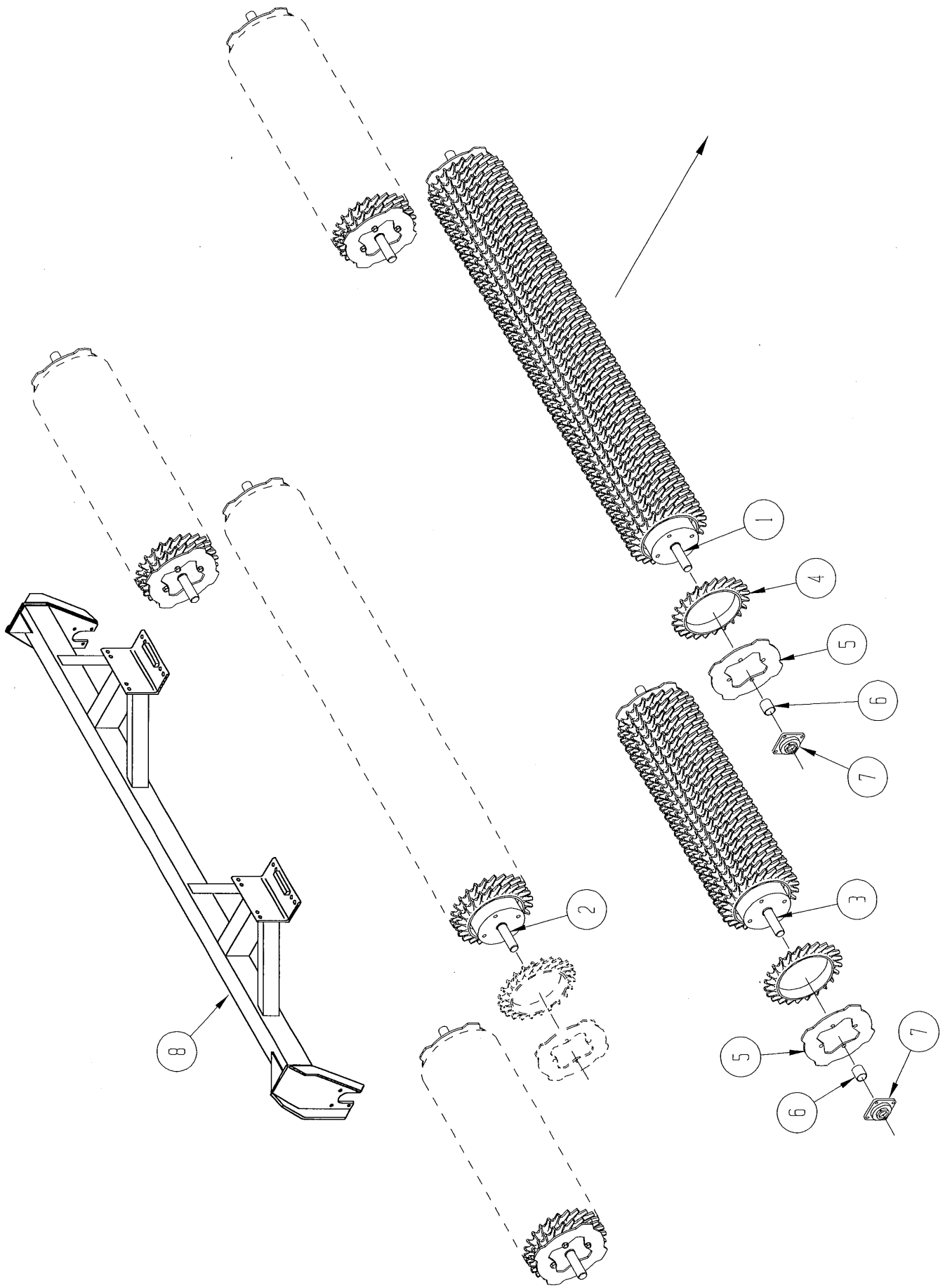
**TINE BAR GROUP 20' & 24'
(4 Bar)**

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	3	522366	Tine Bar, 132"
2	1	522367	Tine Bar, 122 1/2"
3	1	521505	Control Ratchet, Long
4	1	521504	Control Ratchet, Short
5	4	521442	Snap Pin
6	1	521501	Control Linkage, 74"
7	2	521489	Control Linkage, 44"
8	5	521495	Control Clamp
9	14	521099	Eye Bolt, 1/2 x 3 1/2
10	8	522909	Outer Toolbar Bracket
11	13	521306	Inner Toolbar Bracket
12	3	522299	Outer Toolbar Bracket, Rear
13	4	521407	Inner Toolbar Bracket, Rear
14	2	521513	Control Clamp
15	6	522372	Tine Bar, 75 1/4" (24' Unit)
	6	522369	Tine Bar, 51" (20' Unit)
16	2	522371	Tine Bar, 83" (24' Unit)
	2	522368	Tine Bar, 59" (20' Unit)
17	1	521489	Control Linkage, 42"
18	7	522259	Stop Collar
19	3	522035	Control Handle
20	2	522647	Control Ratchet
21	1	521260	Control Linkage, 23"
22	1	522648	Control Handle



TINE BAR GROUP 28' -30'
(4 Bar)

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	522329	Tine Bar, 146 ¾" (Front)
2	2	522338	Tine Bar, 151 ½" (Center/Rear)
3	1	521505	Control Ratchet, Long
4	1	521504	Control Ratchet, Short
5	4	521442	Snap Pin
6	1	521501	Control Linkage, 74"
7	2	521489	Control Linkage, 44"
8	5	521495	Control Clamp
9	14	521099	Eye Bolt, 1/2 x 3 1/2
10	8	522909	Outer Toolbar Bracket
11	13	521306	Inner Toolbar Bracket
12	3	522299	Outer Toolbar Bracket, Rear
13	4	521407	Inner Toolbar Bracket, Rear
14	2	521513	Control Clamp
15	6	522910	Tine Bar, 99 ¼" (30' Unit)
	6	522336	Tine Bar, 51" (28' Unit)
16	2	522911	Tine Bar, 104" (30' Unit)
	2	522332	Tine Bar, 59" (28' Unit)
17	1	521489	Control Linkage, 42"
18	7	522259	Stop Collar
19	3	522035	Control Handle
20	2	522647	Control Ratchet
21	1	521260	Control Linkage, 23"
22	1	522648	Control Handle
23	1	522337	Tine Bar, 164" (center)

