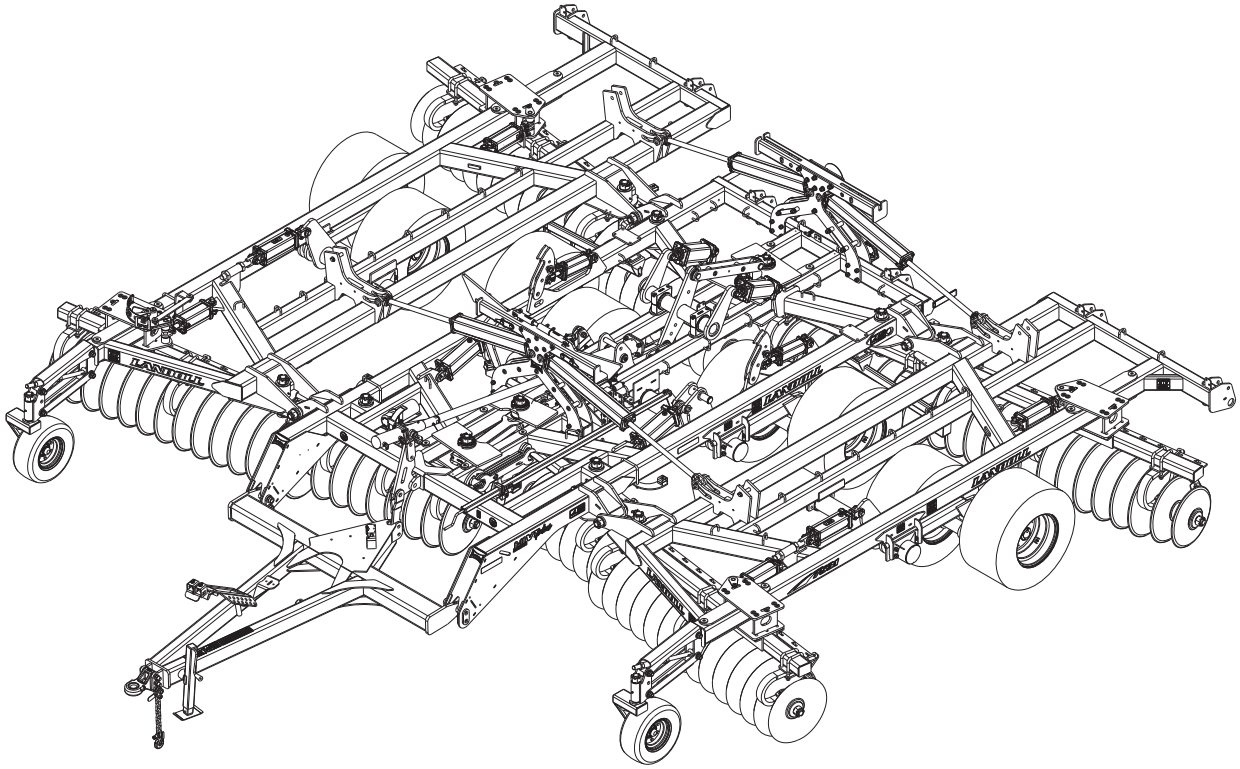
Model 7531
Adjustable VT Plus
Operator's Manual



LANDOLL COMPANY, LLC
1900 North Street
Marysville, Kansas 66508
(785) 562-5381
800-428-5655 ~ WWW.LANDOLL.COM

F-1188-2510

Instructions for Ordering Parts

**** Repair parts must be ordered through an Authorized Dealer ****

DEALER INSTRUCTIONS FOR ORDERING PARTS FROM LANDOLL PARTS DISTRIBUTION CENTER

Phone #: 800-423-4320 or 785-562-5381 **Fax #: 888-527-3909**
Order online: dealer.landoll.com

IDENTIFICATION PLATE

The data plate, which lists the model number and serial number, is located on the front of the frame *See Figure 1-1*.

SERIAL NUMBER NOMENCLATURE

The Following information will help decode the 7531 Adj. VT Plus serial number

75H2500100 = xxmyyssss

The 7500 series QR code decal, may be scanned to link to the most current manuals, located on the front of the frame *See Figure 1-1*.

xx	= model series (i.e. 75 for Adjustable VT Plus)
m	= month of manufacture (ex. “H” means October. The letter I is not used.)
yy	= year manufactured (ex. “25” means 2025)
sssss	= Sequential number used to track warranty and service information.

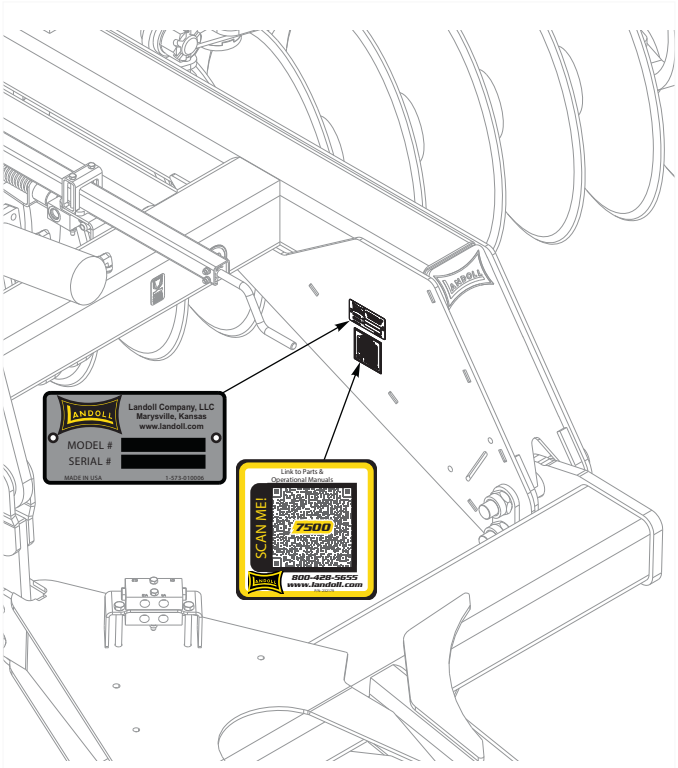


Figure 1-1: Data Plate and QR Code Decal Location

Manuals for 7531 VT Plus

Manual Number	Manual Type
F-1188	Operator’s Manual
F-1189	Parts Manual

DANGER

DO NOT operate or perform any maintenance tasks on this equipment until you have completed the following:

1. **Receive proper training to operate this equipment safely.**
2. **Read and understand the operator's manual.**
3. **Be thoroughly trained on inspection and repair procedures.**

Failure to comply with this warning may result in serious injury or possibly death.

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Chapter 1

Introduction and Safety Information

The Landoll Model 7531 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 equipment. 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.

CHAPTER 5 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:
LANDOLL COMPANY, LLC
1900 NORTH STREET
MARYSVILLE, KANSAS 66508

PHONE # (785) 562-5381 or (800) 428-5655
OR
FAX # (888) 527-3909

CHAPTER 6 Is a troubleshooting guide to aid in diagnosing and solving problems with the equipment.

PARTS LIST Is a separate manual showing the various assemblies, subassemblies, 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:

LANDOLL COMPANY, LLC
1900 NORTH STREET
MARYSVILLE, KANSAS 66508
ATTENTION: PUBLICATIONS - DEPT. 55

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 7531 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

1. Thoroughly read and understand all operating procedures contained in this manual before attempting to transport this implement.
2. ***It is the responsibility of the operator to understand and comply with all federal, state, and local requirements before transporting the Disc.***
3. When transporting the implement on road or highway, use adequate warning symbols, reflectors, lights, SIS, and slow moving vehicle signs as required. Verify that all symbols and lights are clearly visible and functioning before transporting. Transport during daylight hours whenever possible. Slow moving tractors and implements can create a hazard when driven on public roads and can be difficult to see especially at night.
4. Do not tow an implement that when fully loaded, weighs more than 1.5 times the weight of the towing vehicle. Never tow the implement with a motor vehicle. Tow the implement only with a properly ballasted tractor.
5. Use a locking-style hitch pin that properly fits the tractor drawbar and the implement hitch. Lock the tractor drawbar in the center position to prevent loss of steering control.

6. Attach the safety chain to the tractor recommended drawbar support. Provide only enough slack in the chain for turning. Do not attach the safety chain to an intermediate support. Safety chain must have rating greater than the gross weight of the towed implement(s). Replace the safety chain if it is worn or damaged in any way.
7. Verify that all hydraulic hoses and electrical wiring between the tractor and implement are safely routed to avoid damage.
8. Check implement tire pressure for correct inflation. Verify that lug nuts are properly torqued before transporting.
9. Install all transport locks and pins before transporting.
10. Never allow riders on the implement.
11. ***Maximum transport speed for the Machine is 20 mph, regardless of the tractor capabilities***. Excessive speed may result in loss of control of the tractor and implement, reduced braking, or failure of the implement tires and/or structure. Slow down when road surface conditions are poor or rough, or when driving on inclines. Reduce speed when turning, on curves and slopes, to avoid tipping. Equipment altered other than the place of manufacture, may further reduce the maximum transport speed.
12. Avoid overhead power lines. Serious injury or death can result. Electrocution can occur without direct contact. Know the transport height and width of the implement before transporting. Attachments can increase the height and width of the 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.
5. Engage hydraulic lift cylinder lockouts, or lower equipment to the ground before servicing.

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 manufactures 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 than the TOTAL weight of all towed implements.
2. Additional safety chain should be used between each implement.
3. Attach the chain to the tractor drawbar 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

Safety Decals and Reflectors

The 7531 VT is equipped with all safety signs installed for safe operation.

For you safety:

- Carefully read and follow safety sign directions.
- Keep the safety signs clean and visible.
- Replace damaged, missing, or illegible safety signs.
- Be sure any new equipment or repair parts include safety signs. New safety signs may be ordered from your Landoll dealer. Refer to this section for parts and proper safety sign placement.

To Install new safety signs:

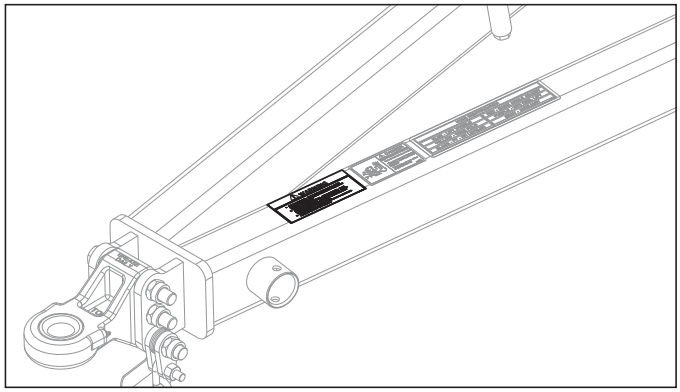
1. Remove the old damaged safety sign if still present.
2. Clean placement area to remove any dirt or grease.
3. Remove backing from new safety sign.
4. Apply the safety sign starting from one end pressing firmly and working across the safety sign being careful not to create any air bubbles.

P/N 8-573-010084

Danger: Before Operating

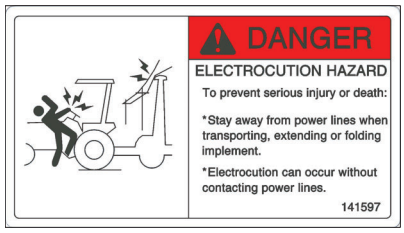
Front of hitch, 1st from left.

QTY. 1



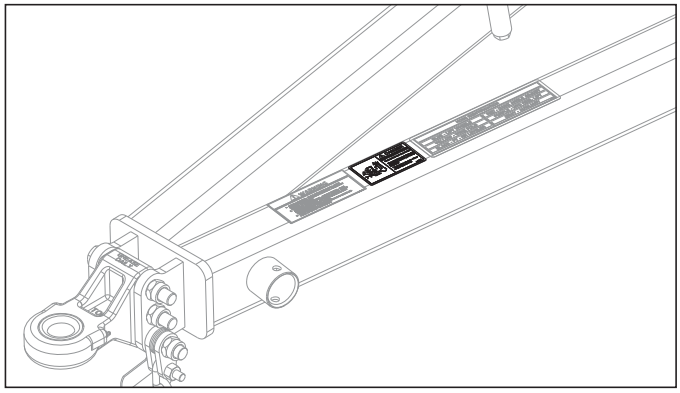
P/N 141597

Danger: Electrocution Hazard



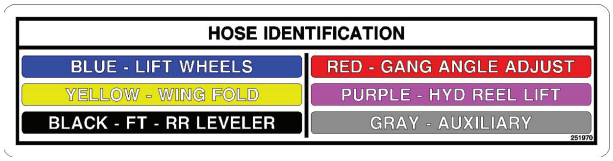
Front of hitch, 2nd from left.

QTY. 1



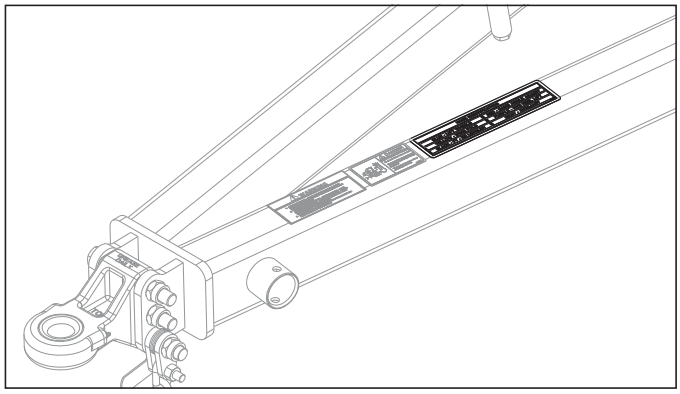
P/N 251970

Hose Identification



Front of hitch, 3rd from left.

QTY. 1

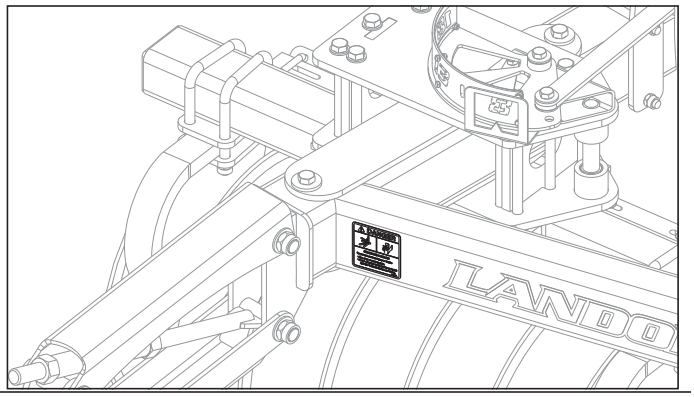


P/N 247227

Danger: Crushing Hazard

Wing frame, front, both sides.

QTY. 2

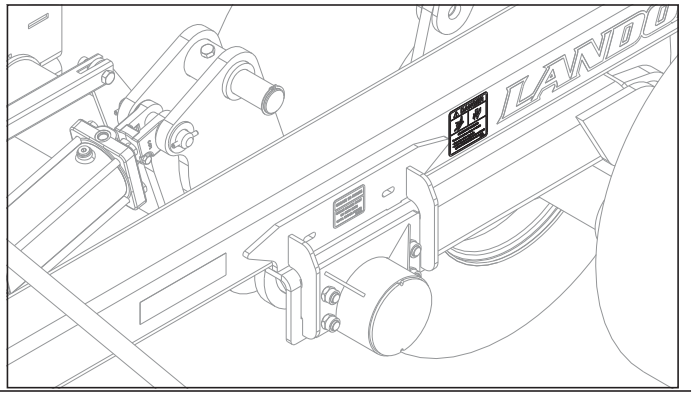


P/N 247227

Danger: Crushing Hazard

Center & wing frames, middle, both sides.

QTY. 4

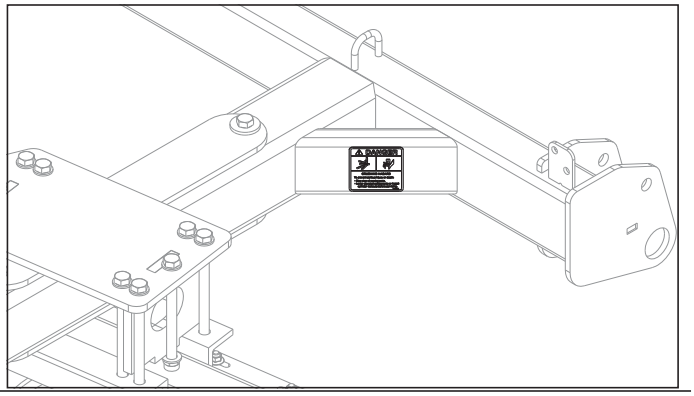


P/N 247227

Danger: Crushing Hazard

Wing Frame, rear, both sides.

QTY. 2

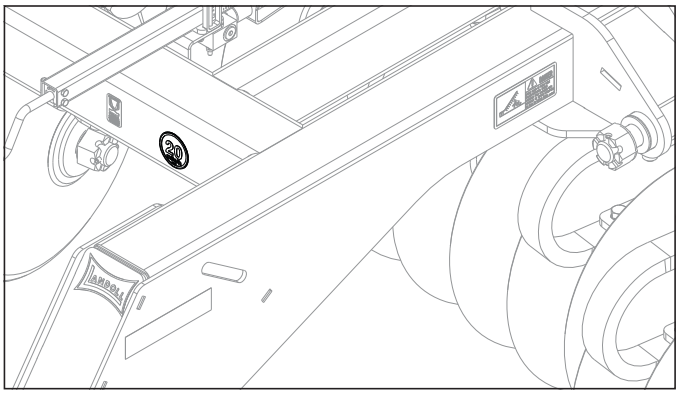


P/N 144193

SIS 20 MPH

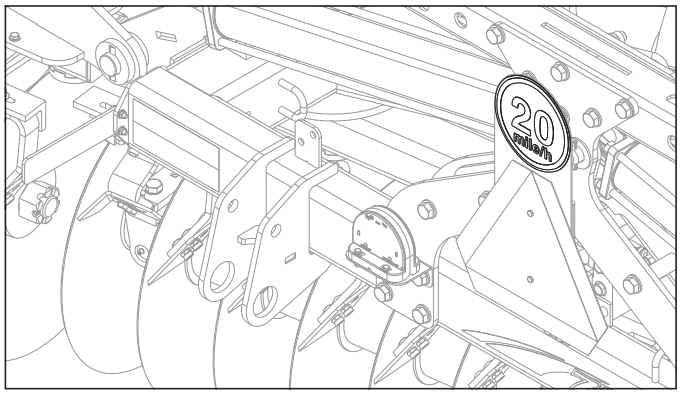
Center frame, front, both sides.

QTY. 2



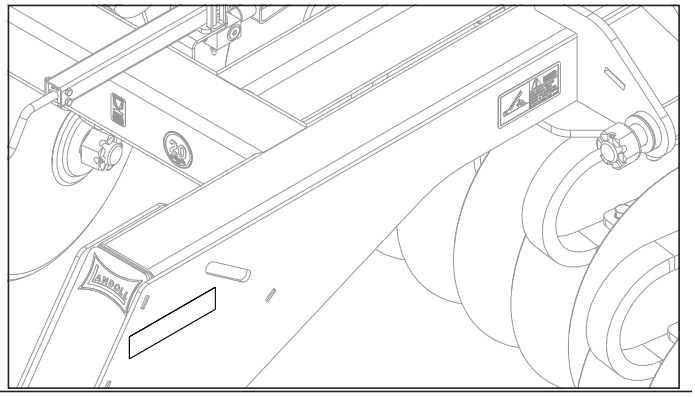
P/N 224589
SIS 20 MPH

Center frame, SIS 20 MPH mount plate, rear.
QTY. 1



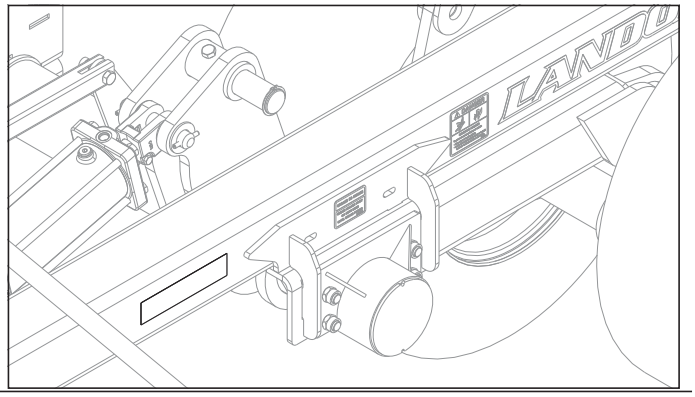
P/N 528934
Yellow Reflector

Center frame, front, both sides.
QTY. 2



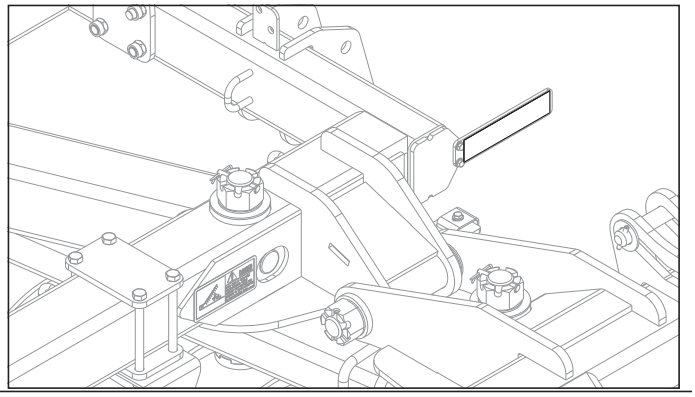
P/N 528934
Yellow Reflector

Center frame, middle, both sides.
QTY. 2



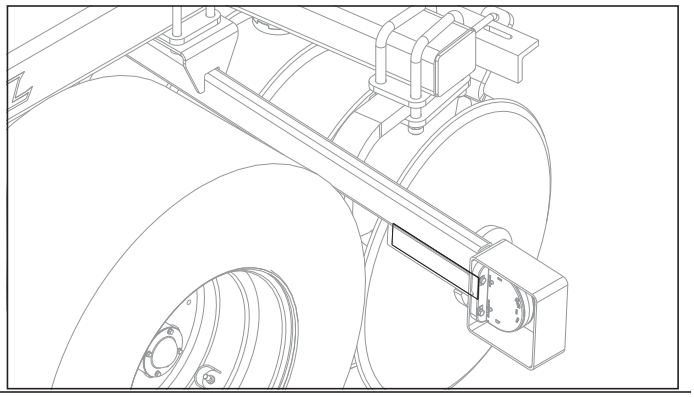
P/N 528934
Yellow Reflector

Center frame, rear, both sides.
QTY. 2



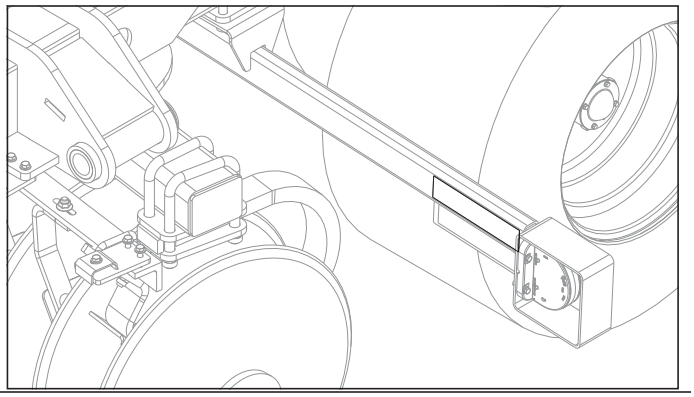
PP/N 528934
Yellow Reflector

Light Bracket, front, both sides.
QTY. 2



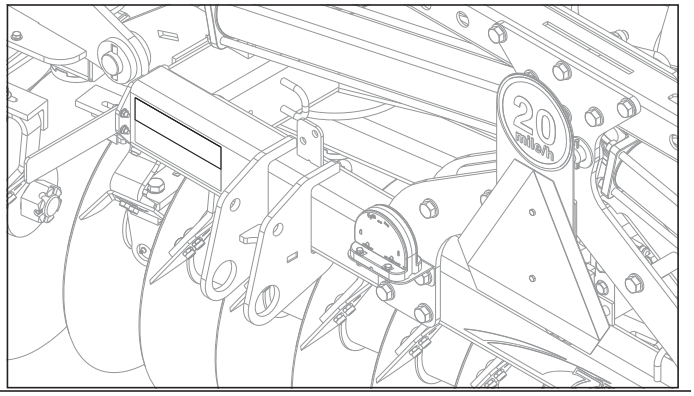
P/N 528938
Orange Reflector

Light bracket, top, rear, both sides.
QTY. 2



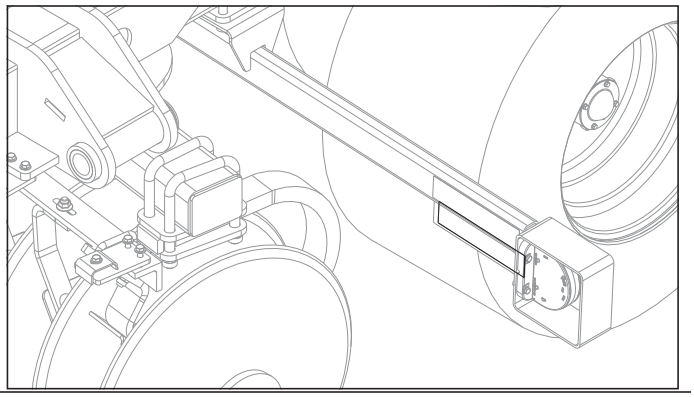
P/N 528938
Orange Reflector

Center frame, top, rear, both sides.
QTY. 2



P/N 528933
Red Reflector

Light bracket, bottom, rear, both sides.
QTY. 2

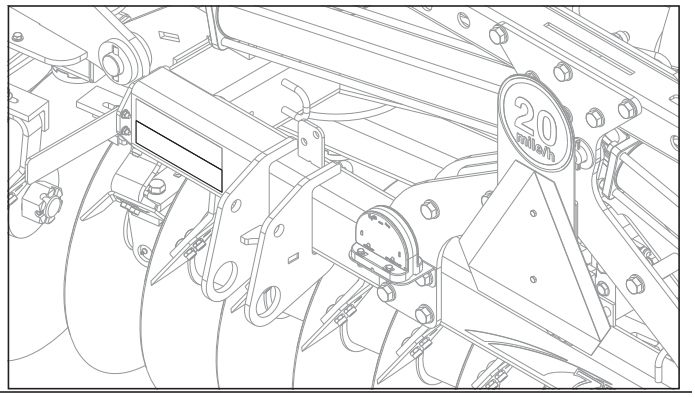


P/N 528933

Red Reflector

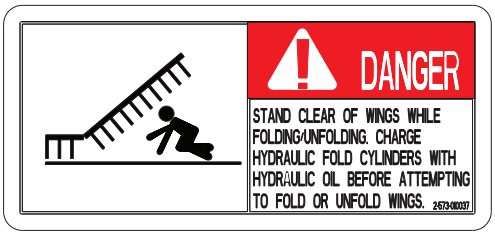
Center frame, bottom, rear, both sides.

QTY. 2



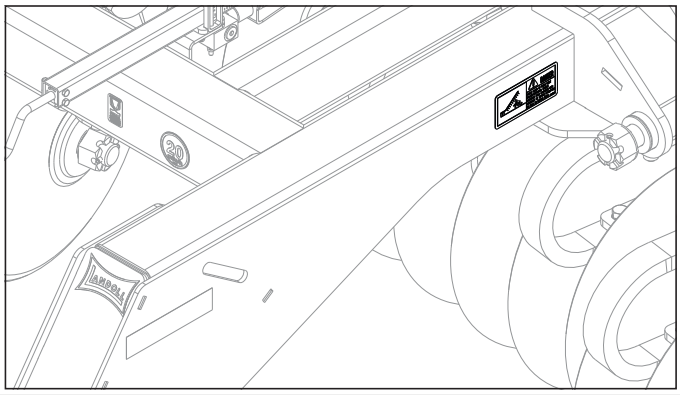
P/N 2-573-010037

Danger: Folding Wing



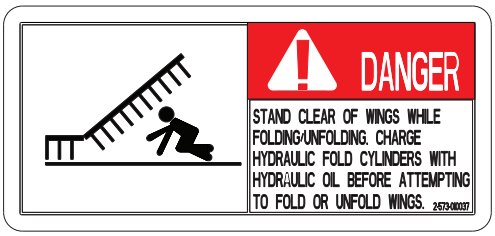
Center frame, front, both sides.

QTY. 2



P/N 2-573-010037

Danger: Folding Wing



Center frame, rear, both sides.

