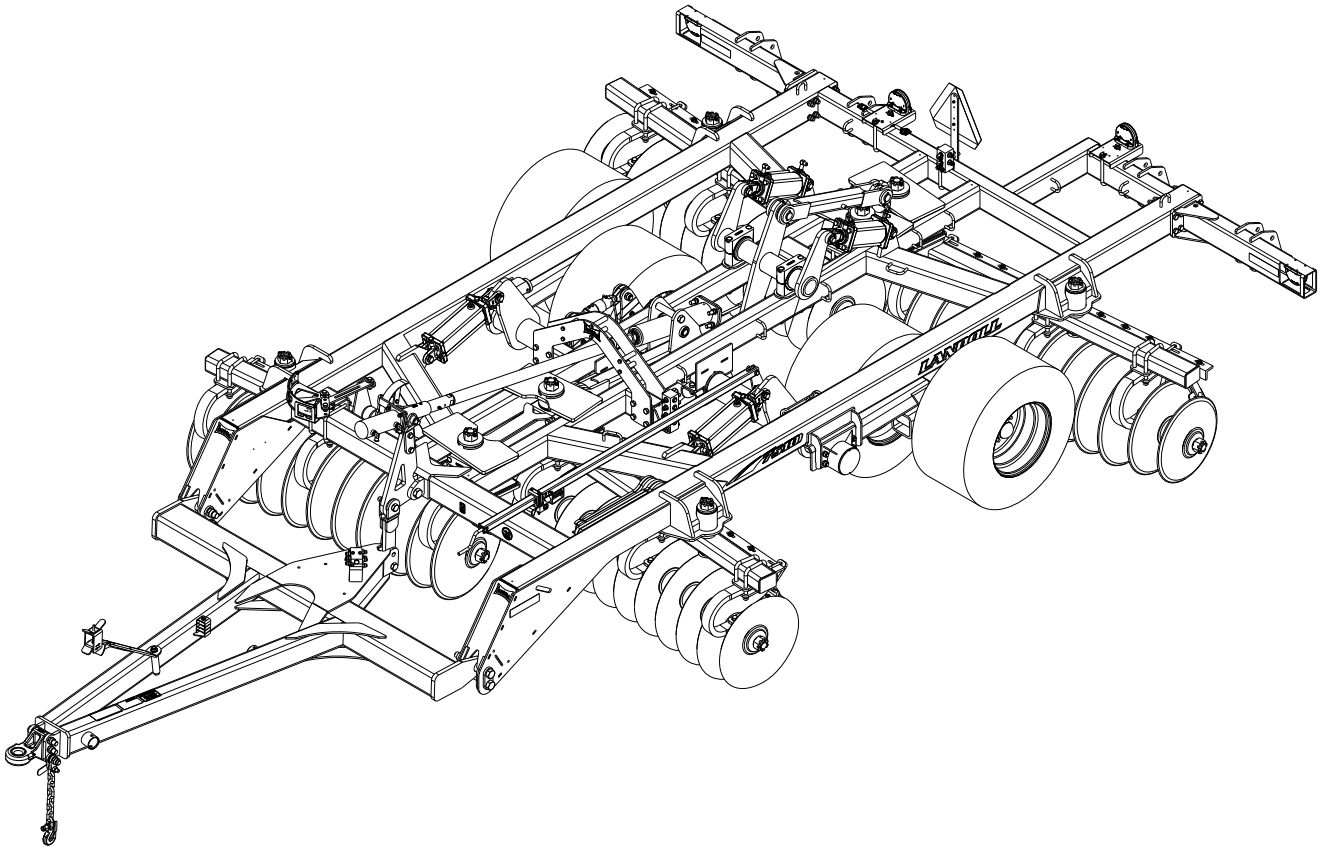
Model 7510
Adjustable VT Plus
Operator's Manual



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Manuals for the 7510 VT	
MANUAL NUMBER	**MANUAL NAME**
F-963	7510 VT Plus Operator's Manual
F-964	7510 VT Plus Parts Manual

Table of Contents

4 Operation and Maintenance

5 Troubleshooting Guide

Chapter 1

Introduction

Introduction

The Landoll Model 7510 VT is a quality product designed to give years of trouble free performance. By following each section of this manual, your system will perform as designed for you and your operation.

CHAPTER 1 Gives basic instructions on the use of this manual and understanding the safety statements.

CHAPTER 2 Gives product specifications for the equipment. These specifications supply lengths and measures for your equipment. A Standard Bolt Torque Table is provided to give guidelines for bolt torques to be used when servicing this product.

CHAPTER 3 Contains assembly instructions for your 7510 VT. When these procedures are correctly followed, your equipment should provide you years of trouble-free operation and service.

CHAPTER 4 Instructs how to operate your equipment before using it, and describes adjustments needed. Gives practical advice for the care and maintenance of your Landoll equipment. Drawings in this section locate adjustment points on the equipment.

IF YOU HAVE ANY QUESTIONS CONTACT:
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CHAPTER 5 Is a troubleshooting guide to aid in diagnosing and solving problems with the 7510 VT.

PARTS MANUAL Is a separate manual showing the various assemblies, sub-assemblies, and systems. Refer to that manual when ordering Landoll replacement parts. Order parts from your Landoll dealer.

WARRANTY The Warranty Registration form is included with the product documents. Fill it out and mail it within 15 days of purchase.
NOTE: IMPROPER ASSEMBLY, MODIFICATION, OR MAINTENANCE OF YOUR LANDOLL MACHINE CAN VOID YOUR WARRANTY.

COMMENTS Address comments or questions regarding this publication to:

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Understanding Safety Statements

You will find various types of safety information on the following pages and on the machine signs (decals) attached to the vehicle. This section explains their meaning.

The Safety Alert Symbol means ATTENTION! YOUR SAFETY IS INVOLVED!

NOTE

Means that failure to follow these instructions could cause damage to the equipment or cause it to operate improperly.

NOTICE

Special notice - read and thoroughly understand

CAUTION

Caution means serious equipment or other property damage can occur if instructions on this label are not properly followed.

WARNING

Warning means serious injury or death can occur if safety measures or instructions on this label are not properly followed.

DANGER

Danger means a life-threatening situation exists. Death can occur if safety measures or instructions on this label are not properly followed.

NOTE

Make sure you read and understand the information contained in this manual and on the machine signs (decals) before you attempt to operate or maintain this vehicle.

The safety statements contained in this manual relate to the operation of the Model 7510 VT.

Decal Safety

1. Examine safety decals and be sure you have the correct safety decals for the implement.
2. Keep these signs clean so they can be observed readily. It is important to keep these decals cleaned more frequently than the implement. Wash with soap and water or a cleaning solution as required.
3. Replace decals that become damaged or lost. Also, be sure that any new implement components installed during repair include decals which are assigned to them by the manufacturer.
4. When applying decals to the implement, be sure to clean the surface to remove any dirt or residue. Where possible, sign placement should protect the sign from abrasion, damage, or obstruction from mud, dirt, oil etc.

DANGER

- **Do not allow anyone to ride on the tractor or implement. Riders could be struck by foreign objects or thrown from the implement.**
- **Never allow children to operate equipment.**
- **Keep bystanders away from implement during operation.**

Transporting Safety

IMPORTANT

It is the responsibility of the owner/operator to comply with all state and local laws.

1. When transporting the implement on a road or highway, use adequate warning symbols, reflectors, lights and slow moving vehicle sign as required. Slow moving tractors and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.

2. Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of the towing vehicle.
3. Carry reflectors or flags to mark the tractor and implement in case of breakdown on the road.

4. Do not transport at speeds over 20 MPH under good conditions. Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.
5. Avoid sudden stops or turns because the weight of the implement may cause the operator to lose control of the tractor. Use a tractor heavier than the implement.
6. Use caution when towing behind articulated steering tractors; fast or sharp turns may cause the implement to shift sideways.
7. Keep clear of overhead power lines and other obstructions when transporting. Know the transport height and width of your implement.

Attaching, Detaching, and Storage

1. Do not stand between the tractor and implement when attaching or detaching implement unless both are not moving.
2. Block implement so it will not roll when unhitched from the tractor.
3. Store in an area where children normally do not play.

Maintenance Safety

1. Understand the procedure before doing the work. Use proper tools and equipment.
2. Make sure all moving parts have stopped.
3. Do not make adjustments or lubricate implement while it is in motion.
4. Block the implement so it will not roll when working on or under it to prevent injury.

High Pressure Fluid Safety

1. Escaping fluid under pressure can be nearly invisible and have enough force to penetrate the skin causing serious injury. Use a piece of cardboard, rather than hands, to search for suspected leaks.
2. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.
3. Avoid the hazard by relieving pressure before disconnecting hydraulic lines.

Protective Equipment

1. Wear protective clothing and equipment.
2. Wear clothing and equipment appropriate for the job. Avoid loose fitting clothing.

3. Because prolonged exposure to loud noise can cause hearing impairment or hearing loss, wear suitable hearing protection, such as earmuffs or earplugs.

Chemical Safety

1. Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.
2. Read chemical manufacturer's instructions and store or dispose of unused chemicals as specified.
3. Handle chemicals with care and avoid inhaling smoke from any type of chemical fire.
4. Store or dispose of unused chemicals as specified by the chemical manufacturer.

Prepare for Emergencies

1. Keep a First Aid Kit and Fire Extinguisher handy.
2. Keep emergency numbers for doctor, ambulance, hospital and fire department near the phone.

Tire Safety

1. Tire changing can be dangerous and should be performed by trained personnel using correct tools and equipment.
2. When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side, not in front of or over the tire assembly. Use a safety cage if available.
3. When removing and installing wheels use wheel-handling equipment adequate for the weight involved.

Safety Chain

1. Use a chain with a strength rating equal to or greater than the gross weight of towed machinery, which is 10,100 pounds minimum in accordance with ASAE S338.2 specifications. If two or more implements are pulled in tandem, a larger chain may be required. Chain capacity must be greater then the TOTAL weight of all towed implements.
2. A second chain should be used between each implement.
3. Attach the chain to the tractor draw-bar support or specified anchor location. Allow only enough slack in the chain to permit turning. The distance from hitch pin to attachment point or intermediate support point should not exceed 9 inches.
4. Replace the chain if any links or end fittings are broken, stretched or damaged.
5. Do not use a safety chain for towing.

Chapter 2

Standard Specifications

Model Specifications

7510 VT									
Model Number	Rear Gang cut at 10 °	Transport Width	Transport Height	Blade Diameter	No. of Blades	No. of Bearings	Spindle Size	Wheel Bolt Pattern	Estimated Weight
7510-14	13'- 10"'	15' - 2"	N/A	24"	46	6/6	3"	8 Bolt	13,670lbs.

NOTE: Specifications Are Subject To Change Without Prior Notification-Transport Height Can Vary With Reel Placement

Tire Inflation			
Tire Size	Tire Manufacturer	Ply/Load Rating	Inflation Pressure (Psi) (Max.)
480/45R17 AG	BKT VF	LOAD INDEX 167A8B/8000 LBS. @ 25MPH	78 psi
380/55RX16.5 IMP	Good Year	LOAD INDEX 150A/8/7400 LBS. @ 30MPH	74 psi
410/50R X 16.5 IMP	BKT	LOAD INDEX 153A8/B/8,050 LBS. @ 30MPH	73psi

Recommended Torque Specification For Lug Bolts and Nuts	
Bolt Size	Torque (FT. LBS.)
5/8-18 (Heavy Duty Disc)	100 - 125 FT. LBS.

General Torque Specifications (rev. 4/97)

TORQUE SPECIFIED IN FOOT POUNDS - This chart provides tightening torques for general purpose applications when special torques are not specified on process or drawing. Assembly torques apply to plated nuts and cap-screws assembled without supplemental lubrication (as received condition). They do not apply if special graphite moly-disulfide or other extreme pressure lubricants are used. When fasteners are dry (solvent cleaned) add 33% to as received condition torque. Bolt head identification marks indicate grade and may vary from manufacturer to manufacturer. Thick nuts must be used on grade 8 cap-screws. Use value in [ ] if using prevailing torque nuts.

UNC SIZE	SAE Grade 2	SAE Grade 5	SAE Grade 8	UNF SIZE	SAE Grade 2	SAE Grade 5	SAE Grade 8
1/4-20	4 [5]	6 [7]	9 [11]	1/4-28	5 [6]	7 [9]	10 [12]
5/16-18	8 [10]	13 [13]	18 [22]	5/16-24	9 [11]	14 [17]	20 [25]
3/8-16	15 [19]	23 [29]	35 [42]	3/8-24	17 [21]	25 [31]	35 [44]
7/16-14	24 [30]	35 [43]	55 [62]	7/16-20	27 [34]	40 [50]	60 [75]
1/2-13	35 [43]	55 [62]	80 [100]	1/2-20	40 [50]	65 [81]	90 [112]
9/16-12	55 [62]	80 [100]	110 [137]	9/16-18	60 [75]	90 [112]	130 [162]
5/8-11	75 [94]	110 [137]	170 [212]	5/8-18	85 [106]	130 [162]	180 [225]
3/4-10	130 [162]	200 [250]	280 [350]	3/4-16	150 [188]	220 [275]	320 [400]
7/8-9	125 [156]	320 [400]	460 [575]	7/8-14	140 [175]	360 [450]	500 [625]
1-8	190 [237]	408 [506]	680 [850]	1-14	210 [263]	540 [675]	760 [950]
1-1/8-7	270 [337]	600 [750]	960 [1200]	1-1/8-12	300 [375]	660 [825]	1080 [1350]
1-1/4-7	380 [475]	840 [1050	1426 [1782]	1-1/4-12	420 [525]	920 [1150]	1500 [1875]
1-3/8-6	490 [612]	1010 [1375]	1780 [2225]	1-3/8-12	560 [700]	1260 [1575]	2010 [2512]
1-1/2-6	650 [812]	1460 [1825]	2360 [2950]	1-1/2-12	730 [912]	1640 [2050]	2660 [3325]
1-3/4-5	736 [920]	1651 [2063]	2678 [3347]	1-3/4-12	920 [1150]	2063 [2579]	3347 [4183]

METRIC:

Coarse thread metric class 10.9 fasteners and class 10.0 nuts and through hardened flat washers, phosphate coated, Rockwell “C” 38-45. Use value in [ ] if using prevailing torque nuts.

Nominal thread diameter (mm)	Newton Meters (Standard Torque)	Foot Pounds (Standard Torque)	Nominal Thread Diameter (mm)	Newton Meters (Standard Torque)	Foot Pounds (Standard Torque
6	10 [14]	7 [10]	20	385 [450]	290 [335]
7	16 [22]	12 [16]	24	670 [775]	500 [625]
8	23 [32]	17 [24]	27	980 [1105]	730 [825]
10	46 [60]	34 [47]	30	1330 [1470]	990 [1090]
12	80 [125]	60 [75]	33	1790 [1950]	1340 [1450]
14	125 [155]	90 [115]	36	2325 [2515]	1730 [1870]
16	200 [240]	150 [180]	39	3010 [3210]	2240 [2380]
18	275 [330]	205 [245]	----------	----------	----------

Table 2-1: General Torque Specifications

Hydraulic Fitting Torque Specifications

TORQUE IS SPECIFIED IN FOOT POUNDS- 37° JIC, ORS, & ORB (REV. 10/97)

This chart provides tightening torques for general purpose applications when special torques are not specified on process or drawing. Assembly torques apply to plated nuts and capscrews assembled without supplemental lubrication (as received condition). They do not apply if special graphite moly-disulfide or other extreme pressure lubricants are used. When fasteners are dry (solvent cleaned) add 33% to as received condition torque. Bolt head identification marks indicate grade and may vary from manufacturer to manufacturer. Thick nuts must be used on grade 8 capscrews. Use value in [ ] if using prevailing torque nuts.

Parker Brand Fittings

Dash Size	37 Degree JIC	O-Ring (ORS)	O-Ring Boss (ORB)
-4	11-13	15-17	13-15
-5	14-16	----------	21-23
-6	20-22	34-36	25-29
-8	43-47	58-62	40-44
-10	55-65	100-110	58-62
-12	80-90	134-146	75-85
-16	115-125	202-218	109-121
-20	160-180	248-272	213-237
-24	185-215	303-327	238-262
-32	250-290	----------	310-340

Gates Brand Fittings

Dash Size	37 Degree JIC	O-Ring (ORS)	O-Ring Boss (ORB)
-4	10-11	10-12	14-16
-5	13-15	----------	----------
-6	17-19	18-20	24-26
-8	34-38	32-40	37-44
-10	50-56	46-56	50-60
-12	70-78	65-80	75-83
-14	----------	65-80	----------
-16	94-104	92-105	111-125
-20	124-138	125-140	133-152
-24	156-173	150-180	156-184
-32	219-243	----------	----------

Aeroquip Brand Fittings

Dash Size	37 Degree JIC	O-Ring (ORS)	O-Ring Boss (ORB)
-4	11-12	10-12	14-16
-5	15-16	----------	16-20
-6	18-20	18-20	24-26
-8	38-42	32-35	50-60
-10	57-62	46-50	75-80
-12	79-87	65-70	125-135
-14	----------	----------	160-180
-16	108-113	92-100	200-220
-20	127-133	125-140	210-280
-24	158-167	150-165	270-360
-32	245-258	----------	----------

Table 2-2: Hydraulic Fitting Torque Specifications

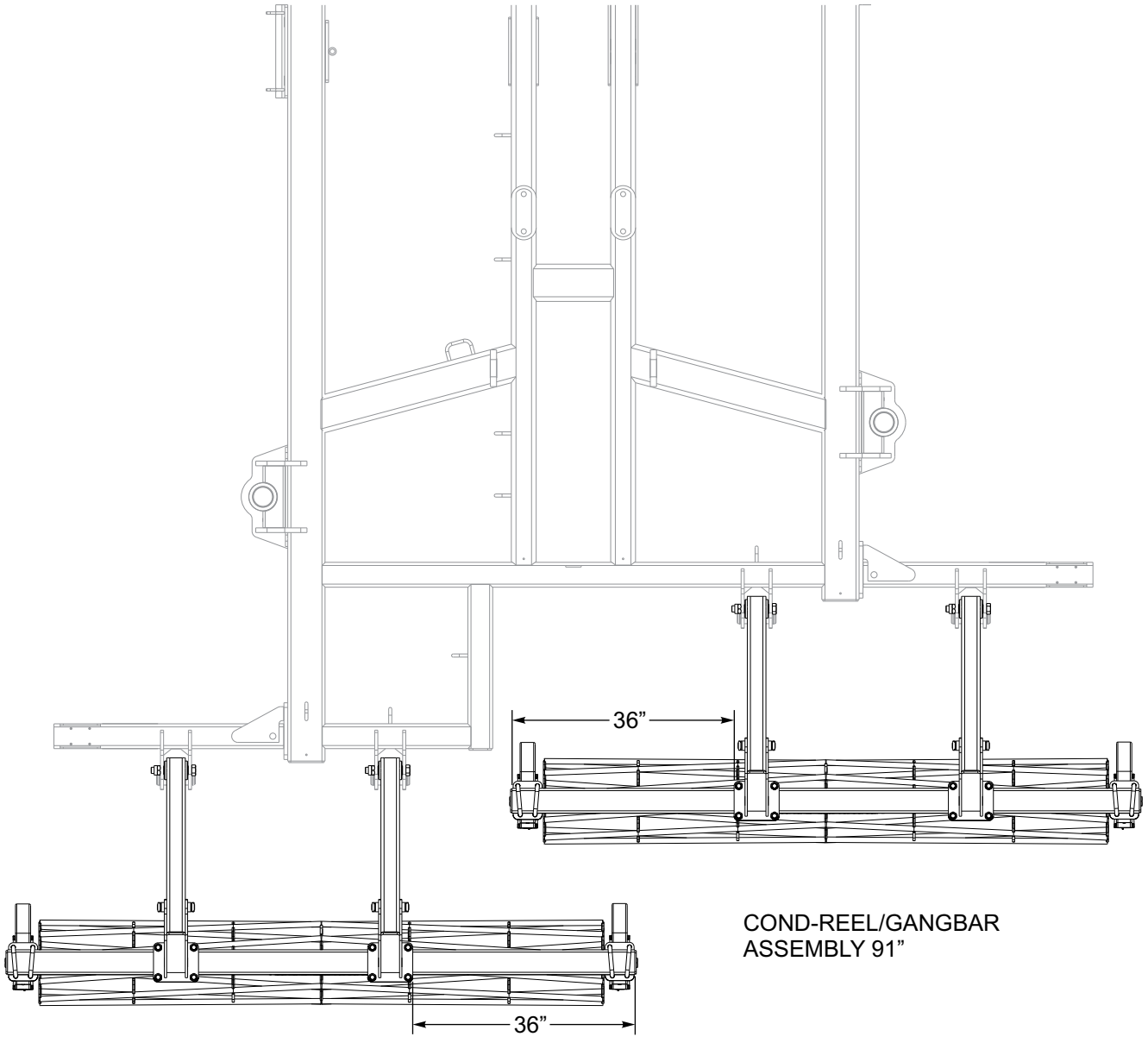

Figure 2-1: Conditioner Reel Placement 14’