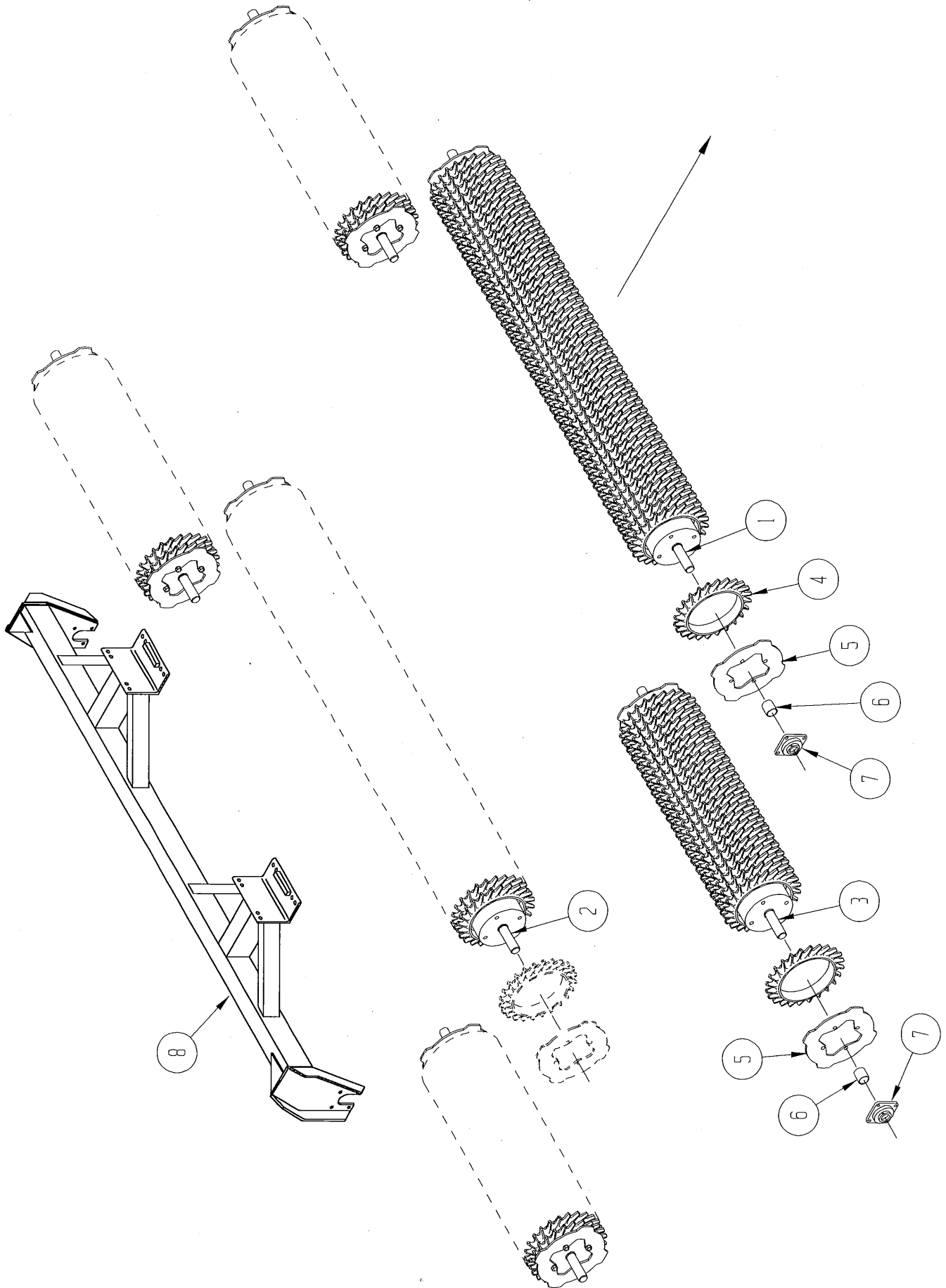


10" ROLLER ASSEMBLIES

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	521863	Roller Weldment, 12' (20' & 24' Units)
	1	521865	Roller Weldment, 14' (28' & 30' Units)
2	1	521864	Roller Weldment, 13' (20' & 24' Units)
	1	521866	Roller Weldment, 15' (28' & 30' Units)
3	4	521309	Roller Weldment, 4' (20' Unit)
	4	521857	Roller Weldment, 6' (24' Unit)
	4	521858	Roller Weldment, 7' (28' Unit)
	4	521859	Roller Weldment, 8' (30' Unit)
4	**	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
5	12	521496	Roller End Plate
6	12	521677	Spacer, Roller
7	12	980821	Bearing, 4 Bolt Flange 1 15/16
8	1	522623	Roller Mount, Rear (20' & 24' Units)
	1	522285	Roller Mount, Rear (28' & 30' Units)

** See table for quantities

ROLLER LENGTH	CAST RING QUANTITY
4'	20
6'	30
7'	35
8'	40
12'	60
13'	65
14'	70
15'	75

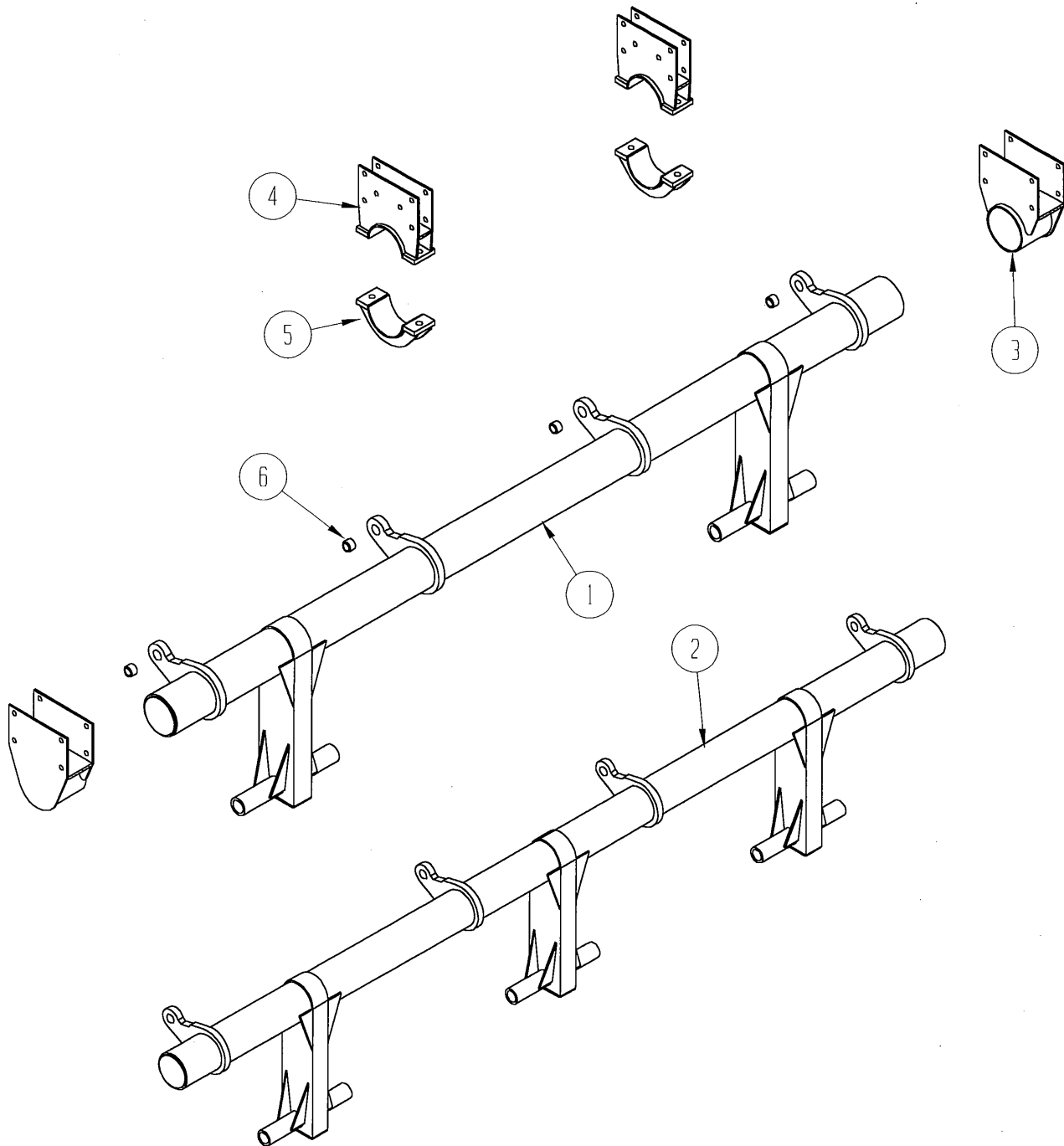


12" ROLLER ASSEMBLIES

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	521930	Roller Weldment, 12' (20' & 24' Units)
	1	521932	Roller Weldment, 14' (28' & 30' Units)
2	1	521931	Roller Weldment, 13' (20' & 24' Units)
	1	521933	Roller Weldment, 15' (28' & 30' Units)
3	4	521312	Roller Weldment, 4' (20' Unit)
	4	521924	Roller Weldment, 6' (24' Unit)
	4	521925	Roller Weldment, 7' (28' Unit)
	4	521926	Roller Weldment, 8' (30' Unit)
4	**	521592	Cast Ring, 12-14-20 Standard
	**	521643	Cast Ring, 12-14-20 Ductile
	**	521644	Cast Ring, 12-14-20 Domestic
5	12	521447	Roller End Plate
6	12	521677	Spacer, Roller
7	12	980821	Bearing, 4 Bolt Flange 1 15/16
8	1	522623	Roller Mount, Rear (20' & 24' Units)
	1	522285	Roller Mount, Rear (28' & 30' Units)