QTY. 2

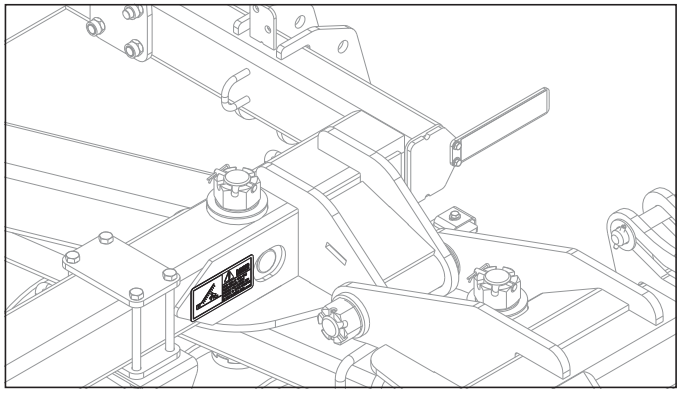


Table provided for general use.

NOTES:

Chapter 2

Specifications

Introduction

This manual is compiled as a guide for owners and operators of the 7531 VT. Read it carefully so as to be able to follow the suggestions made. Please take time to understand the proper maintenance schedule and SAFE operation of your equipment.

In the event that a new and inexperienced operator is placed in charge of running the equipment, they should read and understand, that part of the manual for proper maintenance and SAFE operation, and to be trained in regard by an experienced operator.

Owner Assistance

If customer service or repairs are needed, contact your Landoll dealer. They have trained personnel, parts and service equipment specially designed for Landoll products. Your machine's parts should only be replaced with Landoll parts. Have the Serial Number and complete Model Number available when ordering parts from your Landoll dealer. ***See Figure 2-1***

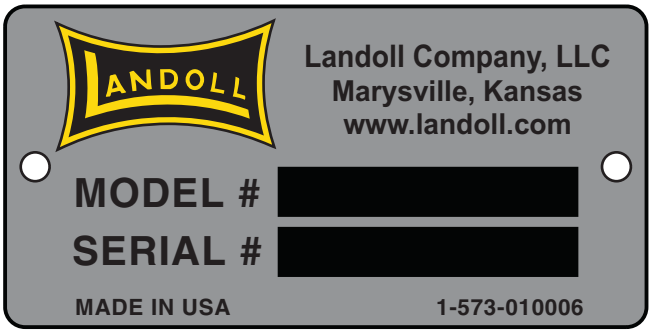


Figure 2-1: ID Plate

Warranty Registration

Be certain to register the machine Online registration at *www.landoll.com* within 10 days of purchase or lease, in order to be on file at Landoll and eligible for Warranty.

Take time to read and understand the Warranty for this product, ***See Page 2-2*** and ***See Page 2-3.***

Landoll reserves the right to make changes and/or add improvements to it's products at any time without obligation to previously manufactured equipment.

Please take time to complete the following information for your personal reference, should you need to contact your Dealer with questions or parts needs.

MODEL_____

SERIAL #_____

DATE OF PURCHASE_____

DEALER NAME_____

We at Landoll wish to thank you for purchasing our product. We have spent considerable time and effort to research, design, test and develop this machine and are confident it will serve you in the use for which it was designed.

LANDOLL TILLAGE PRODUCT THREE YEAR LIMITED WARRANTY

Landoll Company, LLC warrants each new serial numbered Whole Good Tillage product, when properly assembled, adjusted, serviced, and normally operated, to be free from defects in materials and workmanship for a period of three (3) years, unless otherwise noted, from the date of delivery. Date of delivery shall be the date the Dealer places the product in the possession of the original retail purchaser, and must be confirmed by the Dealer submitting a properly completed Landoll Company, LLC Warranty Registration Form to the Landoll Company, LLC Warranty Department. Warranty starts the day the product is rented or leased. This limited warranty shall be transferable until the expiration date.

Landoll Company, LLC shall repair, or at its option, replace any part(s) of the product determined, by Landoll Company, LLC, to be defective. Landoll Company, LLC may request the return of part(s), freight prepaid via a carrier approved by the Landoll Warranty Staff, to Landoll Company, LLC for further evaluation. If the part is determined to be defective, Landoll Company, LLC will refund the freight charges incurred in returning the defective part(s).

This limited warranty requires pre-authorization by the Landoll Company, LLC Warranty Staff of any warranty related utilization of components or labor, and is subject to specific exclusions and does not apply to any product which has been: 1) subjected to or operated in a manner which, at any time, have exceeded the product design limits: 2) repaired or altered outside our factory in any way so as, in the judgment of Landoll Company, LLC, to affect its stability or reliability: 3) subject to misuse, negligence, accident, or has been operated in a manner expressly prohibited in the instructions; or not operated in accordance with practices approved by Landoll Company, LLC. Operating the product in soils containing rocks, stumps or obstructions may void the warranty in its entirety. Excessive acres, consistent with non-seasonal very large farming operations, and, non-agricultural activities, may further limit the terms of this warranty. The sole obligation of Landoll Company, LLC under this warranty shall be limited to repairing or replacing, at its option, part(s) which shall be identified to Landon Company, LLC by way of a pre-authorized Landoll Company, LLC Warranty Claim Form. Warranty, expressed or implied, will be denied on any product not properly registered with the Landoll Company, LLC Warranty Department within ten (10) days of the first retail sale. As stated above, Landoll Company, LLC Warranty Staff will identify components listed on a Warranty Claim required to be returned for further analysis. All parts returned to Landoll Company, LLC must be shipped with a Return Materials Authorization (RMA) provided by the Landoll Company, LLC Warranty Staff. Defective components must be returned by the purchaser to Landoll Company, LLC with transportation and freight charges prepaid within thirty (30) days after receipt of the RMA. The examination conducted by Landoll Company, LLC of returned parts shall disclose to its satisfaction the extent the component may be detective.

All parts and labor warranty MUST be pre-authorized by Landoll Company, LLC Warranty Staff. Failure to do so may result in no warranty payment of any kind. Labor will be reimbursed in accordance with published shop rates pre-approved by the Landoll Company, LLC Warranty Staff. Time authorized for specific work will be limited, where appropriate, to the hours listed in the Landoll Company, LLC authorized Labor Rate Guide.

...continued on following page.

Figure 2-2: Landoll Tillage Product Warranty (1 of 2)

LANDOLL TILLAGE PRODUCT THREE YEAR LIMITED WARRANTY

...continued from previous page.

USER'S OBLICATION:

1. Read the Operator's Manual.
2. Understand the safe and correct operating procedures pertaining to the operation of the product.
3. Lubricate and maintain the product according to the maintenance schedule in the Operator's Manual.
4. Inspect machine and have parts repaired or replaced when continued use of the product would cause damage or excessive wear to other parts.
5. Contact the Landoll Company, LLC Dealer for repair or replacement of defective parts. Mileage incurred by the Landoll Company, LLC Dealer is the customer's responsibility.

This 3-Year Limited Warranty SHALL NOT APPLY TO: (See Warranty Procedure Manual for details.)

1. Ground Engaging Tools.
2. Vendor Warranty Only Parts.

WARRANTY LABOR:

1. Considered during the first year of warranty only.
2. During the second and third year:
   - Warranty labor is not covered. Customer is resposible for removing, replacing and returning the defective part(s) to the Landoll Dealer

THIS WARRANTY IS EXPRESSIVELY IN LIEU OF ALL OTHER WARRANTIES OF MATERIAL, WORKMANSHIP DESIGN, APPLICATION OR OTHERWISE WITH RESPECT TO ANY EQUIPMENT, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND LANDOLL COMPANY, LLC SHALL NOT BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND ON ACCOUNT OF ANY LANDOLL PRODUCT. NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY, VERBALLY OR IN WRITING, OR GRANT ANY OTHER WARRANTY. LANDOLL COMPANY, LLC, WHOSE POLICY IS ONE OF CONTINUOUS IMPROVEMENT, RESERVES THE RIGHT TO MAKE CHANGES WITHOUT OBLIGATION TO MODIFY PREVIOUSLY PRODUCED EQUIPMENT.

This warranty does not expand, enlarge upon or alter in any way, the warranties provided by the original manufacturers and suppliers of component parts and accessories. This warranty excludes such parts or accessories which are not defective, but may wear out and have to be replaced during the warranty period, including, but not limited to, light bulbs, paint, and the like. (Tire Warranties are expressly excluded from Landoll Company, LLC warranty herein.) Purchaser is expected to pay all repairs or replacement costs, in connection with this Agreement, including sales and other taxes immediately upon completion of work performed.

LIMITATION OF LIABILITY: Landoll Company, LLC shall not be liable to purchaser for any incidental or consequential damages suffered by the purchaser, including, but not limited to, any commercially reasonable charges, expenses or commissions incurred in connection with effecting cover or any other reasonable expense incident to the delay or other breach of warranty by Landoll Company, LLC, loss of anticipated profits, transportation expenses due to repairs, non-operation or increased expense of operation costs of purchased or replaced equipment, claim of customers, cost of money, any loss of use of capital or revenue, equipment rental, service trips, or for any special damage or loss of any nature arising at any time or from any cause whatsoever. LIMITATION OF REMEDY: In the event of Landoll Company, LLC failure to repair the product subject to the warranty contained herein, the purchaser's sole and exclusive remedy against Landoll Company, LLC shall be for the repair or replacement of any defective part or parts of the product subject to work or repair within the time period and manner set forth herein. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as Landoll Company, LLC is willing and able to repair or replace defective parts in the prescribed manner.

Figure 2-3: Landoll Tillage Product Warranty (2 of 2)

General Torque Specifications

LANDOLL
FASTENER TORQUE SPECIFICATIONS
(Rev. 23/04)

This chart provides general torque specifications for Standard Nuts and Caps Screws (as received condition) that are not called out on processes or drawings.

This **DOES NOT** apply if special lubrication such as graphite moly-disulfide or other extreme pressure lubricants are used.

Add 33% to the listed torque specification if the fastener is dry (solvent cleaned).

Cap screw grades are indicated by markings on the head, these vary among manufacturers.

Thick Nuts must be used on grade 8 cap screws.

SAE TORQUE SPECIFICATIONS (FOOT-POUNDS)

[ ] Indicates specifications for Prevailing Torque Nuts.

UNC Size	Grade 2	Grade 5	Grade 8
1/4 - 20	4 [5]	6 [7]	9 [11]
5/16 - 18	8 [10]	13 [16]	18 [22]
3/8 - 16	15 [19]	23 [29]	35 [43]
7/16 - 14	24 [30]	35 [43]	55 [62]
1/2 - 13	35 [43]	55 [62]	80 [100]
9/16 - 12	55 [62]	80 [100]	110 [137]
5/8 - 11	75 [94]	110 [137]	170 [212]
3/4 - 10	130 [162]	200 [250]	280 [350]
7/8 - 9	125 [156]	320 [400]	460 [575]
1 - 8	190 [237]	408 [506]	680 [850]
1-1/8 - 7	270 [337]	600 [750]	960 [1200]
1-1/4 - 7	380 [475]	840 [1050]	1426 [1782]
1-3/8 - 6	490 [612]	1100 [1375]	1780 [2225]
1-1/2 - 6	650 [812]	1460 [1825]	2360 [2950]

See back side for SAE UNF and Metric torques.

Form No. F-257-0322

SAE TORQUE SPECIFICATIONS (FOOT POUNDS)

[ ] Indicates specifications for Prevailing Torque Nuts.

UNF Size	Grade 2	Grade 5	Grade 8
1/4 - 28	5 [6]	7 [9]	10 [12]
5/16 - 24	9 [11]	14 [17]	20 [25]
3/8 - 24	17 [21]	25 [31]	35 [44]
7/16 - 20	27 [34]	40 [50]	60 [75]
1/2 - 20	40 [50]	65 [81]	90 [122]
9/16 - 18	60 [75]	90 [112]	130 [162]
5/8 - 18	85 [106]	130 [162]	180 [225]
3/4 - 16	150 [188]	220 [275]	320 [400]
7/8 - 14	140 [175]	360 [450]	500 [625]
1 - 14	210 [263]	540 [675]	760 [950]
1-1/8 - 12	300 [375]	660 [825]	1080 [1350]
1-1/4 - 12	420 [525]	920 [1150]	1500 [1875]
1-3/8 - 12	560 [700]	1260 [1575]	2010 [2512]
1-1/2 - 12	730 [912]	1640 [2050]	2660 [3325]

METRIC TORQUE SPECIFICATIONS

This chart provides torque specification for phosphate coated, Rockwell "C" 38-45 Metric Coarse Thread Class 10.9 Fasteners, Class 10.0 Nuts and Harden Flat Washers.

[ ] Indicates specifications for Prevailing Torque Nuts.

MM Size	Newton - Meters	Foot-Pounds
6	10 [14]	7 [10]
7	16 [22]	12 [16]
8	23 [32]	17 [24]
10	46 [60]	34 [47]
12	80 [101]	60 [75]
14	125 [155]	90 [115]
16	200 [240]	150 [180]
18	275 [330]	205 [245]
20	385 [450]	290 [335]
24	670 [775]	500 [625]
27	980 [1105]	730 [825]
30	1330 [1470]	990 [1090]
33	1790 [1950]	1730 [1870]
36	2325 [2515]	1730 [1870]
39	3010 [3210]	2240 [2380]

See front side for SAE UNC and notes.

Figure 2-4: General Torque Specifications

Hydraulic Fitting Torque Specifications

LANDOLL
HYDRAULIC FITTING TORQUE SPECIFICATIONS
(REV. 23/04)
AEROQUIP BRAND FITTINGS
37° JIC; ORS & ORB

This chart provides torque specifications for Plated Carbon Steel and Stainless Steel Fittings (as received condition) that are not called out on processes or drawings.

This **DOES NOT** apply if special lubrication such as graphite moly-disulfide or other extreme pressure lubricants are used.

Minus 65% from the listed torque specification for Brass Fittings.

TORQUE SPECIFICATIONS
(FOOT-POUNDS)
[ ] Indicates specifications for Prevailing Torque Nuts.

DASH Size	37 Degree JIC	O-Ring (ORS)	O-Ring Boss (ORB)
-4	11-12	10-12	14-16
-5	15-16	-----	18-20
-6	18-20	18-20	24-26
-8	38-42	32-35	50-60
-10	57-62	46-50	72-80
-12	79-87	65-70	125-135
-14	-----	-----	160-180
-16	108-113	92-100	200-220
-20	127-133	125-140	240-280
-24	158-167	150-165	270-360
-32	245-258	-----	-----

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LANDOLL
HYDRAULIC FITTING TORQUE SPECIFICATIONS
(REV. 23/04)
GATES BRAND FITTINGS
37° JIC; ORS & ORB

This chart provides torque specifications for Plated Carbon Steel and Stainless Steel Fittings (as received condition) that are not called out on processes or drawings.

This **DOES NOT** apply if special lubrication such as graphite moly-disulfide or other extreme pressure lubricants are used.

Minus 65% from the listed torque specification for Brass Fittings.

TORQUE SPECIFICATIONS
(FOOT-POUNDS)
[ ] Indicates specifications for Prevailing Torque Nuts.

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	-----	-----

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LANDOLL
HYDRAULIC FITTING TORQUE SPECIFICATIONS
(REV. 23/04)
PARKER BRAND FITTINGS
37° JIC; ORS & ORB

This chart provides torque specifications for Plated Carbon Steel and Stainless Steel Fittings (as received condition) that are not called out on processes or drawings.

This **DOES NOT** apply if special lubrication such as graphite moly-disulfide or other extreme pressure lubricants are used.

Minus 65% from the listed torque specification for Brass Fittings.

TORQUE SPECIFICATIONS
(FOOT-POUNDS)
[ ] Indicates specifications for Prevailing Torque Nuts.

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
-14	-----	-----	-----
-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

FORM NO. F-263-2304 (3 of 3)

Figure 2-5: Hydraulic Fitting Torque Specifications

Model Specifications

7531 VT									
Model Number	Rear Gang cut at 13 °	Transport Width	Transport Height	Blade Diameter	No. of Blades F/R	No. of Bearings F/R	Spindle Size	Wheel Bolt Pattern	Estimated Weight
7531-23	23’- 0”’	14’ - 4”	12’ - 8”	24”	38/40	10/10	3”	8 Bolt	24,350lbs.
7531-26	26’- 5”’	14’ - 4”	13’ - 9”	24”	44/46	10/10	3”	8 Bolt	27,440lbs.
7531-29	28’- 9”	14’ - 4”	14’ - 4”	24”	48/50	12/10	3”	8 Bolt	28,620lbs.
7531-32	32’- 2”	17’ - 6”	14’ - 4”	24”	54/56	14/12	3”	8 Bolt	31,580lbs.
7531HD-32	32’- 2”	17’ - 6”	14’ - 4”	24”	54/56	14/12	4” Center 3” Wings	8 Bolt	32,420lbs.
7531-35	34’ - 7”	17’ - 6”	15’ - 5”	24”	58/60	14/14	3”	8 Bolt	32,140lbs.
7531HD-35	34’ - 7”	17’ - 6”	15’ - 5”	24”	58/60	14/14	4” Center 3” Wings	8 Bolt	32,980lbs.

NOTE: HD-Heavy Duty Undercarriage With Dual Wheels On Center Frame
NOTE: Specifications Are Subject To Change Without Prior Notification-Transport Height Can Vary With Reel Placement

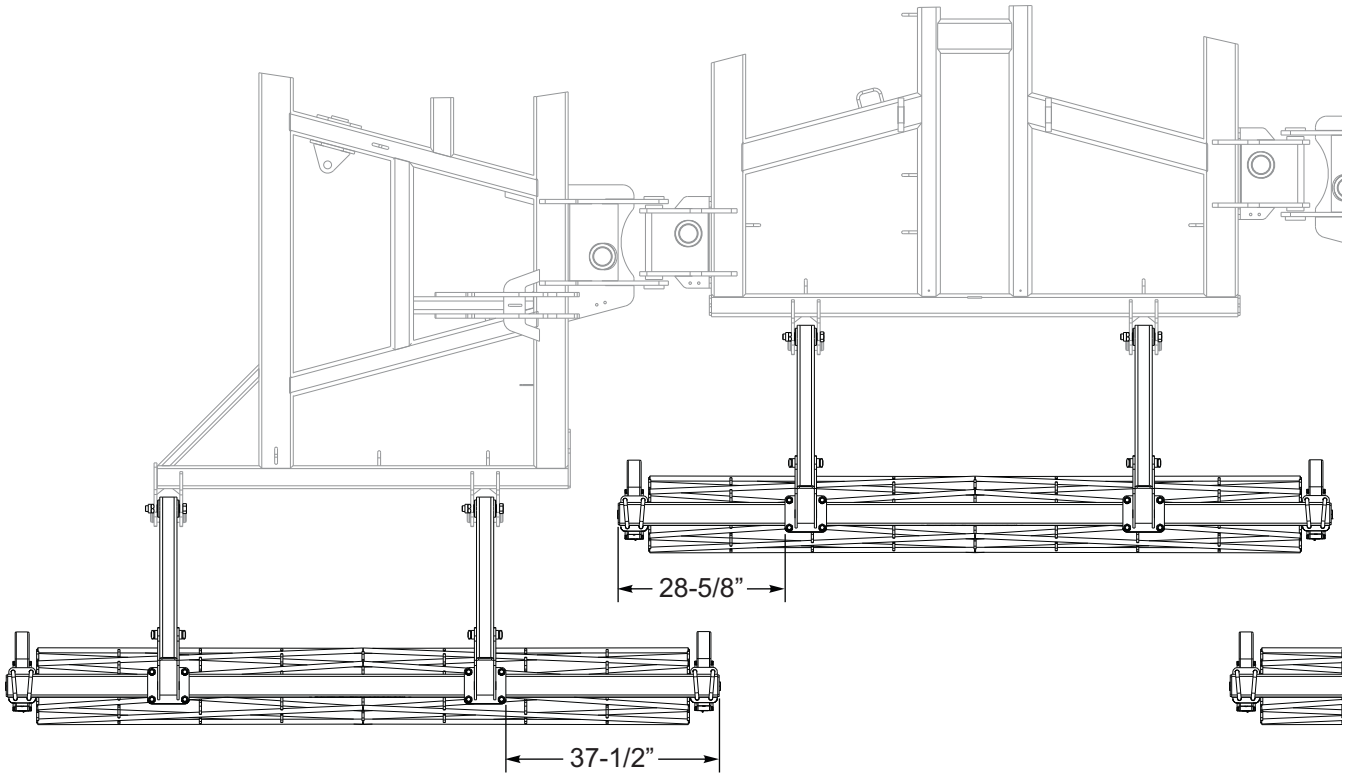
Tire Inflation

Tire Size	Tire Manufacturer	Ply/Load Rating	Inflation Pressure (Psi) (Max.)
480/45R17 AG	BKT VF	LOAD INDEX 167A8B/8000 LBS. @ 25MPH	78 psi
410/50R X 16.5 IMP	BKT	LOAD INDEX 153A8/B/8,050 LBS. @ 30MPH	73psi
265/70R 19.5	Dynatrak	134D - 6,005 lbs. @ 40 mph	120 psi
20.5 X 8.0-10		Load Range D/1,320 lbs.	70 psi

Specific Bolt Torques

Bolts & Nuts	Torque (FT. LBS.)
Center Frame Dual Tire Inner Spindle/Hub	Torque to 100 Ft./Lbs. while rotating. Back to loose and tighten by hand until contact is made with bearing.
Center Frame Dual Tire Outer Spindle/Hub	300 Ft./Lbs. .
Center Frame Dual Tire Wheel Nuts	450-500 Ft./Lbs.
Center or Wing Single Tire Wheel Nuts	85-100 Ft./Lbs.
Disc Gang Shafts	1,200 Ft./Lbs.

Conditioner Reel Placement

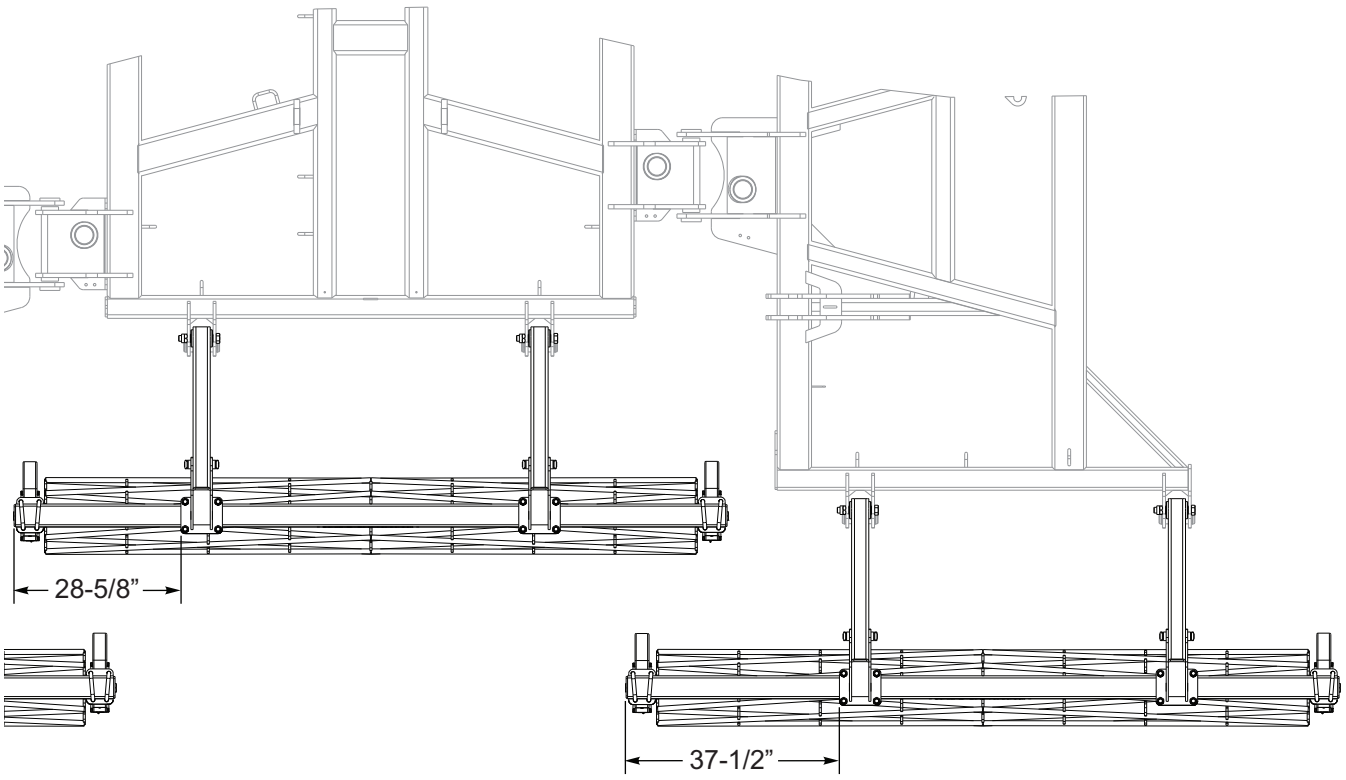


Cond-Reel/Gangbar
Assembly 91”

Cond-Reel/Gangbar
Assembly 114”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-6: Conditioner Reel Placement 7531-23’ (LH)

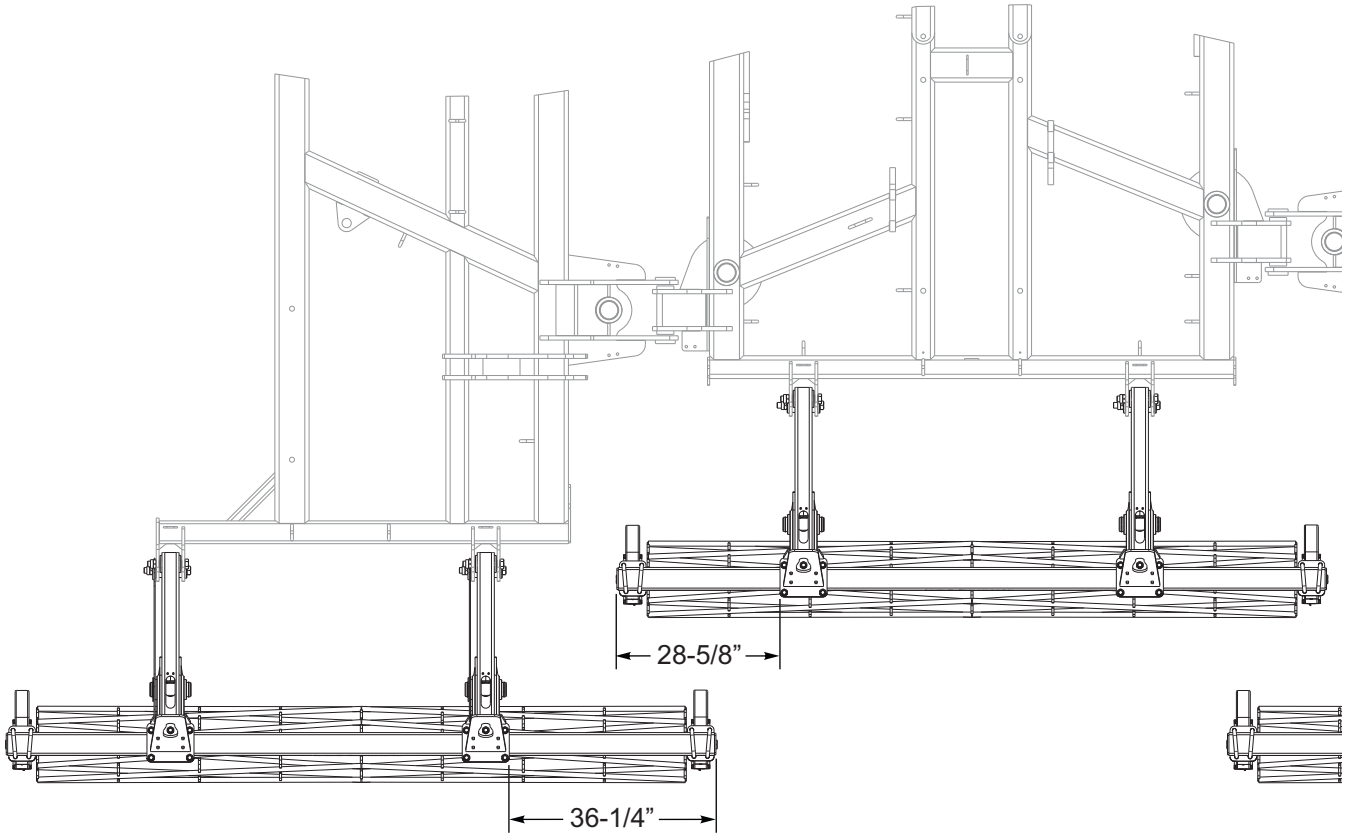


Cond-Reel/Gangbar
Assembly 114”

Cond-Reel/Gangbar
Assembly 91”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-7: Conditioner Reel Placement 7531-23’ (RH)