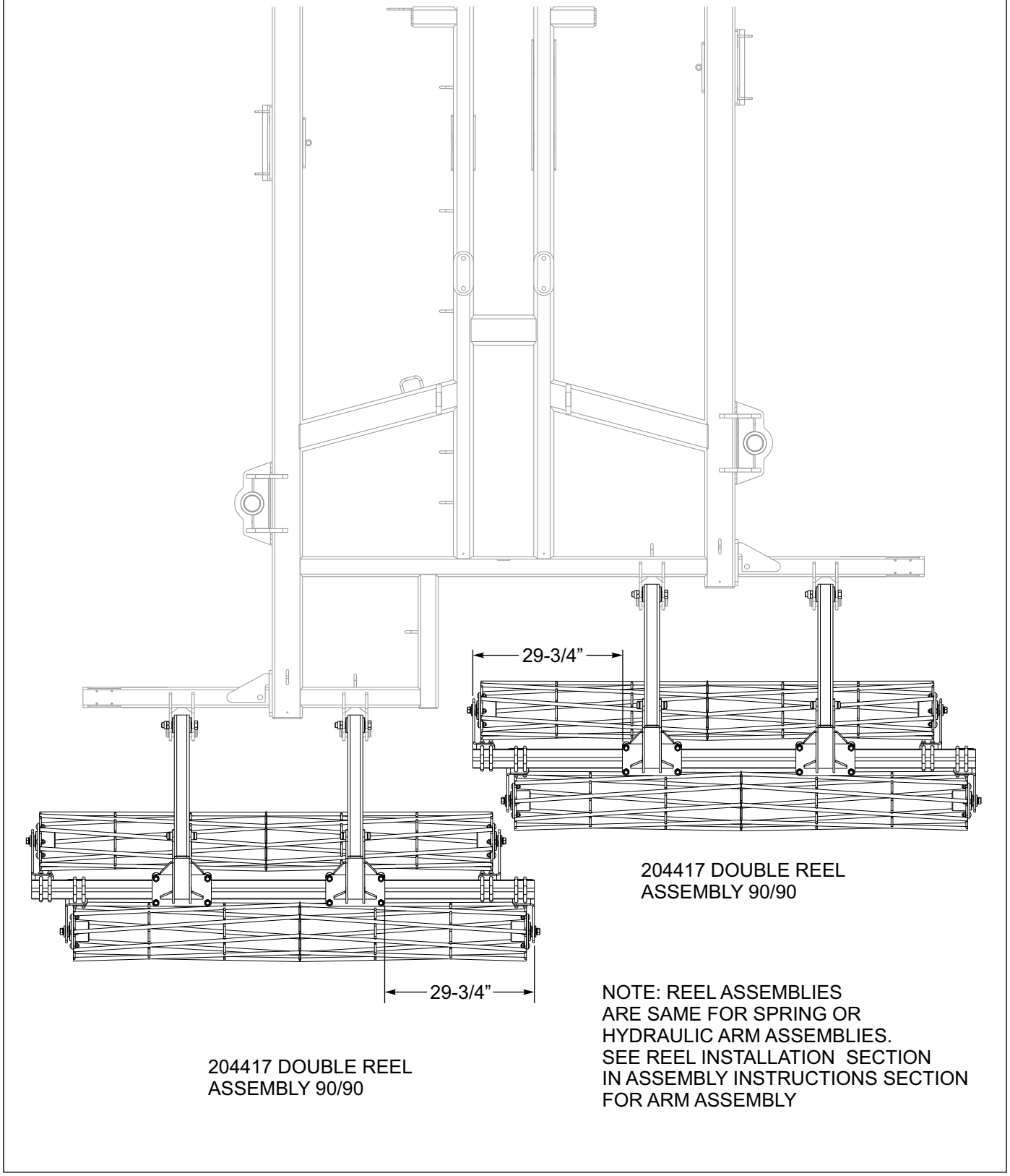

Figure 2-2: Double Round Reel Placement 7510-14’

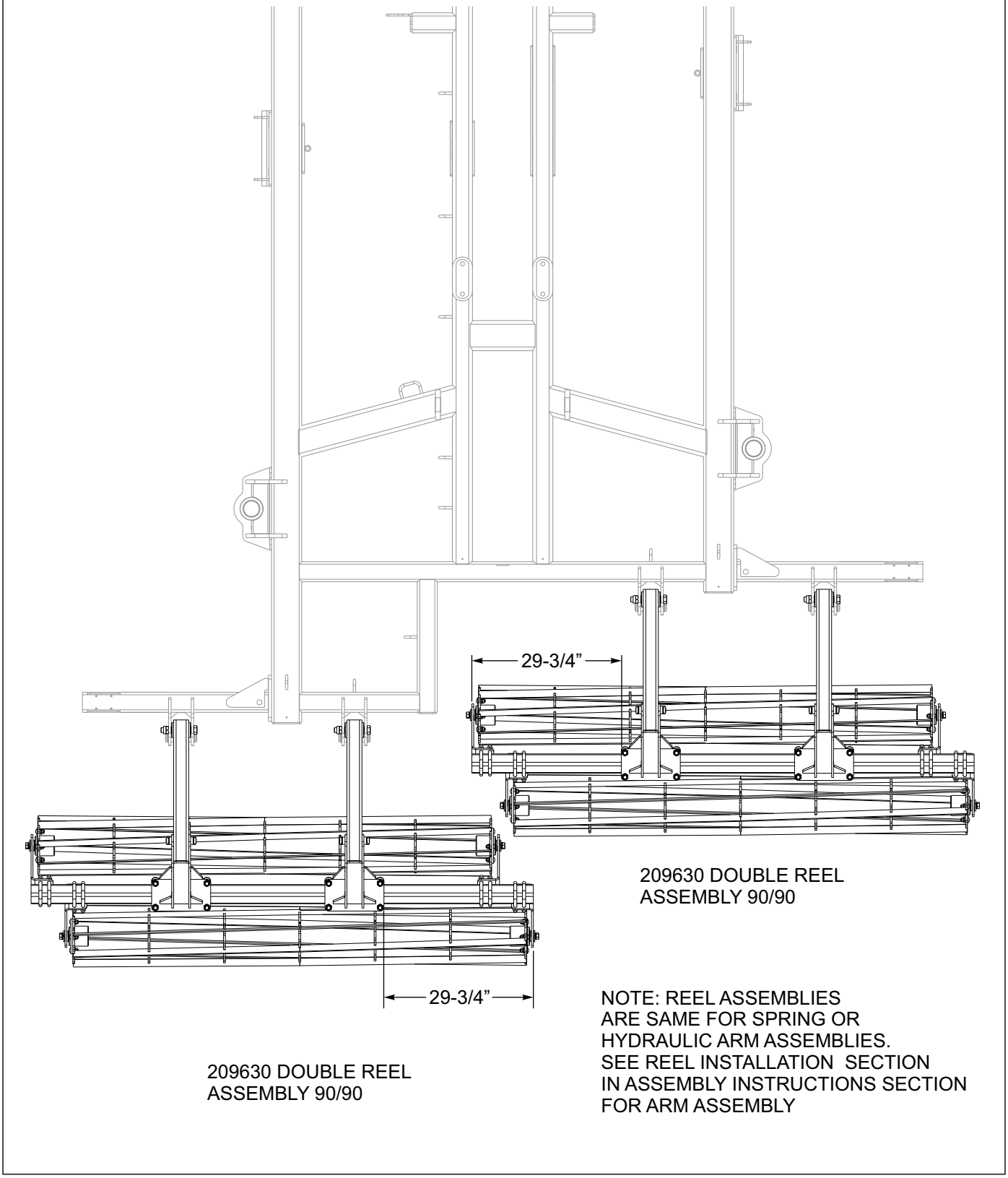

Figure 2-3: Double Flat Reel Placement 7510-14’

Chapter 3

Assembly Instructions

It is very important that your new 7510 VT Plus be properly assembled, adjusted and lubricated before use. Illustrations to assist with the assembly process are provided in **Section 2, "General Torque Specifications (rev. 4/97)"**. They show proper disc gang, wing stabilizer bracket, and light mounting bracket spacing. Illustrations in this section show proper assembly procedures. Remove paint from grease fittings. Replace any grease fittings that are damaged or missing. Be sure to return screws, clips, etc., to their original locations.

To insure alignment of assemblies, **leave the nuts loose until completion** of final assembly. Use lock washers or flat washers as specified. Spread all cotter pins.

After completion of final assembly, tighten all nuts evenly to prevent misalignment, distortion or binding. Tighten all screws and nuts to the recommended torques **(See "General Torque Specifications (rev. 4/97)" on page 2-2.).**

CAUTION

Be sure to bleed the hydraulic system of all air in lines after installation. Failure to bleed the system of all air can result in improper machine operation.

7510

DANGER

Disc blades are extremely sharp. Exercise extreme care when working on or near disc blades. Do not allow discs to roll over or fall onto any bodily part. Do not allow wrenches to slip when working near disc blades. Never push wrenches toward disc blades. Do not climb over machine above disc blades. Failure to stay clear of disc blade edges can cause serious personal injury or death.

WARNING

Do not attempt to lift heavy parts (such as the frame, disc gangs, rock shaft, and pull hitch) manually. Use a hoist or a fork lift to move these parts into position.

DANGER

To prevent accidental lowering:

1. **All hydraulically elevated equipment must be locked out using the cylinder lockouts:**
2. **Lower equipment to the ground while servicing or when it is idle.**

Failure to take measures to prevent accidental lowering may result in serious personal injury or death.

7510 VT Plus Frame and Hitch Assembly

IMPORTANT

Read all safety precautions at the front of the section before attempting any of the following procedures.

1. Place the center frame assembly on stands approximately 36” high, **(See Figure 3-2.)** The assembly area should be a large level area of sufficient size to accommodate the disc when fully assembled.

WARNING

Do not attempt to lift heavy parts (such as the frame assembly, disc gangs and pull hitch) manually. Use a hoist or a fork lift to move these parts into position.

2. Attach the hitch weldment (**See Figure 3-2.)**, to the front of the center frame using 1-1/4-7 x 10 cap screws, 1-1/4 flat washers, hitch mount plates and1-1/4-7 lock nuts. The1-1/4 flat washers are provided.

NOTE

The hitch may be assembled in the upper or lower position depending on matching tractor drawbar height. ***See “Hitch Adjustment” on page 4-8 for proper adjustment.***

3. Move the 7000/8000 tongue jack to the forward mounting tube and rotate to parking position to support the front of the hitch.
4. Insert a 3/4-10 x 7 hex head cap screw into the hose holder tube on the right side of the hitch from the bottom side so the threads point upward. Hold in place with a 3/4 prevailing flange nut with the flange pointing upward as well. Do not tighten this cap screw, so the hose holder bracket may pivot freely in this joint.
5. Slide the hose holder bracket over the screw and secure with another 3/4 prevailing flange nut.
6. Install a 3/8-16 x 5 all-thread screw in the front of the hose holder bracket and secure with a 3/8-16 hex nut.
7.
8. Slide the hose holder clamp over the 3/8-16 X 5 hex screw and loosely start the wing nut on top of the clamp. Hydraulic hoses will be routed through the clamp after assembly.
9. Install tire/wheel assembly to all 8 bolt hub/spindle assemblies with 5/8” lug nuts.
10. Torque wheels 85 to 100 ft./lbs.

NOTE

All tire/wheel assemblies are mounted with the valve stem facing outward.

Spare Tire Assembly (Optional)

1. Attach Optional spare tire and mount to rear of hitch as shown (See Figures 3-1)

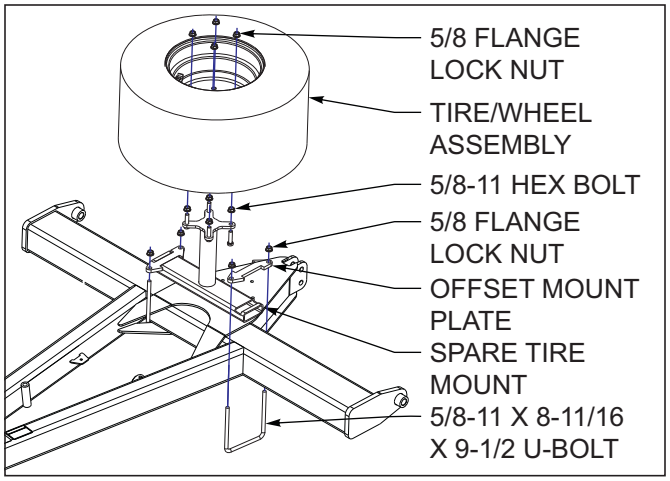

Figure 3-1: Spare Tire Assembly

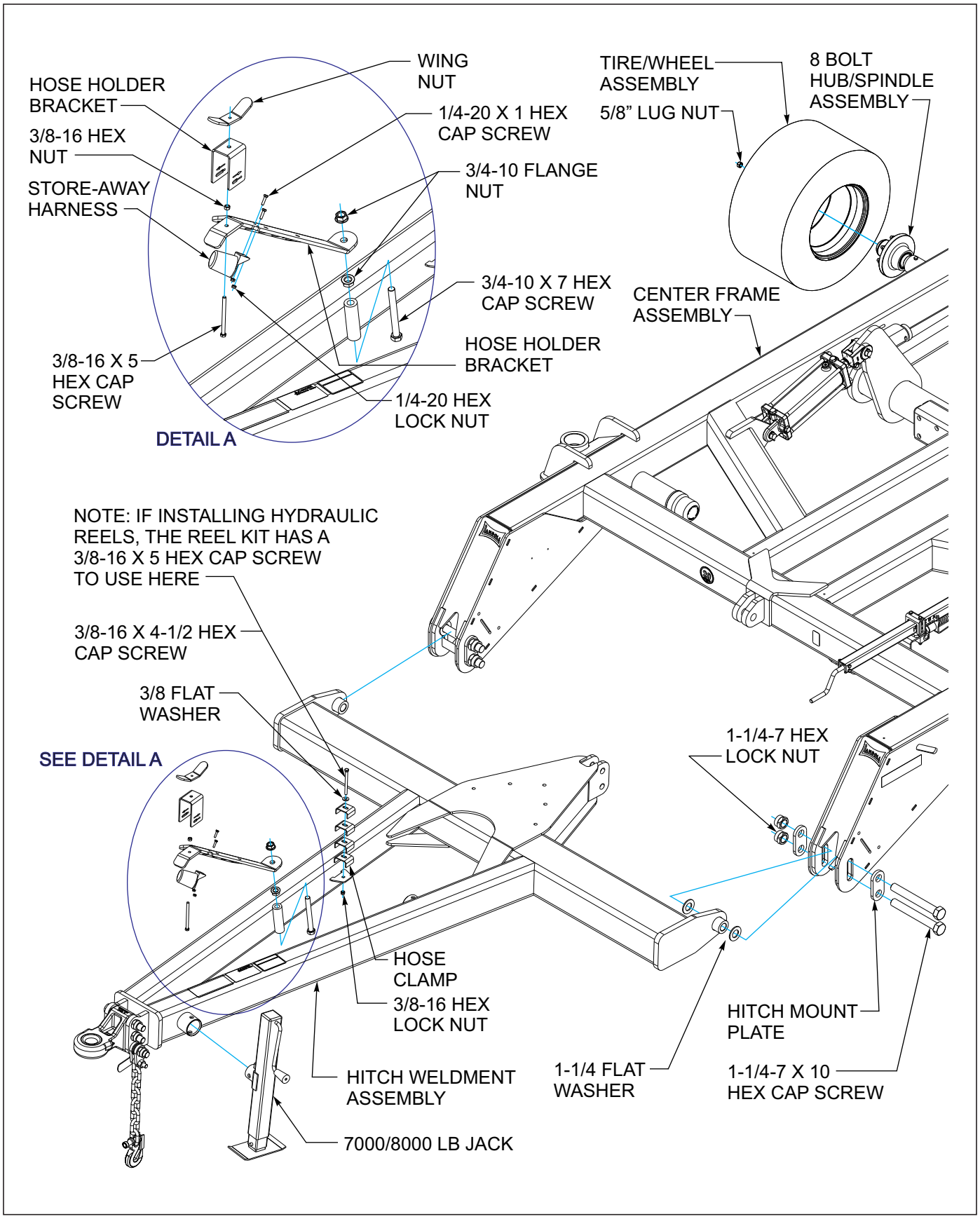

Figure 3-2: 7510-14' Frame and Hitch Assembly Installation

Leveler Assembly

1. Be sure bushing is in the leveler L link **(See Figure 3-3.)**
2. Attach the leveler L link to the front mount of the center frame with a 1-1/4-7 x 6 hex head cap screw and 1-1/4-7 hex lock nut.
3. With a 1-8 x 4-1/2 hex head cap screw and 1-8 hex lock nut attach the leveler ball joint link to the leveler link.
4. Connect the bottom end of the leveler link to the rear, lower mounting holes of the hitch using a 1-8 x 4-1/2 hex head cap screw and 1-8 hex lock nut.

NOTE

When the hitch is in the upper mounting position, the leveler link is mounted in the lower holes. When the hitch is in the lower position, the link is mounted in the top mounting holes. ***See Section 4, "Hitch Adjustment"*** *for proper adjustment.*

5. Slide leveler cross cylinder/w zerk over front end of leveler assembly until 2 holes are through plate **(See Figure 3-3.)** Slide 3-1/2 x 6 cylinder onto front end of leveler assembly until the 2 holes in cylinder are aligned with 2 holes in leveler and slide the leveler pins through aligned holes. Slide leveler cross cylinder assembly back though until plates on two cylinders are aligned and secure with1/2-13 x 2 hex cap screws and 1/2-13 hex lock nuts.
6. Be sure bearing flanges are in both leveler cross brackets and slide brackets over leveler cross cylinder as shown. Secure with flat washer and 5/16 x 2-1/2 spring pin on both sides.
7. Attach the other end of the leveler cross brackets to top of leveler l with 3/4-10 x 3-1/2 hex cap screws and 3/4-10 lock nut.
8. The grease zerk should be pointing up and the preset distance should at 4" between the two nuts.

NOTE

If the leveler assembly needs adjusted ***See Section 4, "Hitch Adjustment"*** *for proper adjustment.*

9. Attach level indicator as shown **(See Figure 3-3.)**

NOTE

For leveler hydraulic installation **(See Figure 3-7.)**

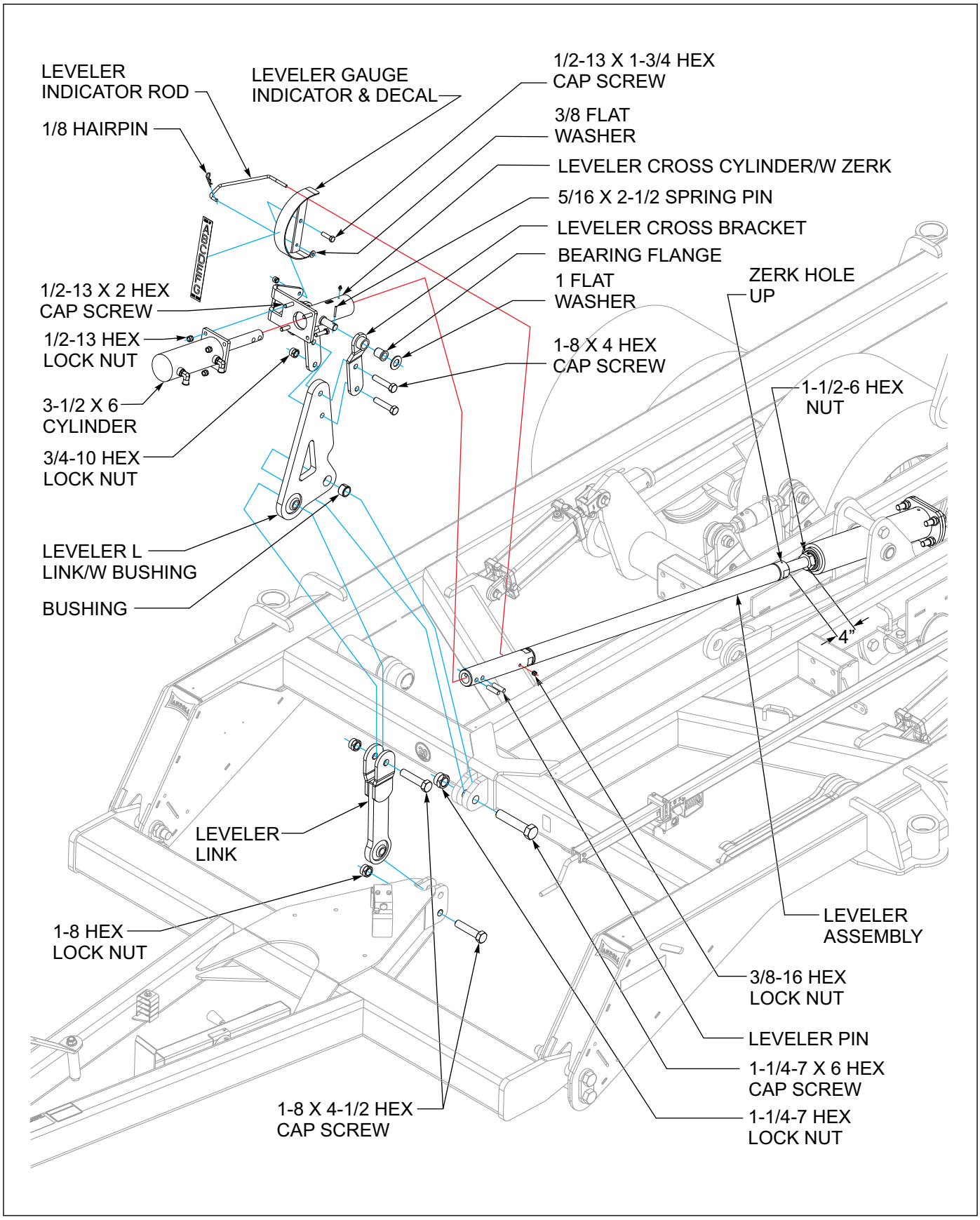

Figure 3-3: Leveler Assembly Installation

Hydraulic Installation

NOTE

Refer to Figures 3-5 and 3-6 *for lift hydraulic diagrams.*

Refer to Figures 3-11 and 3-12*for gang hydraulic diagrams.*

Refer to Figures 3-7 *for leveler hydraulic diagram for all models.*

1. Install the 16 port hydraulic manifolds at the center of the center frame to the mount welded to the frame **(See Figure 3-5.) u**sing 1/2-13 x 3-1/2 hex bolts and 1/2-13 lock nuts. The top two ports are for the lift system and the bottom two are for the adjustable gang system.

NOTE

The top port of each set is designated to go to the base ends of the appropriate cylinders.

2. Install 90 degree regular adapter fittings in both rod and base ends of all lift cylinders that are assembled to the frame **(See Figure 3-5.)**.
3. The disc gang angle cylinders **(See Figure 3-11. 7510-14')**use the following fittings: The left master base end on the center frame requires a tee fitting and the rest of the ports on the center frame cylinders are regular 90 degree fittings. Both front wing gang cylinders require regular 90 degree fittings on both ends. Both rear wing gang cylinders have a 45 degree fitting on the base end and a black 90 degree 1/16 restrictor fitting on the rod end.

⚠ CAUTION

Restrictors are installed to prevent uncontrolled dropping of wings. Removal of these restrictors, or improper installation can result in serious damage to the implement.

4. At the rear of the hitch **(See Figure 3-4.)** there will be two identical valves installed (Double Pilot Operated Check Valves) with 3/8 x 3-1/2" bolts and nuts onto the hose clamp. Install these valves with the V1/V2 ports facing the tractor and the C1/C2 Ports facing the rear. Install straight o-ring adapter fittings into each of the 8 outlets. When plumbing the hydraulic disc gangs or the leveler it does not matter which hose goes to C1/C2 or V1/V2, leveler hydraulics **(upper valve, See Figure 3-11.)** or gang hydraulics **(lower valve, See Figure 3-7.** just so they are facing the correct direction and hooked to the cylinder or the tractor correctly.