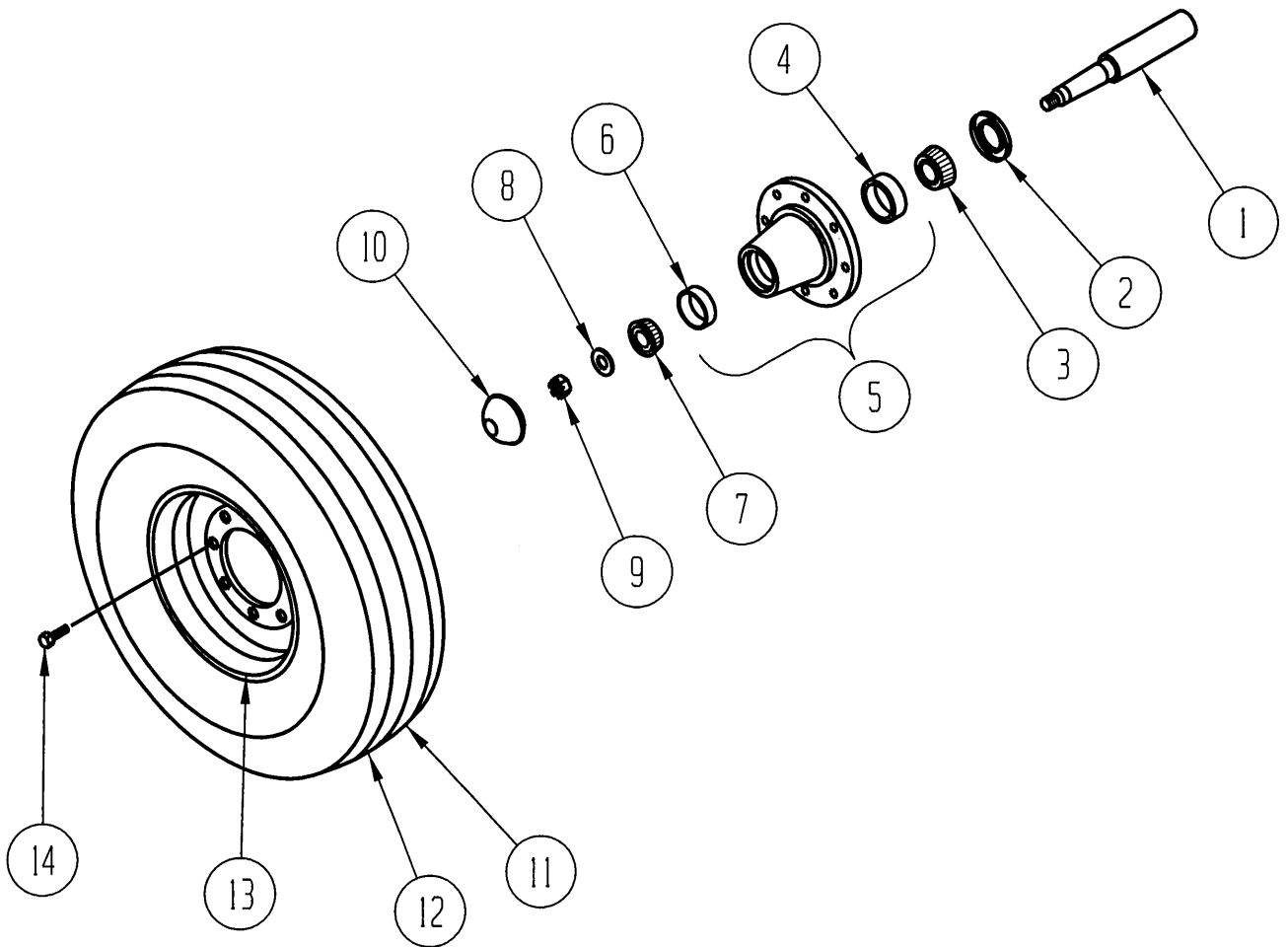
** See table for quantities

ROLLER LENGTH	CAST RING QUANTITY
4'	20
6'	30
7'	35
8'	40
12'	60
13'	65
14'	70
15'	75



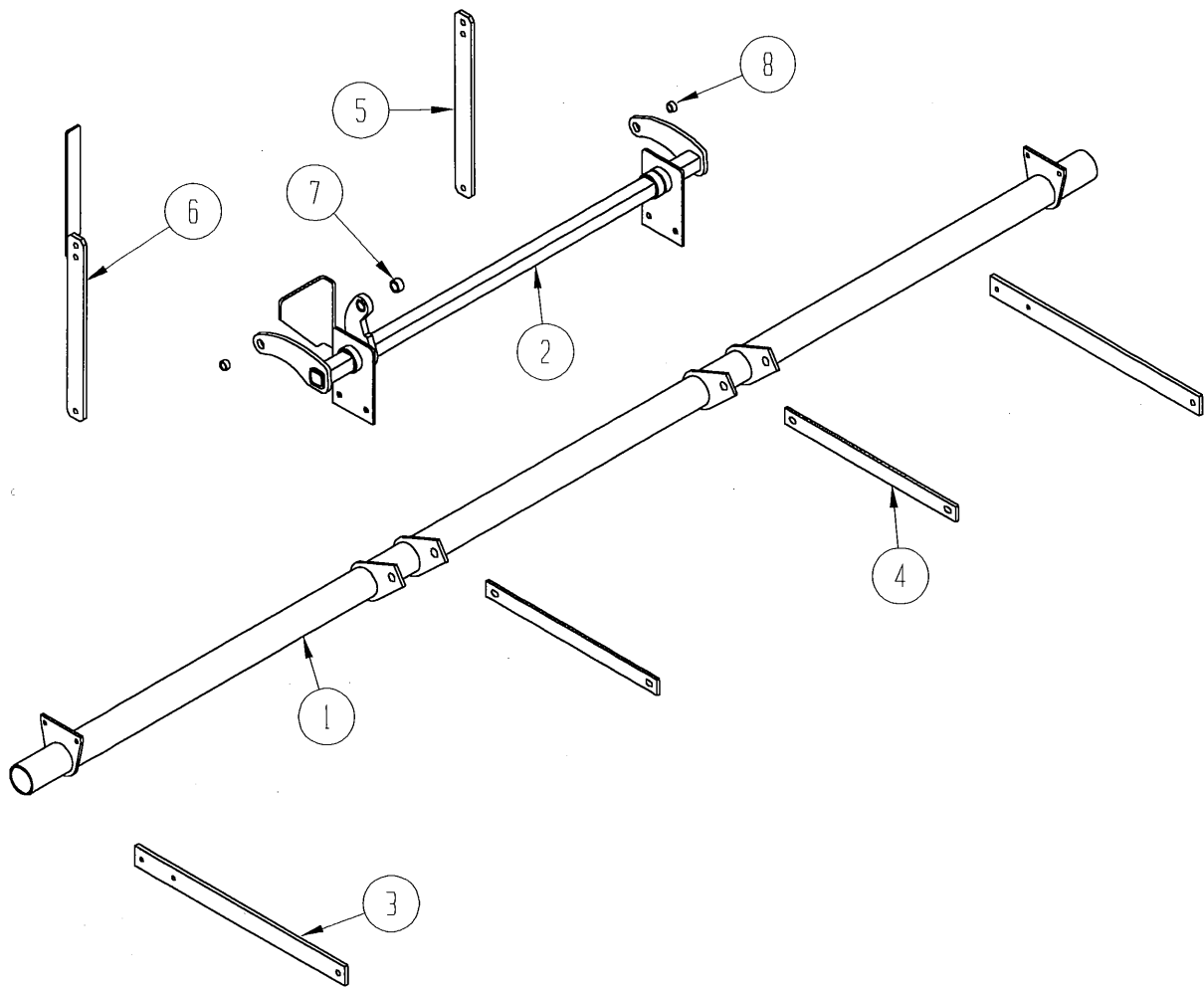
AXLE GROUP

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	522621	Axle Weldment (20' & 24' Units)
2	1	522897	Axle Weldment (28' & 30' Units)
3	2	522235	Axle Bracket, Outer
4	2	522238	Axle Bracket, Inner Top
5	2	522241	Axle Bracket, Inner Bottom
6	2	521391	Hardened Bushing