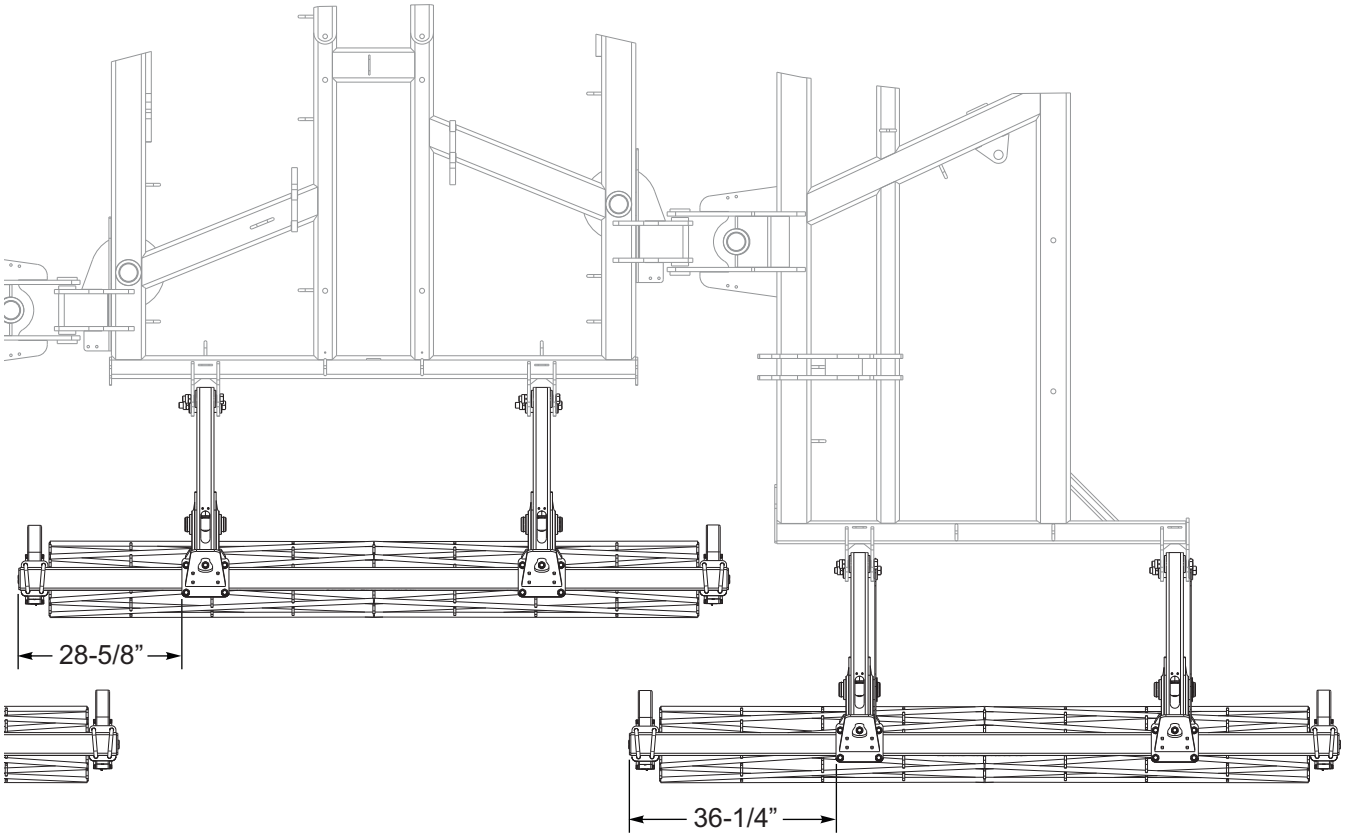


Cond-Reel/Gangbar
Assembly 114”

Cond-Reel/Gangbar
Assembly 114”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-8: Conditioner Reel Placement 7531-26’ (LH)

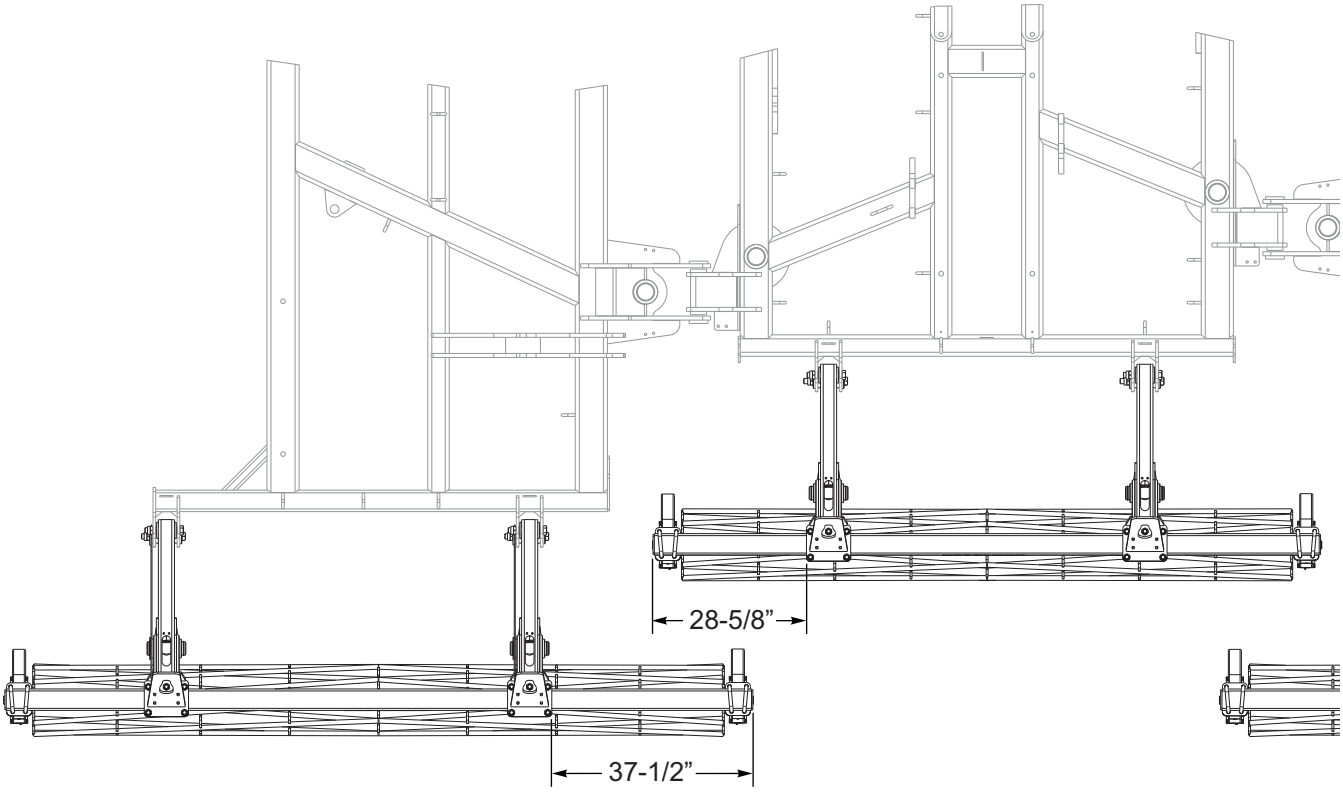


Cond-Reel/Gangbar
Assembly 114”

Cond-Reel/Gangbar
Assembly 114”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-9: Conditioner Reel Placement 7531-26’ (RH)

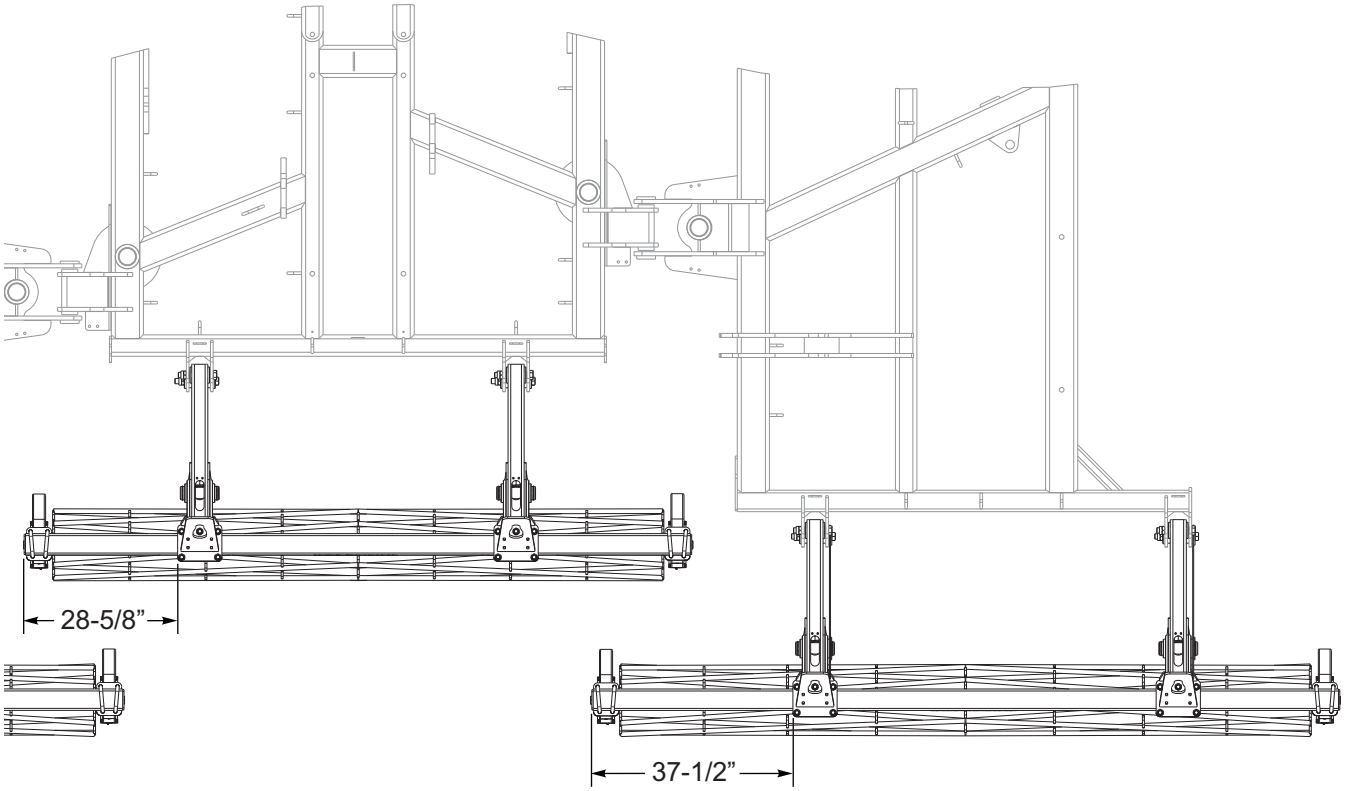


Cond-Reel/Gangbar
Assembly 129”

Cond-Reel/Gangbar
Assembly 114”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-10: Conditioner Reel Placement 7531-29’ (LH)



Cond-Reel/Gangbar
Assembly 114”

Cond-Reel/Gangbar
Assembly 129”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-11: Conditioner Reel Placement 7531-29’ (RH)

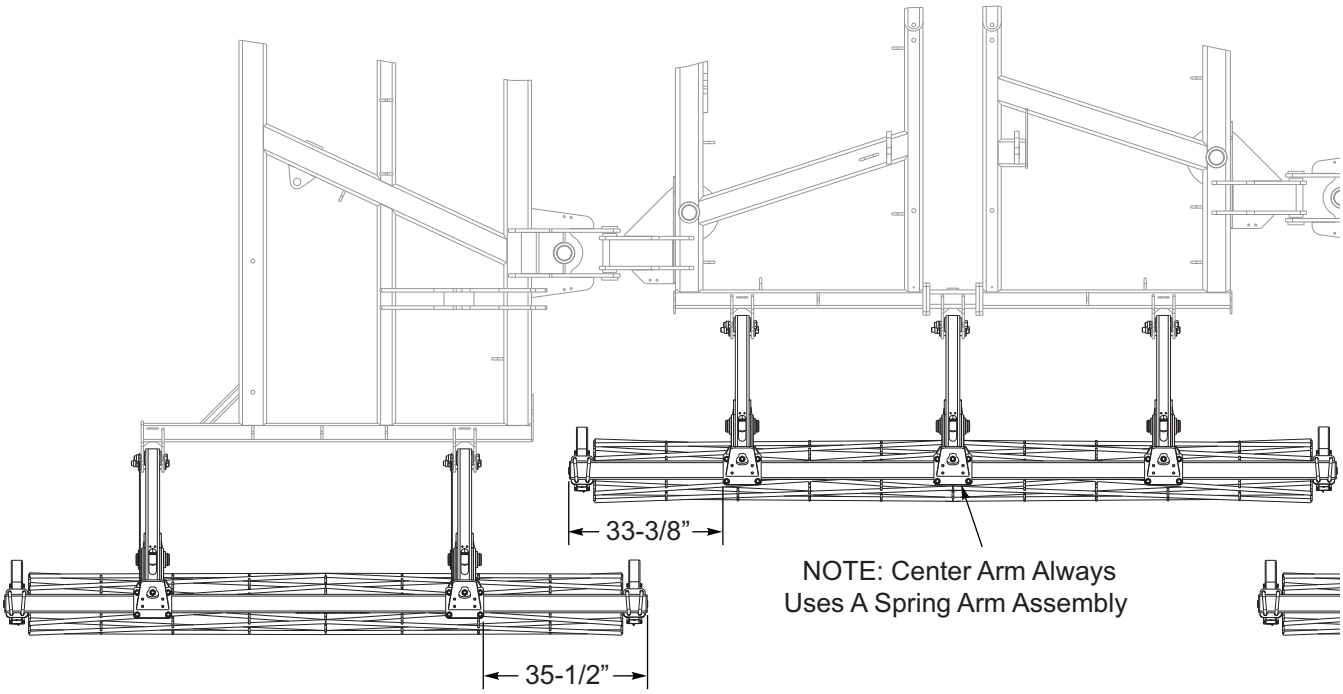
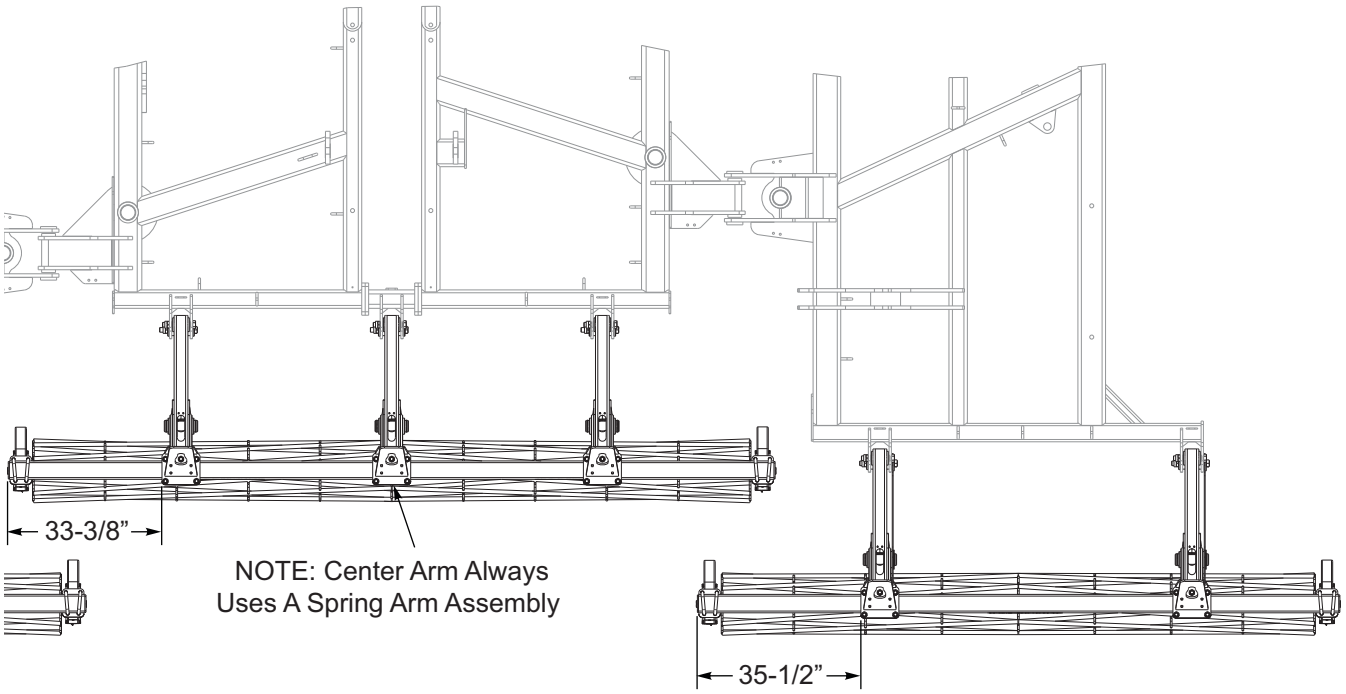
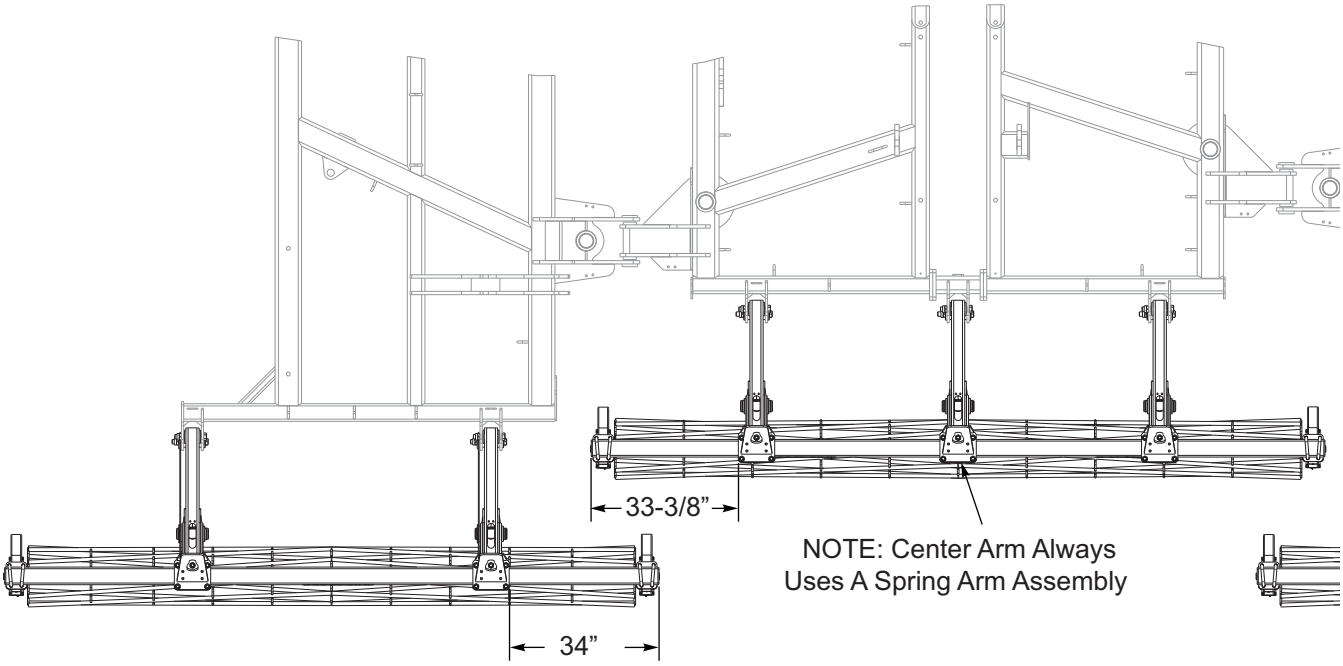


Figure 2-12: Conditioner Reel Placement 7531-32’ (LH)



NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-13: Conditioner Reel Placement 7531-32’ (RH)



Cond-Reel/Gangbar
Assembly 138”

Cond-Reel/Gangbar
Assembly 156”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-14: Conditioner Reel Placement 7531-35’ (LH)

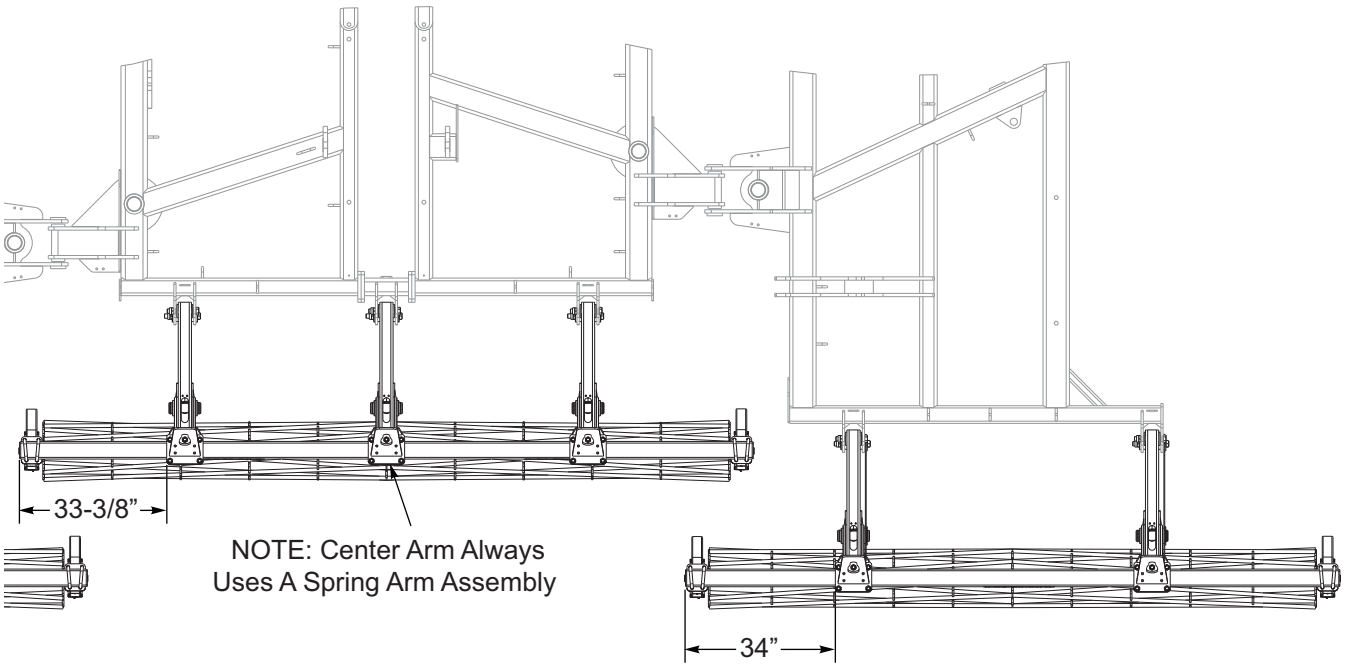
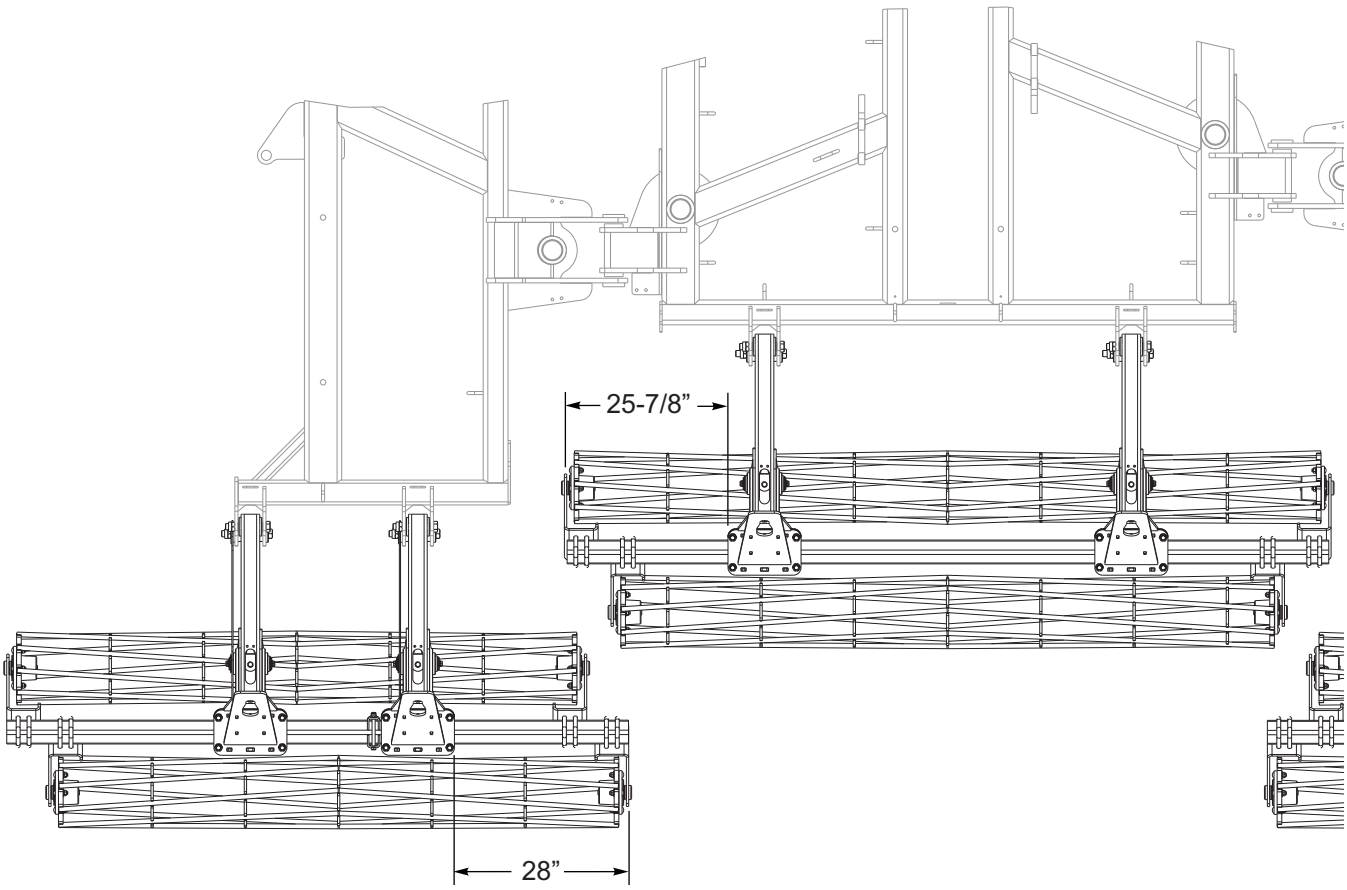


Figure 2-15: Conditioner Reel Placement 7531-35’ (RH)

Double Round Reel Placement

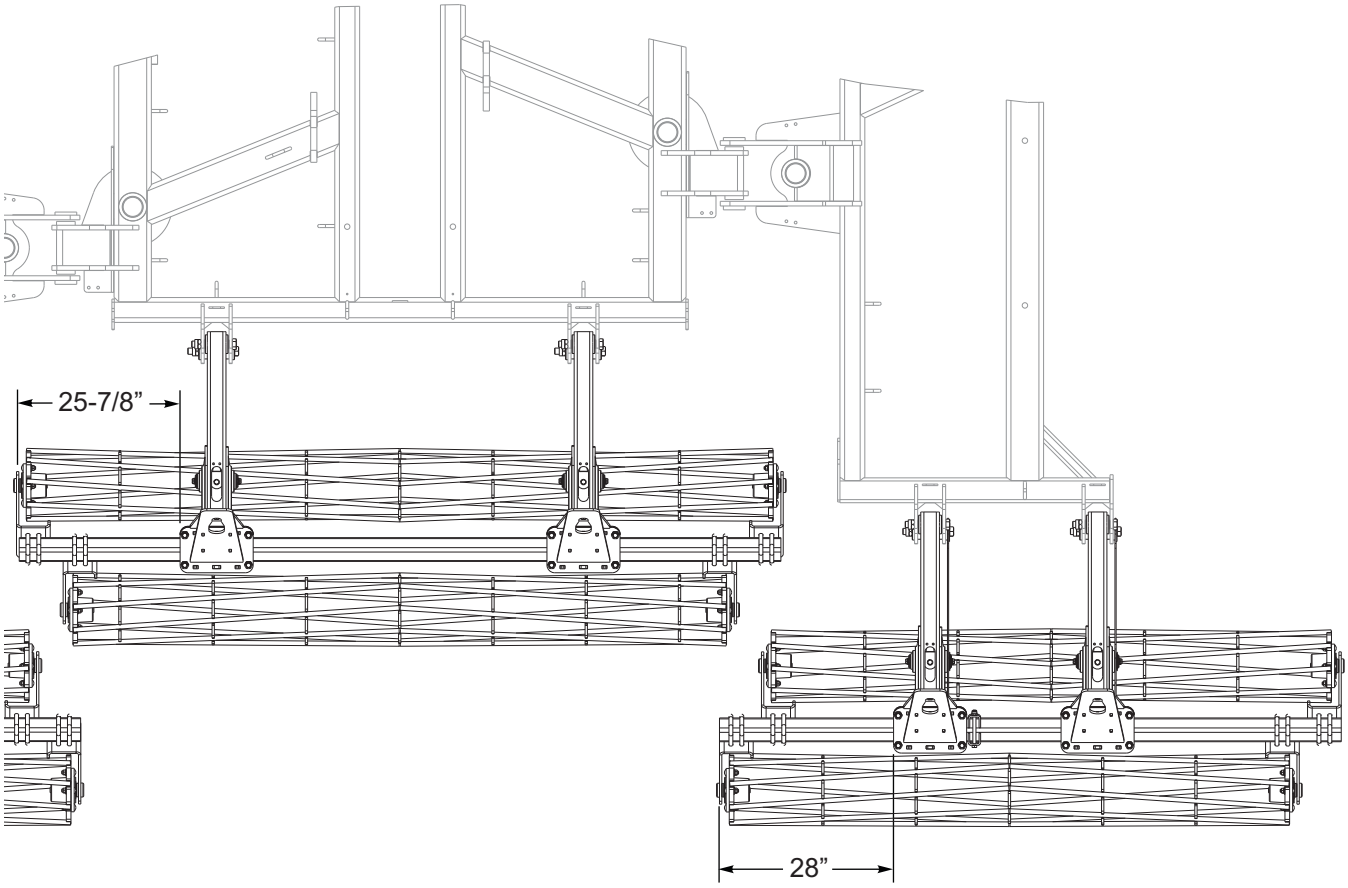


Double Round Reel
Assembly 90”/90”