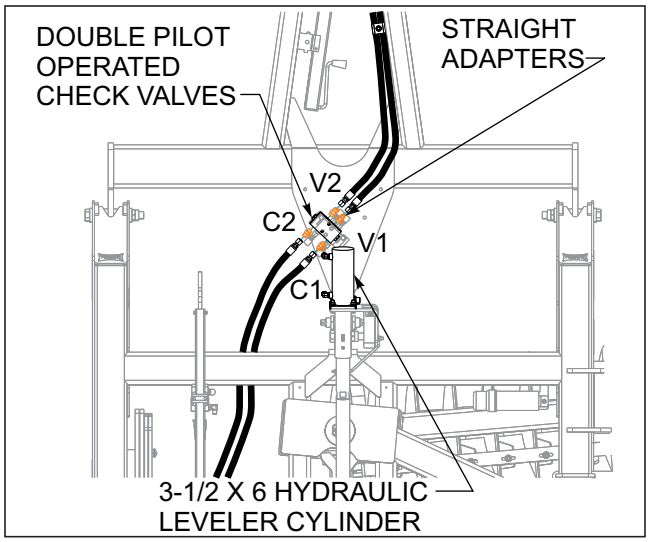

Figure 3-4: Check Valve Placement

5. IInstall Leveler cylinder hoses and couplers **(See Figure 3-7.)** Wrap leveler hoses with black hose wrap.
6. Install adjustable disc gang cylinder hoses and couplers, **(See Figure 3-11.)** Wrap disc gang cylinders with red hose wrap.
7. Install lift cylinder hoses and couplers, **(See Figure 3-6.,)** Wrap lift hoses with blue hose wrap.
8. Attach hoses to tractor or other hydraulic source and purge each system of air and fill cylinders with hydraulic oil. The lift and gang adjustment system are rephrasing so once the cylinders start extending just continue to hold the lever until all of the cylinders are fully extended. The hydraulic leveler cylinders will need to be extended and retracted several times to assure they are purged of air.
9. Double check all hoses and fittings for any leaks and correct as needed.

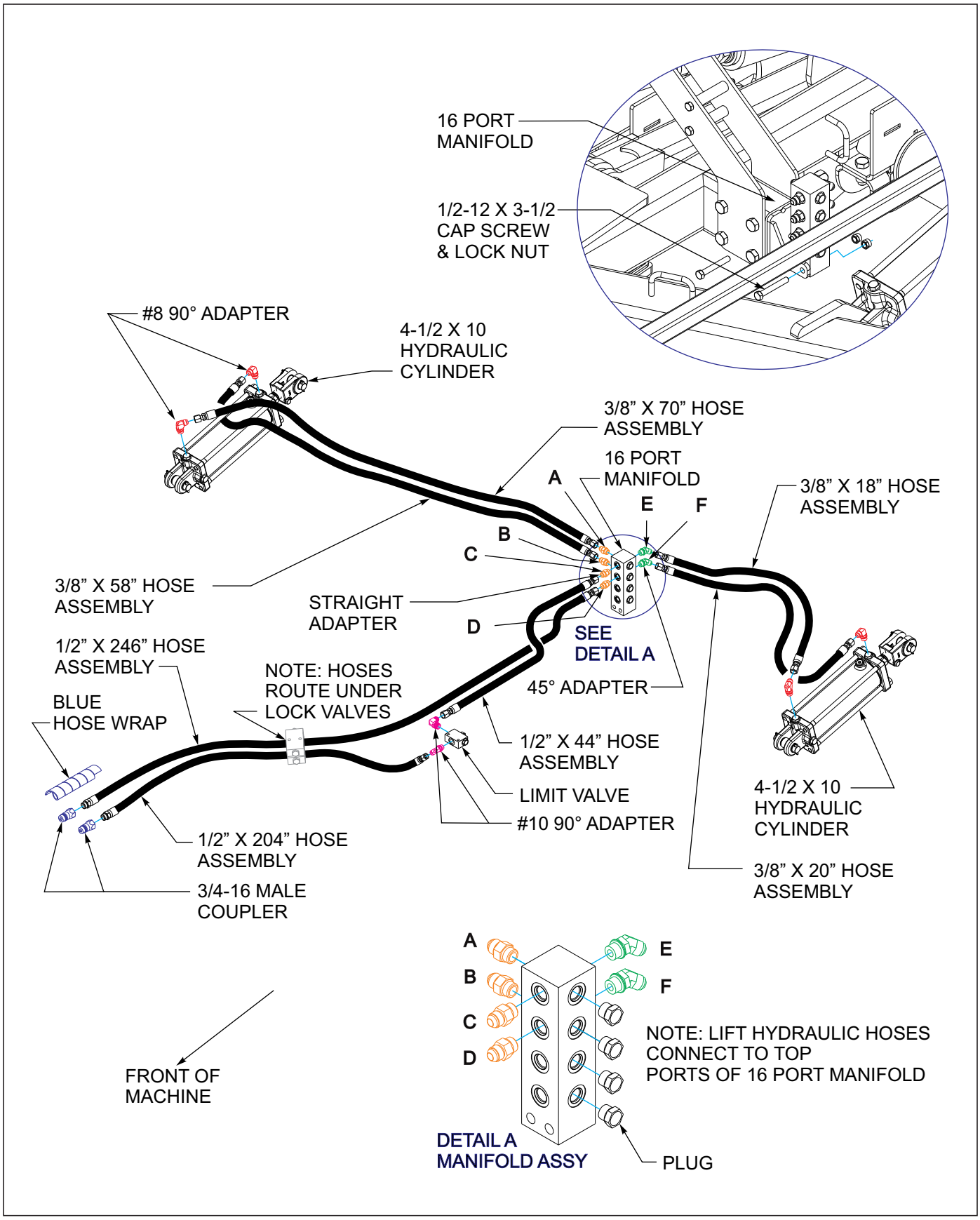

Figure 3-5: Lift Hydraulic Installation 7510-14'

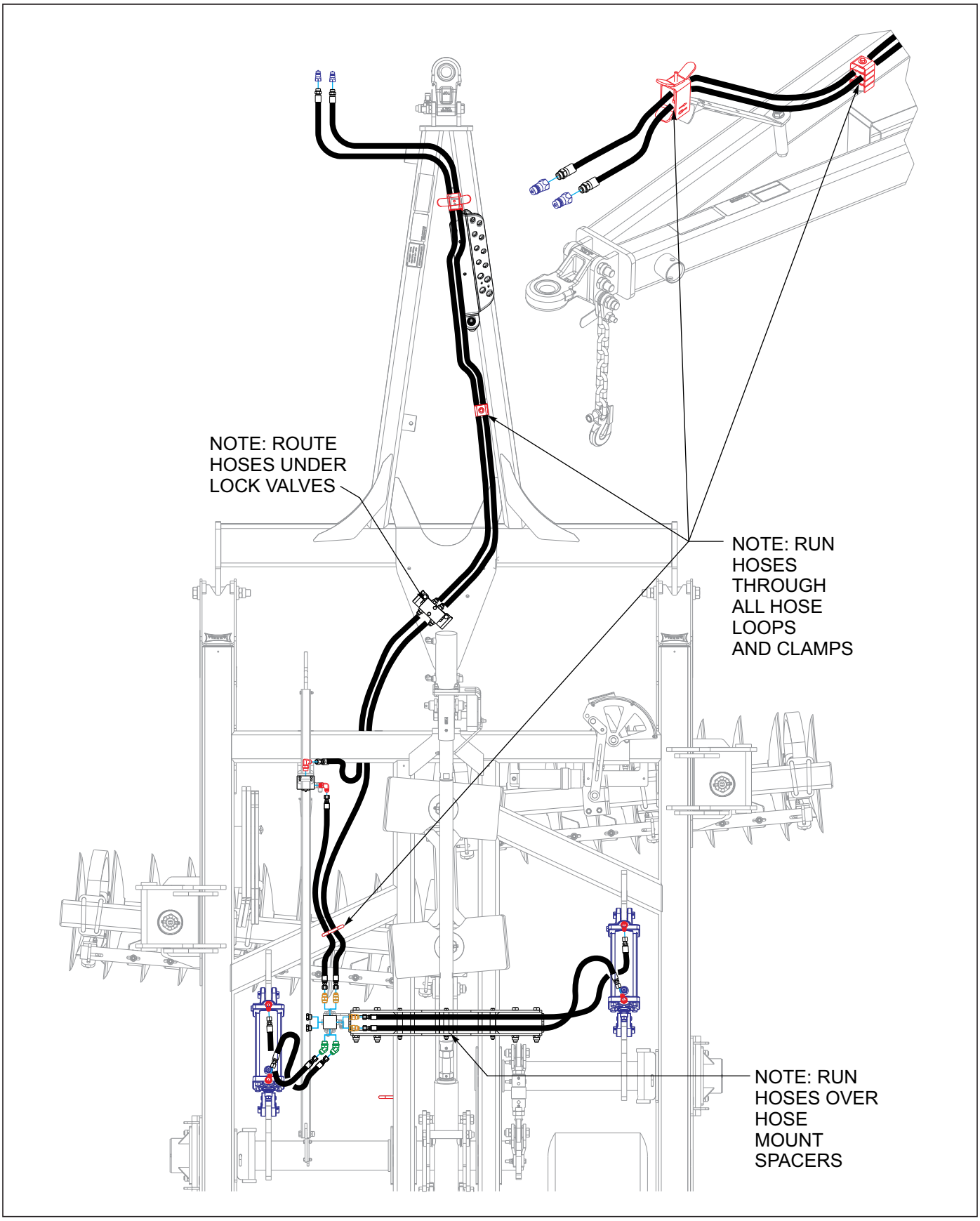

Figure 3-6: Lift Hydraulic Layout 7510-24'

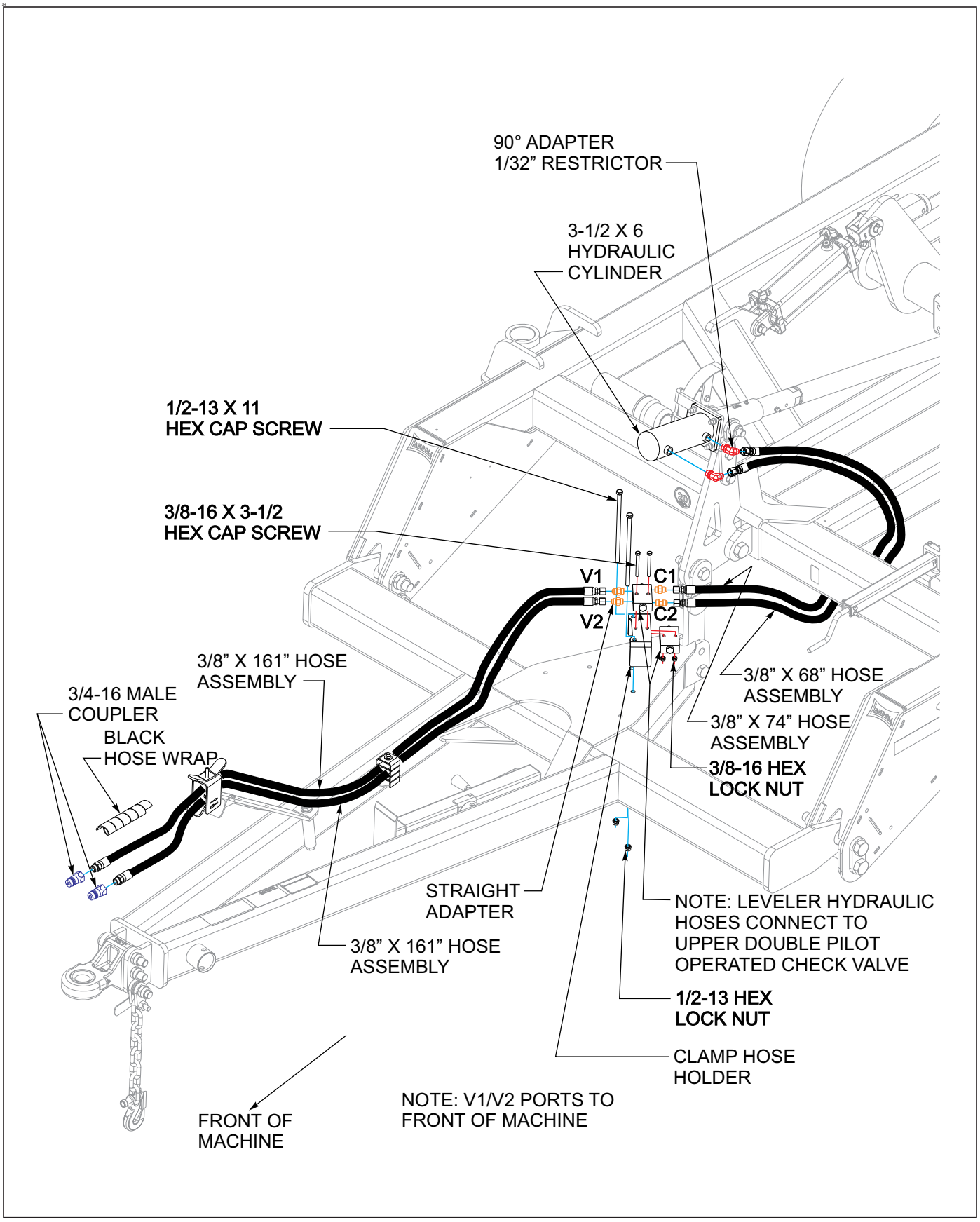

Figure 3-7: Leveler Hydraulic Installation

Center Disc Gangs

There are several ways to install the gangs on the 7510. It is recommend to install the front gangs first to keep the front end of machine from coming up uncontrolled. If a hoist is available, installing the center frame gangs before installing the wings or the hitch is one way of assembling the disc gangs on the center frame. The more common method is to install the hitch, wings, leveler, and route the hoses for the lift system so the machine can be raised and lowered to allow getting the gangs under the frame. Again with this method install the left front gang first, right front , right rear, and then the left rear center. This will keep the most clearance to allow getting them installed.

DANGER

Disc blades are extremely sharp. Exercise extreme care when working on or near disc blades. Do not allow discs to roll over or fall onto any bodily part. Do not allow wrenches to slip when working near disc blades. Never push wrenches toward disc blades. Do not climb over machine above disc blades. Failure to stay clear of disc blade edges can cause serious personal injury or death.

1. Install the left front disc gang assembly by moving disc gang assembly to proper frame position **(See Figures 3-9.)** Install gang pivot pin through gang pivot tube of gangbar, there are notches that will need to be aligned so the pin will not rotate in the gang bar. Install the 3" stainless steel thrust washer over the gang pivot pin, and pin will go on through the gang pivot mount welded to the outside of the center frame inside the hinges. Install the 1-13/16 diameter thrust stainless steel washer to the threaded end of the gang pivot pin along with the gang pivot nut. If the top bushing in the center frame pivot comes out a little while the pin is going through, just put the gang pivot nut on and hand tighten down to press it back into place. While gang pivot nut is still loose place both of the center frame slide pads onto the top side of the gang bar inside of the holder at the center of the machine. Next loosly install the gangbar slide and the center frame slide pads along with the blue washer with a 1-13/16" diameter hole and 1-3/4" slotted nut in the middle of the center frame to keep the end of the gang from falling.
2. Proceed to install the remaining three gangs-right front, right rear, and left rear in the same way.
3. With all the center frame gangs installed, set the center frame or the whole machine down so the gangs are setting on the floor. Remove the four gangbar slide that are in the center of the frame so the gang connector links can be installed.
4. The front gangs have a distance of 26" from center to center of the gangbar pivot shafts sticking up, move gangs to where this is close and the gangs are close to the front of the machine as shown in **(See Figures 3-9.)** Assemble the front bearing halves and insert the 3/4-10 x 9" bolts through the front connector. Assemble the rear bearing halves and insert the 3/4-10 x 10" bolts through the connector and into front link weldment that is already on the frame assembly. Tighten these four bolts alternating sides to tighten the cast bearings up evenly. With both bearings tight install a thrust stainless steel washer on top of the bearing inserts and reinstall the gang bar slides, center frame slide pads, blue washers with 1-13/16" diameter hole and slotted nuts.
5. The rear gangs have a distance of 12" from center to center of the gangbar pivot shafts sticking up, move gangs to where this is close and the gangs are close to the rear mount that is assembled with the frame. Assemble the front and rear bearing halves with clamp plates and insert the ¾-10 x 9 bolts through the connector with the nuts being on the inside. Tighten these four bolts alternating sides to tighten the cast bearings up evenly. With both bearings tight install a stainless steel washer on top of the bearing inserts and reinstall the gang bar slide weldments, center frame slide pads, blue washer with 1-13/16" diameter hole and slotted nuts.
6. Tighten down all eight of the slotted nuts on the center frame using the disc gang wrench provided on the center frame. Tighten to 200 ft-lbs and then back off to the nearest slot in nut.
7. Install the gang adjust gauge as shown (**See Figures 3-10,)** All bolts may be tightened except the 5/8-11 x 5-11/16 x 5-1/2 u-bolts as this plate will need to slide to calibrate gauge.

NOTE

8. *To calibrate gauge the disc gangs will need to be adjusted to the 15 degree angle with hydraulics.* (**See Figures 3-10,)***Then manually rotate gang adjust dial to 15 degree setting in indicator gauge. The gauge mount plate should measure 5-1/2" to end of front frame tube and the gang lever plate should measure 42-1/4" to end of gang bar as shown* (**See Figures 3-8.)** *Now the 5/8-11 x 5-11/16 x 5-1/2 u-bolts and lock nuts may be tightened* (**See Figures 3-10.)**

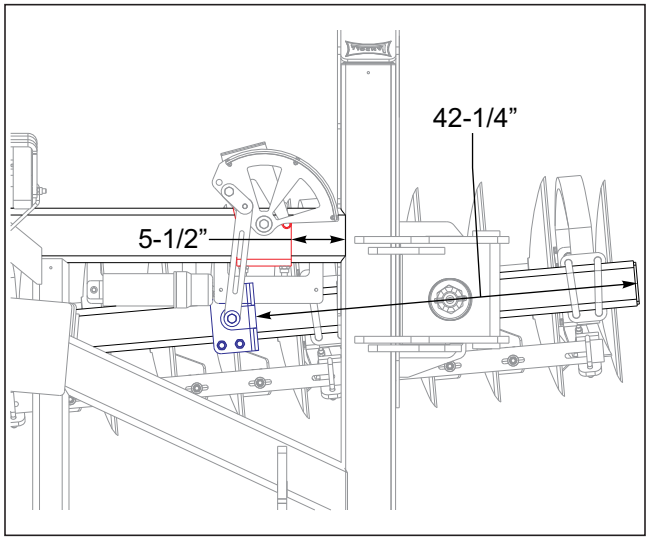

Figure 3-8: Disc Gang Adjust Placement

IMPORTANT

Grease the zerk down inside of four gang pivot pins until grease is purged from the pivot joint (**See Figures 4-17.)**

9. Install a clevis pin and 1/8" hair pin through all castle nuts of center and outer gang bar attachment assemblies to prevent gang pivot nuts from loosening as shown (**See Figures 3-10.)**