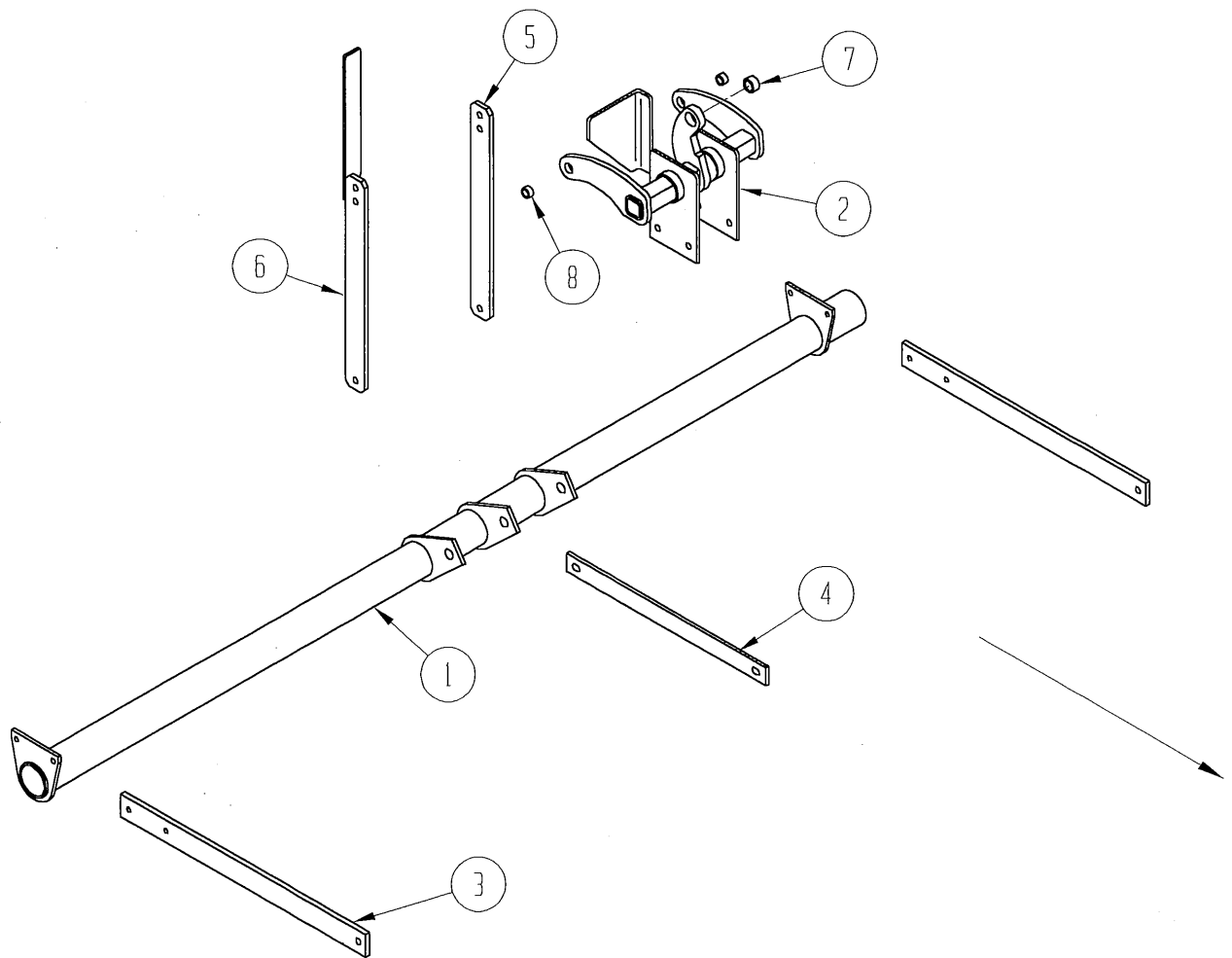
HUB & WHEEL ASSEMBLY

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/Brgs & Seal
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
10	1	999952	Hub Cap
11	1	521910	Tire, 11L x 15FI 12-Ply
12	1	999974-99	Tube, 15"
13	1	999986	Wheel, 15" 8 Hole
14	8	997905	Lug Bolt



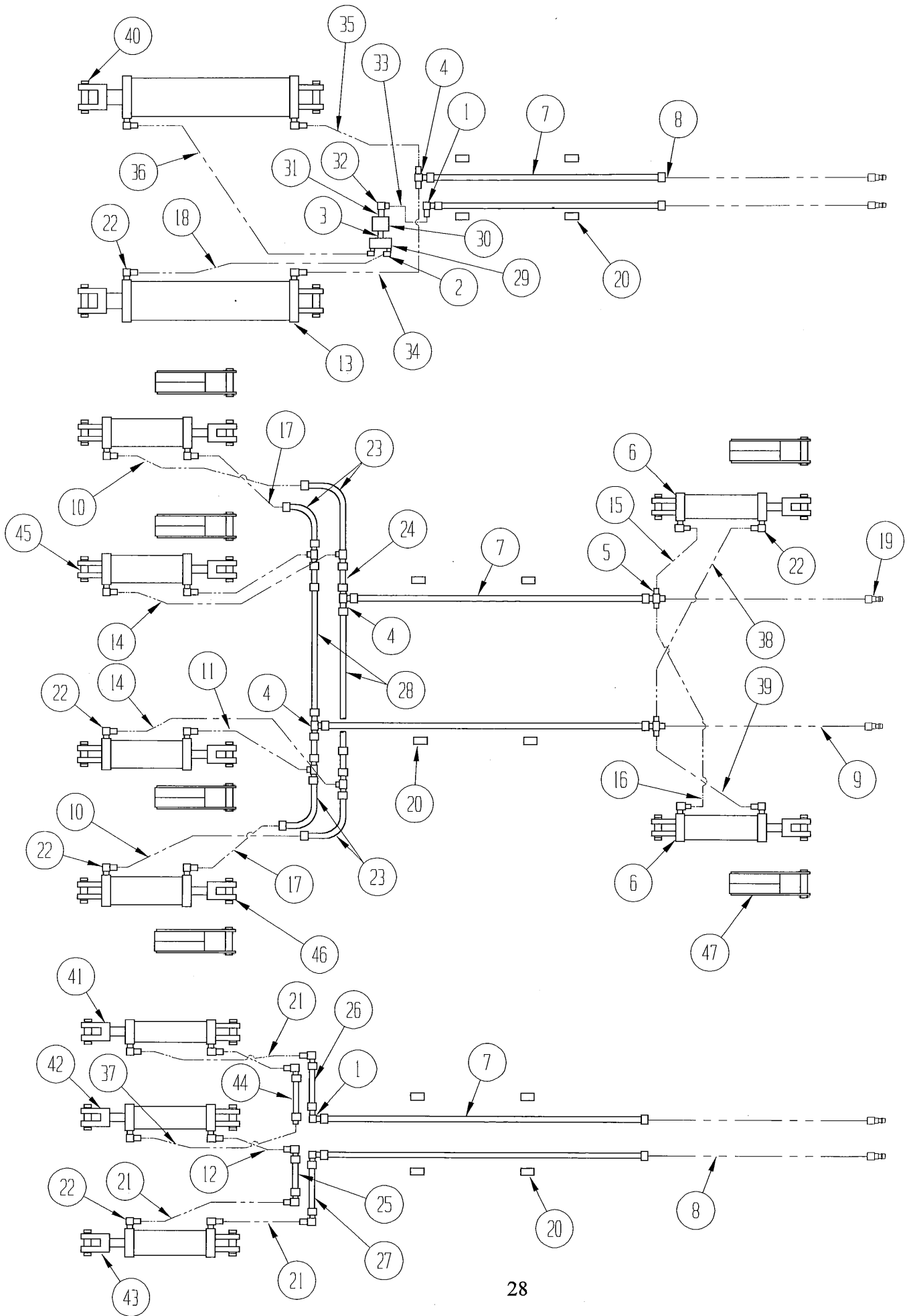
LEVELING BAR & LIFT GROUP (CENTER SECTION)