Double Round Reel
Assembly 105”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-16: Double Round Reel Placement 7531-23’ (LH)

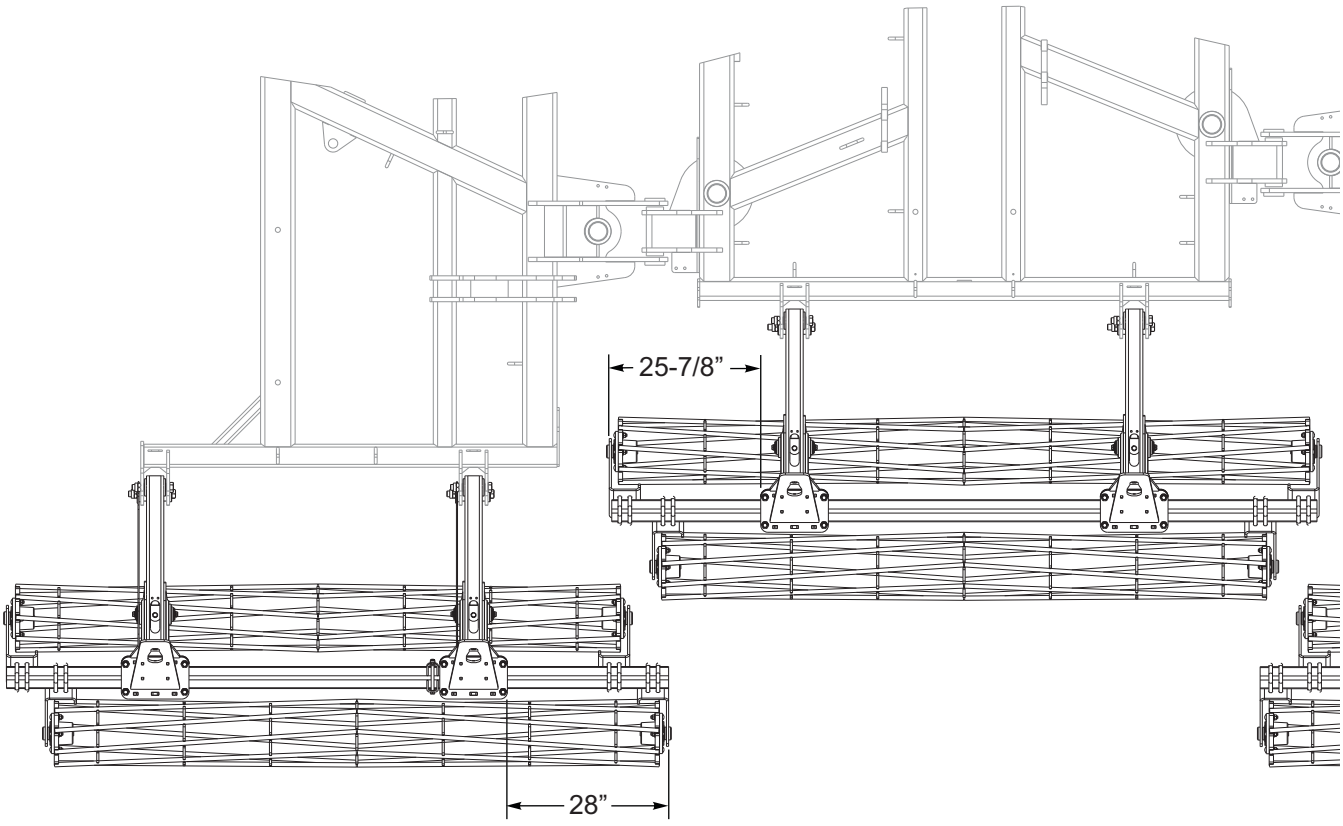


Double Round Reel
Assembly 105”/120”

Double Round Reel
Assembly 90”/90”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-17: Double Round Reel Placement 7531-23’ (RH)

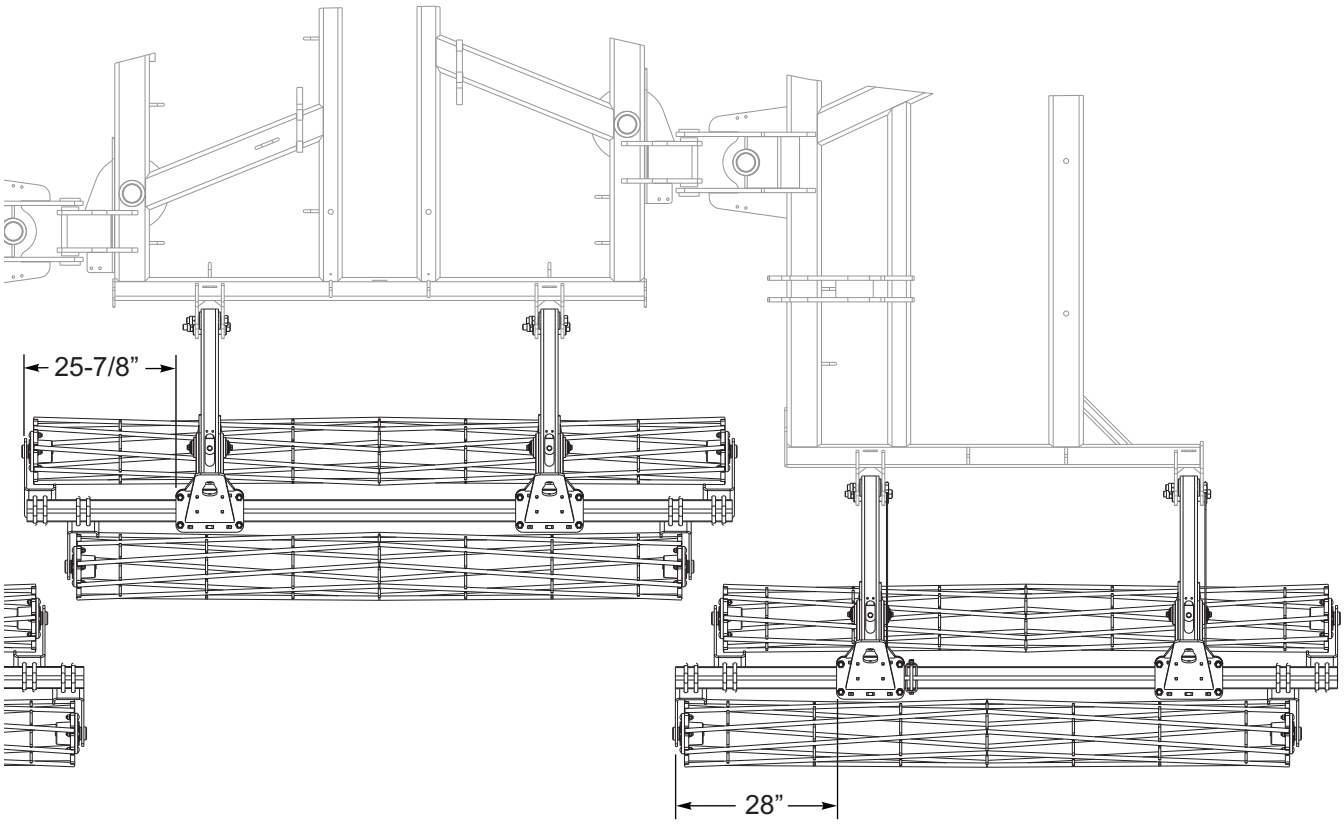


Double Round Reel
Assembly 105”/105”

Double Round Reel
Assembly 105”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-18: Double Round Reel Placement 7531-26’ (LH)

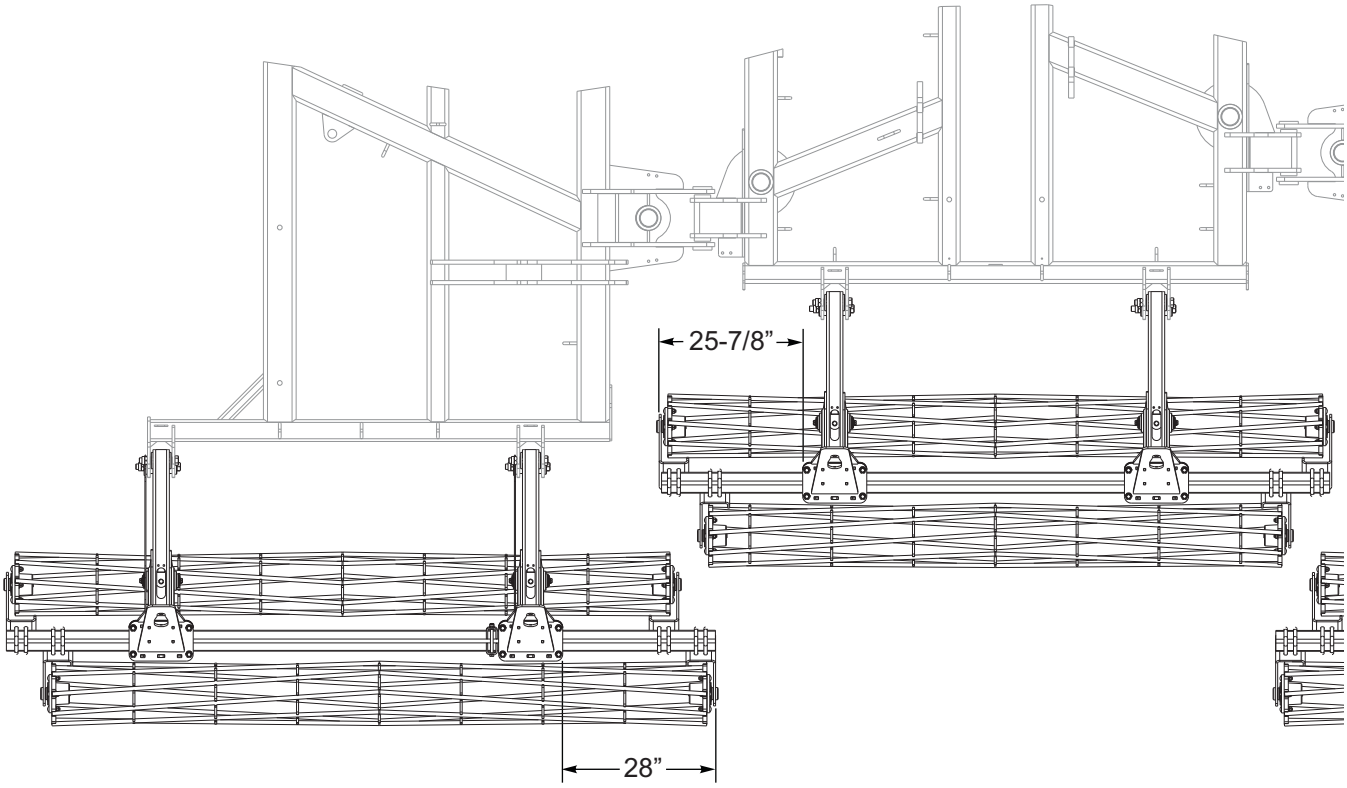


Double Round Reel
Assembly 105”/120”

Double Round Reel
Assembly 105”/105”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-19: Double Round Reel Placement 7531-26’ (RH)

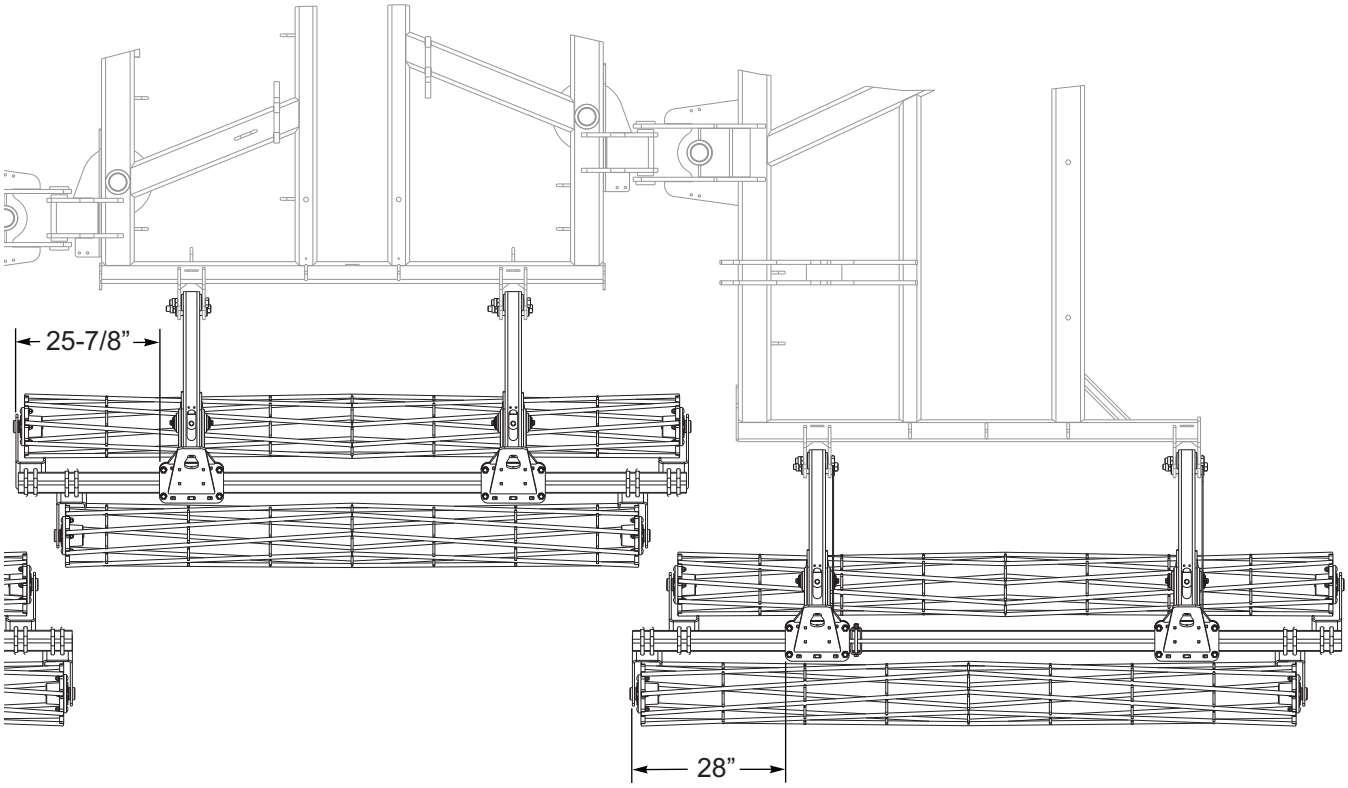


Double Round Reel
Assembly 120”/120”

Double Round Reel
Assembly 105”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-20: Double Round Reel Placement 7531-29’ (LH)

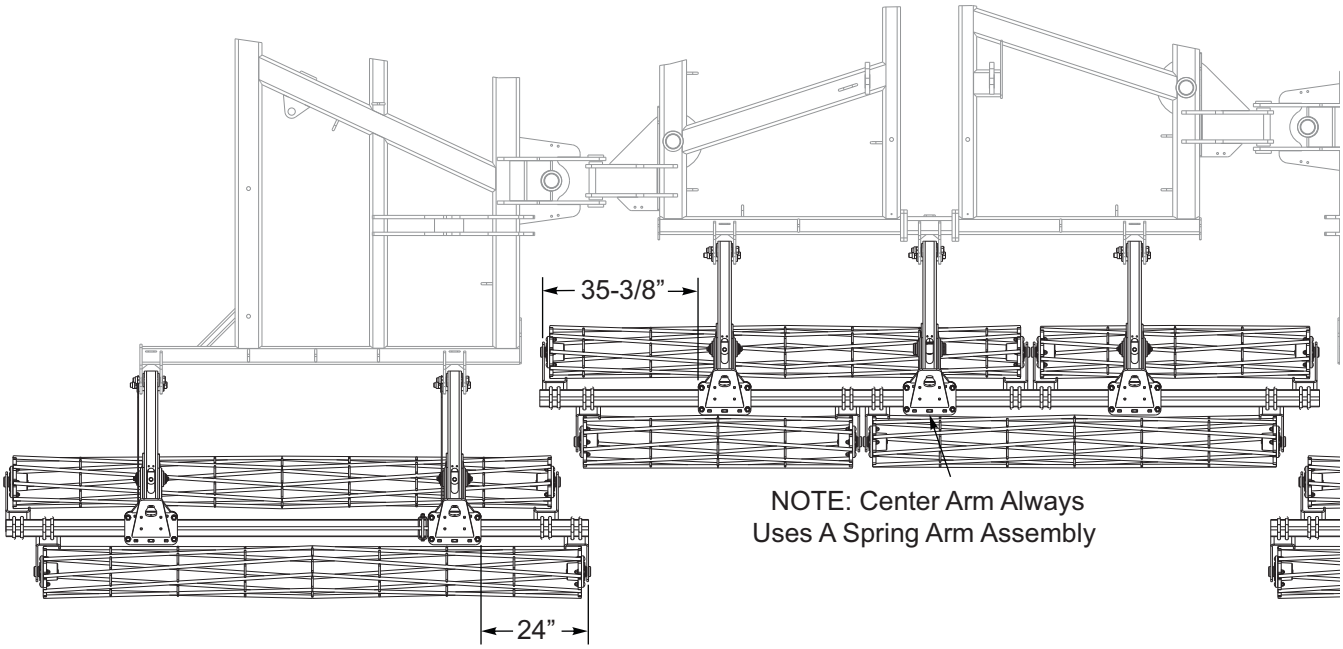


Double Round Reel
Assembly 105”/120”

Double Round Reel
Assembly 120”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-21: Double Round Reel Placement 7531-29’ (RH)

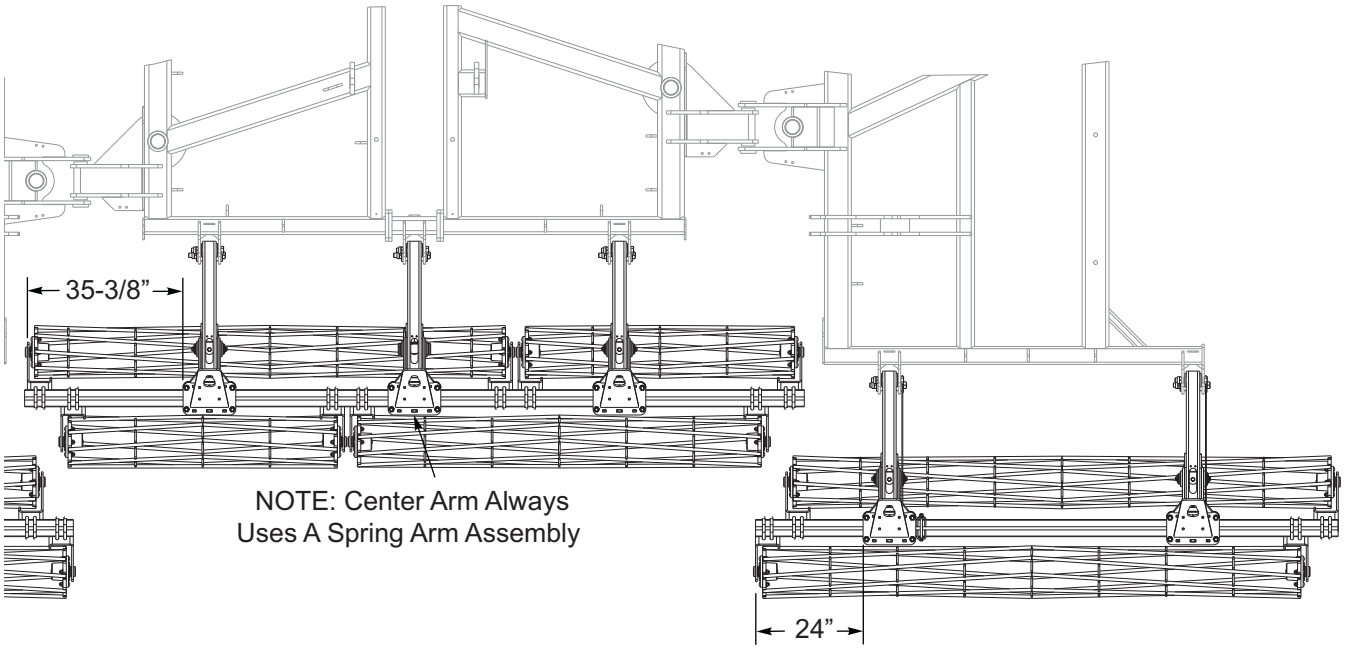


Double Round Reel
Assembly 120”/120”

Double Round Reel
Assembly 150”/165”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-22: Double Round Reel Placement 7531-32’ (LH)

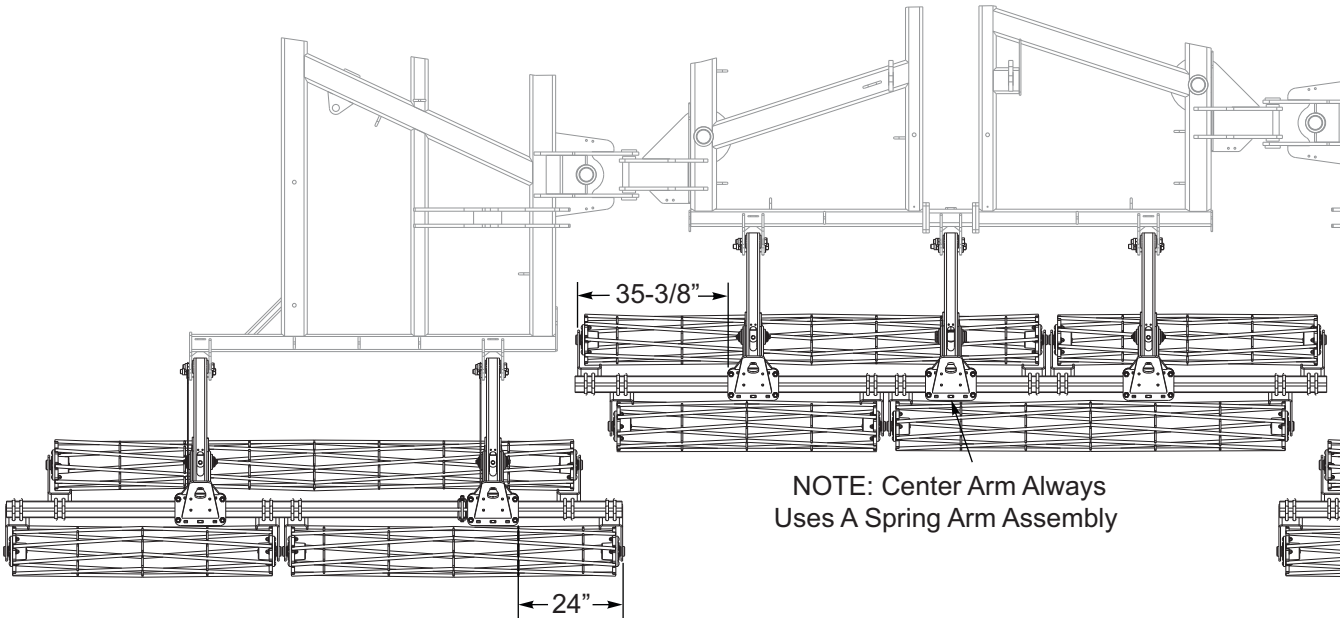


Double Round Reel
Assembly 150”/165”

Double Round Reel
Assembly 120”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-23: Double Round Reel Placement 7531-32’ (RH)



Double Round Reel
Assembly 120”/135”

Double Round Reel
Assembly 150”/165”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-24: Double Round Reel Placement 7531-35’ (LH)

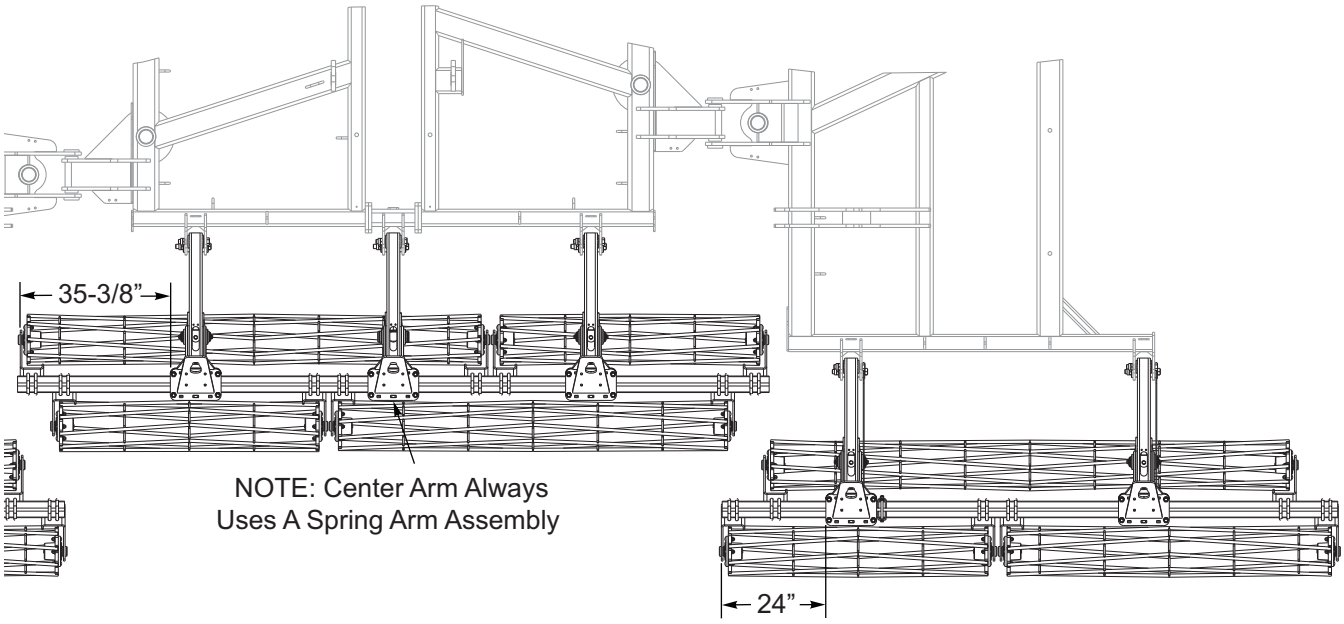
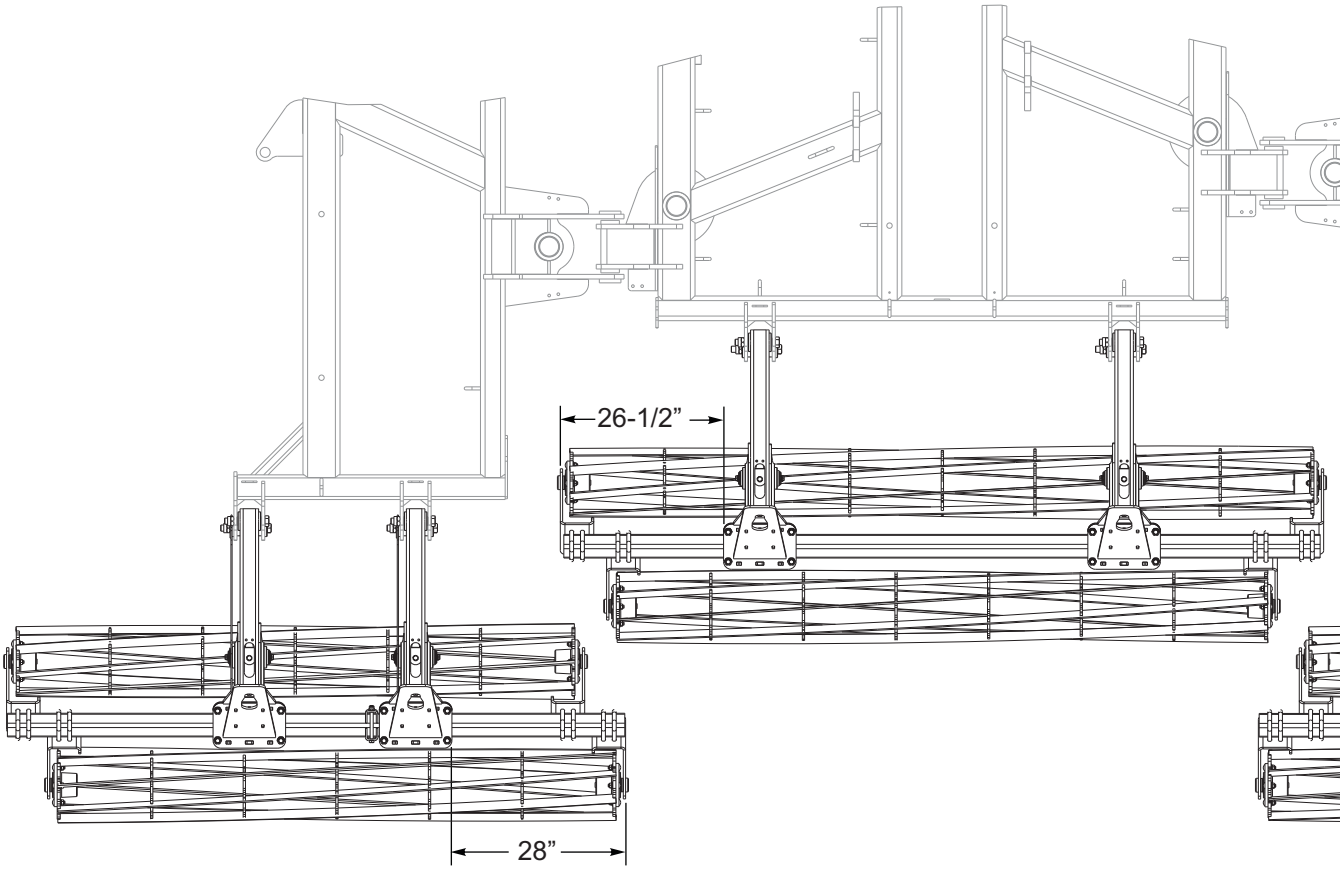