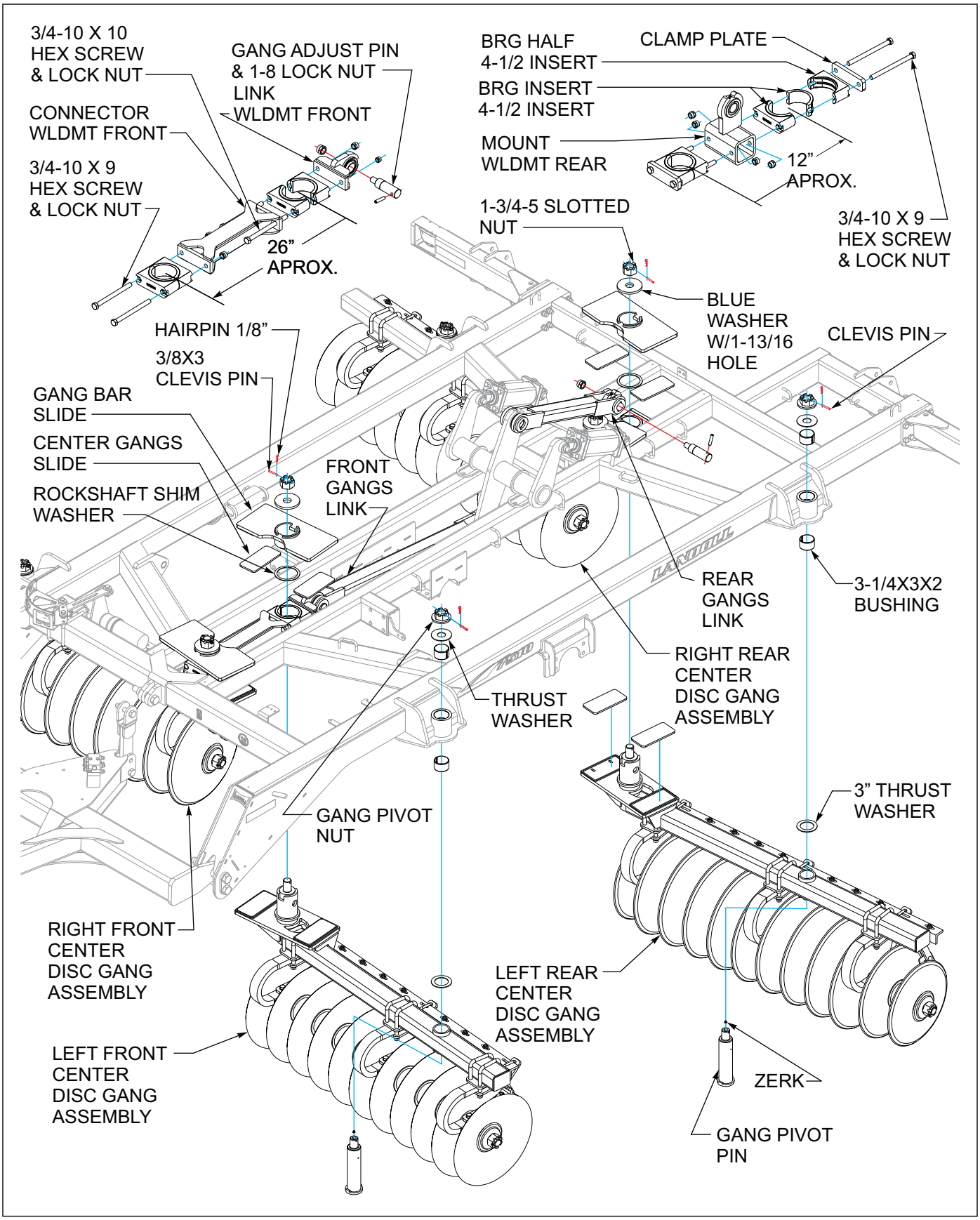

Figure 3-9: Center Disc Gang Installation

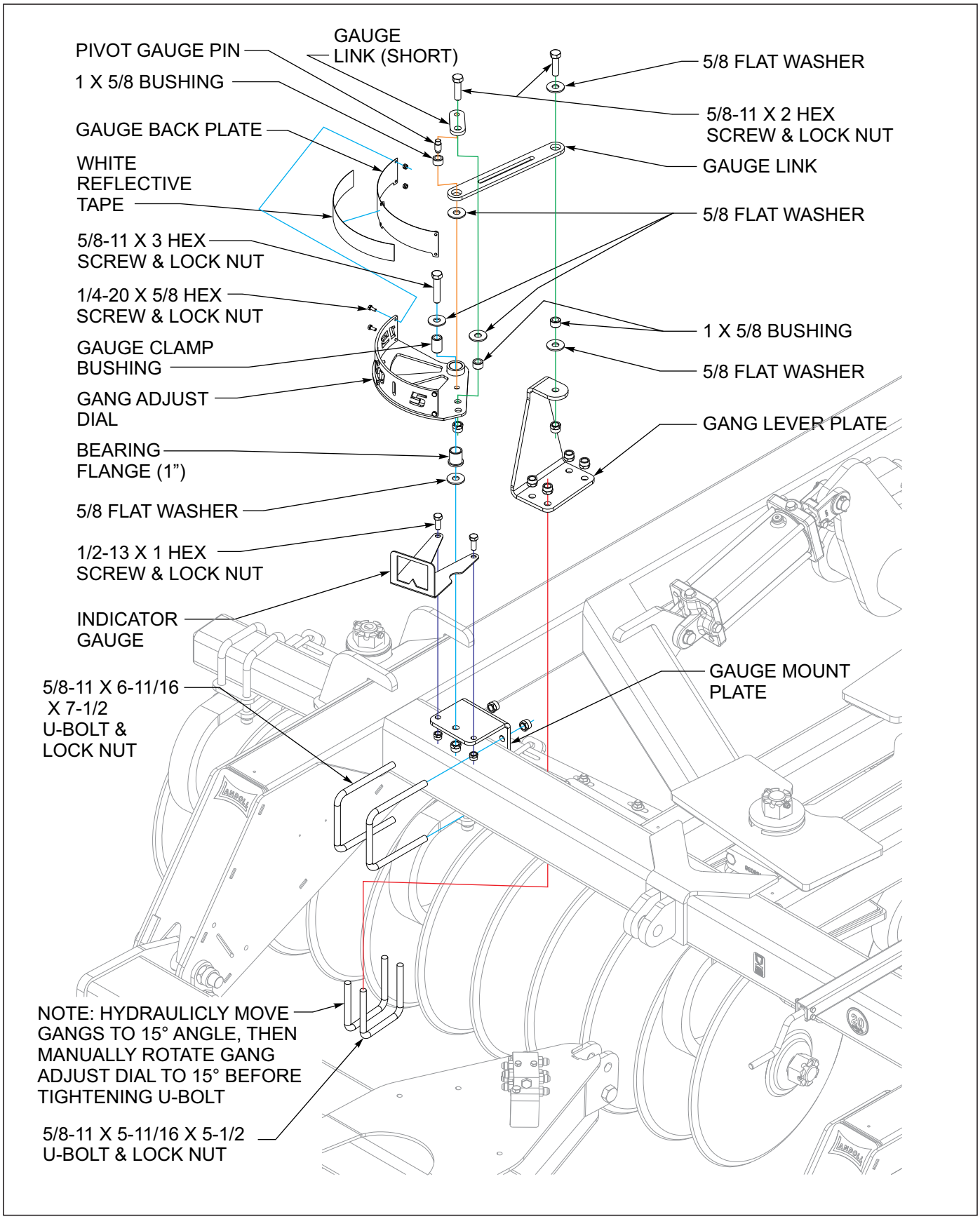

Figure 3-10: Disc Gang Adjust Gauge Installation

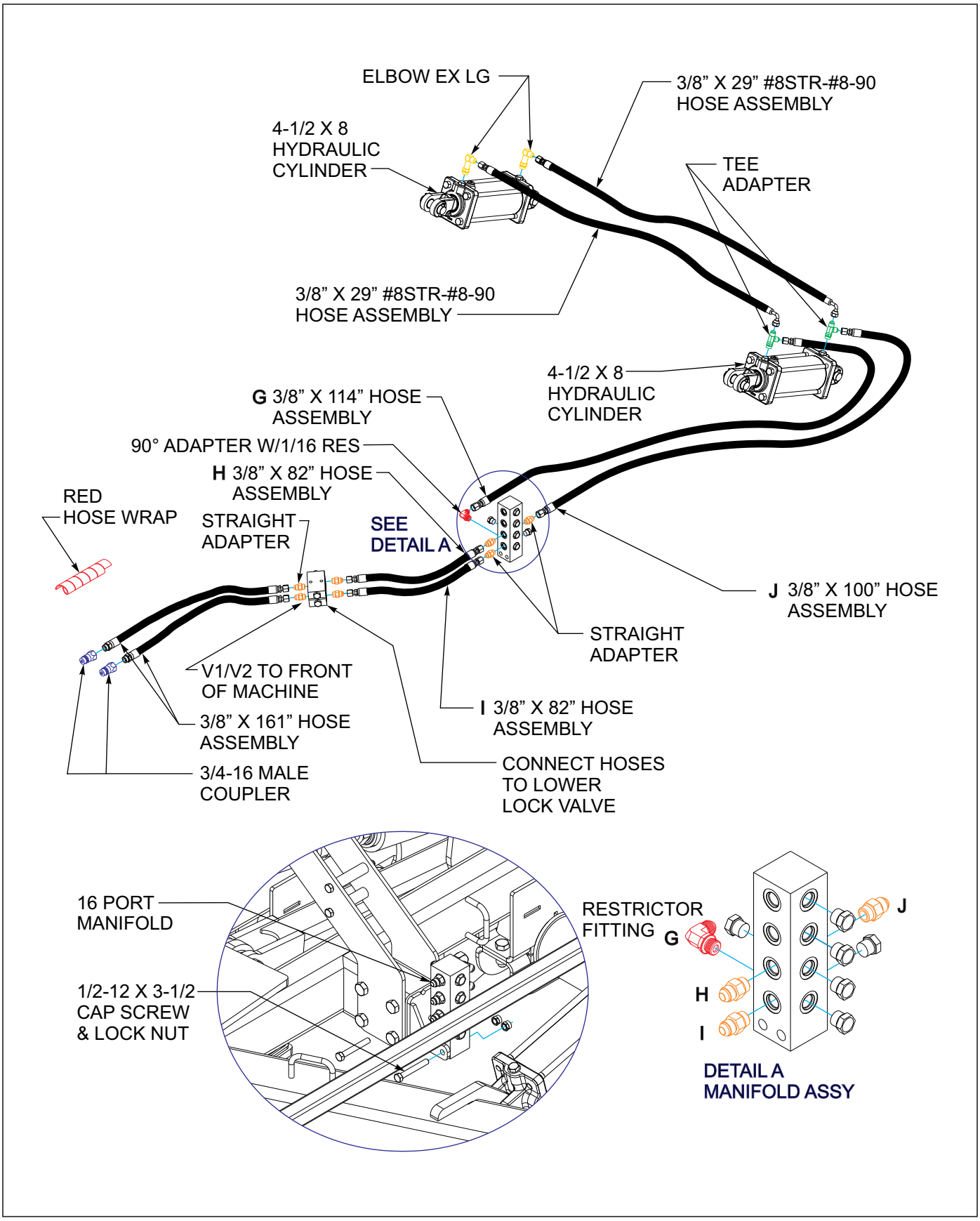

Figure 3-11: Gang Hydraulic Installation 7510-14’

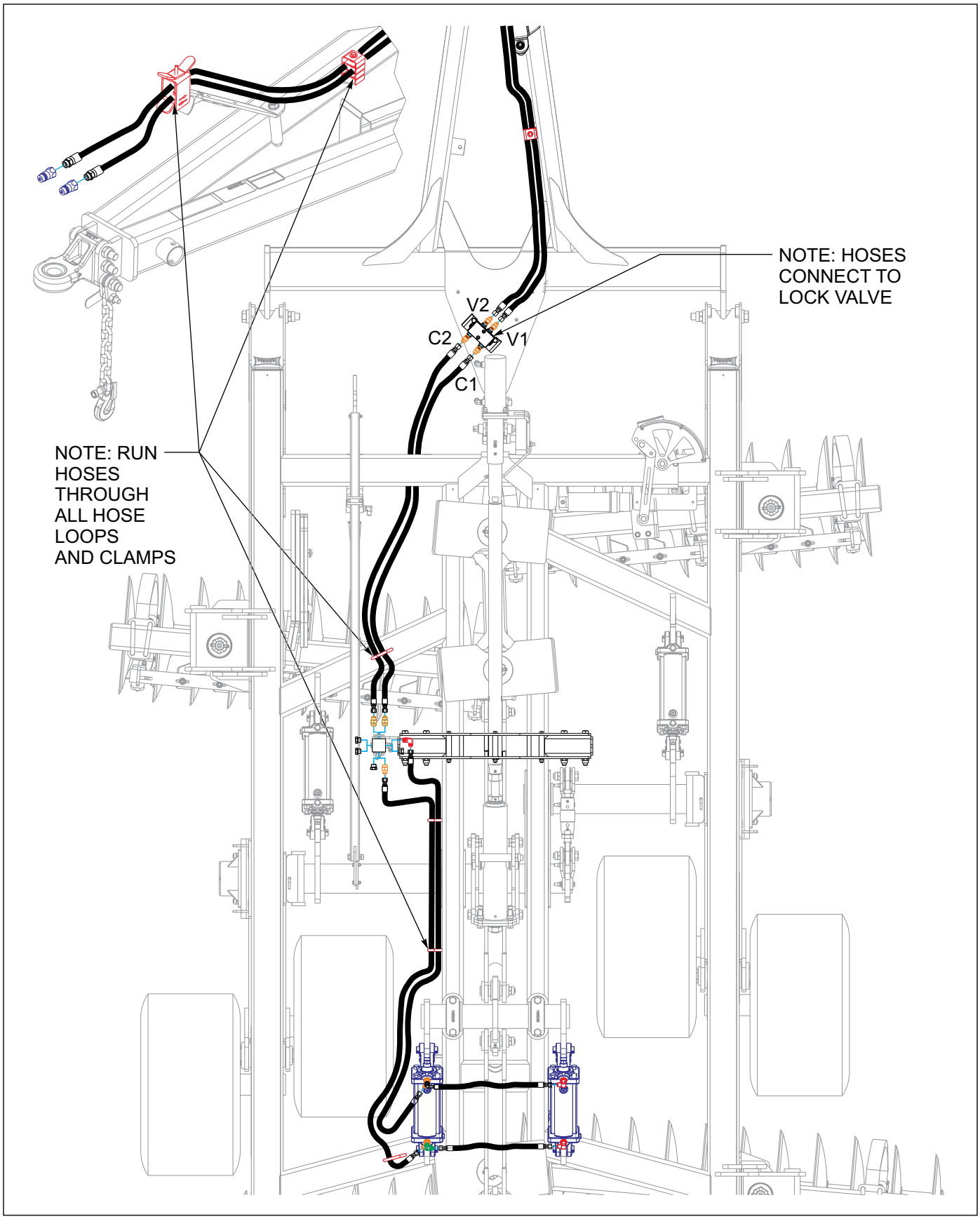

Figure 3-12: Gang Hydraulic Layout 7510-14'

Table provided for general use.

NOTES:

7-PIN CONN.	4-PIN TOWER	CIRCUIT	WIRE COLOR
1	D	GROUND	WHITE
2	–	WORK LAMPS	BLACK
3	B	LEFT FLASHING & TURN	YELLOW
4	–	STOP LAMPS	RED
5	A	RIGHT FLASHING & TURN	GREEN
6	C	TAIL LAMPS	BROWN
7	–	SWITCHED POWER (12 V)	BLUE

MAIN WARNING LIGHT HARNESS - WIRING CHART

	1	2	3	4	5
	2-PIN TOWER	3-PIN TOWER	6-PIN SHROUD	3-PIN TOWER	2-PIN TOWER
BLACK LEFT TURN			A	C	
WHITE GROUND	A	A	B	A	A
BROWN TAIL LIGHT		B	C	B	
YELLOW LEFT TURN			D		B
GREEN RIGHT TURN	B		E		
RED RIGHT TURN		C	F		

REAR WARNING LIGHT HARNESS - WIRING CHART

Figure 3-13: LED Light Harness Wire Designations

LED Light Installation

NOTE

Refer to (See Figure 3-14.) for light bracket placements.

1. Attach left and right reel extensions w/ref to center frame using 3/4-10x 8 hex cap screws and lock nuts. The yellow reflectors go to the front side **(See Figure 3-14.)** and attach left tail light mount to frame assembly using 5/8-11 x 4-11/16 x 8-1/4 u-bolts and 5/8-11 flange lock nuts.
2. Attach ag flasher control module to bottom of right tail light mount with 1/4-20 x 1-1/2 cap screws and lock nuts. Be sure that the control module is set so that the 6 pin connector faces the left side of the machine.
3. Attach right tail light mount and ag flasher control module to frame assembly with 5/8-11 x 4-11/16 x 8-1/4 u-bolts and 5/8-11 flange lock nuts.
4. Attach the ag red single LED lamps to tail light mounts using 1/4-20 x 1-1/4 hex head cap screws and hex lock nuts.

IMPORTANT

Make sure lights are positioned for maximum visibility from the rear.

5. Install the rear warning light harness to the frame. Refer to **(See Figure 3-15.)** for light harnesses routing. Connect 2 pin and 3 pin ends to each of the warning lights. Connect 6 pin to the ag flasher control module. **See Figure 3-13 for LED harness wire designations.**
6. Attach ag amber single LED lamps to light brackets using 1/4-20 x 1-1/4 hex head cap screws and hex lock nuts.
7. Attach front warning harness to frame. Connect 4 pin end to the ag flasher control module.
8. Insure that the harnesses are clear of any moving parts and secure the harnesses with tie wraps provided.
9. Install the stor-away holder to hose holder on hitch with 1/4-20 x 3/4 hex head cap screws and hex lock nuts **(See Figure 3-2.)**

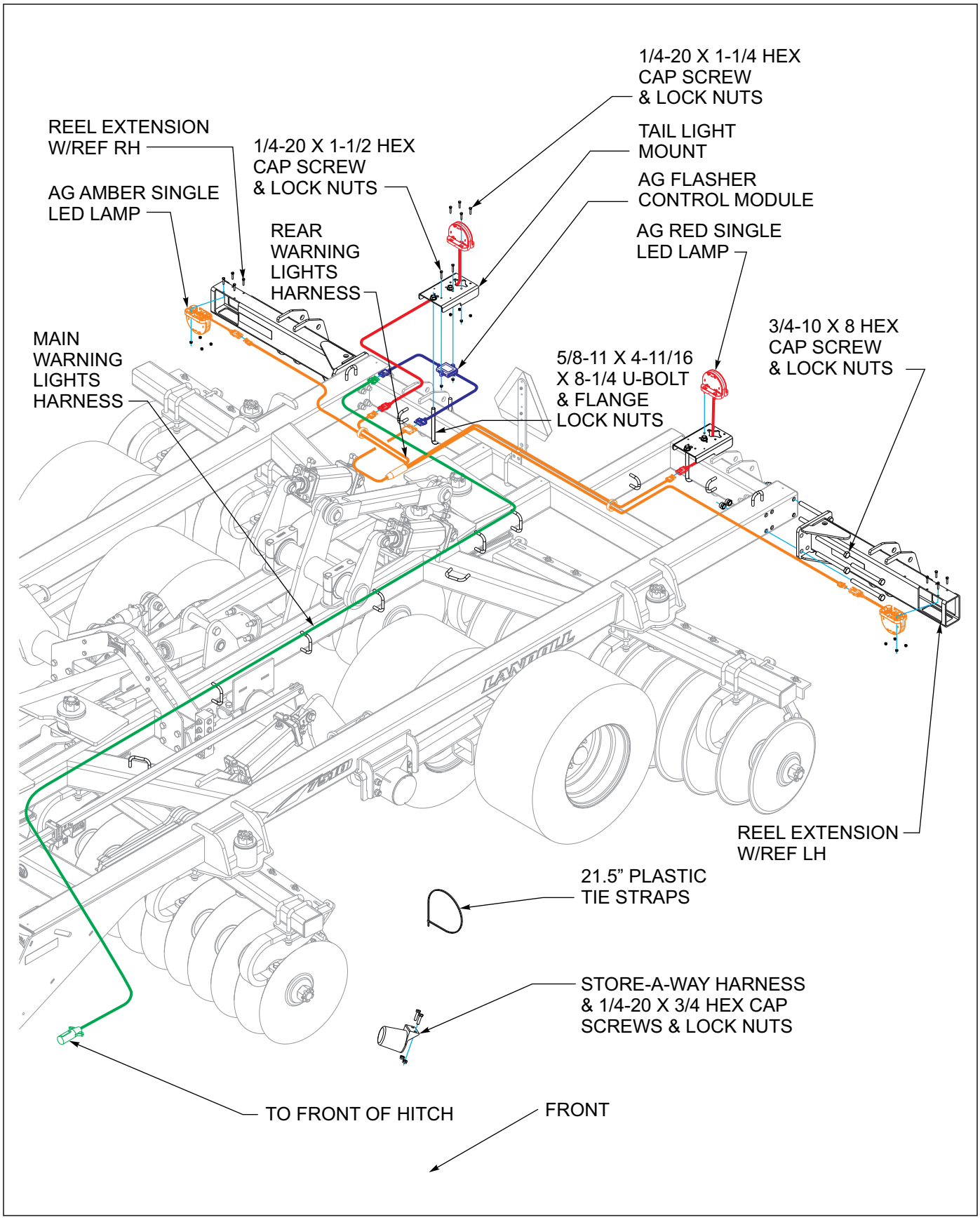

Figure 3-14: LED Light Installation

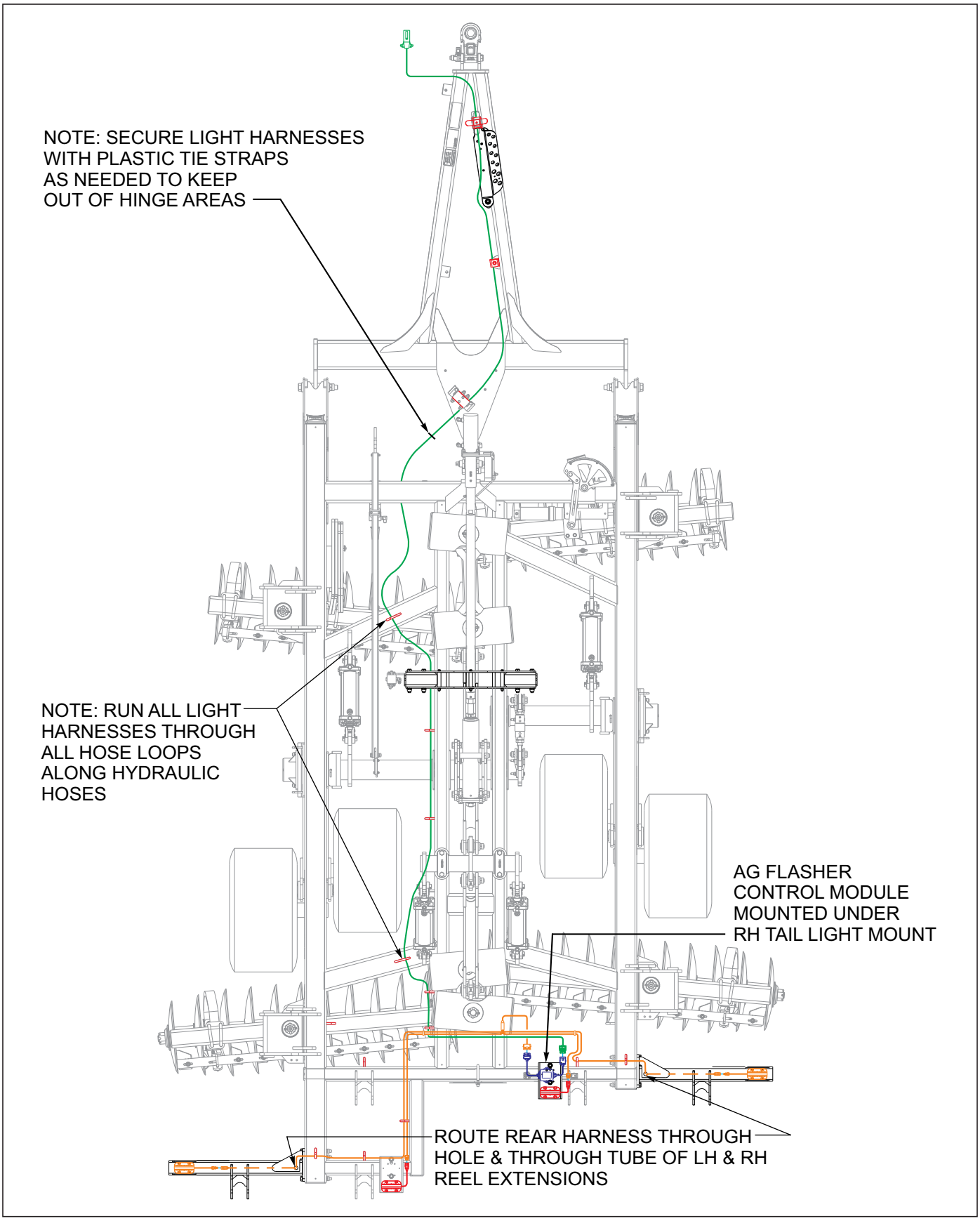

Figure 3-15: LED Light Layout

Table provided for general use.

NOTES:

Conditioner Reel Spring Installation (Option)

NOTE

Refer to Conditioner Single Reel Installation shown in **Figure 3-16** for single reel installation or *Conditioner Double Reel Installation* shown in **Figure 3-17** for double reel installation.

1. Slide the adjustment pin through the rear plates of center and wing frames, secure with (2) 2-1/2 snap rings.
2. Assemble the 1-8 x 9 adj bolt through adjustment pin on frame, 1" lock washer, (2) 1-8 hex nuts, and 17" heavy spring assembly.
3. Install 1-1/2” flange bearing into reel arm. Slide in 1-1/2” pivot bushing.
4. Attach reel arm to upper hole on rear center or wing frame or double mount using 1-8 x 6-1/2 hex head cap screw and hex lock nut.
5. Assemble 17" heavy spring assembly to reel arm using 1" pivot pin, and 5/16 x 1-1/2” spring slotted pins. Set pin centers to 21" dimension as shown in **Figure 3-16**.

WARNING

Do not attempt to lift heavy parts (such as the frame, disc gangs, lift, pull hitch, or reel/gang bar assembly manually. Use a hoist or a forklift to move these parts into position.

6. Attach single reel/gang bar assembly to reel arms using gang bar mount plate, 3/4-10 x 6 hex head cap screws and double hex lock nuts as shown in **Figure 3-16**. **Refer to pages 2-4** in “Specification Section” for single reel gang bar placement locations.
7. Attach double reel/gang bar assembly to reel arms using gang bar mount plate, (2) clamp tubes, (4) spring torsion rubber, secure with 3/4-10 x 8-1/2 hex head cap screws and double hex lock nuts as shown in **Figure 3-17**. **Refer to pages 2-5 thru 2-6** in “Specification Section for single reel gang bar placement locations.