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	522622	Leveling Bar (20' & 24' Units)
	1	522634	Leveling Bar (28' & 30' Units)
2	1	521383	Lifting Bar Weldment
3	2	522654	Pull Link, Side
4	2	521374	Pull Link, Inner
5	1	521488	Lift Link
6	1	522029	Lift Link Weldment
	1	522301	Depth Indicator Decal
7	1	521391	Hardened Bushing
8	2	360098	Spacer Bushing



LEVELING BAR & LIFT GROUP (WINGS)

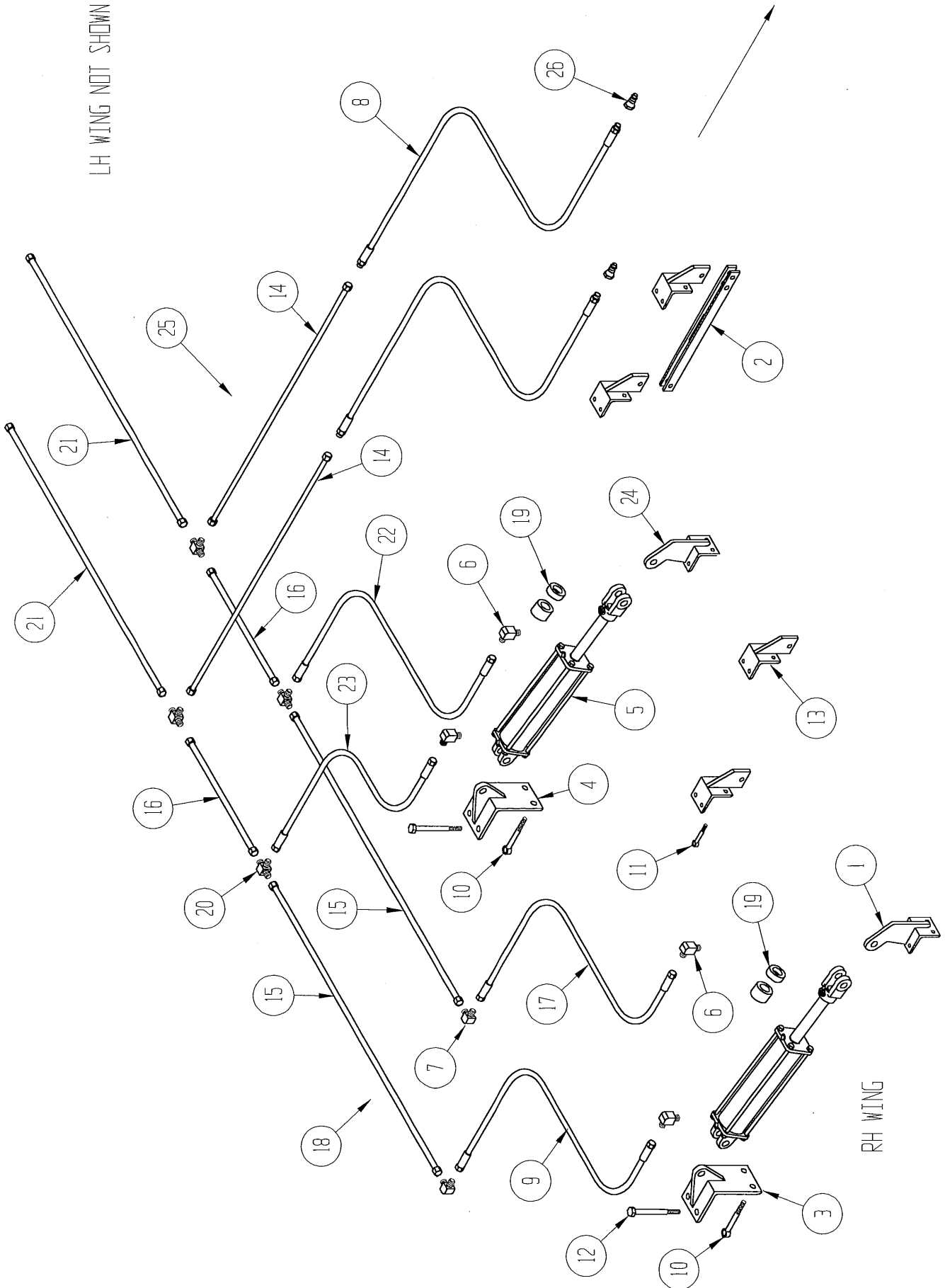
ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	522913	Leveling Bar, RH Shown (20' Unit)
	1	522914	Leveling Bar, LH Not Shown (20' Unit)
	1	522713	Leveling Bar, RH Shown (24' Unit)
	1	522714	Leveling Bar, LH Not Shown (24' Unit)
	1	522393	Leveling Bar, RH Shown (28' Unit)
	1	522394	Leveling Bar, LH Not Shown (28' Unit)
	1	522907	Leveling Bar, RH Shown (30' Unit)
	1	522908	Leveling Bar, LH Not Shown (30' Unit)
2	1	522282	Lifting Bar weldment
3	2	522645	Pull Link, Side
4	1	522825	Pull Link, Center
5	1	521488	Lift Link
6	1	522029	Lift Link Weldment
	1	522301	Depth Indicator Decal
7	1	521391	Hardened Bushing
8	2	360098	Spacer Bushing



HYDRAULIC SCHEMATIC

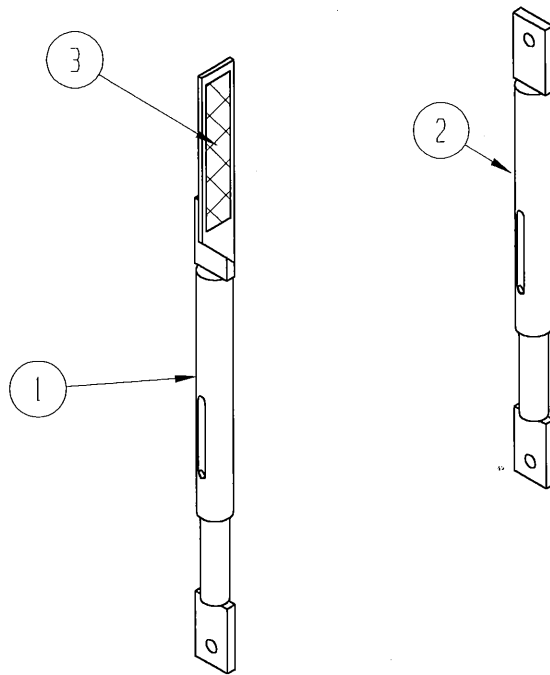
ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	8	2500-10-10	Elbow, 90°
2	2	6801-	Elbow, 90° O-ring
3	2		Adapter,
4	2	2603-10	Tee
5	2	2650-10	Cross
6	2	2500-10-8	Cylinder, Hydraulic 3 ½ x 8
7	2		Hydraulic Tube, 5/8 x 70
8	2		Hose, Hydraulic ½ x 192
9	2		Hose, Hydraulic ½ x 192
10	2		Hose, Hydraulic ½ x 22
11	2		Hose, Hydraulic ½ x 15
12	2		Hose, Hydraulic ½ x 39
13	2	998402	Cylinder, Hydraulic 5 x 20
14	1		Hose, Hydraulic ½ x 24
15	2		Hose, Hydraulic ½ x 22
16	1		Hose, Hydraulic ½ x 27
17	1		Hose, Hydraulic ½ x 20
18	1		Hose, Hydraulic ½ x 68
19	6	291027	Quick Coupler, Male End
20	20	264704	Clamp, Hydraulic Tube 5/8 Dbl.
21	1	521001	Hose, Hydraulic ½ x 66
22	1	998389	Elbow, 90° O-ring
23	4		Tube, Hydraulic 5/8 x 52 w/ 90° Bend
24	2		Tube, Hydraulic 5/8 x 12
25	1		Tube, Hydraulic 5/8 x 30 (20° & 24°)
	1		Tube, Hydraulic 5/8 x 51 ½ (28° & 30°)
26	1		Tube, Hydraulic 5/8 x 56 (20° & 24°)
	1		Tube, Hydraulic 5/8 x 68 (28° & 30°)
27	1		Tube, Hydraulic 5/8 x 60 (20° & 24°)
	1		Tube, Hydraulic 5/8 x 72 (28° & 30°)
28	2		Tube, Hydraulic 5/8 x 17
29	1	522802	Flow Divider/Combiner, Synchronizing
30	1	522804	Flow Restrictor
31	1	6504-10-12	Adapter
32	1	6500-10-10	Elbow, 90°
33	1		Hose, Hydraulic ½ x 28
34	1		Hose, Hydraulic ½ x 32
35	1		Hose, Hydraulic ½ x 38
36	1		Hose, Hydraulic ½ x 51
37	1		Hose, Hydraulic ½ x 56
38	1		Hose, Hydraulic ½ x 33
39	1		Hose, Hydraulic ½ x 39
40	1	522657	Pin, 5" Cylinder
41	1	522658	Cylinder, Re-phasing 2 ½ x 8
42	1	522659	Cylinder, Re-phasing 2 ¾ x 8
43	1	522660	Cylinder, Re-phasing 3 x 8
44	1		Tube, Hydraulic 5/8 x 72 (20° & 24°)
	1		Tube, Hydraulic 5/8 x 84 (28° & 30°)
45	4	998393	Cylinder, Hydraulic 3 ½ x 8 w/ Hardened Bushings
46	1	998389	Clevis, Rod End w/ Bushing
47	1	521011	Transport Lock Kit (Optional)