Figure 2-25: Double Round Reel Placement 7531-35’ (RH)

Double Flat Reel Placement

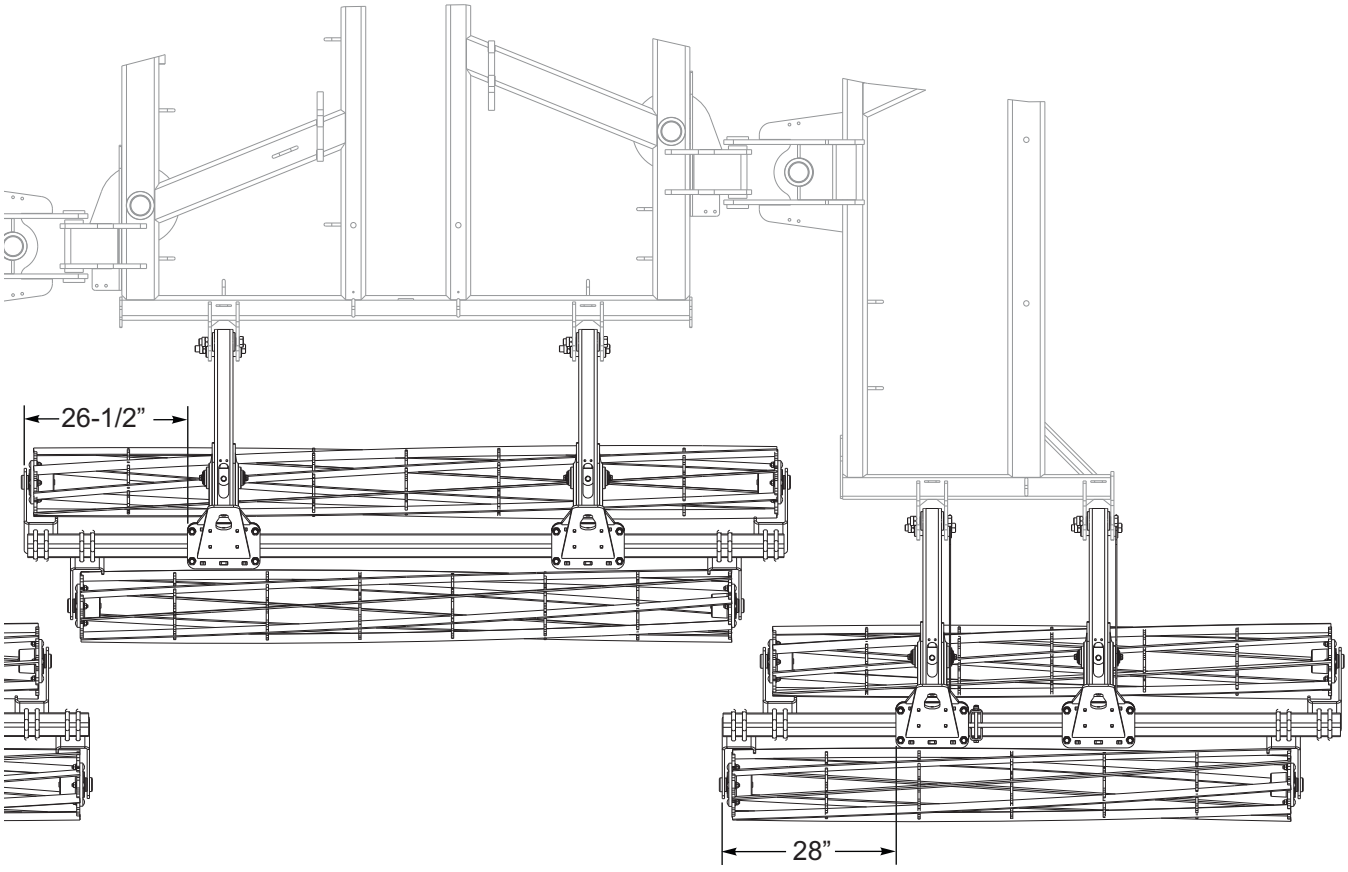


Double Flat Reel
Assembly 90”/90”

Double Flat Reel
Assembly 105”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-26: Double Flat Reel Placement 7531-23’ (LH)

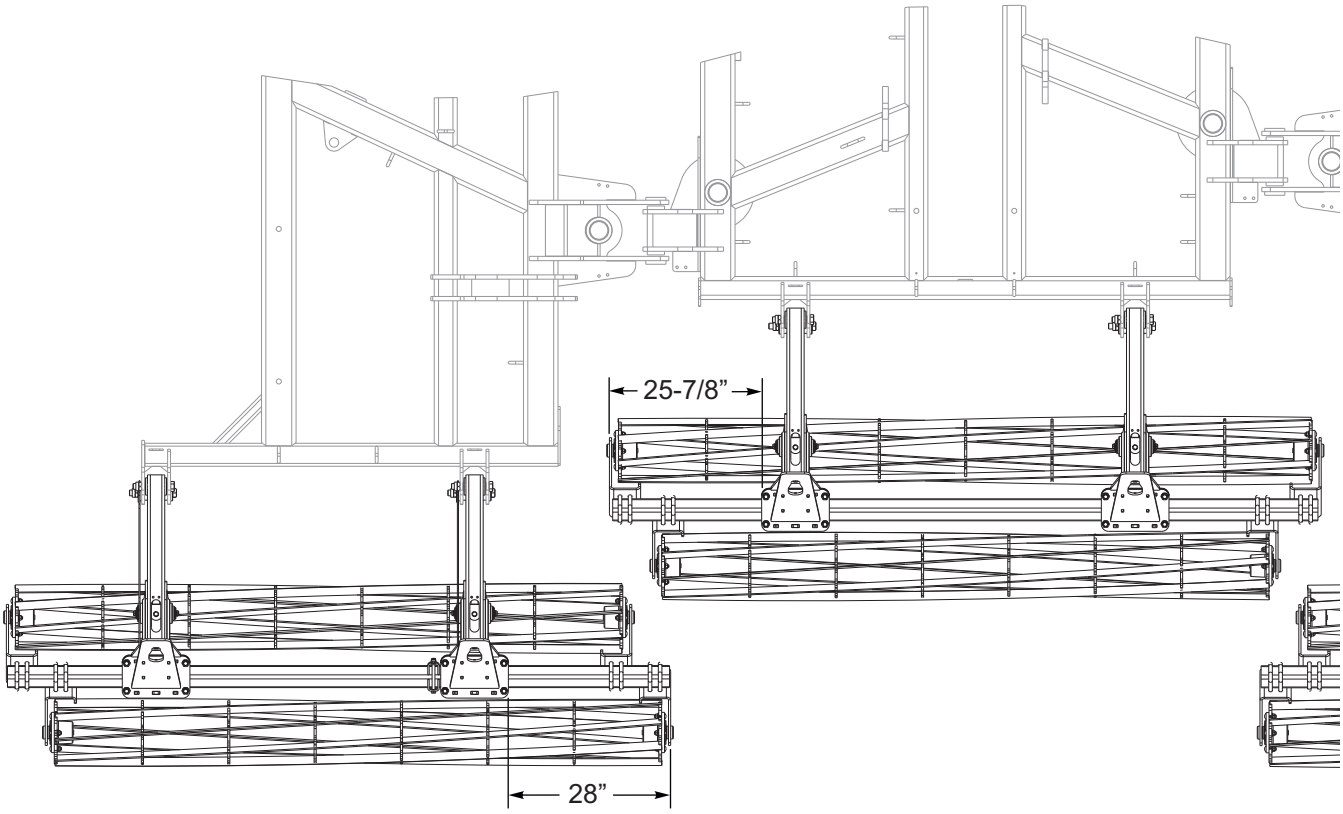


Double Flat Reel
Assembly 105”/120”

Double Flat Reel
Assembly 90”/90”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-27: Double Flat Reel Placement 7531-23’ (RH)

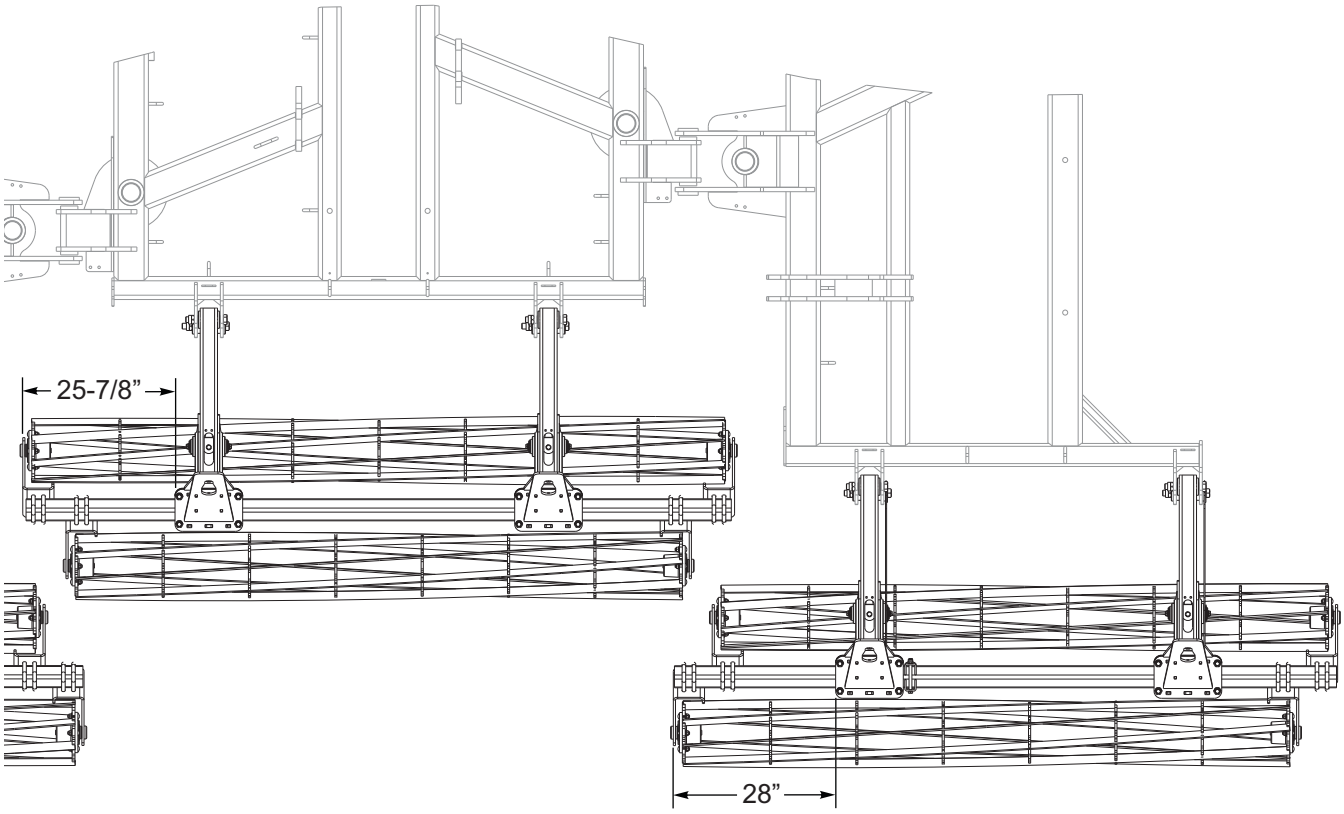


Double Flat Reel
Assembly 105”/105”

Double Flat Reel
Assembly 105”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-28: Double Flat Reel Placement 7531-26’ (LH)

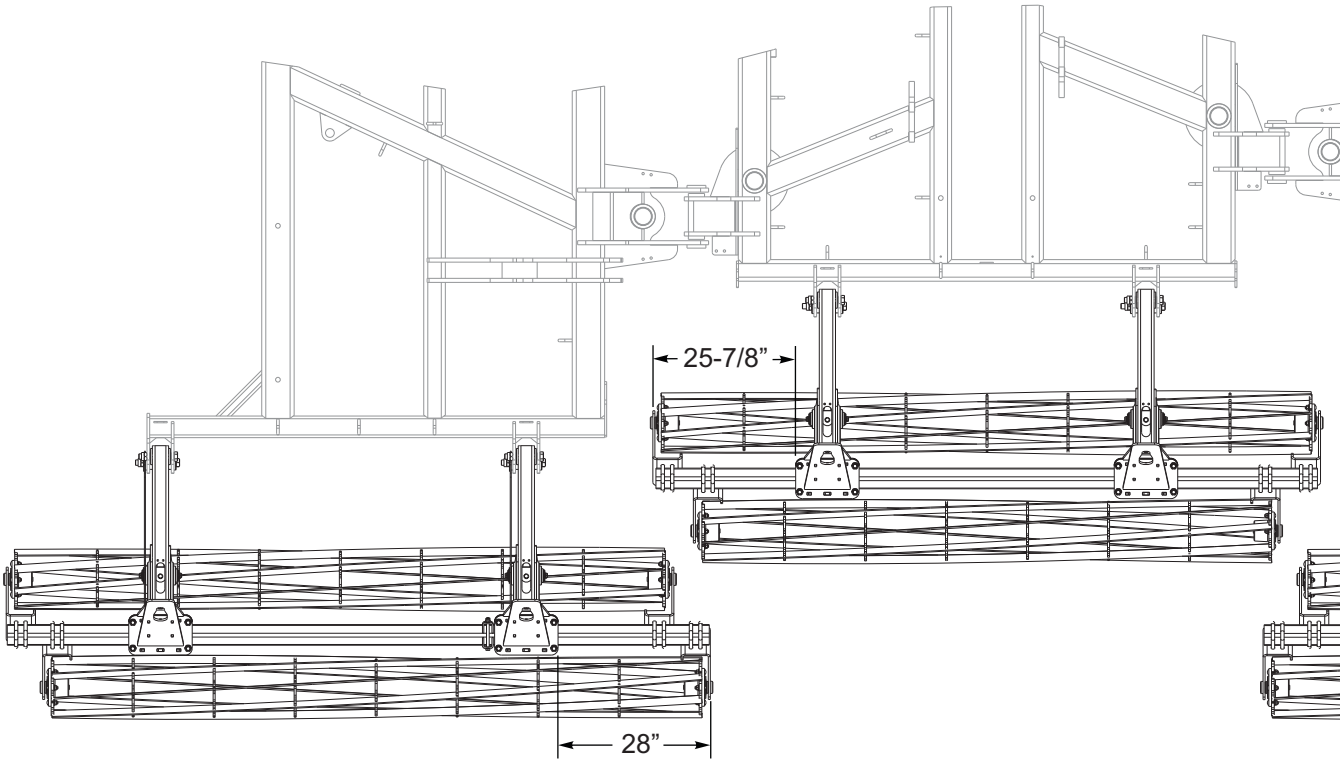


Double Flat Reel
Assembly 105”/120”

Double Flat Reel
Assembly 105”/105”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-29: Double Flat Reel Placement 7531-26’ (RH)

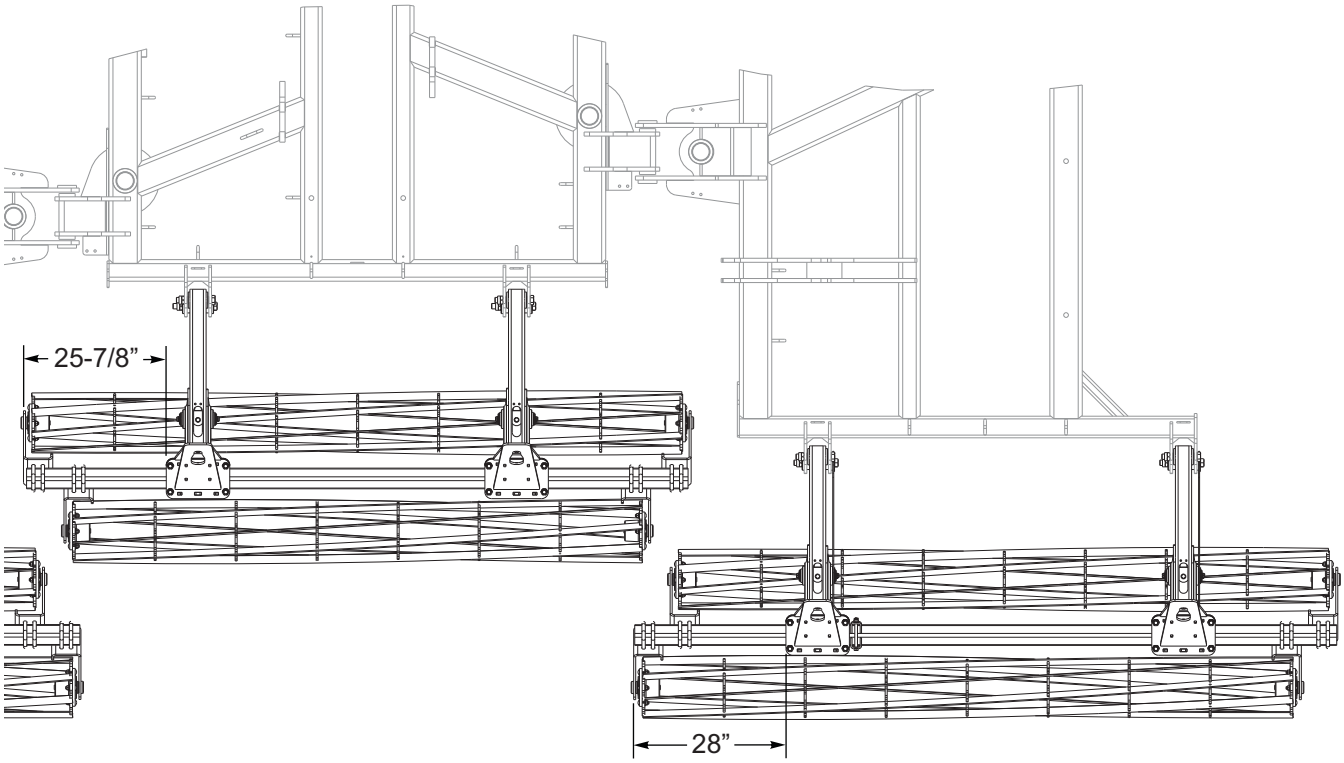


Double Flat Reel
Assembly 120”/120”

Double Flat Reel
Assembly 105”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-30: Double Flat Reel Placement 7531-29’ (LH)

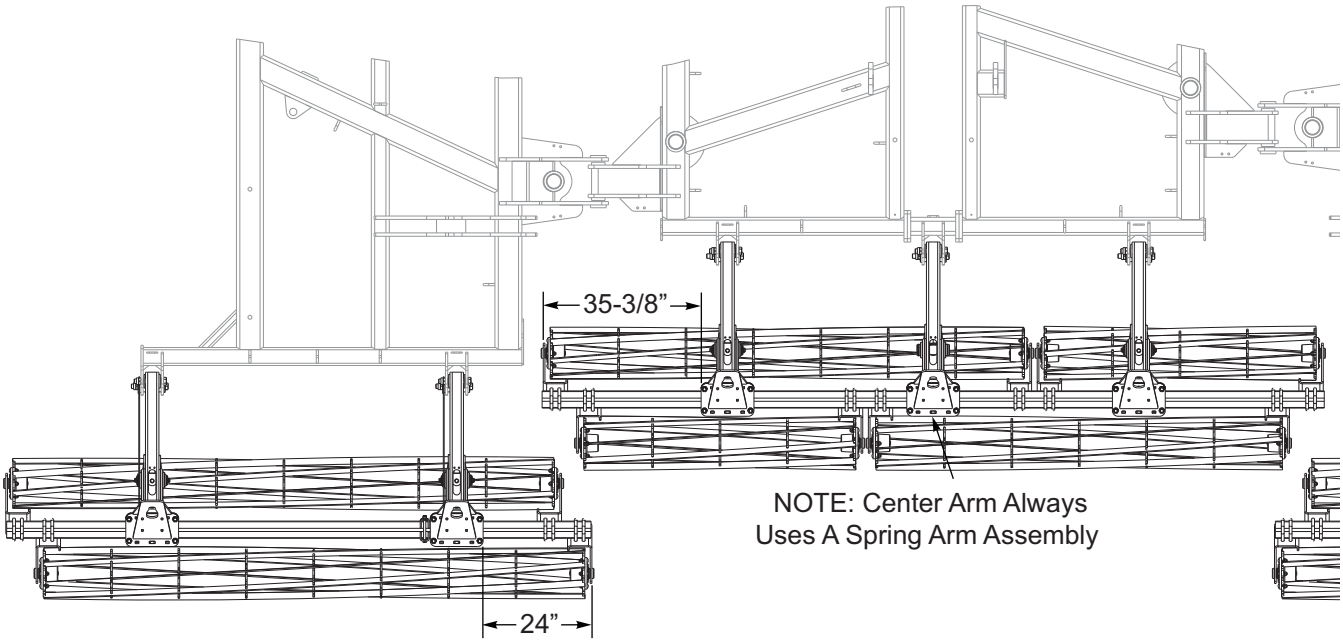


Double Flat Reel
Assembly 105”/120”

Double Flat Reel
Assembly 120”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-31: Double Flat Reel Placement 7531-29’ (RH)

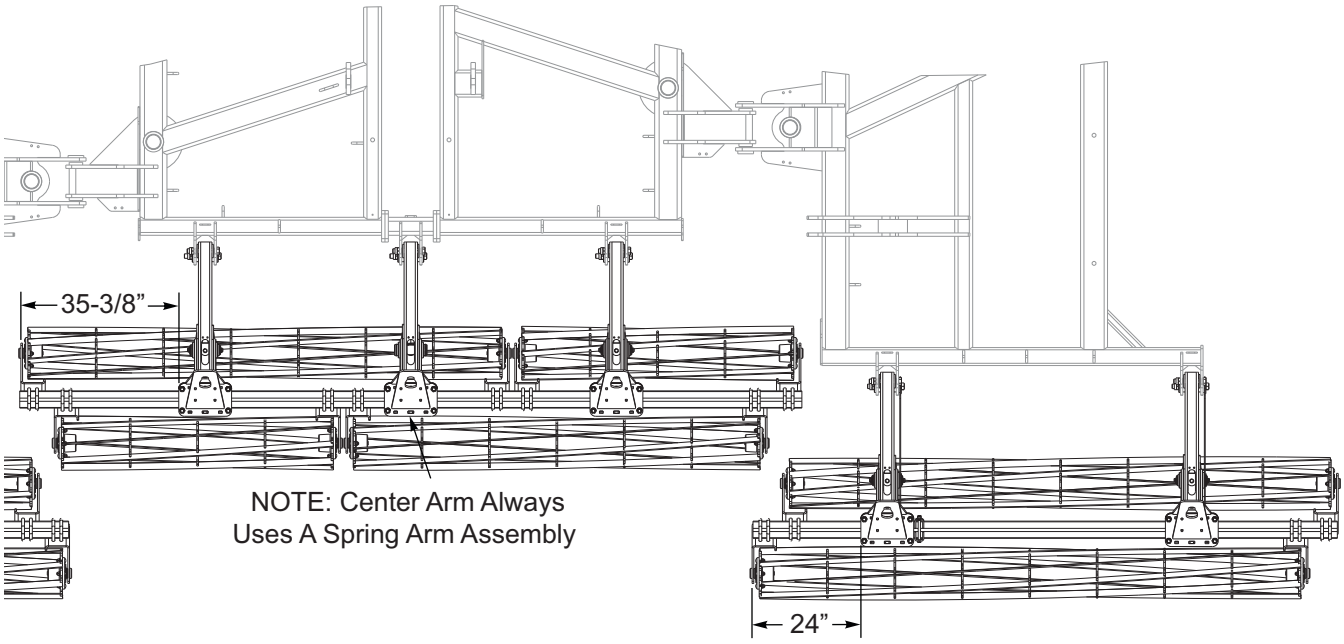


Double Flat Reel
Assembly 120”/120”

Double Flat Reel
Assembly 150”/165”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-32: Double Flat Reel Placement 7531-32’ (LH)

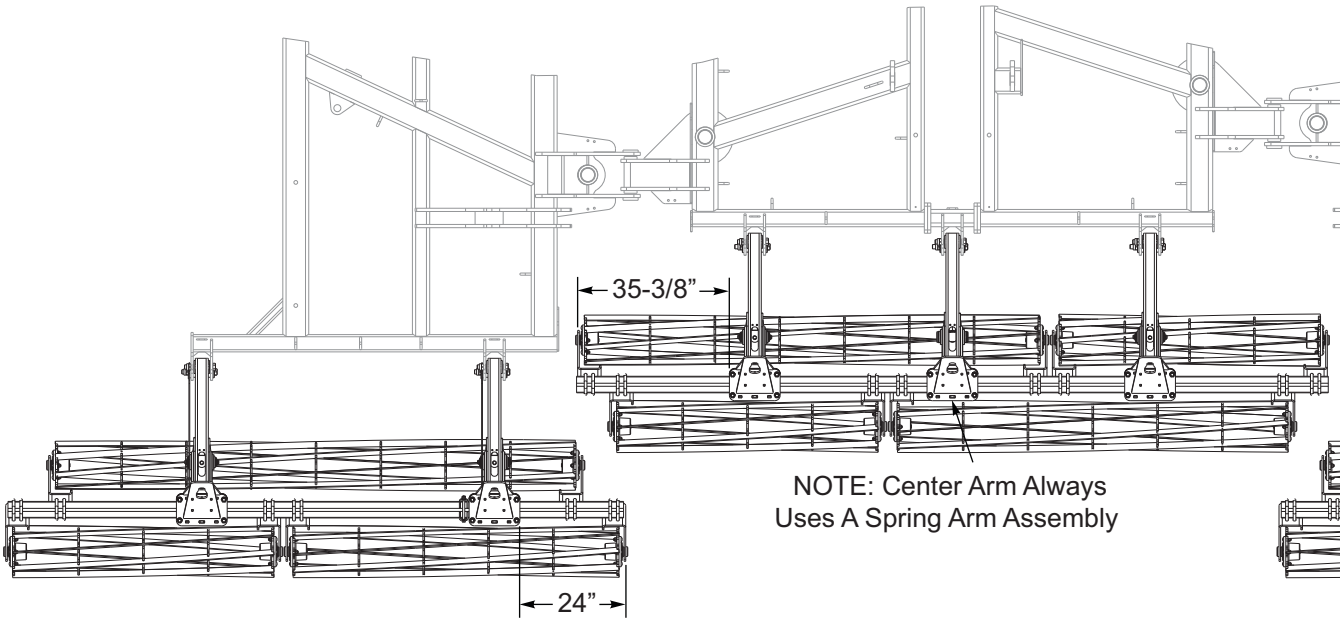


Double Flat Reel
Assembly 150”/165”