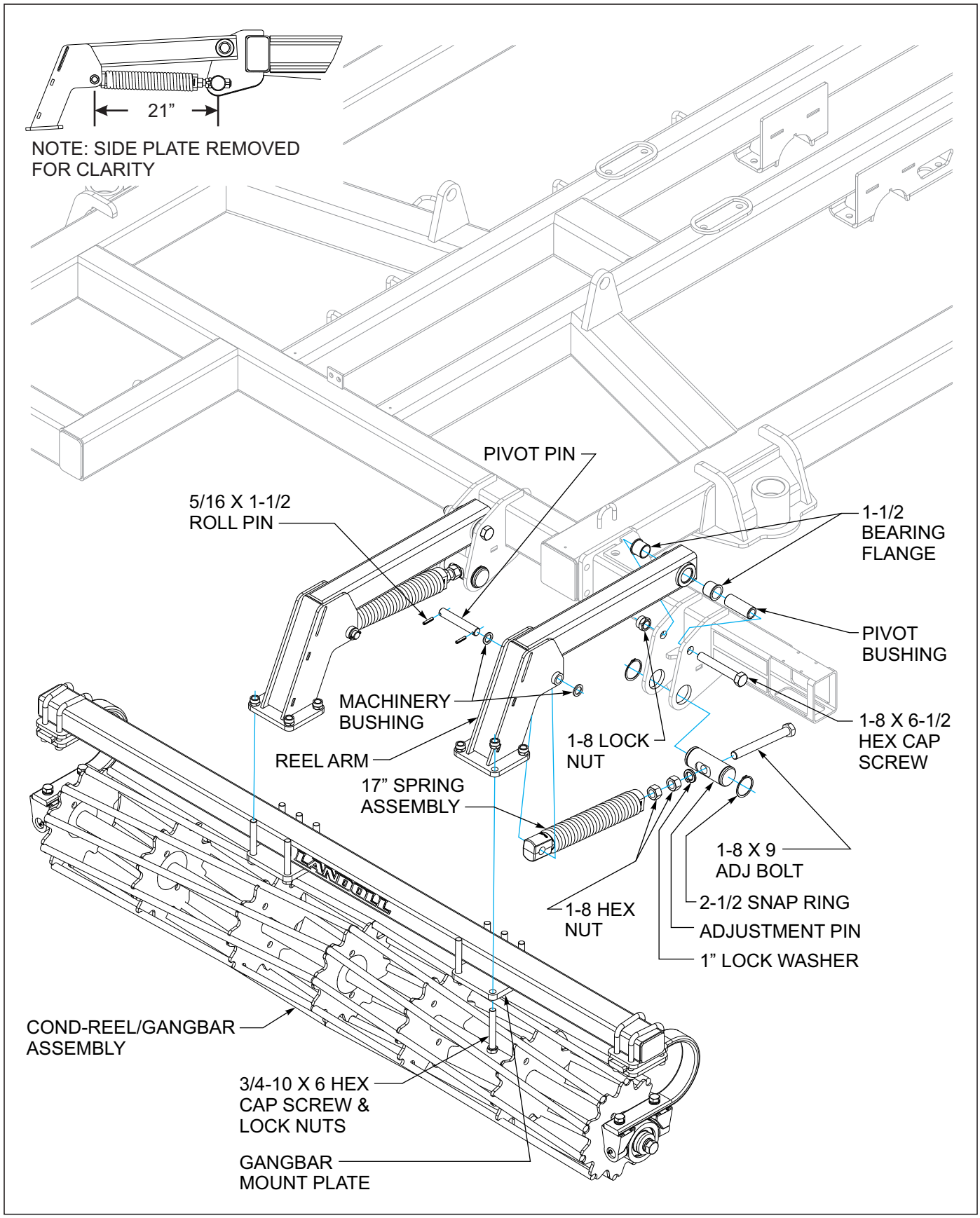

Figure 3-16: Conditioner Single Reel Installation 7510-14’

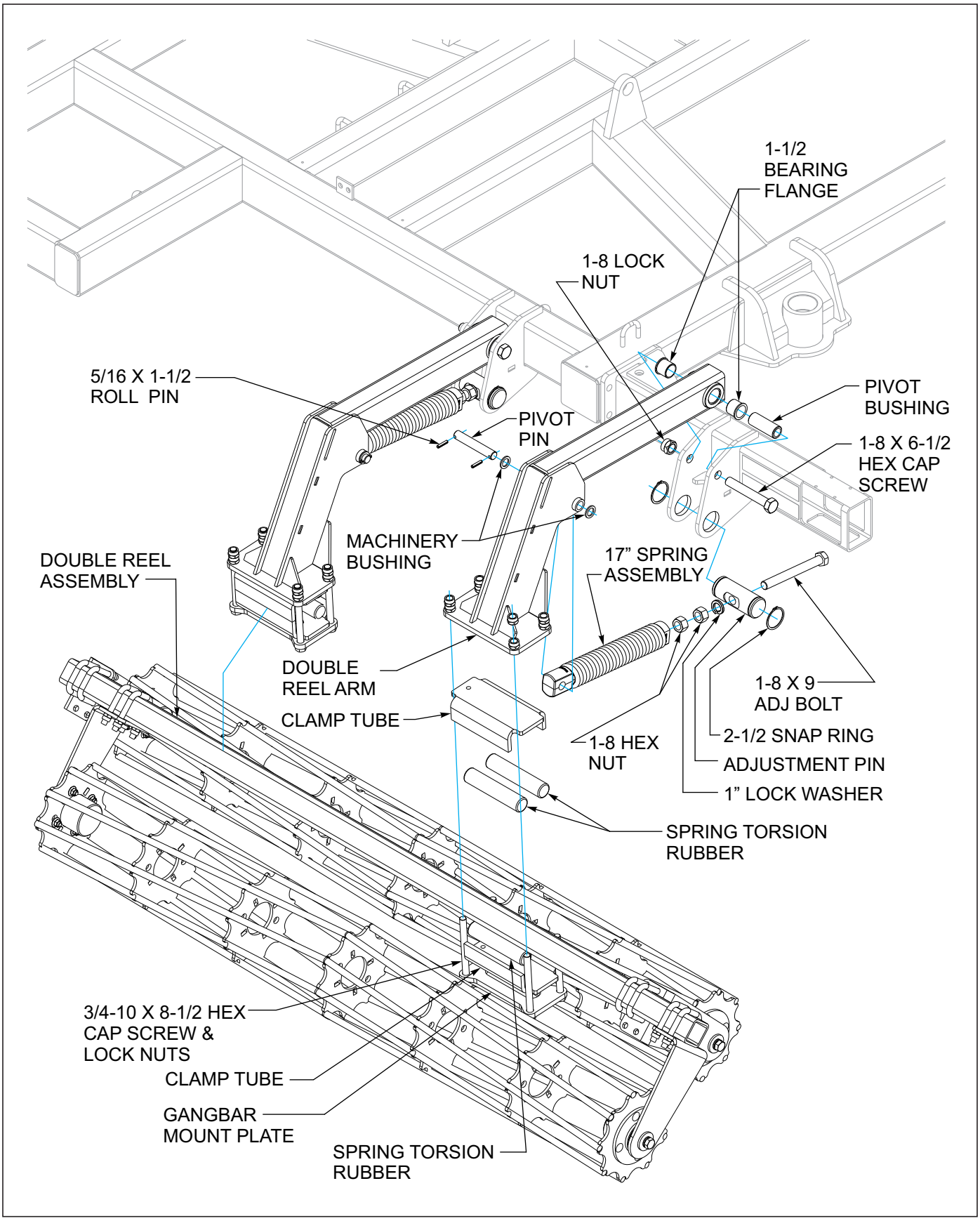

Figure 3-17: Conditioner Double Reel Installation 7510-14'

Table provided for general use.

NOTES:

Hydraulic Conditioner Reel Installation (Option)

NOTE

Refer to Hydraulic Conditioner Single Reel Installation shown in **Figure 3-18** for single reel installation or *Hydraulic Conditioner Double Reel Installation* shown in **Figure 3-19** for double reel installation.

NOTE

The 209666 (7510-32' hydraulic double round reel) and 209676 (7510-32' hydraulic flat reel) on center section uses two of the Hydraulic Conditioner Double Reel Installation arm assemblies, Refer to **Figure 3-18** *and one Conditioner Double Reel Installation arm assembly in center position,* Refer to **Figure 3-17.** *for arm assemblies. Refer to* **Figure 2-1** - **2-3** ***f****or proper arm placement***.**

1. Attach reel arm assemblies to rear frame in top hole using 1-8 x 6-1/2 hex head cap screw, pivot bushing, 1-1/2 flange bearings, and 1-8 hex lock nut.
2. Attach 17" 1-1/8 thd spring assembly and hydraulic cylinder to lower hole on rear frame using trunnion mount assembly, 1/2-13 x 2 hex head cap screw, and 1/2 lock washer. Set pin centers to 21" as shown. Tighten 3/8-16 x 3/4 set screw in threaded spring castings.

WARNING

Do not attempt to lift heavy parts (such as the frame, disc gangs, lift, pull hitch, or reel/gang bar assembly manually. Use a hoist or a forklift to move these parts into position.

3. Attach single reel/gang bar assembly to reel arms using gang bar mount plate, 3/4-10 x 6 hex head cap screws and double hex lock nuts as shown in **Figure 3-18**. *Refer to* **Figure 2-1** for single reel gang bar placement locations.
4. Attach double reel/gang bar assembly to reel arms using gang bar mount plate, (2) clamp tubes, (4) spring torsion rubber, secure with 3/4-10 x 8-1/2 hex head cap screws and double hex lock nuts as shown in **Figure 3-19**. *Refer to* **Figure 2-1** for single reel gang bar placement locations.

NOTES

Refer to ***Figure 3-20*** *for hydraulic diagram for the 7510-14 model.*

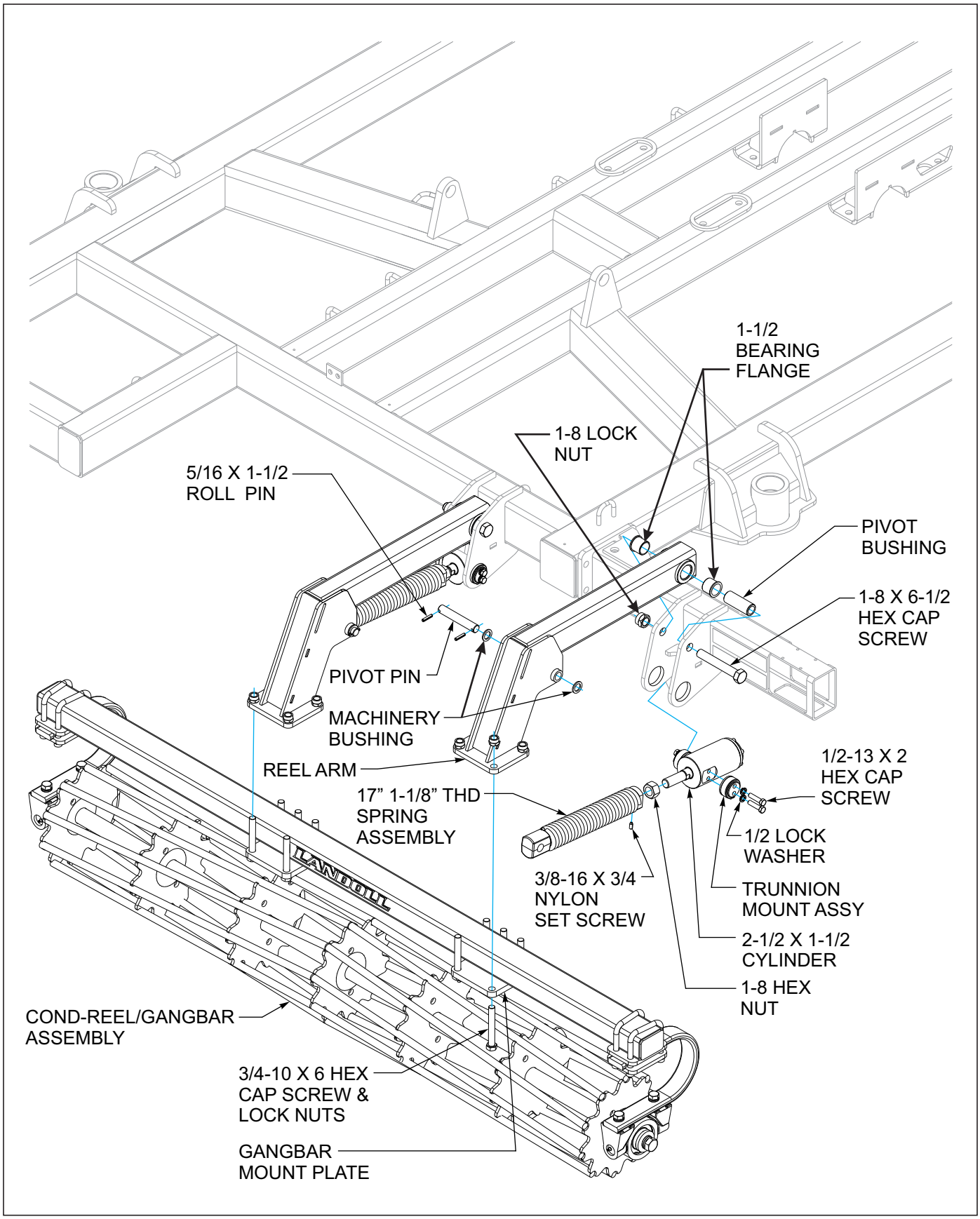

Figure 3-18: Hydraulic Conditioner Reel Single Installation 7510-14'

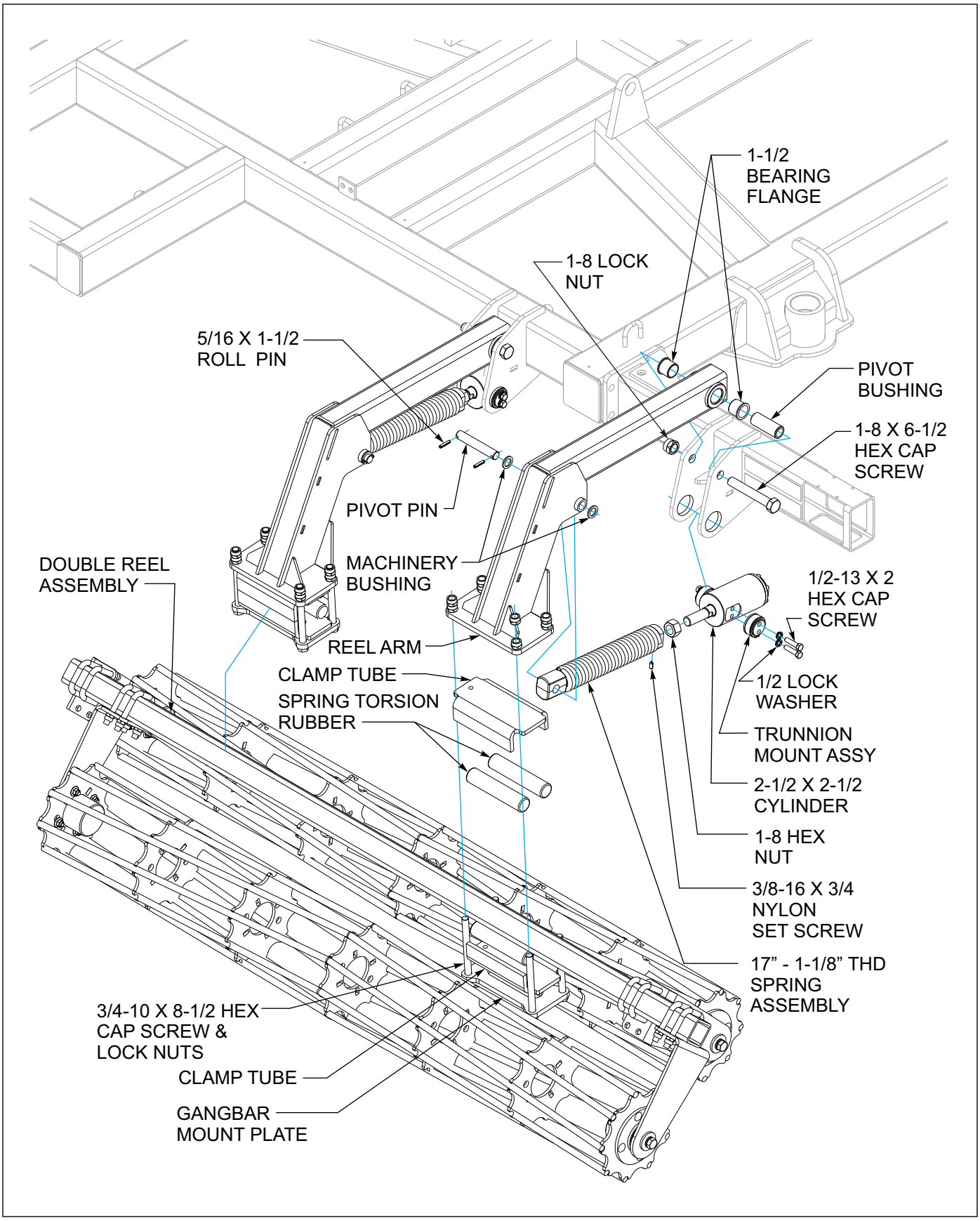

Figure 3-19: Hydraulic Conditioner Double Reel Installation 7510-14'

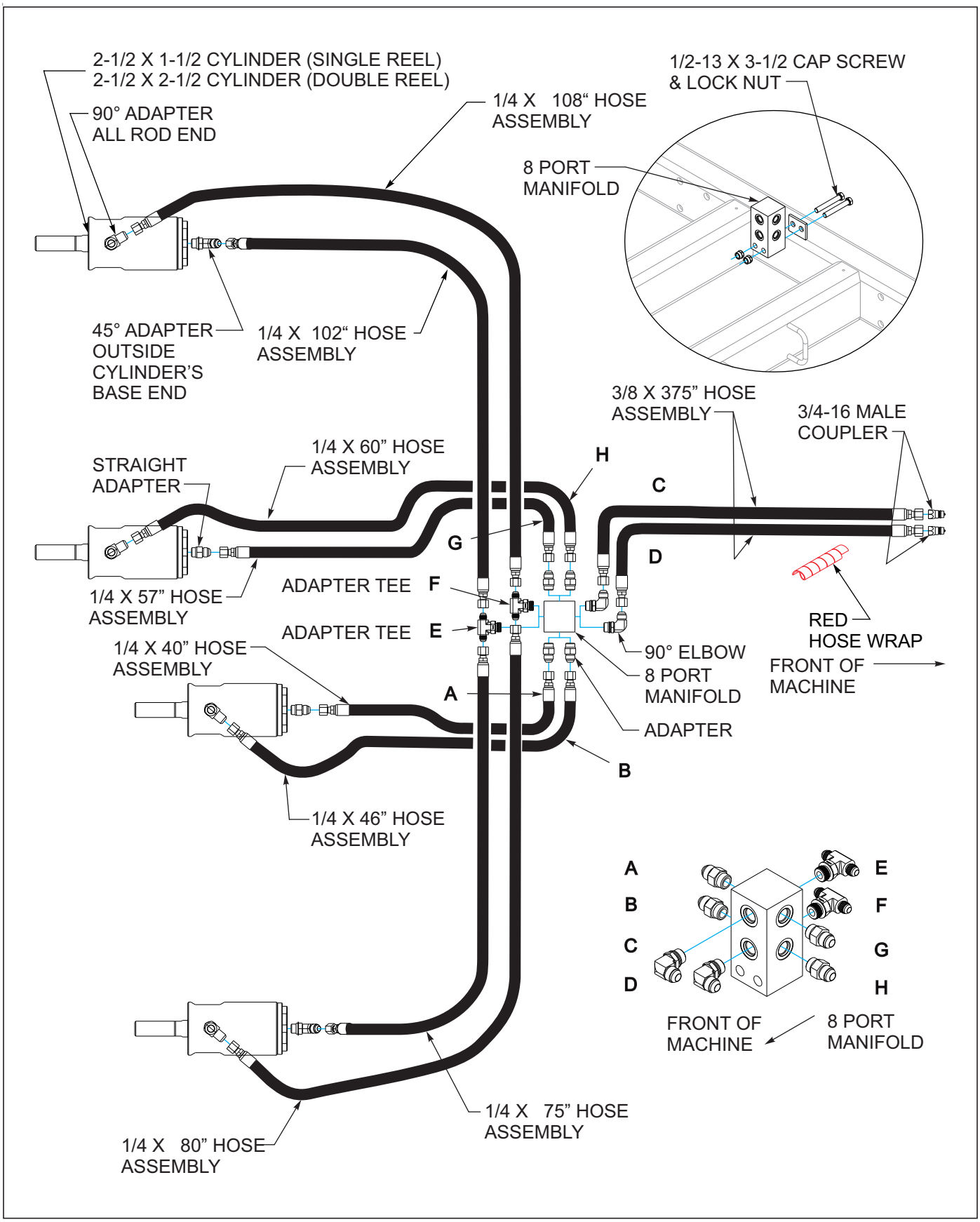

Figure 3-20: Reel Hydraulic Installation 7510-14’

Rear Tow Hitch Installation

A rear tow hitch assembly is available for use on the rear of the VT Plus.

NOTE

The red led ag lamps, ag flasher module and tail light mounts will need to be removed from rear tube of center frame. The ag flasher module and red led ag lamps will be re-installed to the new tail light mounts as shown **(See Figure 3-21.)**

5. Attach rear tow hitch tubes with plates and secure with 1-8 x 8-1/2 cap screws and lock nuts, on angle tubes of rear of center frame in position shown **(See Figure 3-21.).**
6. Attach plates, ag flasher module, tail light mount, red led ag lamp to rear tube of center frame in location show with hardware shown **(See Figure 3-21.)**
7. Remove the 1/2-13 x 3-1/2 cap screws in 16 port manifold. Attach hose mount plate as shown with new 1/2-13 x 4 cap screws and use the1/2-13 lock nuts that were removed.
8. Leave all hardware loose until rear tow hitch is completely assembled.
9. Attach the hitch hyd mount assembly, hitch mounting plate, hitch mounting plate w/loop and rear tow hitch assembly to rear of rear tow hitch tubes with hardware shown **(See Figure 3-22.)**
10. Now the hitch jack mount and 4 hole plates may installed to the rear hitch tubes in position shown **(See Figure 3-22.)**
11. The rear jack tube may be slid into hitch jack mount and secured with the wing lock pin, 1/4 x 3 roll pin and 3/16 dia hair pin as shown. Attach the jack mount tube to the rear jack tube with a 3/4-10 x 4 cap screw and lock nut.
12. Tighten all hardware once rear tow hitch assembly is adjusted appropriately.
13. Route hydraulic hoses on left side of hitch, through tube and follow hose loops to front as shown**(See Figure 3-22.).** Connect one end of the 3/8 x 214" hoses to the couplers on the front of the hitch hyd mount assembly and the other end to the 37 flare bulkhead fittings. Connect the 3/4-16 Male Couplers To The 3/8 X 222" Hose Assembly. Attach the other end of the hoses to the 45el x 37 swivel fittings as shown.
14. Route the 3/8 x 222" hoses through all hose loops and clamps along with other hose to front of hitch.
15. Route the tandem adapter harness through right rear tow hitch tube and attach the connector between the ag flasher module and the main warning lights harness.
16. **See Figure 4-16.** in Operator's Section for proper rear jack tube operation.