LH WING NOT SHOWN



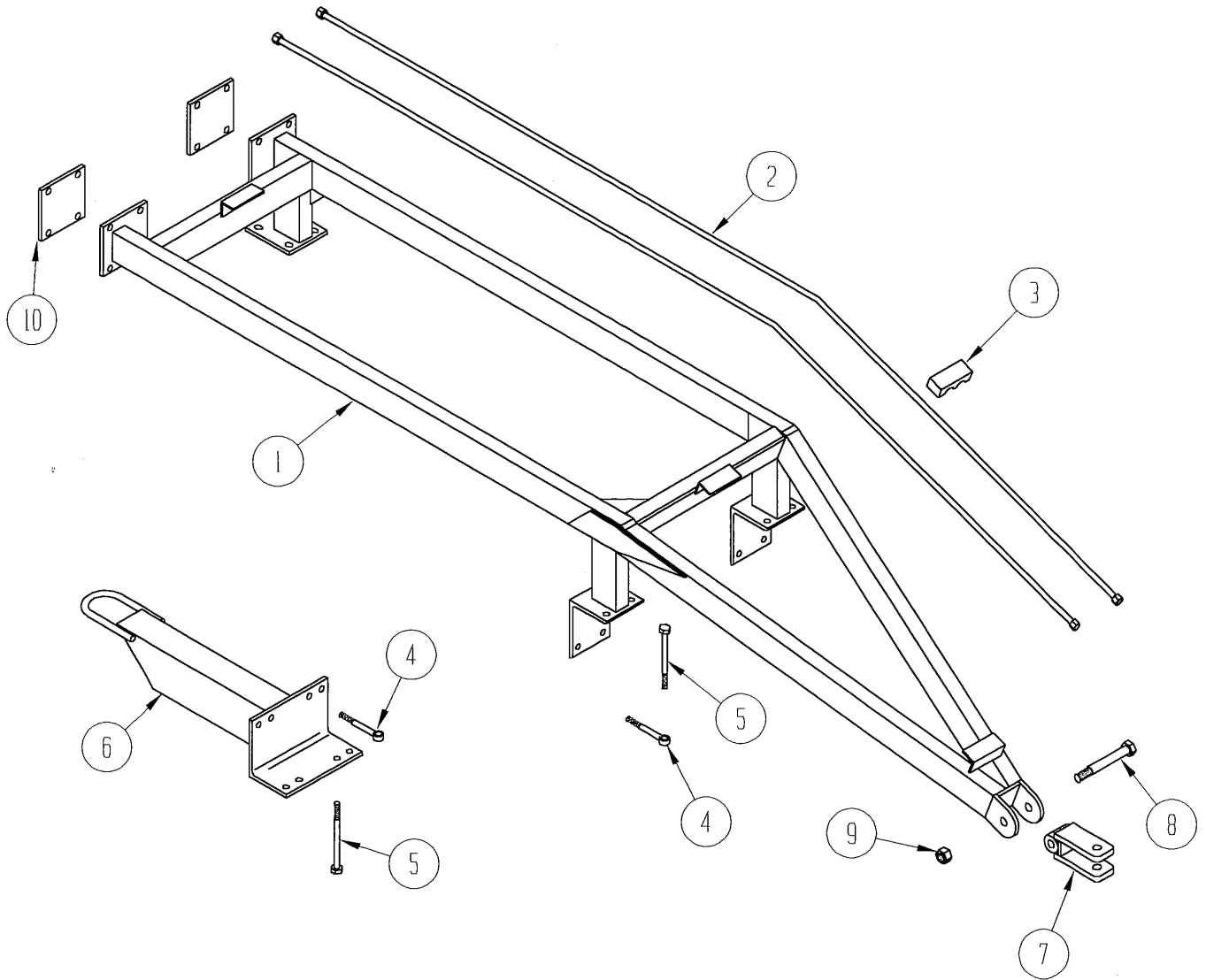
HYDRAULIC TINE BAR CONTROL
 521205 (4-Bar 20'-24') 521242 (4-Bar 28'-30')

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	2	521240	Clamp, Tool Bar Control (Wing)
2	1	521260	Linkage, Tool Bar Control
3	2	521258	Clamp, Cylinder Mount (Wing)
4	1	521265	Clamp, Cylinder Mount
5	3	998903	Cylinder, Hydraulic 3 x 8
6	2	6801-NWO-8-8	Elbow, 90°
7	2	2500-10	Elbow, 90°
8	2		Hose, Hydraulic ½ x 192
9	2		Hose, Hydraulic ½ x 60 (20'-24' Units)
	2		Hose, Hydraulic ½ x 141 (28'-20' Units)
10	6	997903	Eye Bolt, ¾ x 6
11	8	521099	Eye Bolt, ½ x 3 ½
12	6		Hex Bolt, ¾ x 9
13	16	521513	Clamp, Tool Bar Control
14	2		Tube, Hydraulic 5/8 x 70
15	2		Tube, Hydraulic 5/8 x 42 (20'-24')
	2		Tube, Hydraulic 5/8 x 54 (28'-30')
16	2		Tube, Hydraulic 5/8 x 18
17	2		Hydraulic Hose, ½ x 63 (20'-24')
	2		Hydraulic Hose, ½ x 153 (28'-30')
18	10	264704	Clamp, Hydraulic Tube 5/8 Dbl
19	1	522021	Stroke Control Spacer Kit
20	4	2601-10-10	Tee
21	2		Tube, Hydraulic 5/8 x 56 (20'-24')
	2		Tube, Hydraulic 5/8 x 68 (28'-30')
22	1		Hose, Hydraulic ½ x 32
23	1		Hose, Hydraulic ½ x 16
24	1	521659	Clamp, Control
25	6	521243	Clamp Assembly, Six Place
26	2	291027	Quick Coupler, Male End