Double Flat Reel
Assembly 120”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-33: Double Flat Reel Placement 7531-32’ (RH)



Double Flat Reel
Assembly 120”/135”

Double Flat Reel
Assembly 150”/165”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-34: Double Flat Reel Placement 7531-35’ (LH)

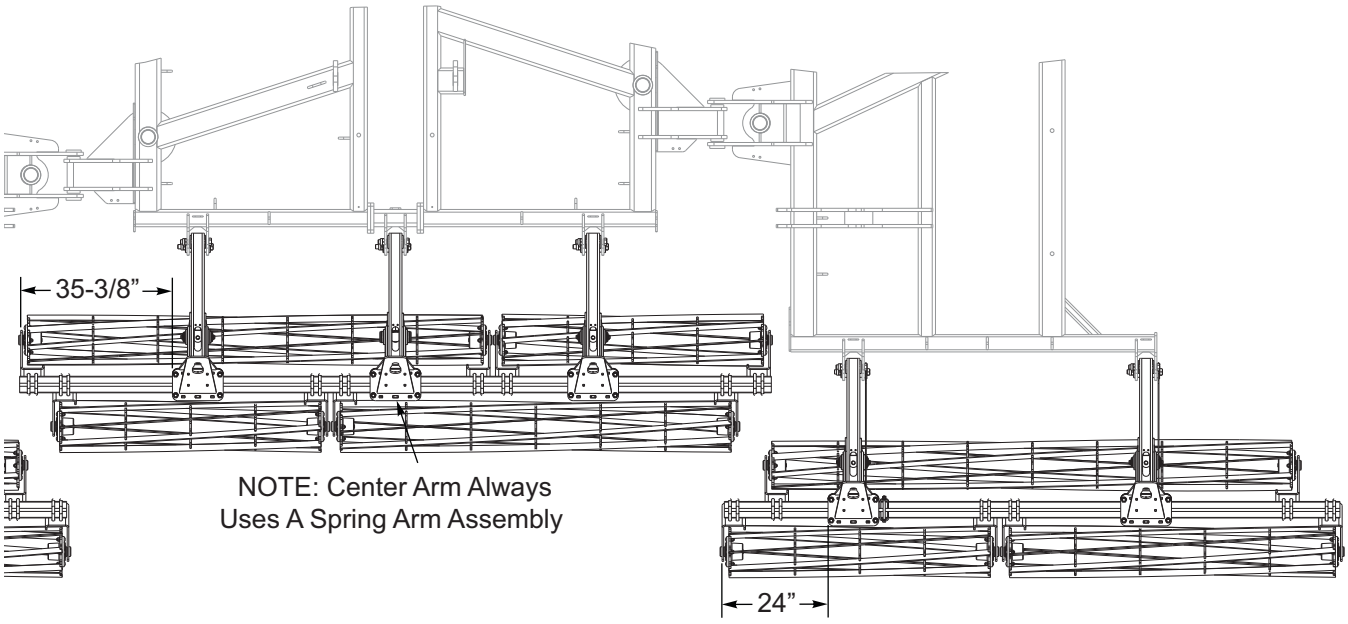
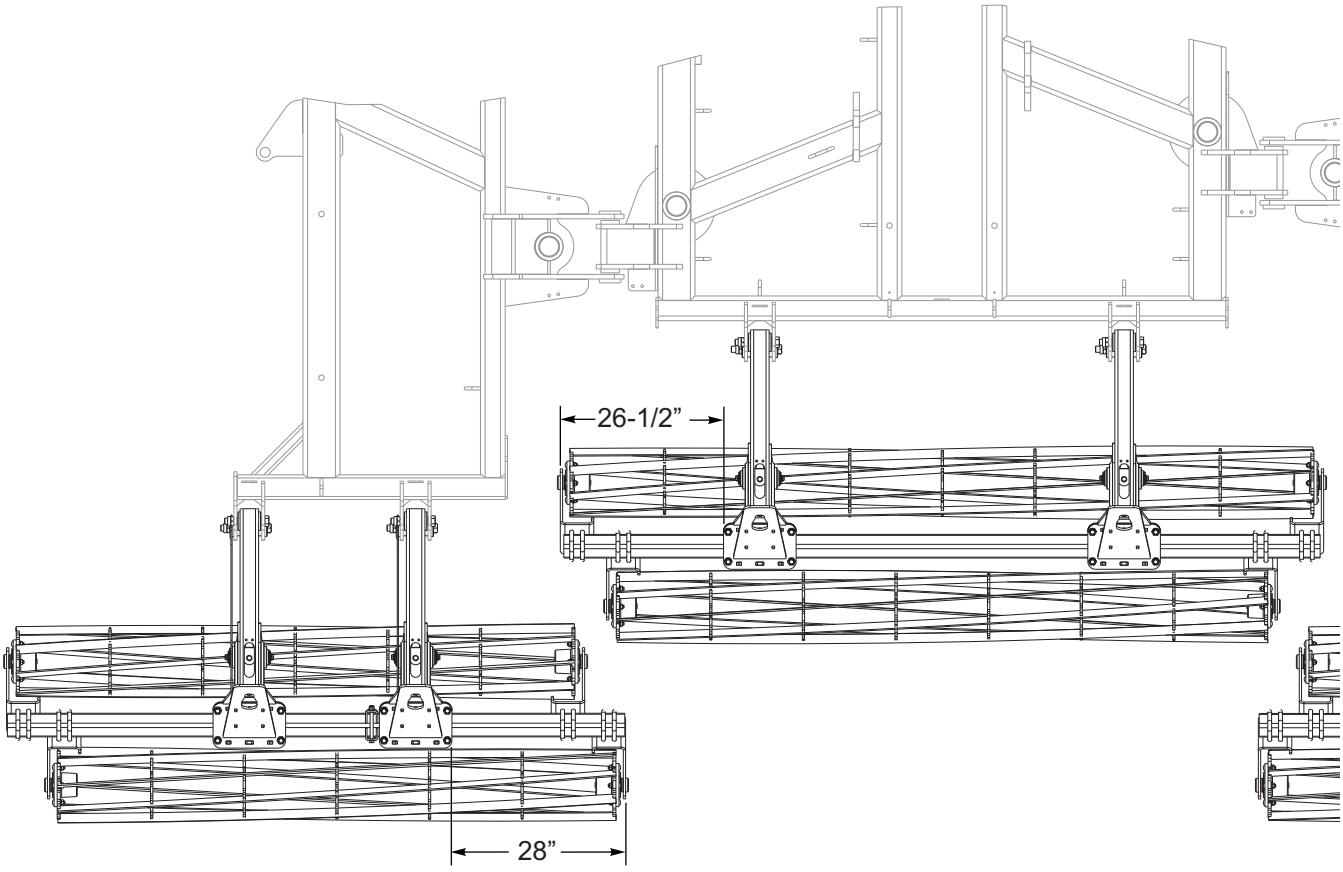


Figure 2-35: Double Flat Reel Placement 7531-35’ (RH)

Double Flat/RD Reel Placement

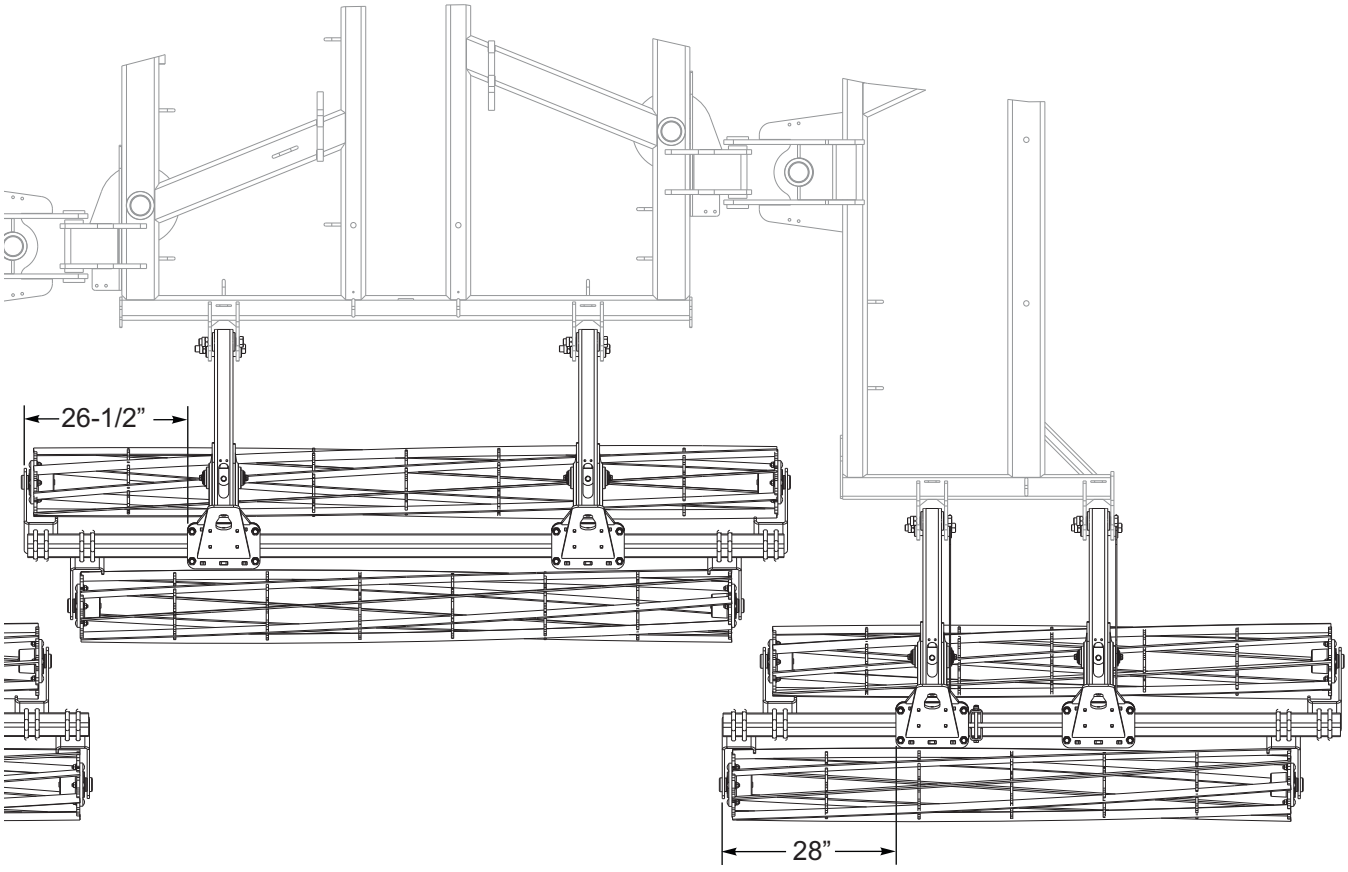


Double Flat Reel
Assembly 90”/90”

Double Flat Reel
Assembly 105”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-36: Double Flat/RD Reel Placement 7531-23’ (LH)

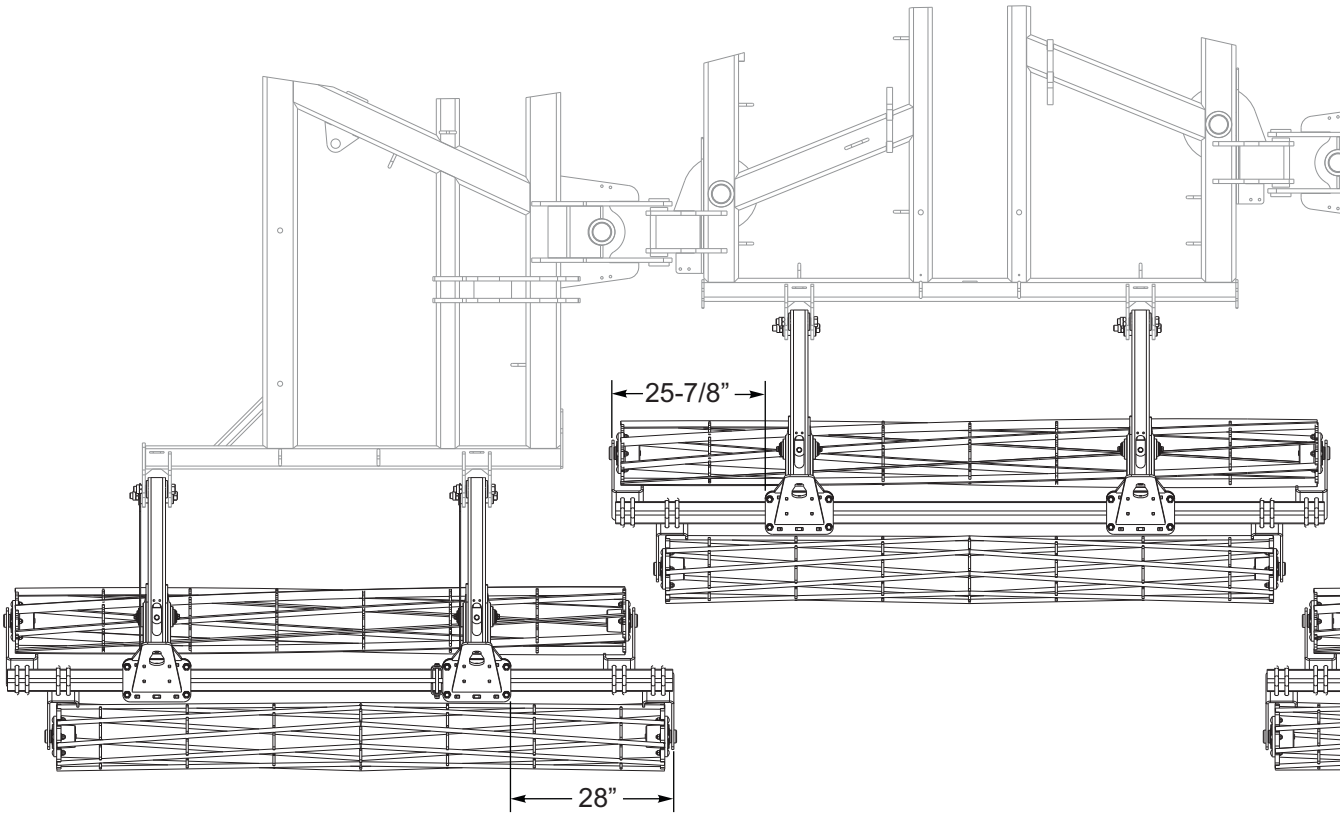


Double Flat Reel
Assembly 105”/120”

Double Flat Reel
Assembly 90”/90”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-37: Double Flat/RD Reel Placement 7531-23’ (RH)

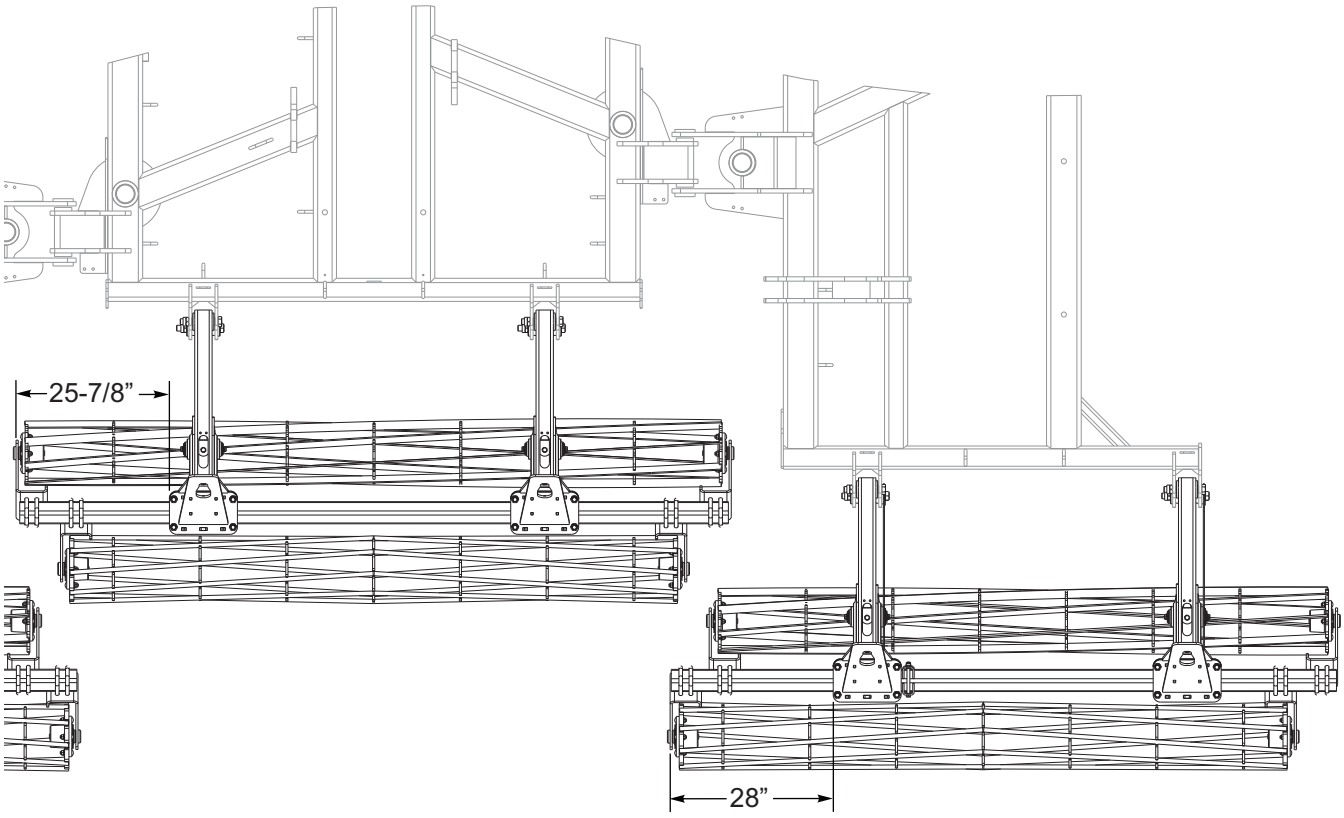


Double Flat/RD Reel
Assembly 105”/105”

Double Flat/RD Reel
Assembly 105”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-38: Double Flat/RD Reel Placement 7531-26’ (LH)

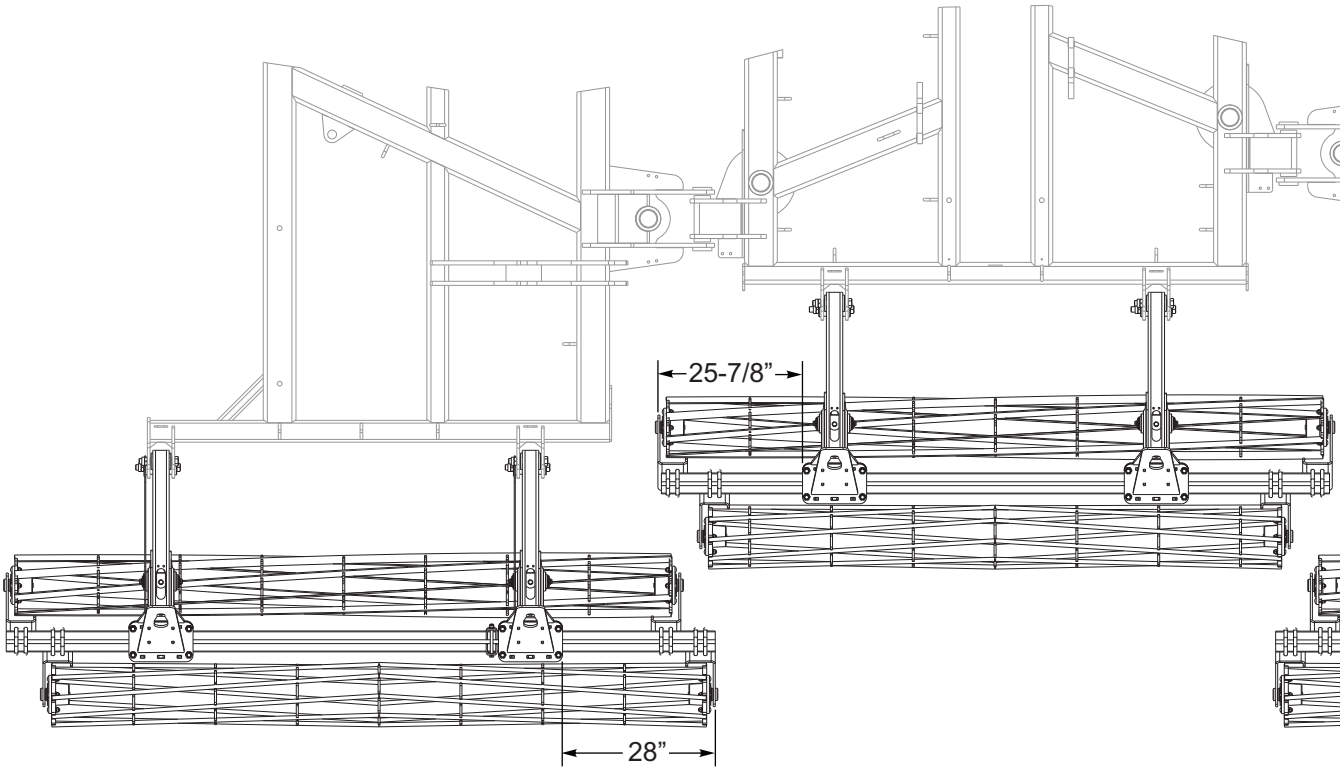


Double Flat/RD Reel
Assembly 105”/120”

Double Flat/RD Reel
Assembly 105”/105”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-39: Double Flat/RD Reel Placement 7531-26’ (RH)

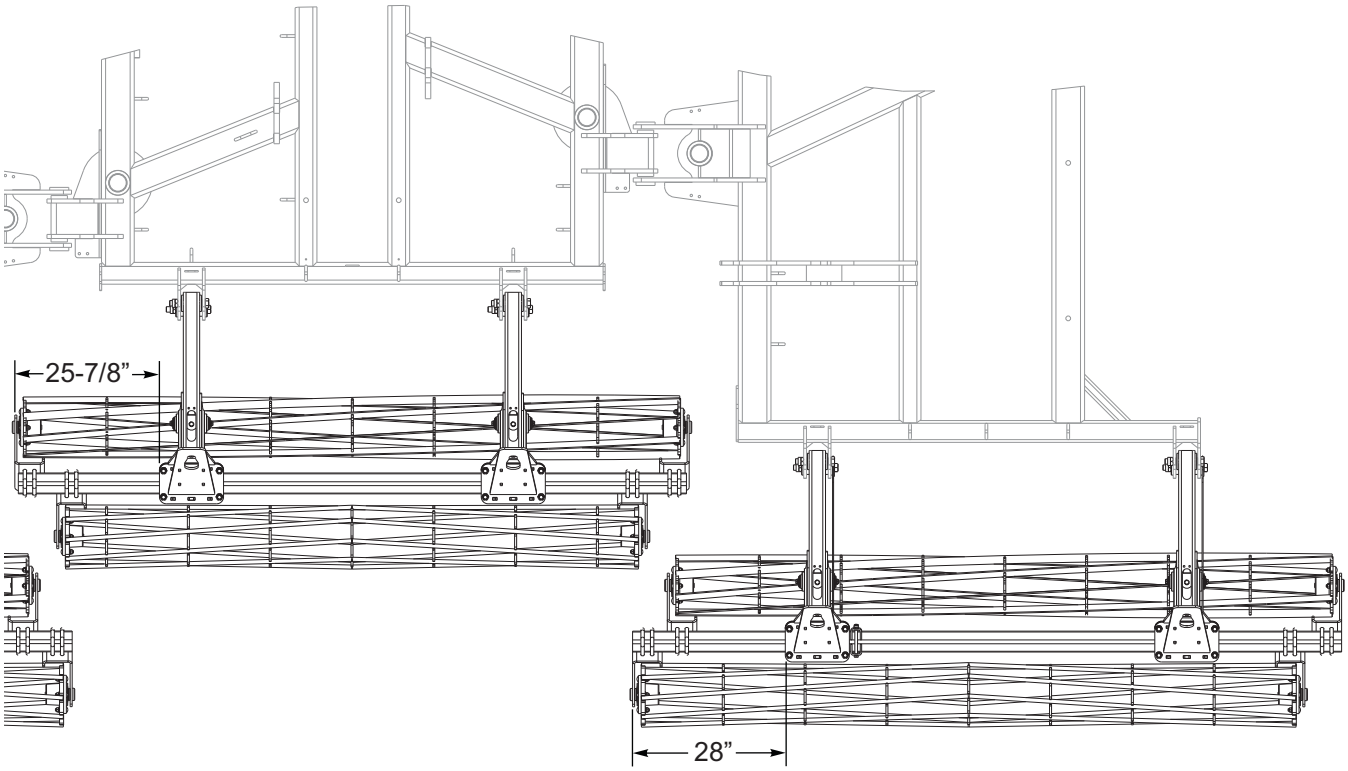


Double Flat/RD Reel
Assembly 105”/105”

Double Flat/RD Reel
Assembly 105”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-40: Double Flat/RD Reel Placement 7531-29’ (LH)

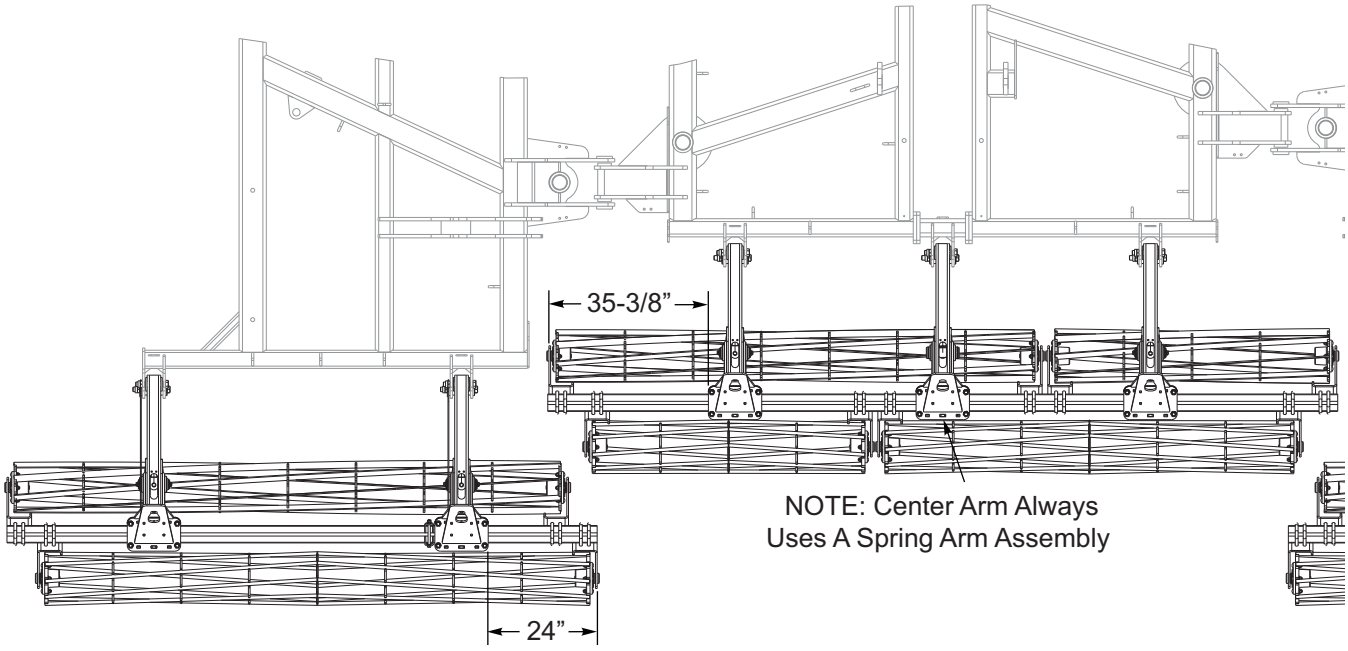


Double Flat/RD Reel
Assembly 105”/120”

Double Flat/RD Reel
Assembly 105”/105”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-41: Double Flat/RD Reel Placement 7531-29’ (RH)