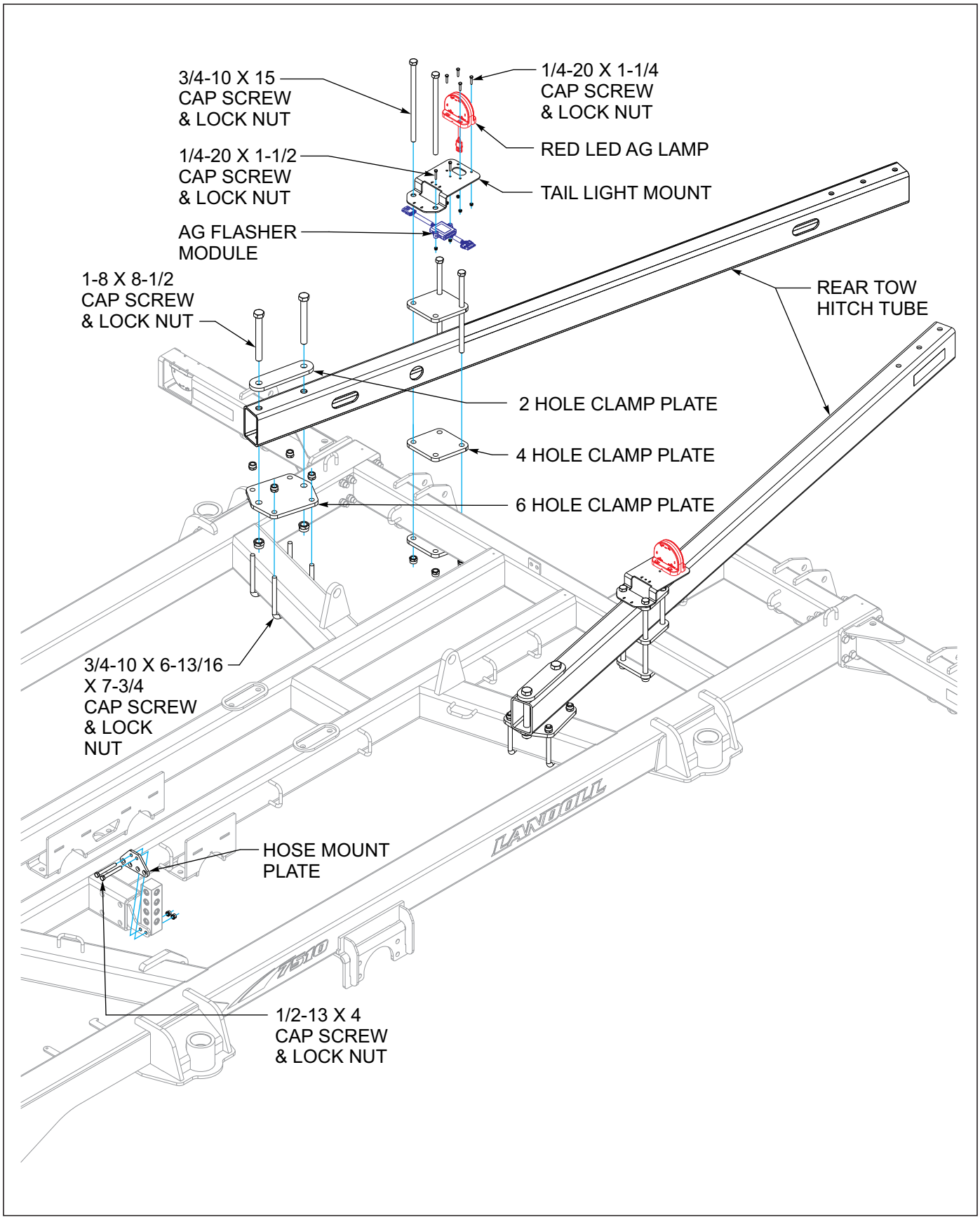

Figure 3-21: Rear Tow Hitch Installation (1 of 2)

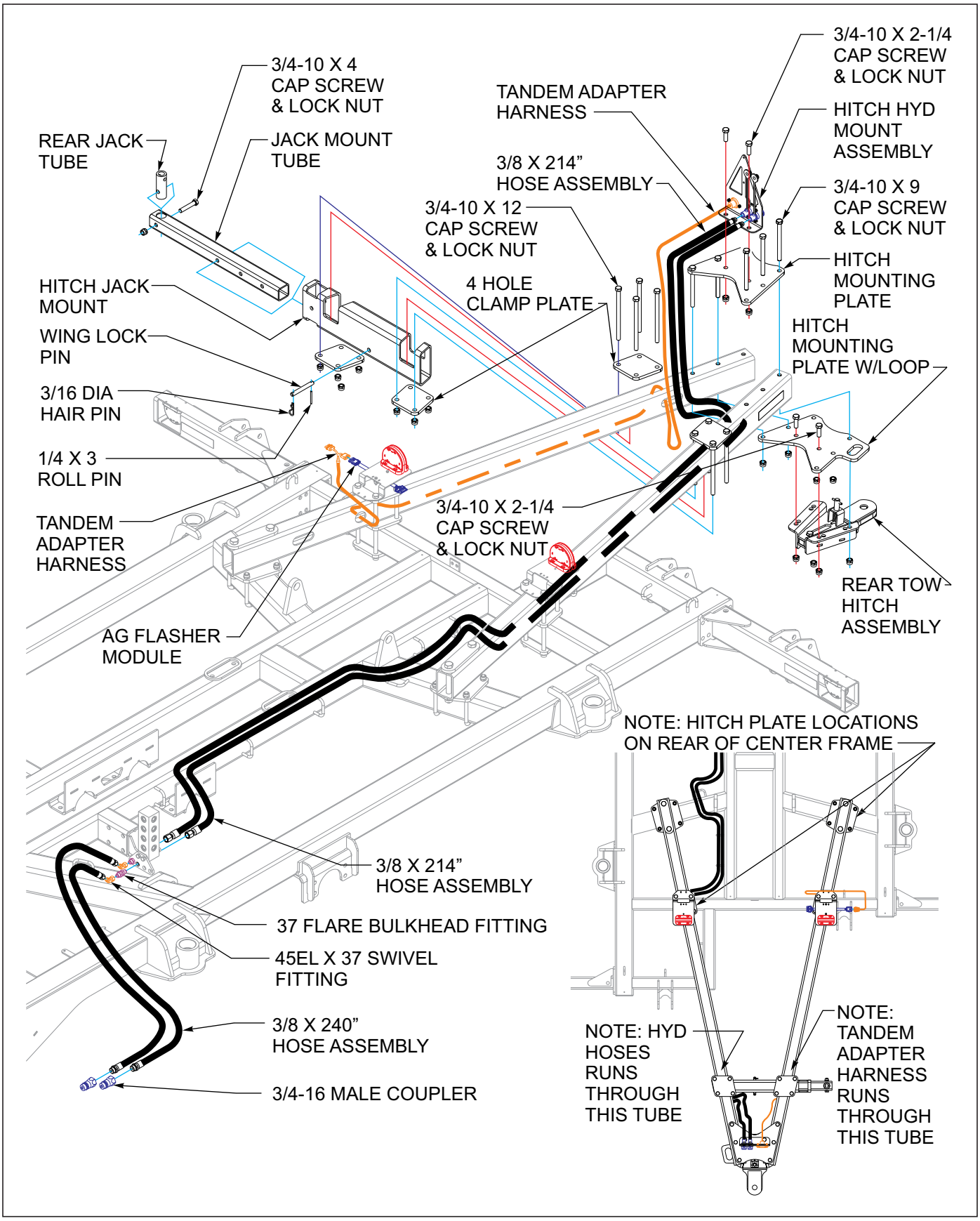

Figure 3-22: Rear Tow Hitch Installation (2 of 2)

Final Assembly

1. Attach a tractor to the implement and charge the lift system hydraulics as described is **“Hydraulic Lift System” on page 4-3.**
2. Install the transport locks on both 4 x 10 master cylinders on the center frame.
3. Connect the hydraulic hoses on the optional hydraulic leveler to the tractor (if equipped). Fully extend and retract the hydraulic leveler several times to remove any air. **See “Hydraulic Leveler Adjustment” on page 4-6** for any further adjustments
4. Connect lights to the tractor and verify operation.
5. Check tires for proper inflation
6. Level the disc from side to side as described in **“Leveling (Side to Side)” on page 4-5**.
7. Inspect the final implement assembly, and verify that all bolts have been tightened, cotter pins spread, and that there are no leaking hydraulic connections.
8. Rotate each disc gang to verify that each gang rotates freely. Adjust any scrapers that may have shifted during shipment or assembly.
9. Lubricate the disc at all locations **(See “Lubrication Maintenance” on page 4-14.)**
10. Touch up with paint any areas that may have been scratched during moving, handling, or assembly.
11. Thoroughly read and understand the operating section before using the disc.

Table provided for general use.

NOTES:

Chapter 4

Operation and Maintenance

DANGER

Never allow anyone to ride on the 7510 VT Plus at any time. Allowing a person to ride on the machine can inflict serious personal injury or death to that person.

DANGER

Always lock the tractor drawbar in the center position when transporting the unit. Failure to do so can result in serious injury or death and cause damage to the equipment.

DANGER

Disc blades are extremely sharp. Exercise extreme care when working on or near disc blades. Do not allow discs to roll over or fall onto any bodily part. Do not allow wrenches to slip when working near disc blades. Never push wrenches toward disc blades. Do not climb over machine above disc blades. Failure to stay clear of disc blade edges can cause serious personal injury or death.

DANGER

When transporting the unit, place cylinder lockouts in the transport lock position after fully extending the cylinders. Insert the lockout pins to secure the cylinder lockouts. Failure to lockout the cylinders can cause the unit to settle during transport, which can result in serious injury or death and cause damage to the equipment.

WARNING

All hydraulically elevated equipment must have cylinder lockouts installed or be lowered to the ground, when servicing or when equipment is idle. Failure to take preventive measures against accidental lowering can result in serious personal injury.

CAUTION

When transporting farm implements on public roads, it is the responsibility of the operator to abide by state and local laws concerning wide loads, speed, safety emblems and safety lighting equipment. Drive at safe speeds. Particularly when rounding corners, crossing rough ground or driving on hillsides, to prevent tipping the tractor.

Tractor Preparation

The 7510 VT Plus is designed to be pulled by tractor equipped with a double lip or clevis type hitch. If your tractor is not equipped as such, you need to purchase the hitch from your local tractor dealer.

Before attaching the VT Plus, prepare the tractor as follows:

1. Inflate the rear tractor tires equally and add ballast according to the tractor operator's manual.
2. Lock the tractor drawbar in the center position.

VT Plus Preparation

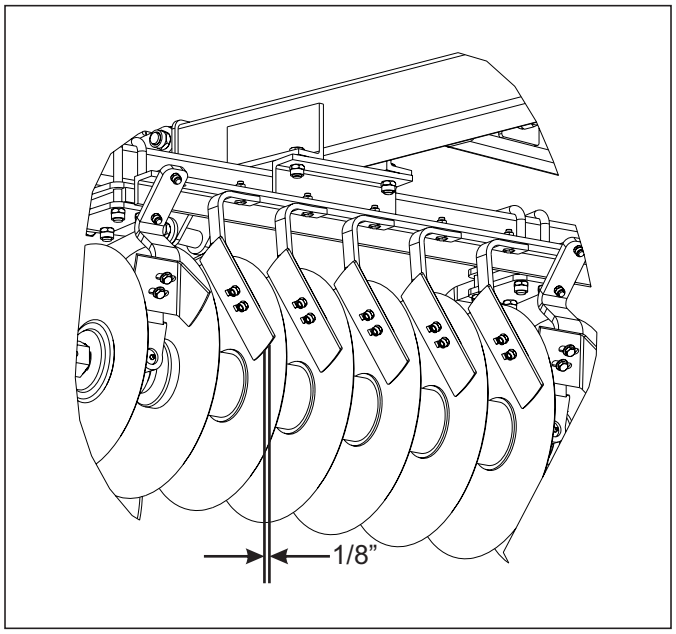

Figure 4-1: Disc Scraper to Disc Blade

1. Prior to operating the 7510 VT Plus, inspect it thoroughly for good operating condition.
2. Replace worn or missing parts.
3. When the machine is new, check the bolt tightness after a few hours of operation. Tighten any loose nuts or bolts. Check the lift wheel lug bolts daily.
4. Check the lift wheel tire inflation. Inflate all tires equally to avoid side draft. Follow the tire manufacturer's recommended pressures listed on the sidewall of the tires.
5. Check disc scrapers for proper adjustment to the disc blade **(See Figure 4-1.)**
6. Lubricate the machine as shown **(See Figure 4-18.)**

Attaching to the Tractor

1. Align the tractor drawbar with the machine. Raise or lower the disc ring hitch, as needed, using the swivel jack. Attach the unit with proper size hitch pin.
2. Always place the swivel jack on the interior mount before setting the machine in motion.
3. Clean all hydraulic couplings and attach to the tractor.
4. Attach safety chain to tractor allowing plenty of movement for turning both directions. The safety chain should latch securely to prevent it coming loose.
5. Plug in the 7-pin connector for the lights.
   a. The tractor should have a good clean receptacle, free of dirt and corrosion.
   b. Make sure the 7-pin connector is inserted all the way in, and allows the cover to latch over the keyway to secure it in place.

NOTE

The lighting system requires a good ground connection and if the lights do not seem to work right check the installation of the 7-pin connector and the condition of the pins.

Hydraulic Lift System

The VT Plus is equipped with a rephasing hydraulic lift system to raise and lower the unit in the field.

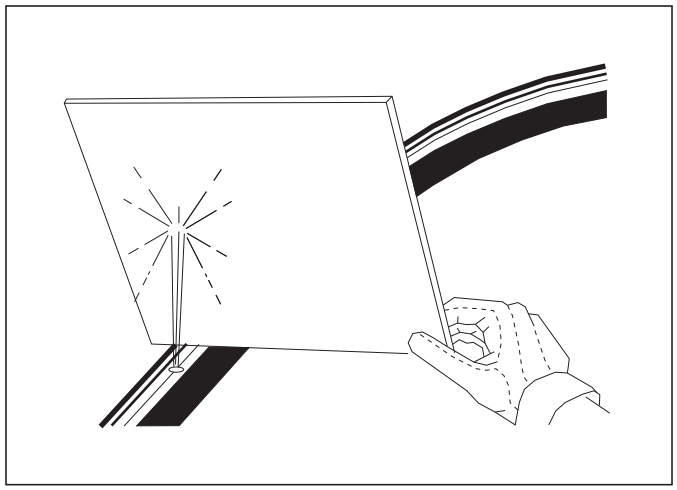

Figure 4-2: Hydraulic Leak Detection

WARNING

Escaping hydraulic fluid can cause serious personnel injury. Relieve system pressure before repairing, adjusting, or disconnecting. Wear proper hand and eye protection when searching for leaks. Use cardboard instead of hands (See Figure 4-2.) Keep all components (cylinders, hoses, fittings, etc.) in good repair.

1. The rephasing hydraulic lift system contains smaller wing frame cylinders plumbed in series with larger center frame cylinders. It is important that the cylinders be connected in the proper series for the lift system to operate correctly. When the cylinders are fully extended and held in this position, oil is able to flow through the cylinders (or rephase) and allow the cylinders to operate in sync. This also allows the system to purge any air that may enter the system without having to loosen or crack hydraulic lines.
2. The hydraulic system is not filled with oil and should be purged of air before transporting and field operations. Carefully hitch the VT Plus to the tractor and connect the hydraulic lift hoses. Check to make sure the tractor hydraulic reservoir is full of the manufacturer's recommended oil. Slowly raise the machine, and continue to hold the hydraulic lever until all lift cylinders are fully extended. Lower and raise the unit to verify that all cylinders are working simultaneously throughout the stroke. If the cylinders are not working evenly or together, fully extend the lift cylinders and continue to hold the lever to purge any remaining air. Do not loosen any hoses or fittings. Recheck tractor reservoir to make sure it is within operating limits. With all cylinders fully extended, install the 1-3/8 X 10 transport lockouts **(See Figure 4-3.)** Storage location for lockouts **(See Figure 4-4.)**
3. Always fully extend the cylinders and hold the lever to ensure the cylinders are rephased before starting any field operation. This will keep all cylinders in time and frame sections level when operating.

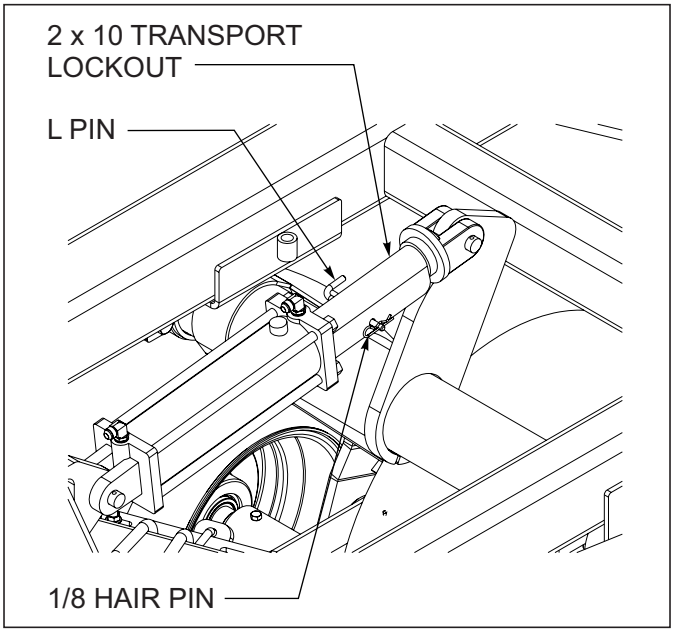

Figure 4-3: Installed Transport Locks

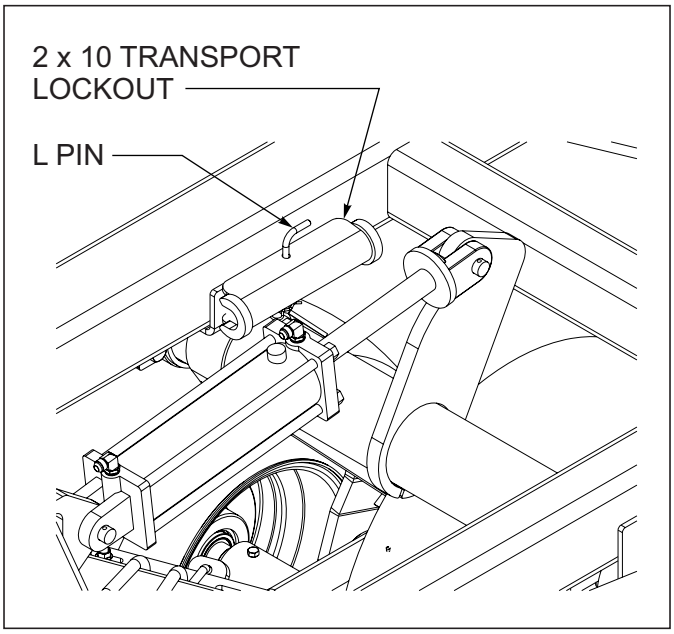

Figure 4-4: Stored Transport Locks

General Operation

1. The horsepower requirements are typically 8-10 horsepower per foot of cut. This will vary widely due to speed, depth, moisture, residue and types of soils. Local dealers can help in making recommendations for your areas.
2. Operating speed is typically 6 - 9 mph. Excessive speed can cause the unit to bounce, uneven depth, and create a ridge on the outside edges. Too low of speed may not allow the unit to properly fill in the center furrow.
3. Lift wheels must always be in contact with the ground and carrying some implement weight. Lift wheels are used to gauge the depth of each frame section and to control the leveling feature. Maximum discing depth cannot be achieved by raising the lift wheels off the ground. Little or no weight on the lift wheels will cause the frame sections to gouge, side-draft, and buckle producing inconsistent cutting depth.
4. Do not turn with the VT Plus in the ground, this can put excessive side load on the gangs and hitch. Raise the unit slightly when making turns to prevent gouging and pushing a ridge.
5. The gang angle is intended to be changed while being pulled through the field. The more aggressive the angle, the more horsepower it will take to pull the 7510. The gang angle may be adjusted from 5 to 15 degrees and gang adjust gauge is located on right, front of center frame **(See Figure 4-5.)** is visible from tractor.

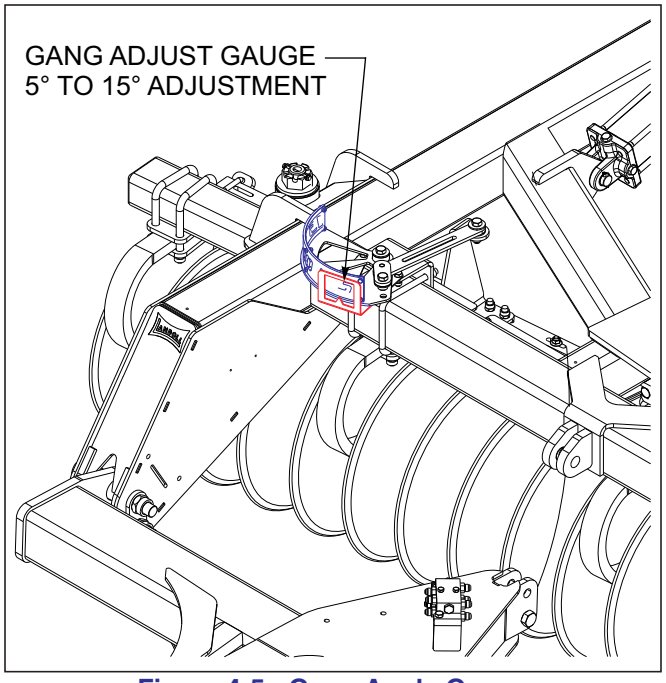

Figure 4-5: Gang Angle Gauge

Field Operation

1. Raise the unit to take the weight off of the transport locks. Remove the transport locks from the lift cylinders (on the main frame only). Store the transport locks on the retainers above the main lift **(See Figure 4-4.)**

Leveling (Side to Side)

1. An adjustable radius rod connects the center frame lifts together to keep them operating in unison. The radius rod does not level the center frame lift. The radius rod length is determined initially by fully retracting the lift cylinders and adjusting the radius rod until it is loose and tightening the jam nuts.
2. To level the center frame:
   a. Verify that all of the tires are properly inflated.
   b. With the unit unfolded, raise it to fully extend the lift cylinders and continue holding the tractor lever 30-60 seconds to insure the cylinders are fully extended and the rephrasing lift system has been purged of air.
   c. Lower the unit so the disc blades are 1” off the ground.
   d. Measure the distance from the walking beam spindle to the top of the frame on both sides. If there is a difference, it needs to be adjusted by turning the cylinder rods with the wrench flats provided at the clevis end **(See Figure 4-7.)**
   e. Let the machine down onto the ground to relieve any pressure, but do not fully retract the cylinders. Remove 1-8 x 4 hex head cap screws from the radius rod assembly and remove from frame **(See Figure 4-6.)**
   f. Loosen the cross bolt on the clevis. If the difference is 1/4” this requires turning the rod of the short side one full revolution to lengthen the cylinder. If the difference is 1/2” this requires turning the rod of the short side out one full turn and the rod of the tall side in one full revolution. Any differences of less than a 1/4“, are acceptable for operating. If the cylinder rod is hard to turn remove cylinder pin and turn clevis.