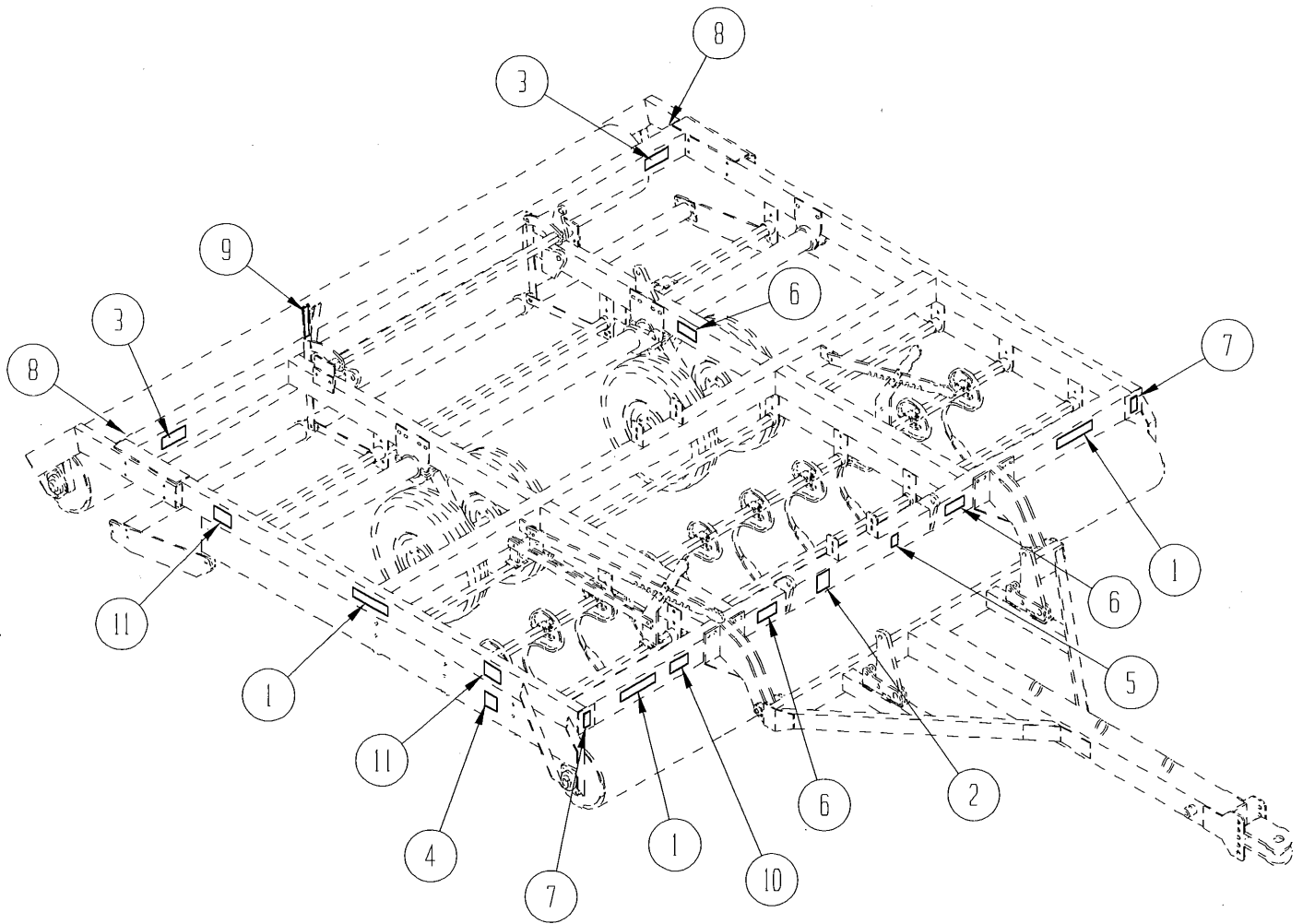
LEVELING BAR ROCK PROTECTION KIT

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



GRAIN DRILL (4-Bar) / HARROW HITCH ASSEMBLIES

ITEM NO.	QUANTITY	PART NO.	DESCRIPTION
1	1	522311	Hitch, Grain Drill (20'-24' Units)
	1	522916	Hitch, Grain Drill (28'-30' Units)
2	2	521613	Tube, Hydraulic
3	3	265013	Clamp, Hydraulic Line 1/2"
4	4	997903	Eye Bolt, 3/4 x 6 1/2 (20'-24' Units)
	8	997903	Eye Bolt, 3/4 x 6 1/2 (28'-30' Units)
5	4 Ea		Hex Bolt, 3/4 x 9
6	1	521170	Hitch, Harrow
7	1	521139	Clevis, Hitch
8	1		Hex Bolt, 1-8 x 6
9	1		Lock Nut, 1-8
10	2	522257	Plate, Clamp (20'-24' Only)

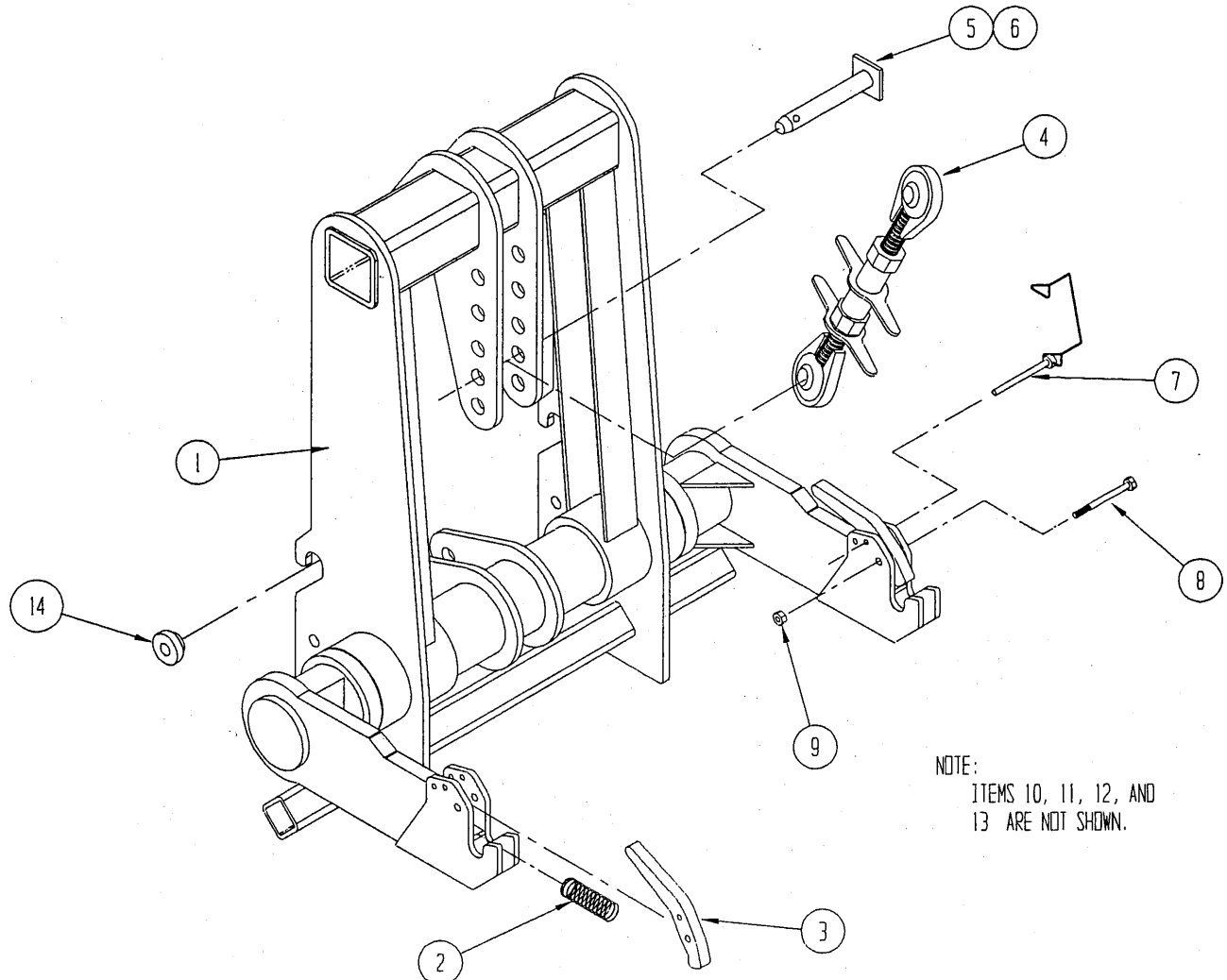


DECAL GROUP

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
7	2	264515	Reflector, Amber
8	2	264516	Reflector, Red
9	3	522301	Decal, Depth Indicator
10	1	521000	Decal, Lift
11	4	265933	Decal, Do Not Ride
12	4	522457	Decal, Overhead Wing Hazard (not shown)