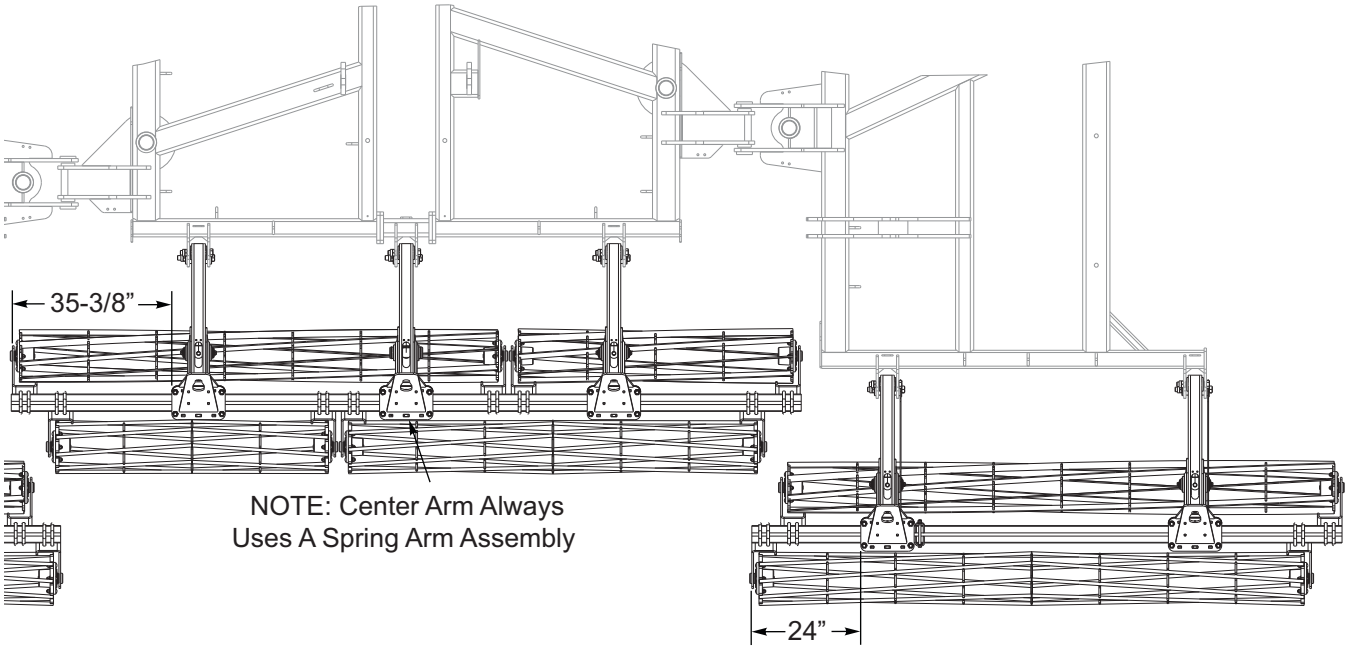


Double Flat/RD Reel
Assembly 120”/120”

Double Flat/RD Reel
Assembly 150”/165”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-42: Double Flat/RD Reel Placement 7531-32’ (LH)

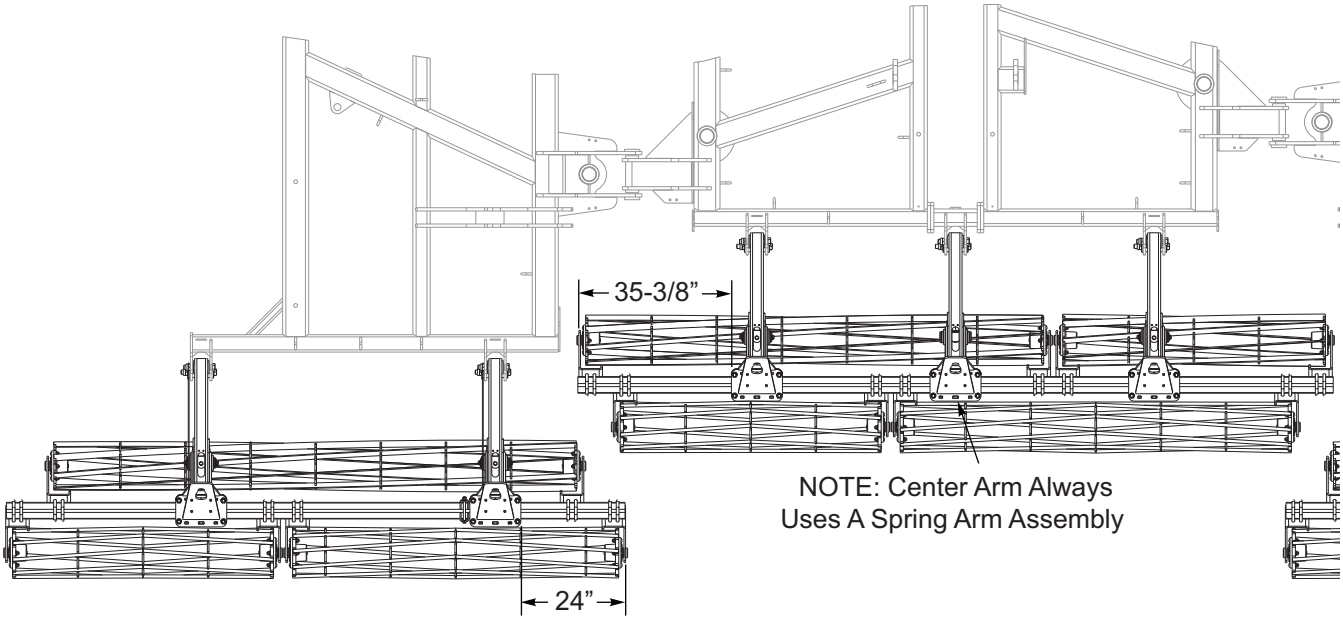


Double Flat/RD Reel
Assembly 150”/165”

Double Flat/RD Reel
Assembly 120”/120”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-43: Double Flat/RD Reel Placement 7531-32’ (RH)

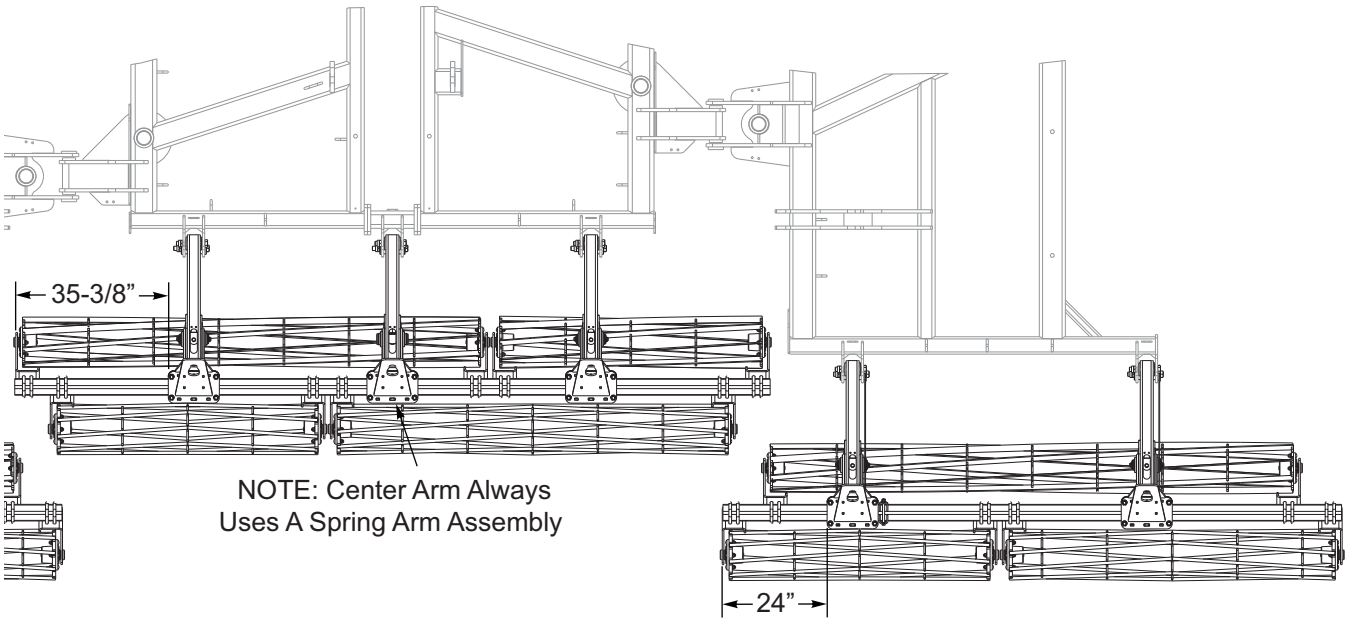


Double Flat/RD Reel
Assembly 120”/135”

Double Flat/RD Reel
Assembly 150”/165”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-44: Double Flat/RD Reel Placement 7531-35’ (LH)



Double Flat/RD Reel
Assembly 150”/165”

Double Flat/RD Reel
Assembly 120”/135”

NOTE: Reel Assemblies Are Same
For Spring Or Hydraulic Arm Assemblies.
See Reel Installation Section In Assembly
Instructions Section For Arm Assembly.

Figure 2-45: Double Flat/RD Reel Placement 7531-35’ (RH)

Table provided for general use.

NOTES:

Chapter 3

Assembly Instructions

It is very important that your new 7531 VT be properly assembled, adjusted and lubricated before use. Illustrations to assist with the assembly process are provided in *(See "Model Specifications" on page 2-6.)*. 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" on page 2-4.)*.

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.

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.

7531 VT Frame Assembly

IMPORTANT

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

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.

1. Models 7531-23'-29', place the center frame assembly on stands approximately 36" high, ***See Figure 3-1*.**

NOTE

Model 7531-23' the rear wing fold tower is not used.

2. Models 7531-32'-35', position the RT & LT center frame assemblies on stands approximately 36" high, ***See Figure 3-2*.**
3. Align holes of rear frame mount in position shown, with holes on rear plates of RT & LT center frame assemblies, secure with 3/4-16 unf x 2-1/2 bolts and 3/4-16 unf lock nuts.

NOTE

4. Do not tighten any bolts until all components and bolts are installed.

5. Install the frame mount top plate on top & front side of center frame, frame mount plate bottom to bottom side and frame mount plate front to rear side of front tube of RT & LT center frame assemblies, RT & LT 20 mph decal assemblies to outer holes, secure with 7/8 x 9, 7/8 x 8-1/2 bolts, 7/8 flat washers and 7/8 lock nuts.
6. Install the bearing cap weldment to bottom side of RT center frame assembly using 3/4 x 2 bolts and 3/4 lock nuts.
7. Attach the radius rod assembly between the right and left center lift, plates with 1 x 4 bolts and 1 lock nuts.

NOTE

Be sure center lift cylinders are both fully retracted before installing radius rod. Securely tighten the 1/2 x 3-1/2 bolts going through radius mount plates.

8. Attach the wing fold stabilizer assembly rear to the rear of center frame assemblies. In top set of holes install the tail light mounts, secure with 3/4 x 6-1/2 bolts, 3/4 N flat washers and 3/4 lock nuts.
9. Attach the wing fold stabilizer assembly front to the middle of center frame assemblies. In outside set of holes on center frame assembly RT install the hose mount, secure with 3/4 x 6-1/2 bolts, 3/4 N flat washers and 3/4 lock nuts. Install in all other holes the 3/4 x 6-1/2 bolts, 3/4 N flat washers and 3/4 lock nuts.
10. Install tire/wheel assembly to all 8 bolt hub/spindle assemblies with 5/8" lug nuts (Single Wheel), M22 hex wheel nut (Dual Wheels).

NOTE

Spacer ring (duals only) must remain between hub and inner dual. Do not place spacer ring between the dual tires.

11. Torque single wheels to 85-100 ft./lbs, dual wheels to 450-500 Ft/Lbs.

NOTE

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

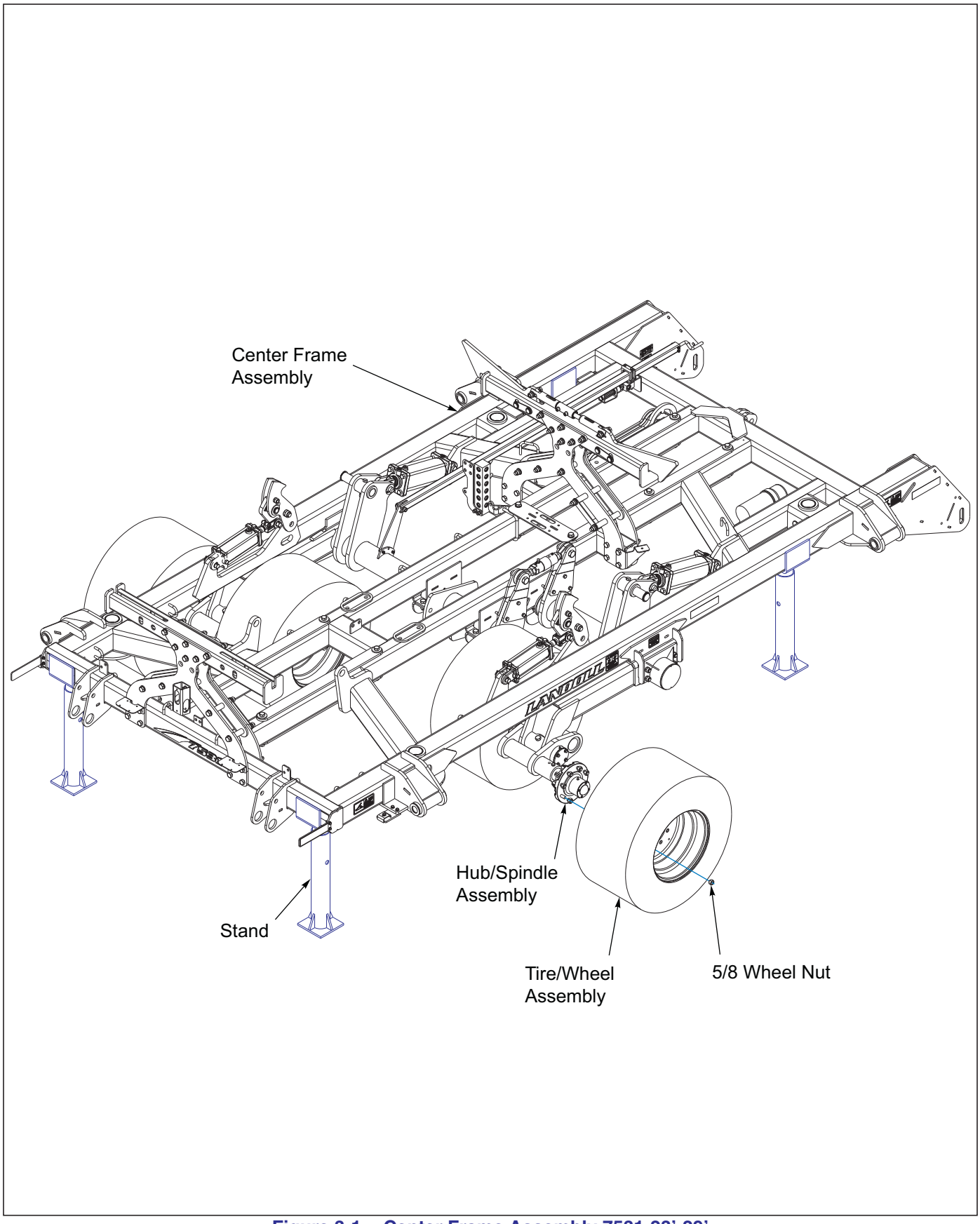


Figure 3-1: Center Frame Assembly 7531-23'-29'

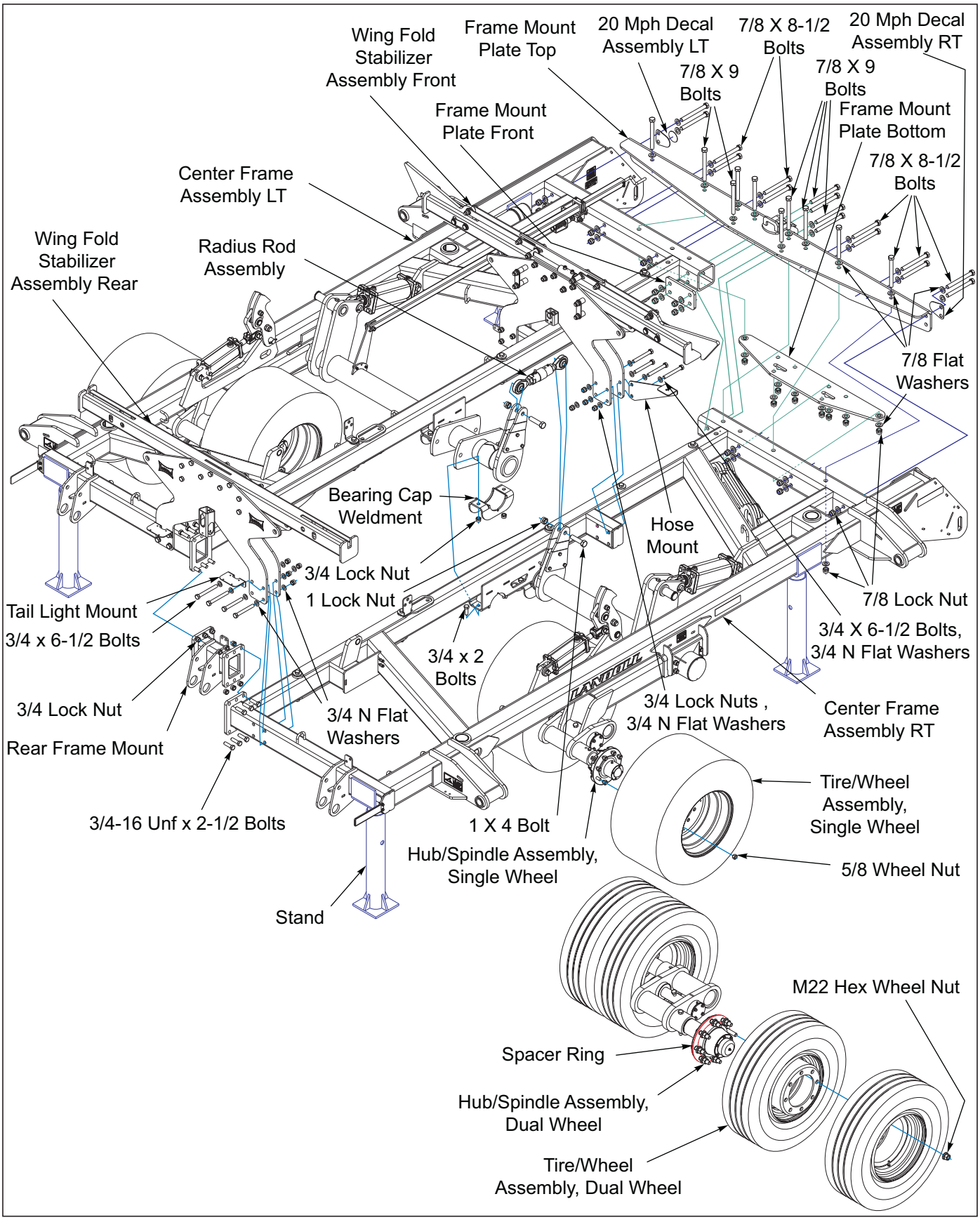


Figure 3-2: Center Frame Assembly 7531-32'-35'

Table provided for general use.

NOTES:

Hitch Assembly

IMPORTANT

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

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.

1. Attach the hitch assembly, ***See Figure 3-4*** to the front of the center frame using 1-1/4-7 x 10 bolts, 1-1/4 flat washers, hitch mount plates and1-1/4 lock nuts.

NOTE

The hitch may be assembled in the upper or lower position depending on matching tractor drawbar height. ***See "Hitch Adjustment" on page 4-10 for proper adjustment.***

2. Move the 7000/8000 LB jack to the forward mounting tube and rotate to parking position to support the front of the hitch.
3. Insert a 3/4 x 7 bolt 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.
4. Slide the hose holder bracket over the bolt and secure with another 3/4 prevailing flange nut.
5. Install two, 3/8 x 3-1/2 all-thread bolt in the front of the hose holder bracket and secure with a 3/8 hex nut.
6. Slide the hose holder clamps over the 3/8 X 3-1/2 bolts and loosely start the wing nuts on top of the clamp. Hydraulic hoses will be routed through the clamp after assembly.
7. Install four, hose clamps on top of welded plate of hitch assembly, loosely start a 3/8 x 3 bolts, 3/8 flat washers and 3/8 lock nuts. Hydraulic hoses will be routed through the clamp after assembly.
8. Install the hose holder clamp over the two, holes on rear plate as shown, ***See Figure 3-4*** using, 1/2 x 11 bolts (7531-23'-29'), 1/2 x 12 bolts (7531-32'-35') and 1/2 lock nuts.
9. Install a double pilot check valve on top and bottom side of hose holder clamp with port orientation as shown, ***See Figure 3-4***, with 3/8 x 3-1/2 bolts and 3/8 lock nuts.

Spare Tire Assembly (Optional)

1. Attach spare tire assembly to rear of hitch as shown ***See Figure 3-3***.

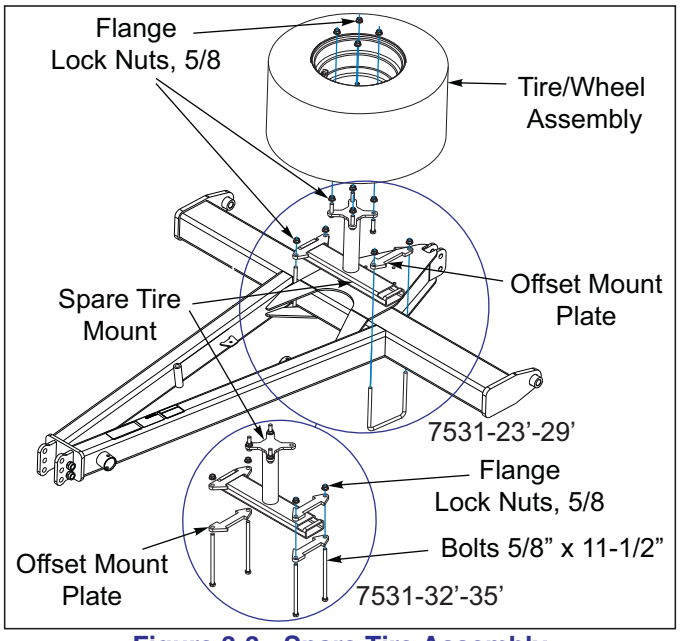


Figure 3-3: Spare Tire Assembly

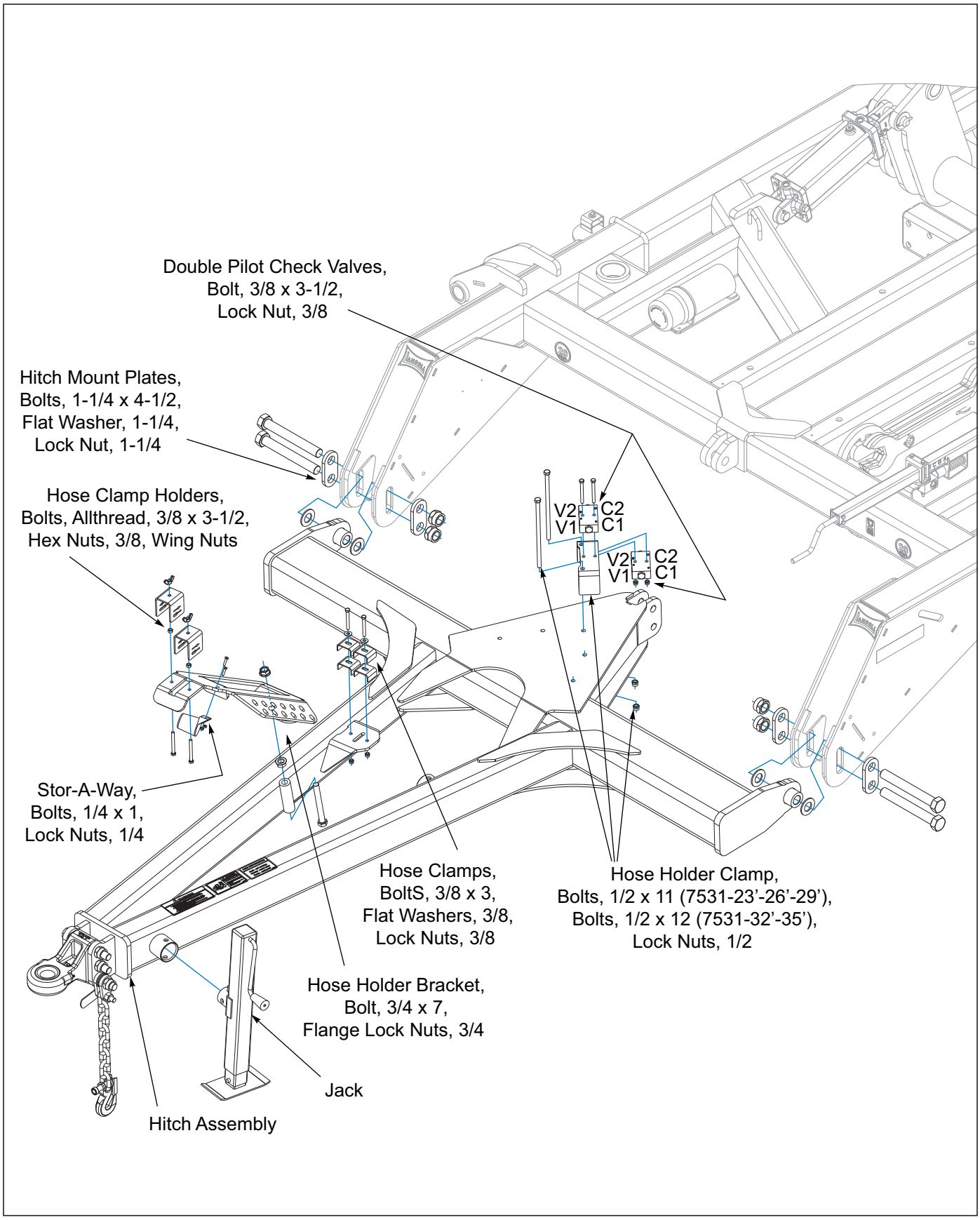


Figure 3-4: Hitch Assembly

Leveler Assembly

1. Be sure the 1-1/4 OD x 1 ID x 1 and 1-1/4 OD x 1 ID x3/41 bushings are in the leveler l link ***See Figure 3-5*****.**
2. Attach the leveler L link to the front mount of the center frame with a 1-1/4 x 6 bolt and 1-1/4 lock nut.
3. Connect the bottom end of the leveler link to the rear, lower mounting holes of the hitch using a 1 x 5 bolt and 1 lock nut.
4. Connect front of leveler l plate to lower link plate using 1-1/4 x 5 bolt, 2” thrust washers and 1-1/4 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 “Hitch Adjustment” on page 4-10.) for proper adjustment.

5. Slide leveler cross cylinder/w zerk over front end of the 71” leveler tube weldment untill 2 holes are through plate ***See Figure 3-5***. Slide the 3-1/2 x 6 cylinder onto front end of 71” leveler tube weldment untill the 2 holes in cylinder are aligned with 2 holes in 71” leveler tube weldment and slide the 5/8 x 2-3/8 pins through aligned holes. Slide leveler cross cylinder assembly back through until plates on two cylinders are aligned and secure with1/2 x 2 bolts and 1/2 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 1 x 4-1/2 bolts and 1 lock nut.
8. The grease zerk should be pointing up and the preset distance should at 5” between the two nuts.