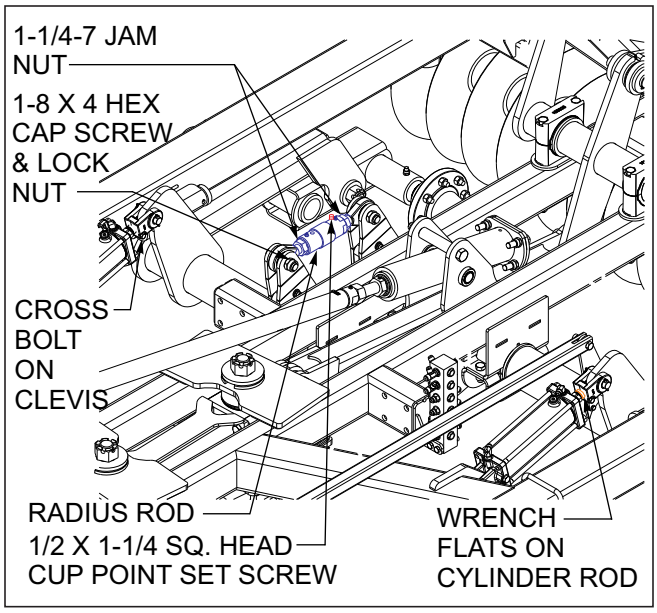

Figure 4-6: Center Frame Leveling

3. After adjusting the cylinder rod or rods, the radius rod needs to be adjusted back to a neutral position. This is accomplished by fully retracting the lift cylinders and adjusting the radius rod until it fits between the lifts. Reinstall 1-8 x 4 hex head cap screw, tighten jam nuts, and 1/2 x 1-1/4 square head cup point set screw to prevent radius rod from turning.
4. To level the unit:
   a. Verify that all tires are properly inflated, and that the center radius rod adjustment has been properly set.
   b. With the implement unfolded, raise the unit to fully extend the lift cylinders. Continue to hold the tractor lever 30-60 seconds to insure that the cylinders are fully extended and the rephasing lift system has been purged of air.
   c. Lower the unit until the disc blades are approximately 1” off the ground.
   d. On the center frame, measure the distance from the welded washer to the top side of the frame **(See Figure 4-7.)**

5. An adjusting wrench is provided to make this adjustment. It may be necessary to lower the machine to the ground and relieve weight on the cylinder anchor to make this adjustment. If required, fully raise the implement, lower to just above the ground, and re-verify measurements. Repeat as necessary and securely tighten the cylinder anchor when complete.

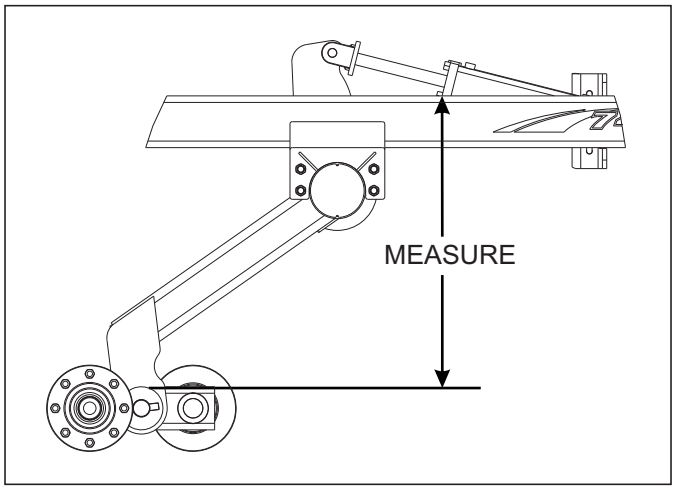

Figure 4-7: Leveling from Side to Side

Leveling (Front-to-Rear)

1. The leveling feature on the VT Plus is used to keep the machine level when raising the unit from a working position to a transport position. The leveling feature is also used to level the unit from front-to-rear to perform a level discing operation in the field.
2. The unit should be level from front to rear and the soil behind the disc should be level without furrows or ridges. If there is a presence of a center ridge from the rear gangs, the rear gangs are too deep. If there is a furrow left from the rear gangs the front gangs are too deep.
3. Implements with the hydraulic leveler, can make adjustments on-the-go from the tractor. A reference gauge is provided on the implement for a guide.
4. The 7510 leveler plates can be adjusted upward to allow the rear of the machine to be lower if needed, during transport. It is preset at Landoll in the upper holes refer to “Detail A” in **(See Figure 4-8.)** for details of adjustment.

IMPORTANT

Improperly set gauge wheels can prevent the leveler from functioning properly. Large adjustments will require adjustment of gauge wheels.

Hydraulic Leveler Adjustment

The 7510 VT will be set at the factory at the 4” distance, if the machine needs adjusted either in or out to accommodate for different harrow or tow hitches follow the following steps.

1. Lower the disc to the ground to remove the load on the leveler assembly.
2. Remove the level indicator rod from the leveler tube **(See Figure 4-8.)** and **(See Figure 3-3. in “Assembly Instructions “section.)**
3. Loosen the 1-1/2-6 hex lock nut at the rear of the leveler tube (an adjustment wrench is provided for this).
4. Screw the leveler tube in or out to desired distance.
5. Install the level indicator rod in the leveler tube and level indicator gauge.
6. The check valve is not adjustable. It prevents movement of the leveler assembly unless the tractor remote is activated.

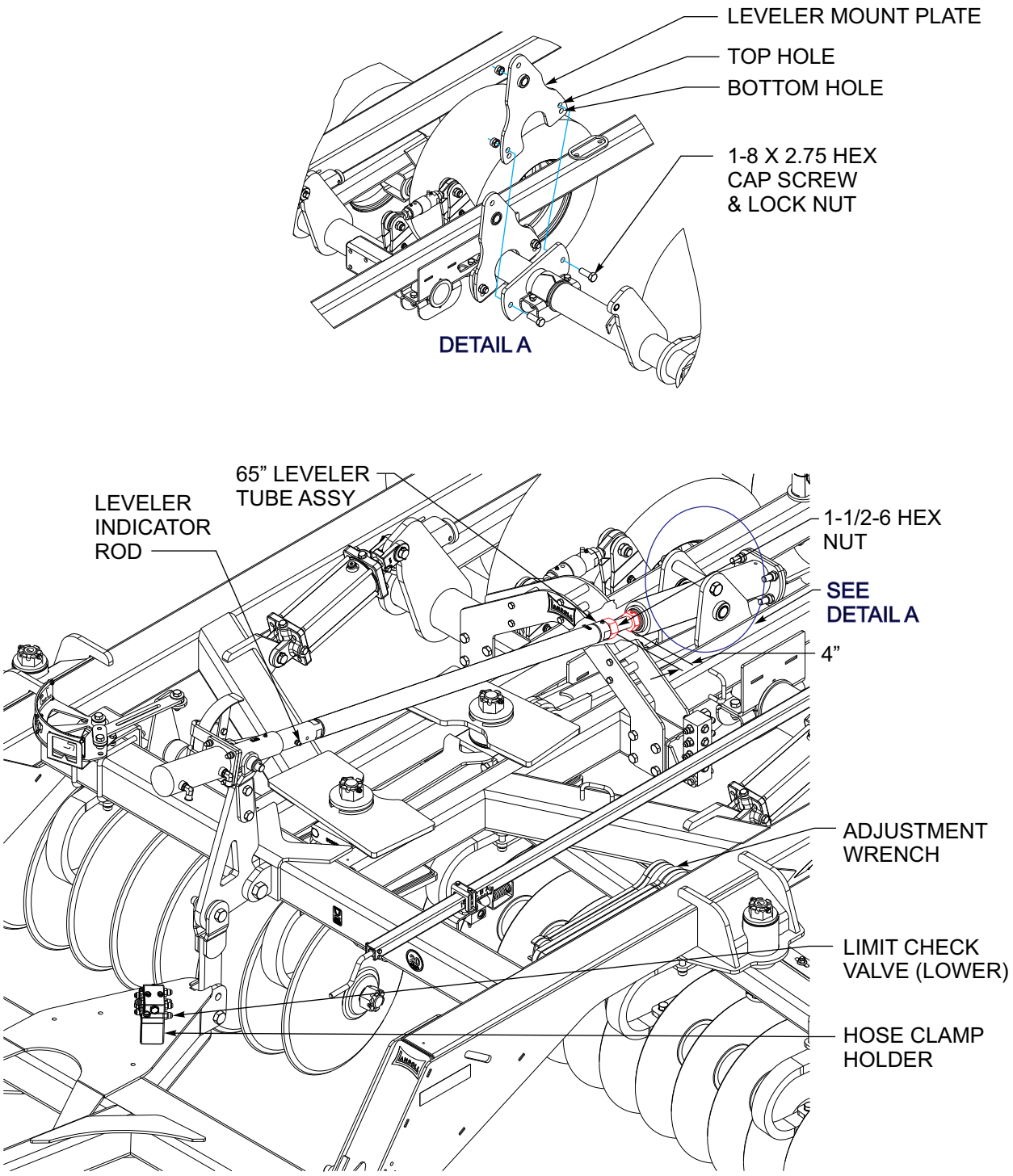

Figure 4-8: Hydraulic Leveler Adjustment

Hitch Adjustment

1. It is important for the VT Plus to maintain a proper draft line with the tractor to do a level job of discing. The draft line will vary depending on soil conditions and tractor drawbar height. The VT Plus is equipped with an adjustable hitch to help insure a proper draft line with the tractor.
2. Generally tractor draw-bars greater than 17" tall will require the hitch to be in the upper position. 17" draw-bars and below should be in the lower position. Operating conditions may also influence the hitch adjustment. The hitch is most commonly located in the upper position.
3. A hitch adjustment that is too high will leave a center furrow, as the front of the 7510 VT will operate too deep. A low hitch adjustment can cause a center ridge, regardless of leveler setting.

IMPORTANT

Excessive down pressure with gauge wheels can also create a center ridge regardless of hitch and leveler settings.

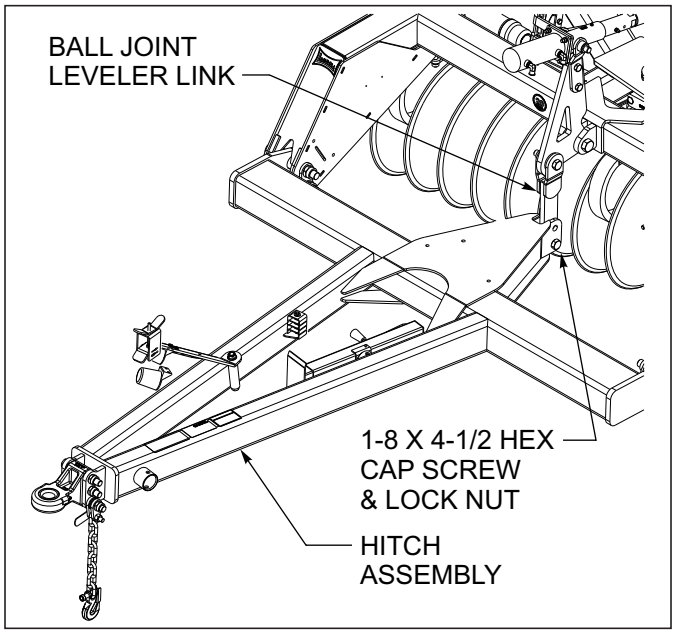

Figure 4-9: Hitch Adjustment

4. To adjust the hitch **(See Figure 4-9.)**:
   a. Lower the VT Plus to the ground.
   b. Adjust the leveler screw cylinder in or out until the pressure is relieved on the leveling system **(See "Leveling (Side to Side)" on page 4-5 and "Leveling (Front-to-Rear)" on page 4-6).**
   c. Remove the 1-8 X 4 hex head cap screw and hardware from the leveler ball joint link at the center rear of the hitch assembly.
   d. Loosen, but do not remove the bolts that pass through the ball joint connections at the outer rear connections of the hitch.
   e. Remove the bolt through the two hole clamp plates (above or below) the rear connections of the hitch ball joint.
   f. Vertically raise or lower the hitch to the desired operating position.
   g. Reinstall the bolt through the two-hole clamp plates to secure the hitch in the new position.
   h. Re-tighten all hitch bolts.
   i. Install the bolt in the leveler ball joint link in the new position at the rear of the hitch and re-tighten.

IMPORTANT

When the hitch is in the lower position, the leveler ball joint link will be in the upper mounting hole at the rear of the tongue. If the hitch is in the raised mounting position, the leveler ball joint link will be in the lower hole at the rear of the tongue.

Scraper Adjustment

The VT Plus is equipped with rigid scrapers at regular spools with dual scrapers at the disc bearings.

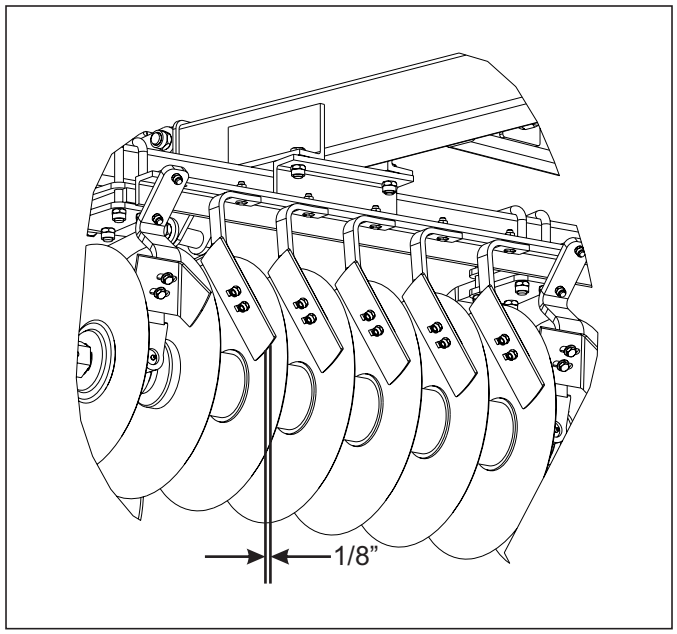

Figure 4-10: Scraper Adjustment

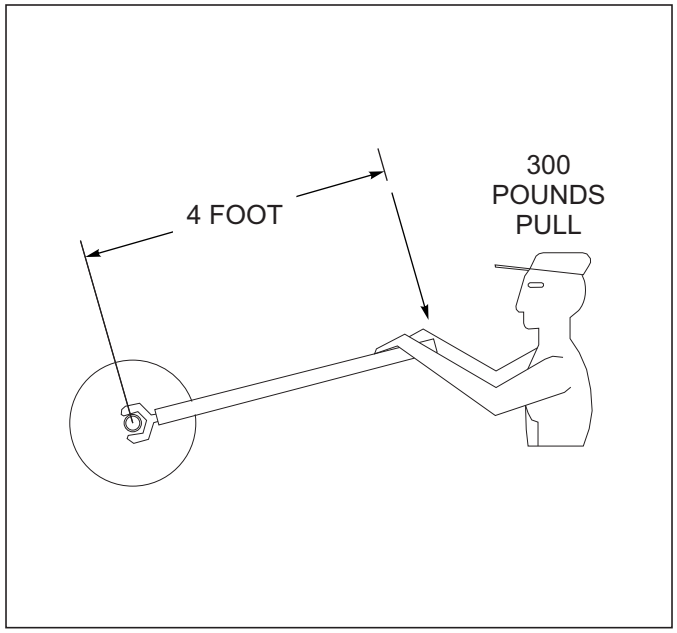

Figure 4-11: 1,250 Foot-Pounds of Torque

1. Rigid scrapers should be set initially as close to the disc blade as possible without rubbing (approximately 1/8”) **(See Figure 4-10.)** A slotted hole at the top of each scraper is provided for individual adjustment. Adjustments may be made for entire gangs, by loosening the u-bolts around the angle-iron scraper bars and sliding the whole bar. Scraper arms are made of spring steel. In wet conditions, the scraper may be set against the disc blade and will function as a spring-loaded scraper.
2. Scraper blades have two positions. The blades are initially set in the front position to position scraper closer to the spool. This position will perform better in wet and heavier residue conditions. The blade may be moved back for dryer conditions and climates where less scraper action is needed.
3. Dual scrapers are provided at the bearing locations to scrape the disc blade and to limit the amount of soil and residue carried into the bearing hanger. Scrapers can be individually adjusted in or out from the concave side of the disc blade.

CAUTION

Tighten all 1-3/4” nuts to 1,250 foot-pounds of torque (See Figure 4-11.)

Disc Blades

1. The 7510 VT Plus is equipped with 22"/24" -4 ga. (.256), or 22"/24" -4 ga. (.256) rollable low concavity disc blades on both front and rear. The use of other concavity blades can give unpredictable results and is not recommended.
2. Sharpening – In some cases there is a desire to sharpen disc blades for improved cutting. There are several people who roll-sharpen disc blades. Most disc blades used today are made of chrome-boron steel. The chrome-boron steel has a higher hardness than traditional carbon-steel blades for increased wear. Higher hardness makes roll sharpening more difficult often with mixed results, and is not covered by warranty. Disc blade manufacturers will not cover any alterations to blades other than the place of manufacture. Results from roll-sharpening damage may not be immediate, and may take more than a season to be noticeable. If you choose to sharpen disc blades, check with local dealers for reputable experienced sharpeners that will stand behind their work.

⚠ DANGER

Disc blades are extremely sharp. Exercise extreme care when working on or near disc blades. Do not allow discs to roll over or fall onto any bodily part. Do not allow wrenches to slip when working near disc blades. Never push wrenches toward disc blades. Do not climb over machine above disc blades. Failure to stay clear of disc blade edges can cause serious personal injury or death.

Depth Stop Adjustment (Manual)

The operating depth of the VT Plus is controlled by a single-point depth stop. The stop is located at the center front of the machine.

1. Adjust the depth stop by turning the handle in (clockwise) to increase operating depth **(See Figure 4-12.)** Turn the handle out (counter-clockwise) to decrease operating depth. One turn will equal approximately 3/16" adjustment in depth.
2. The gauge on the side of the depth stop tube gives a reference for depth setting. The "A" setting refers to maximum operating depth.

IMPORTANT

For maximum operating depth, the lift wheels must be in contact with the ground and carry some of the machine weight. Raising the lift wheels off the ground, permits uncontrolled depth of each frame section and does not allow the leveler to function properly.

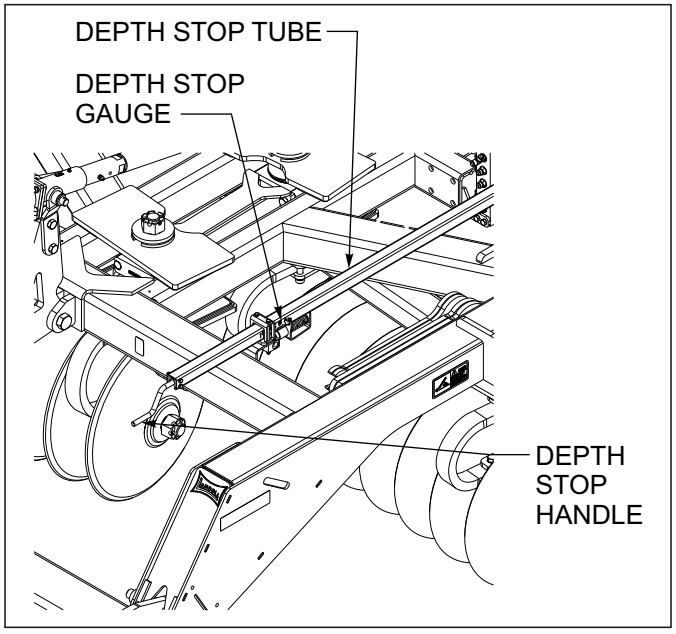

Figure 4-12: Depth Stop Adjustment (Manual)

Wheel Bearing Maintenance

Wheel bearing maintenance should be performed at the beginning of every season of use. Check the wheel bearings periodically for excessive end play. If needed, adjust or replace them using the following procedure:

1. Place the frame on blocks or stands sufficient to lift the tire clear of the ground.
2. Remove the tire.
3. Remove the hub cap, cotter pin, slotted nut and washer.
4. Remove the hub. Clean and inspect the bearings and hub cavity. Replace any worn or defective parts.
5. Repack the bearings using a high-quality wheel bearing grease.
6. Slide the triple-lip seal onto the spindle. Do not install the seal into the hub.
7. Slide the inner bearing cone and hub onto the spindle.
8. Install the outer bearing cone, washer and slotted nut.
9. Tighten the slotted nut while rotating the hub until there is a slight resistance to wheel rotation. Then, back the slotted nut off one notch, until the wheel rotates freely without end play.
10. Slide the triple-lip seal to the hub and install the seal in the hub.

NOTE

The triple-lip seals should point away from the hub to keep contaminants out and allow grease to pass **(See Figure 4-13.)**

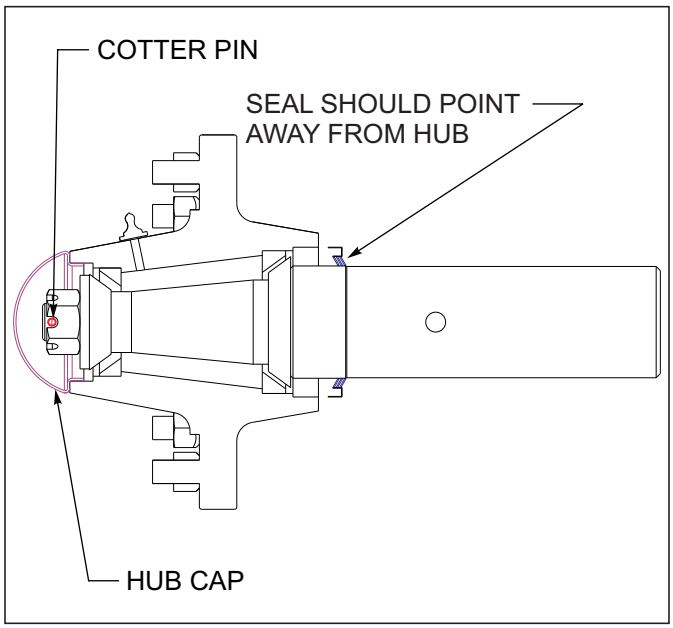

Figure 4-13: Triple Lip Seal

11. Install a new cotter pin and replace the hub cap. **(See Figure 4-13.)**

Hydraulic Maintenance

1. Check the tractor hydraulic fluid level per tractor owner's manual and after any leakage. Check fluid level with the cylinders in the retracted position.
2. If a cylinder or valve leaks, disassemble the parts to determine the cause of the leak. Any time a cylinder is opened up, or whenever any seal replacement is necessary, it is advisable to clean all parts and replace all seals. Seal kits are available from your Landoll dealer.
3. Check all hydraulic hoses weekly. Look for binding or cracking. Replace all worn or defective parts immediately.