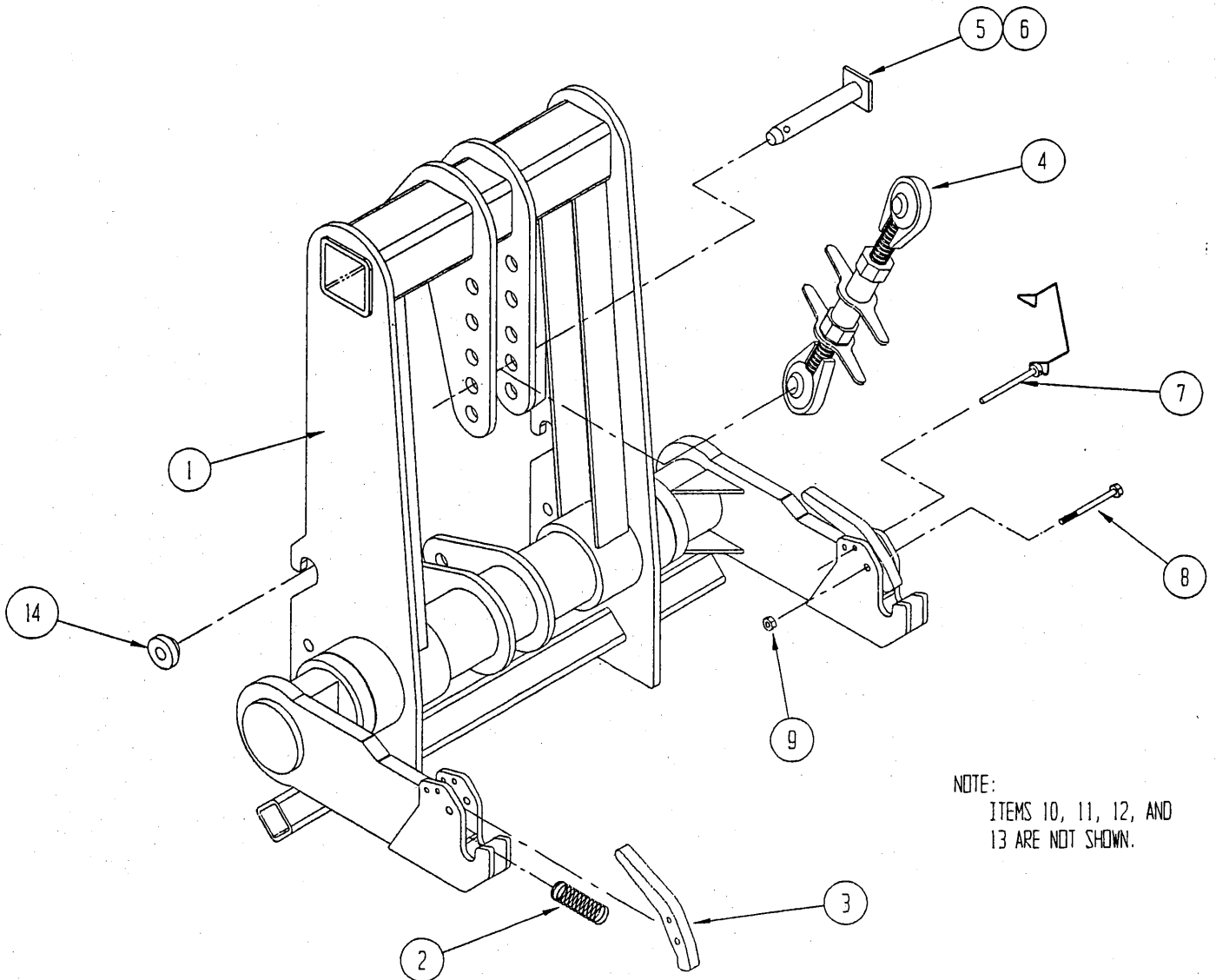
23 1/2" FRONT 3-POINT HITCH

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	520051	MAIN FRAME WELDMENT
2	2	520069	SPRING
3	2	520049	LATCH
4	1	520070	TOP LINK
5	3	520052	PIN
6	3	530053	LYNCH PIN
7	2	521442	SAFETY SNAP PIN
8	2		HEX BOLT: 3/8-16UNC x 2 1/4
9	2		HEX LOCKNUT: 3/8-16UNC
10	1	998403	HYDRAULIC CYLINDER, 4 x 8 O-RING PORTS
11	2		HYDRAULIC HOSES: 1/2" x 16", -8F JIC \ -8M NPT
12	2		QUICK CONNECT TRACTOR ENDS, -8F NPT
13	2	0503-8-8	ADAPTER: -8M O-RING \ -8M JIC
14	4	520054	BUSHING



16" FRONT 3-POINT HITCH

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	520041	MAIN FRAME WELDMENT
2	2	520069	SPRING
3	2	520049	LATCH
4	1	520055	TOP LINK
5	3	520052	PIN
6	3	530053	LYNCH PIN
7	2	521442	SAFETY SNAP PIN
8	2		HEX BOLT: 3/8-16 UNC x 2 1/4
9	2		HEX LOCKNUT: 3/8-16 UNC
10	1	998403	HYDRAULIC CYLINDER, 4 x 8 O-RING PORTS
11	2		HYD. HOSE, 1/2" x 16', -8F JIC \ -8M NPT
12	2		QUICK CONNECT TRACTOR ENDS, -8F NPT
13	2	0503-8-8	ADAPTER: -8M O-RING \ -8M JIC
14	4	520054	BUSHING

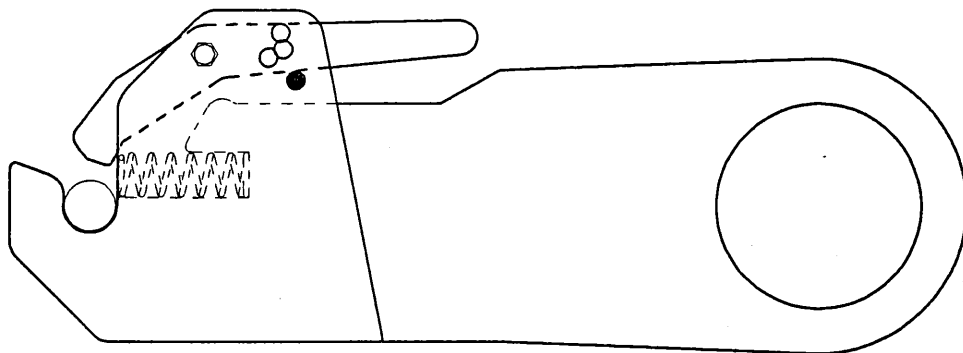


NOTE:
ITEMS 10, 11, 12, AND
13 ARE NOT SHOWN.

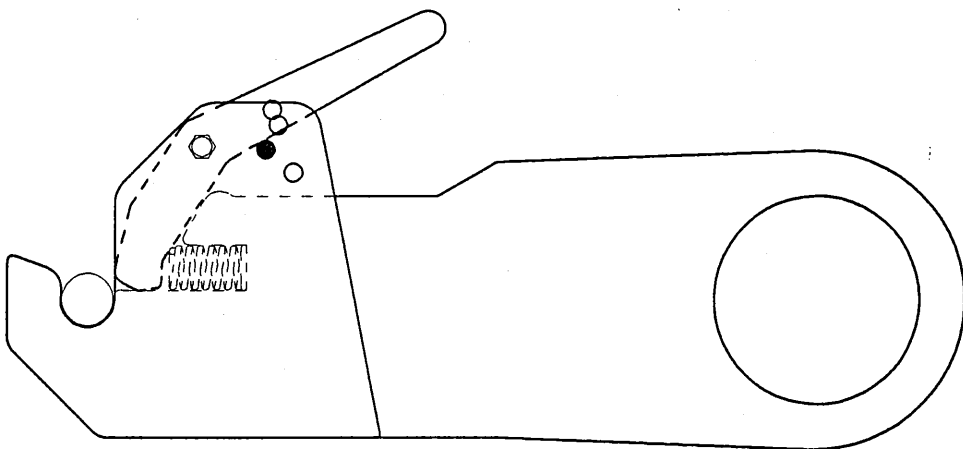
LATCH OPERATION

- PIN POSITION

PIN HOLDER LOCATION
FOR NORMAL OPERATION.



LOCKS LATCH DOWN
FOR UNHITCHING.



LOCKS LATCH IN PLACE
FOR OPERATION AND
LIMITS THE IMPLEMENT'S
ABILITY TO BOUNCE.
(SAFETY PRECAUTION
ONLY)