IMPORTANT

Unfold, lower the unit to the ground, and relieve hydraulic pressure before attempting to service any hydraulic component.

4. Transport locks are provided to hold the implement in a raised position. Do not attempt to perform any service work under the implement without first installing the transport locks. Before servicing any hydraulic component, lower the implement to the ground and relieve all system pressure. If a hydraulic component is disconnected, repaired, or replaced, it will be necessary to purge the system of air before operation. **See "Hydraulic Lift System" on page 4-3** on how to purge the hydraulic systems.

Transport

1. Check and follow all federal, state, and local requirements before transporting the VT Plus.
2. The 7510 should be transported only by tractor required for field operation. The implement weight should not exceed more than 1.5 times the tractor weight. Maximum transport speed for the 7510 is 20 mph for the implement and is designated on the speed identification symbol located on the front of the implement **(See Figure 4-14.)**

CAUTION

Excessive speed may result in loss of control of the tractor and implement, reduced braking ability, or failure of the implement tire or structure. Do not exceed the implement maximum specified ground speed regardless of the capability of the maximum tractor speed.

3. When towing equipment in combination, the maximum equipment ground speed shall be limited to the lowest specified ground speed of any of the towed implements.
4. Maximum transport speed shall be the lesser of travel speed specified in the operator's manual, speed identification symbol, information sign of towed equipment, or limit of road conditions.
5. Slow down when driving on rough roads. Reduce speed when turning, or on curves and slopes to avoid tipping. Equipment altered other than the place of manufacture may reduce the maximum transport speed. Additional weight, added tanks, harrowing attachments, etc. may reduce implement load carrying capabilities.
6. A safety chain is provided with the implement to insure safe transport.
   a. The safety chain should have a tensile strength equal to or greater than the gross weight of the implement. The chain is attached to the lower hitch clevis hole with two flat washers between the clamp plates to assure a tight connection. Always use a 1” diameter Grade 8 bolt for this connection.
   b. Attach the safety chain to the tractor drawbar **(See Figure 4-14.)** Provide only enough slack in the chain for turning. Do not use an intermediate chain support as the attaching point for the chain on the tractor. Do not pull the implement by the safety chain.

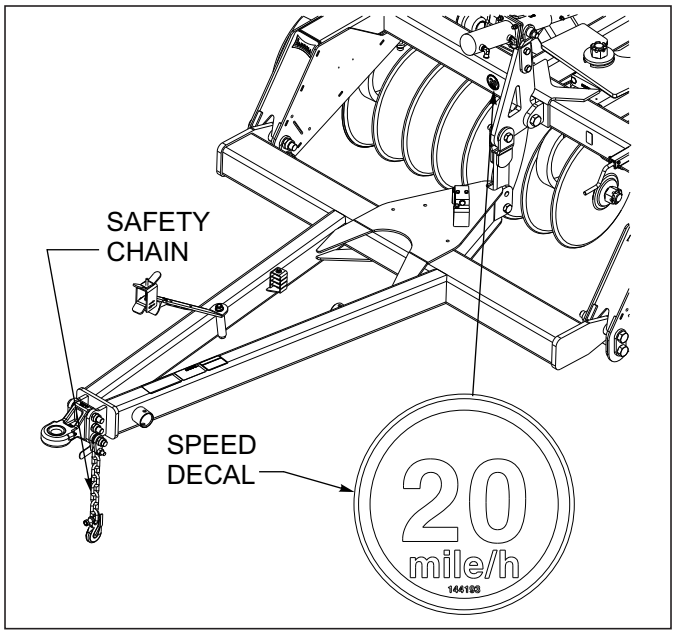

Figure 4-14: Hitch, Speed Identification Symbol, and Safety Chain

   c. When unhitching from the tractor attach the hook end of the chain to a free link close to the hitch clevis for storage. This will keep the hook off the ground, reducing corrosion and keep the hook functioning properly.
   d. Regularly inspect the safety chain for worn, stretched, or broken links and ends. Replace the safety chain if it is damaged or deformed in any way.
7. Check that tires are of proper size, load rating, and inflated to manufacture specifications before transporting. Check wheel lug bolts to insure tightness.
8. Know the transport heights and widths of the unit before transporting. Attachments such as leveling harrows can increase the transport dimensions of the implement. Use caution when transporting near bridges and power lines.

WARNING

Electrocution can occur without direct contact.

9. Raise the unit to full transport height.
10. Install transport locks on both lift and fold systems. Do not depend solely on implement hydraulics for transport. **(See Figure 4-15.)**

WARNING

Failure to use transport lock pins during transport may result in permanent equipment damage, serious injury, or death.

11. Transport during daylight hours whenever possible. Always use flashing warning lights, except where such use is prohibited by law. Make sure lights, reflectors and SMV emblem are clearly visible and operating. Remove any obstructions such as dirt, mud, stalks or residue that restricts view before transporting.
12. To increase stability and reel clearance on center frame, use hydraulic leveler to roll the unit forward.

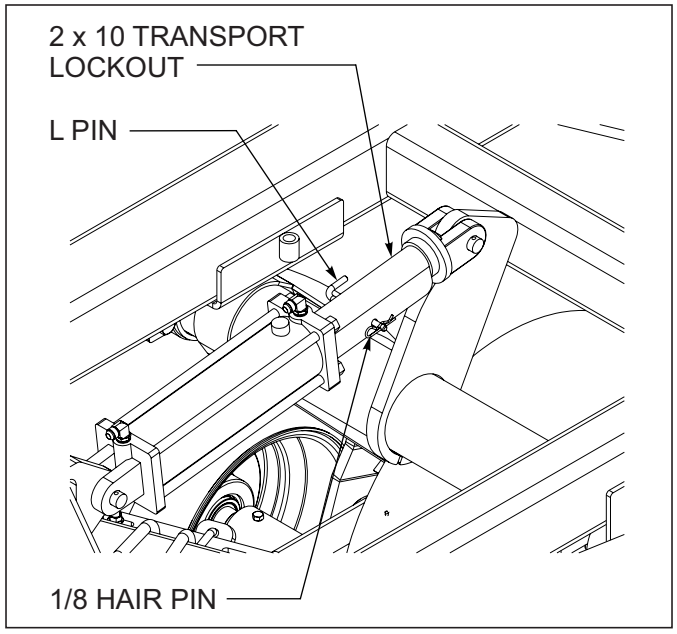

Figure 4-15: Installed Transport Locks

Rear Hitch Jack Operation

A rear jack may be rotated down on the rear tow hitch.

IMPORTANT

The rear jack should only be used when the VT Plus is hooked to a tractor.

1. Remove the 3/16 dia hair pin from the wing lock pin and slide the rear jack tube assembly out of the hitch jack mount, field position **(See Figure 4-16.)**
2. Slide the rear jack tube assembly in from the bottom of the slotted hole of the hitch jack mount tube as shown. secure with the wing pin through the aligned holes and secure pin with the 3/16 dia hair pin. Remove the hitch jack from the hitch and install it on the rear jack tube assembly.The hitch jack may be adjusted down until it is on the ground.
3. Before pulling the VT Plus be sure and put the rear jack tube assembly back in the field position and install the hitch jack back on the hitch storage tube mount.

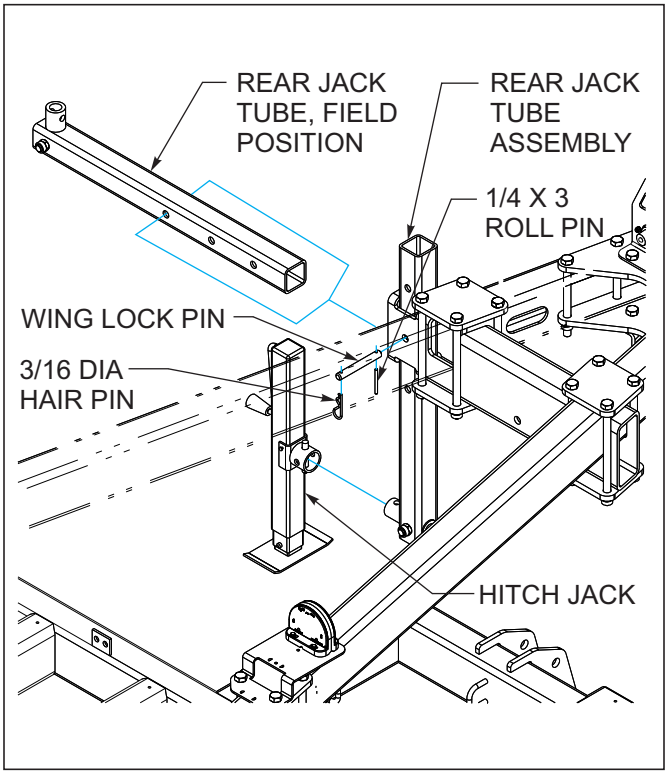

Figure 4-16: Rear Hitch Jack Operation

Lubrication Maintenance

1. A proper maintenance schedule will insure a long operating life and peak performance. Performing the following lubrication will ensure maximum operating life of the 7510 VT **(See Table 4-1 and Figure 4-18.)**
2. When lubricating the VT Plus, SAE multi-purpose EP grease, or EP grease with 3-5% molybdenum sulfide is recommended. Wipe soil from fittings before greasing. Replace any lost or broken fittings immediately.
3. Disc gang and conditioner reel bearings are equipped with seals that will let grease pass and not harm the seal. Regular lubrication will maintain a full grease cavity and help purge any contaminants. Grease the bearings before long periods of storage to prevent moisture buildup within the bearing cavity.
4. Wheel seals, when properly installed, will allow grease to pass without harm to seals. Regular lubrication will extend service life, particularly in severe operating conditions.
5. The VT Plus is equipped with maintenance-free bearings in the lifts, leveler, wing hinges. These areas require no lubrication.
6. The gang pivot pin will need greased annually **(See Figure 4-17.).** Remove the clevis pin. Check to see if gang pivot castle nut is still tight, if it is real loose remove pin and check for wear on pin or spring bushings. Replace pin or bushings if needed.If nut is still tight grease the zerk in top of pin and re-install the clevis pin.

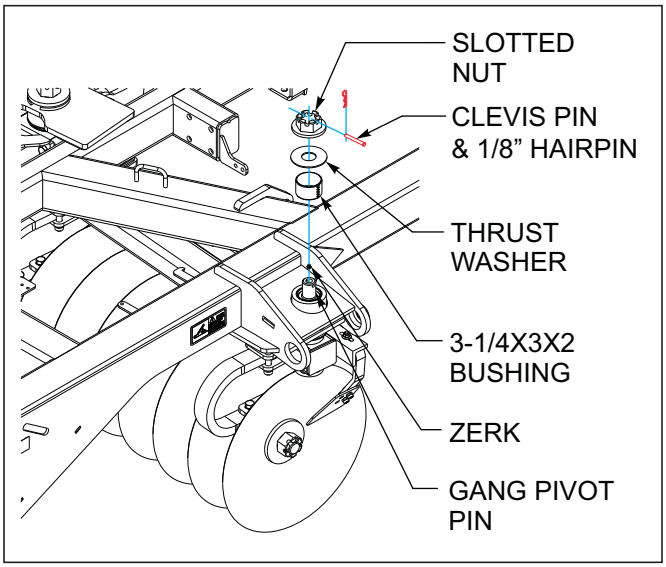

Figure 4-17: Gang Pivot Pin

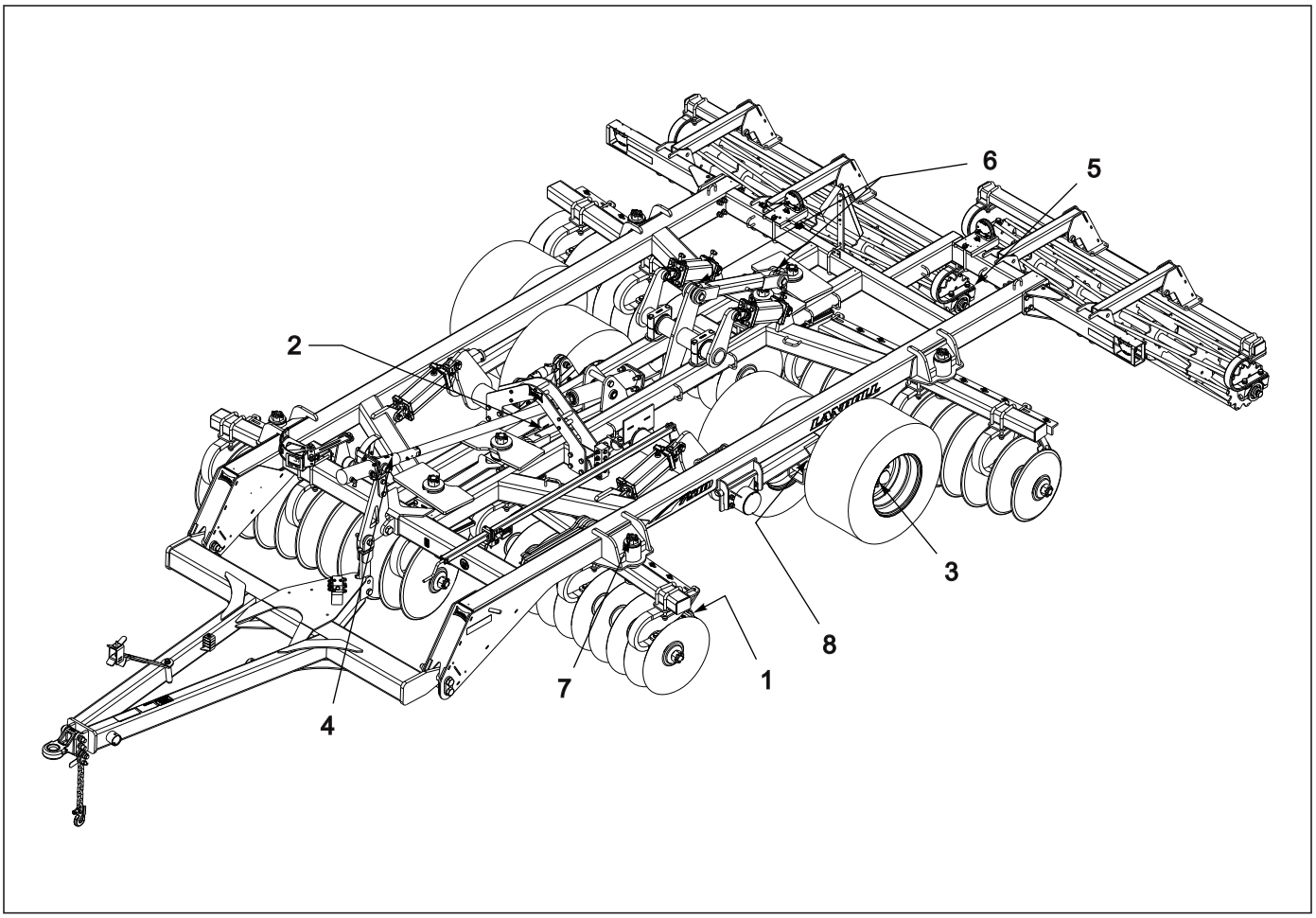

Figure 4-18: Lubrication Schedule

LUBRICATION TABLE			
ITEM	**DESCRIPTION**	**NO. OF LUBE POINTS**	**INTERVAL (Hours Unless Stated)**
1	Disc Gang Bearings	1 each	10
2	Radius Rod	2	50
3	Wheel Hubs	1 each	50
4	Hydraulic Leveler Tube	1	50
5	Conditioner Reel Bearings	1 each	10
6	Gang Adjust Linkage Bearing	1 each - 2 total	50
7	Gang Pivot Pin	1 each - 4 total	Annually **(See Figure 4-17.)**
8	Walking Tandem Pivot	1 each - 2 total	50

Table 4-1: Lubrication Table

Storage

1. The service life of the VT Plus will be extended by proper off-season storage practices. Prior to storing the unit, complete the following procedures:
   a. Completely clean the unit.
   b. Inspect the machine for worn or defective parts. Replace as needed.
   c. Repaint all areas where the original paint is worn off.
   d. Grease all exposed metal surfaces of shanks, points and discs.
   e. Apply a light coating of oil or grease to exposed cylinder rods to prevent them from rusting.
   f. Lubricate each point of the machine as stated in **“Lubrication Table” on page 4-15.**
2. Store the unit in a shed or under a tarpaulin to protect it from the weather. The ground tools and tires should rest on boards, or some other object, to keep them out of the soil.

Chapter 5

Troubleshooting Guide

The Troubleshooting Guide, shown below, is included to help you quickly locate problems that can happen using your 7510 VT. Follow all safety precautions stated in the previous when making any adjustments to your machine.

PROBLEM	PROBABLE CAUSE	SOLUTION
UNIT NOT LEVEL, LEAVING CENTER RIDGE	Leveler not adjusted properly	Adjust leveler, lower front gang
	Hitch adjustment too low	Raise implement hitch point
	Gauge wheels carrying too much weigh	Raise gauge wheels
UNIT NOT LEVEL, LEAVING CENTER FURROW	Leveler not adjusted properly	Adjust leveler, raise front gang
	Hitch adjustment too high	Lower implement hitch point
UNIT NOT LEVEL, LEAVING RIDGE ON OUTSIDE OF UNIT	Unit not level front to rear, front running too deep	Adjust unit to be level.
	Wings not level with center frame	Adjust side to side level. Wings should typically be set even with or slightly higher than center section
	Operating speed too fast, front gang moving soil past rear gang	Slow down to proper operating speed for field conditions.
	Hitch adjustment too high	Lower implement hitch point.
	Gauge wheels too high, allowing wings to go to deep	Properly reset gauge wheels.
UNEVEN DEPTH	Frame not level side to side	Level center frame side to side.
	Wing frames and center frame not level	Level wing frames to center frame
	Lift cylinders not in phase	Fully extend lift cylinders and hold hydraulic lever until all cylinders are fully extended
	Lift wheels not carrying enough weight	Adjust depth stop and raise implement
	Fold cylinders not fully extended to allow wings to flex	extend fold cylinders fully.
	Tire pressure too low	Check inflation
	Unit not level front to rear	Adjust unit to be level.
UNIT SIDE DRAFTS OR MOVES SIDE TO SIDE	Lift wheels not carrying enough weight	Adjust depth stop and raise implement.
	Unit not level front to rear	Adjust unit to be level.
	Level unit side to side	Level center frame and wing frame to center frame side to side.
FRAMES BUCKLING, NOT EVEN	Lift wheels not carrying enough weight	Adjust depth stop and raise implement
	Wing frames and center frame not level to each other	Level wing frames to center frame
	Gauge wheels not set correctly or uneven	Set gauge wheels properly.
WHEEL BEARING FAILURE	Seals not installed correctly	Install seals with the lips pointing outward away from the hub.

PROBLEM	PROBABLE CAUSE	SOLUTION
HYDRAULIC - LIFT CYLINDERS NOT FULLY EXTENDING	Lift cylinders not in phase	Fully extend cylinders and hold hydraulic lever until all cylinders are fully extended.
	Cylinders not installed in proper series	Wing cylinders are smaller diameter than center cylinders. Reinstall cylinders properly.
	Hoses not properly connected:	Check hose routing
HYDRAULIC - ONE SIDE OF CENTER LIFT CYLINDERS NOT FULLY EXTENDING OR CANNOT INSTALL ONE TRANSPORT LOCK	Center lifts not properly timed.	Remove 1" bolt from adjustable radius rod on lifts and fully retract lift cylinders, reinstall radius rod bolt adjusting it to fit the lifts in the position. Check center frame level as described in **"Leveling from Side to Side" on page 4-6.** Check 1/2" x 3-1/2" bolts going through plates holding adjustable radius rod on lift. If broken or sheared replace and reinstall radius rod to fit.
HYDRAULIC - ENTIRE UNIT SETTLING	Depth stop valve not working	Repair valve
HYDRAULIC - UNIT SETTLING, ONE WING RAISING	Center frame cylinder leaking internally on side of unit that wing is raising	Repair center master cylinder
HYDRAULIC - WING SETTLING	Wing cylinder leaking:	Repair cylinder
DISC GANG PLUGGING	Scrapers set too far from disc blade	Adjust scrapers to meet disc blade closer and evenly
	Operating depth too deep	Raise unit.
	Conditions too wet	Wait until conditions more favorable.
	In drier conditions, set scraper farther away from disc blade to improve residue flow	
DISC GANG WILL NOT TURN OR PUSHES SOIL	Scrapers set too tight	Readjust scrapers.
	Depth set too deep for loose or wet conditions	Raise implement or wait until conditions are more favorable.
	Gang bearing failure	Replace bearing
DISC GANG BEARING SNAP RING POPS OUT	Gang bearings installed incorrectly	Install bearings with snap ring away from concave side of disc blade.
SCRAPERS BUILD UP WITH EXCESSIVE SOIL/RESIDUE	Scrapers set too far from disc blade	Readjust scrapers.
DISC BLADES LOOSE AND/OR SHEARING ROLL PIN	Gang not tightened properly	Re-tighten gang shafts to 1250-1500 ft-lbs. If gangs have ran loose, gangs may require disassembly to remove soil to properly torque gang shafts. Replace any worn components, shafts/spools, etc.
CONDITIONER REELS PLUGGING	Excessive down pressure	Raise reels w/ adjustment bolt
LIGHTS DO NOT WORK	Harness or lamp connection unplugged	Check all harness/lamp connections to verify that everything is properly connected.

Document Control Revision Log:

Date	Form #	New/Updated	Improvement(s): Description and Comments
04/27/2018	F-963-0418	New	Initial Release
11/21/2018	F-963-1118	Update	Walking beam revision.
02/08/2019	F-963-0219	Update	Tire/Wheel Revision
04/06/2019	F-963-0420	Update	Added Spare Tire Option Revision.

Equipment from Landoll Corporation is built to exacting standards ensured by ISO 9001 registration at all Landoll manufacturing facilities.

Model 7510

Adjustable VT Plus Operator's Manual

Re-Order Part Number F-963-0420

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