NOTE

*If the leveler assembly needs adjusted****, (See “Hydraulic Leveler Adjustment” on page 4-8.)*** *for proper adjustment.*

9. Attach level indicator as shown ***See Figure 3-5*****.**

NOTE

For leveler hydraulic installation ***See Figure 3-36*****.**

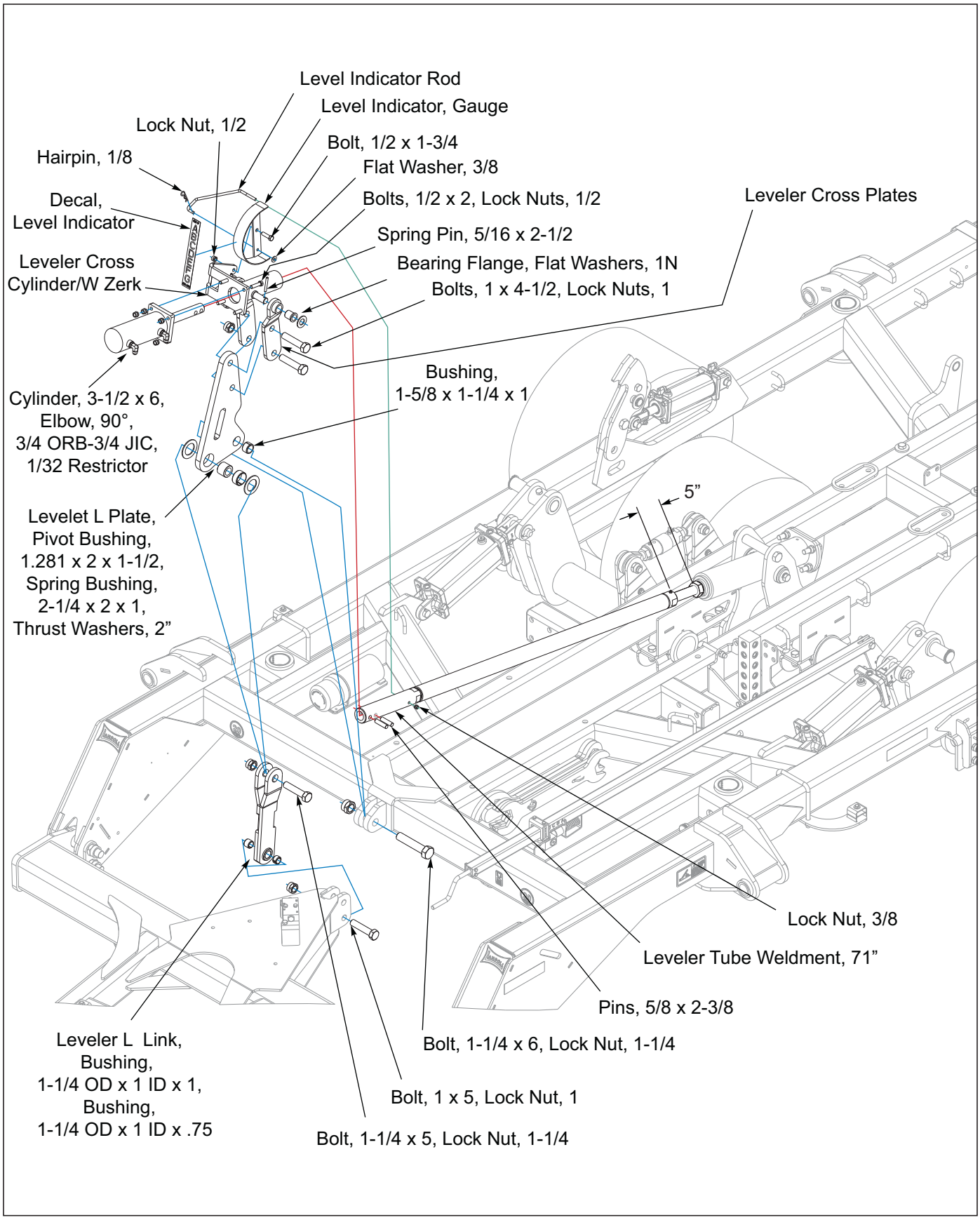


Figure 3-5: Leveler Assembly Installation

Wing Frame Assembly

1. Place the LT and RT wing frame assemblies on stands so the wings are level with the center frame *See Figure 3-6*
2. Be sure the 1-3/4 flange bearings are in center frame and a 1-3/4 thrust washer is installed, **one on each side of center frame hinge ear** and slide the 1-3/4 hinge pin through aligned holes.
3. Secure the 1-3/4 hinge pin with 5/8 x 3 cross pin, 1-3/4 slotted nut, thrust washer and 3/8 x 2-1/2 slotted spring pin.

NOTE

The outer thrust washer may be left off if not needed for proper roll pin alignment in the 1-3/4 slotted nut.

4. Attach the tire/wheel assembly to all 8 bolt hub & spindle assemblies. Torque to 85 to 100 ft./lbs.

NOTE

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

5. Attach the gauge wheel assemblies to the wing frames using 1 x 6 hex head screws, gauge wheel spacer, 1 N flat washers and 1 lock nuts. Securely tighten the mounting screws to eliminate any slack and unnecessary wear.
6. Attach the base end of the fold cylinders to the front and rear fold tower assemblies with 1-1/4 x 7 pins, washers and roll pins provided *See Figure 3-6* Attach the rod end of fold cylinders to the center frame with 1-1/4 x 6-1/2 pins, 1-1/4 flat washers and 5/16 x 2-1/2 spring pins. The fold cylinders come with the fittings supplied already installed and should have a regular 90 degree fitting on the base end and a black 90 degree restricted fitting on the rod end. Install with fittings facing towards the center of machine.

NOTE

Rod ends of fold cylinders need to be left unassembled and propped up until fold hydraulic system is fully charged with oil to prevent machine damage when folding the first time See Figure 3-21.

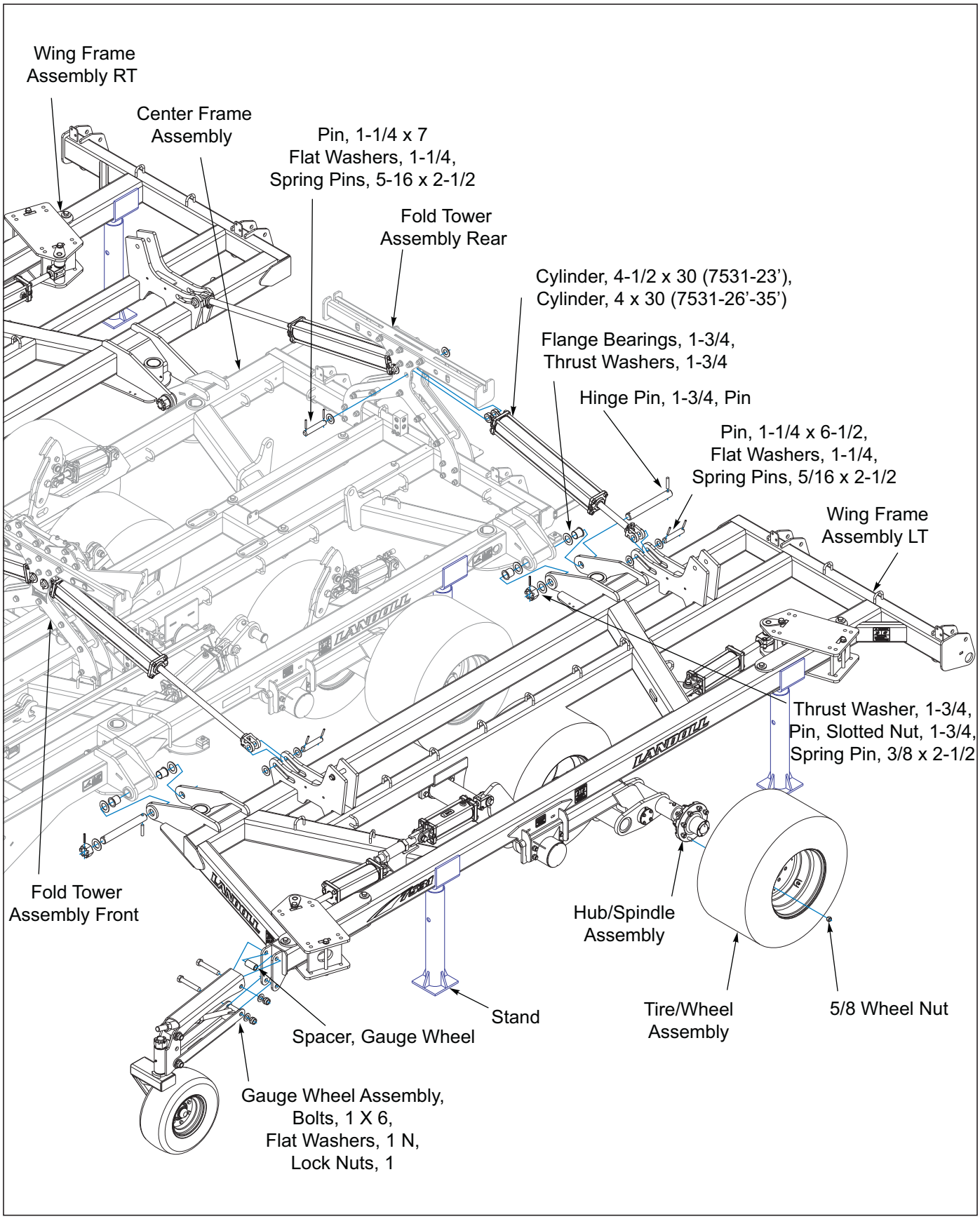


Figure 3-6: Wing Frame Assembly Installation 7531-23' - 35'

Hydraulic Installation

NOTE

***Refer to Figures 3-15- 3-20** for lift hydraulic diagrams for 7531-26', 7531-29' and 7531-32'/35' models.*

***Refer to Figures 3-21 - 3-26** for fold hydraulic diagrams for 7531-23'/26'/29' and 7531-32'/35' models.*

***Refer to Figures 3-40 - 3-51** for gang hydraulic diagrams for 7531-23'/26'/29'/32"/35' models.*

***Refer to Figures 3-36** for leveler hydraulic diagram for all models.*

1. Install the 24 and 8 port hydraulic manifolds at the center and rear of the center frame to the mounts welded to the frames ***See Figure 3-21 - 3-35*** using 1/2-13 x 3-1/2 or 1/2 x 4 bolts and 1/2 lock nuts. On the front manifold, the top two ports are for the fold system, the middle two are for the lift system, and the bottom two are for the adjustable gangs.

NOTE

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

Lift Fittings

1. Install 90° regular adapter fittings in both rod and base ends of all lift cylinders that are assembled to the frame - except the center frame base end fold fittings ***See Figure 3-15*** or ***See Figure 3-18***.

Fold Fittings

1. For **Models 7531-23'-29'**, remove the short 90° fitting in the base end of the front left cylinder and install a long 90° fitting. **Models 7531-32'-35'**, remove 4 fold cylinder base end fittings and replace with long 90° fittings that are supplied - the rod end should have dark colored restrictor fittings.

⚠ 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.

2. The lift transport lock cylinders require regular 90° fittings in both rod and base ends.
3. Models 7531-23'-29' wing fold lock cylinder install straight adapters. Models 7531-32'-35' wing fold lock cylinder install 90° fittings.

NOTE

Rod ends of fold cylinders need to be left unassembled and propped up until fold hydraulic system is fully charged with oil to prevent machine damage when folding the first time. When fold cylinders are charged attach the rod end of cylinders to wing frames using 1-1/4 x 6-1/2 pins, washers and roll pins See Figure 3-25.

Disc Gang Adjust Fittings

1. The disc gang angle cylinders ***See Figure 3-27*** **7531-23'**, ***See Figure 3-30*** **7531-26'-29' and** ***See Figure 3-33*** **7531-32'/35'**use the following fittings:

Models 7531-23'

- Right master on center frame - 90° fitting in base end and straight fitting in rod end.
- Left master on center frame - 90° fitting on both ends.
- RT/LT front wings - 45° fitting in base end and 90° in rod end.
- RT/LT rear wings - 90° fitting in base end and 90° fitting with 1/16 restrictor in rod end.

Models 7531-26'/29'

- Right master on center frame - 90° fitting in base end and straight fitting in rod end.
- Left master on center frame - 90° fitting on both ends.
- RT/LT front wings - 90° fitting in base end and 90° in rod end.
- RT/LT rear wings - straight adapter in base end and 90° fitting with 1/16 restrictor in rod end.

Models 7531-32'/35'

- Right and left master on center frame - 90° fitting in both ends.
- RT/LT front wings - 90° fitting in base end and 90° in rod end.
- RT/LT rear wings - straight adapter in base end and 90° fitting with 1/16 restrictor in rod end.

2. At the rear of the hitch ***See Figure 3-7*** 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 3-43*** or gang hydraulics **lower valve,** ***See Figure 3-36*** **7531-23'/26'/29'/32'/35'),** just so they are facing the correct direction and hooked to the cylinder or the tractor correctly.

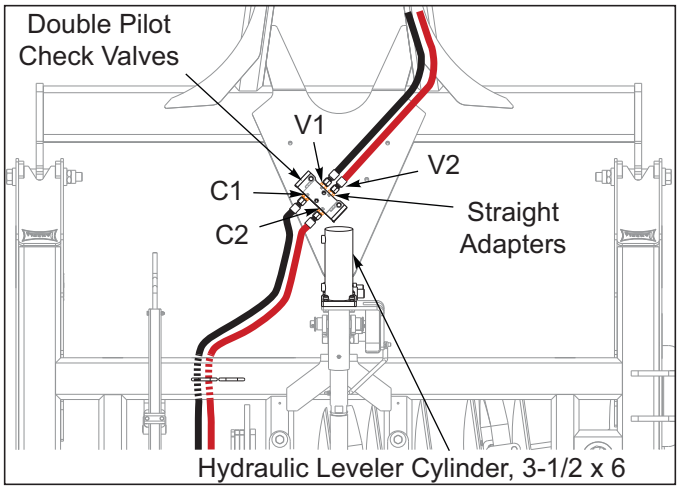


Figure 3-7: Check Valve Placement

3. Models 7531-23'-29' install the 24 manifold/bulkhead mount in position shown ***See Figure 3-8***, using 5/8 x 6-11/16 x 5-1/2 u-bolts and 5/8 lock nuts. Attach the 24 port manifold and bulkhead mount with 1/2 x 4 bolts and 1/2 lock nuts.

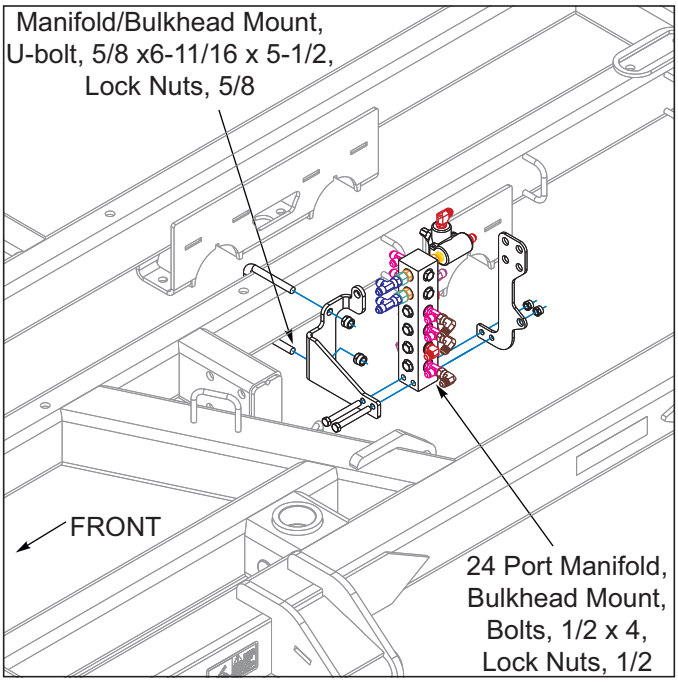


Figure 3-8: 24 Port Manifold 7531-23'-29'

4. Models 7531-32'-35' install the 24 port manifold, bulkhead mount in position shown, ***See Figure 3-9***, using 1/2 x 4 bolts and 1/2 lock nuts.

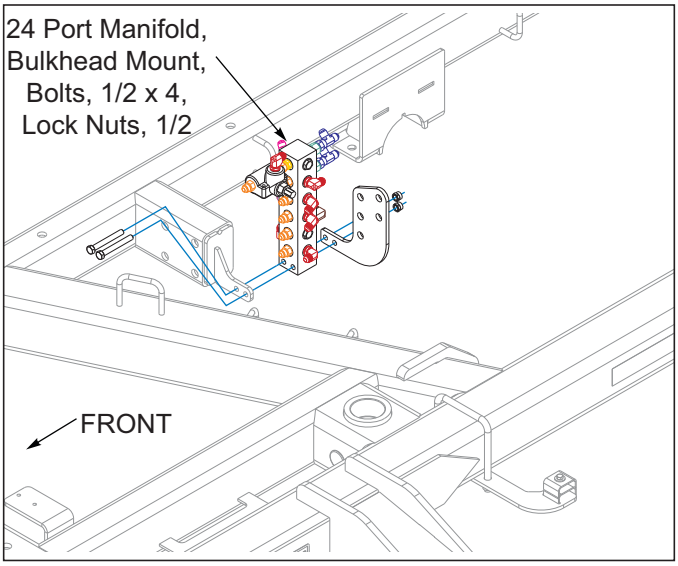


Figure 3-9: 24Port Manifold 7531-32'-35'

5. Models 7531-26'-29' install the 8 port manifold, bulkhead mount in position shown, ***See Figure 3-10***, using 1/2 x 4 bolts and 1/2 lock nuts.

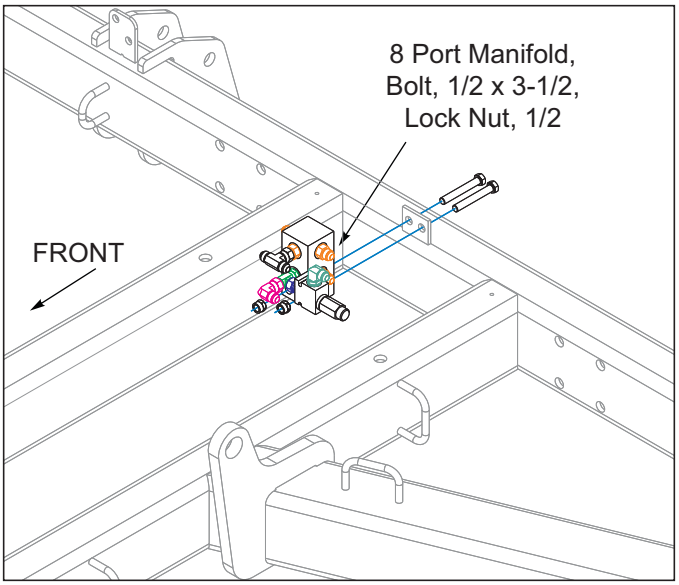


Figure 3-10: 8 Port Manifold 7531-26'-29'

6. Models 7531-32'-35' install the 8 port manifold, bulkhead mount in position shown, ***See Figure 3-11***, using 1/2 x 4 bolts and 1/2 lock nuts.

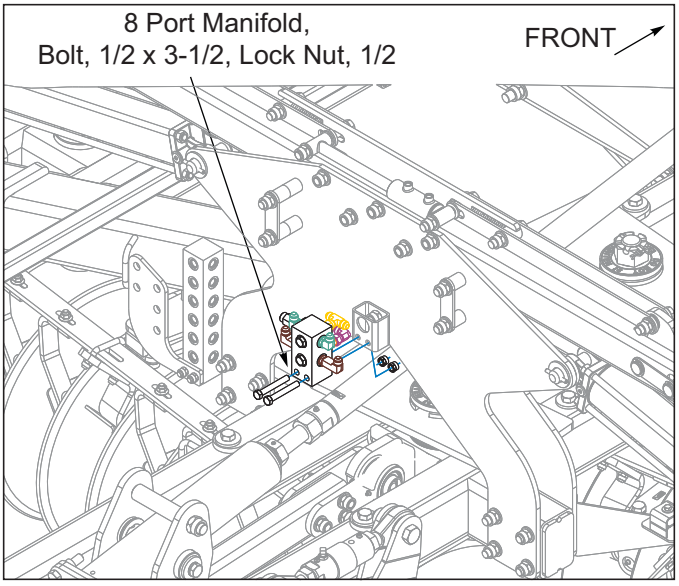


Figure 3-11: 8 Port Manifold 7531-32'-35'

7. Install the hose mount plate short to outside tube of center frame, both sides using 5/8 x 6-11/16 x 7-1/2 u-bolts and 5/8 lock nuts ***See Figure 3-12***. Attach hose clamps with 3/8 x 3 bolt, 3/8 flat washer and 3/8 lock nut.

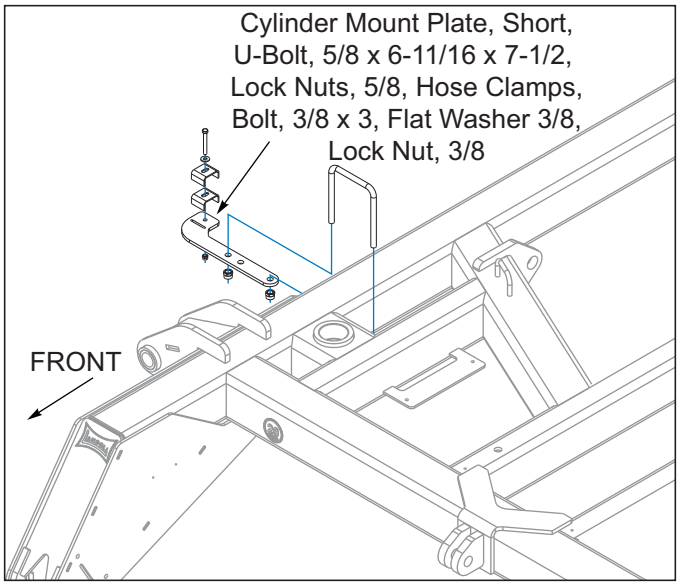


Figure 3-12: Hose Mount Plate 7531-23'-29'

8. Install the hose mount plate to outside tube of center frame, both sides using 5/8 x 6-11/16 x 7-1/2 u-bolts and 5/8 lock nuts ***See Figure 3-13***. Attach hose clamps with 3/8 x 3 bolt, 3/8 flat washer and 3/8 lock nut.

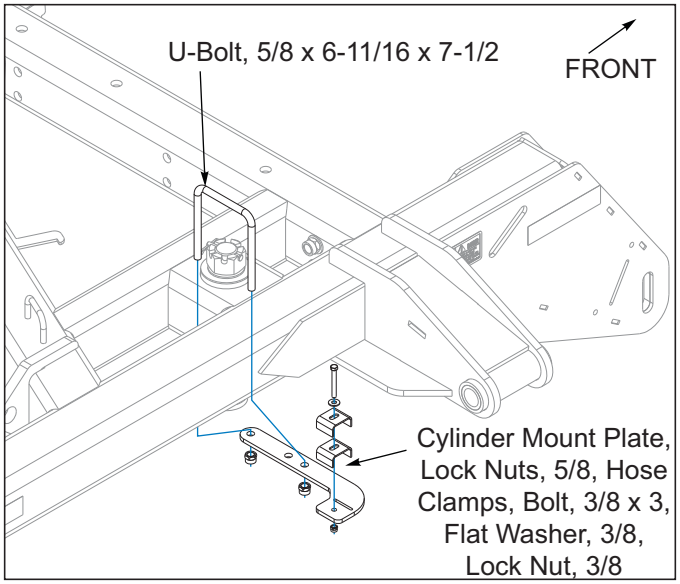


Figure 3-13: Hose Mount Plate 7531-32'-35'

7. The hose guide plate will be factory installed on models 23’-29’. Install (3) hose clamps to the front holes of hose guide plate with 3/8 x 3-1/2 bolts, 3/8 flat washers and 3/8 lock nuts ***See Figure 3-14***. Install (2) hose clamps to the rear holes of hose guide plate with 3/8 x 3bolts, 3/8 flat washers and 3/8 lock nuts. Do not tighten hose clamp bolts until hoses are run through hose clamps.

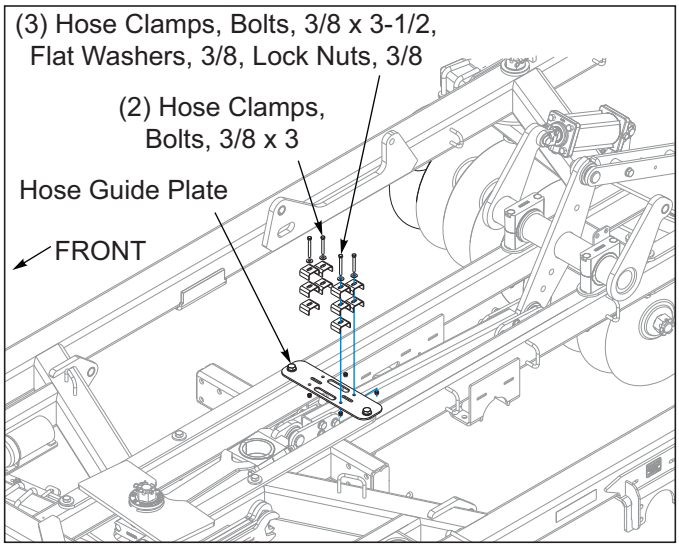


Figure 3-14: Hose Guide Plate 7531-23’-29’

8. Install Leveler cylinder hoses, couplers and black hose handles ***See Figure 3-36***.
9. Install adjustable disc gang cylinder hoses, couplers and red hose handles ***See Figure 3-46*** **through** ***See Figure 3-51***.
10. Install lift cylinder hoses, couplers and blue hose handles ***See Figure 3-15*** **through** ***See Figure 3-20***.
11. Install fold cylinder hoses, couplers and yellow hose handles ***See Figure 3-21*** **through** ***See Figure 3-26***.
12. 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 and fold cylinders will need to be extended and retracted several times to assure they are purged of air.
13. With the fold cylinders purged of air extend them and rotate the rod so the bolt that goes through the clevis end is on the top side. Attach the clevis to the wing fold slot with 1-1/4 x 6-1/2 long pins with flat washers and roll pins.
14. Double check all hoses and fittings for any leaks and correct as needed.

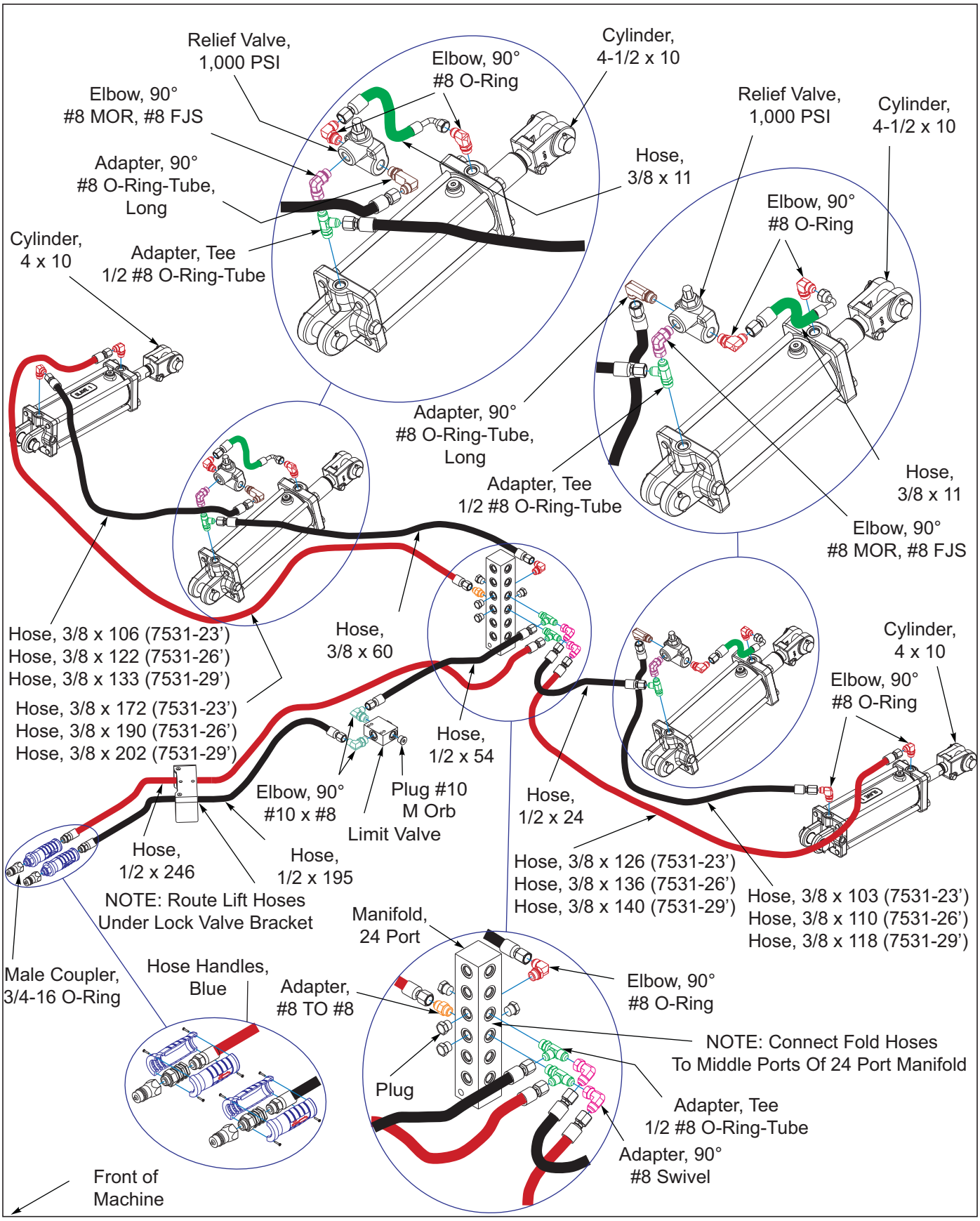


Figure 3-15: Lift Hydraulic Installation 7531-23'-29'

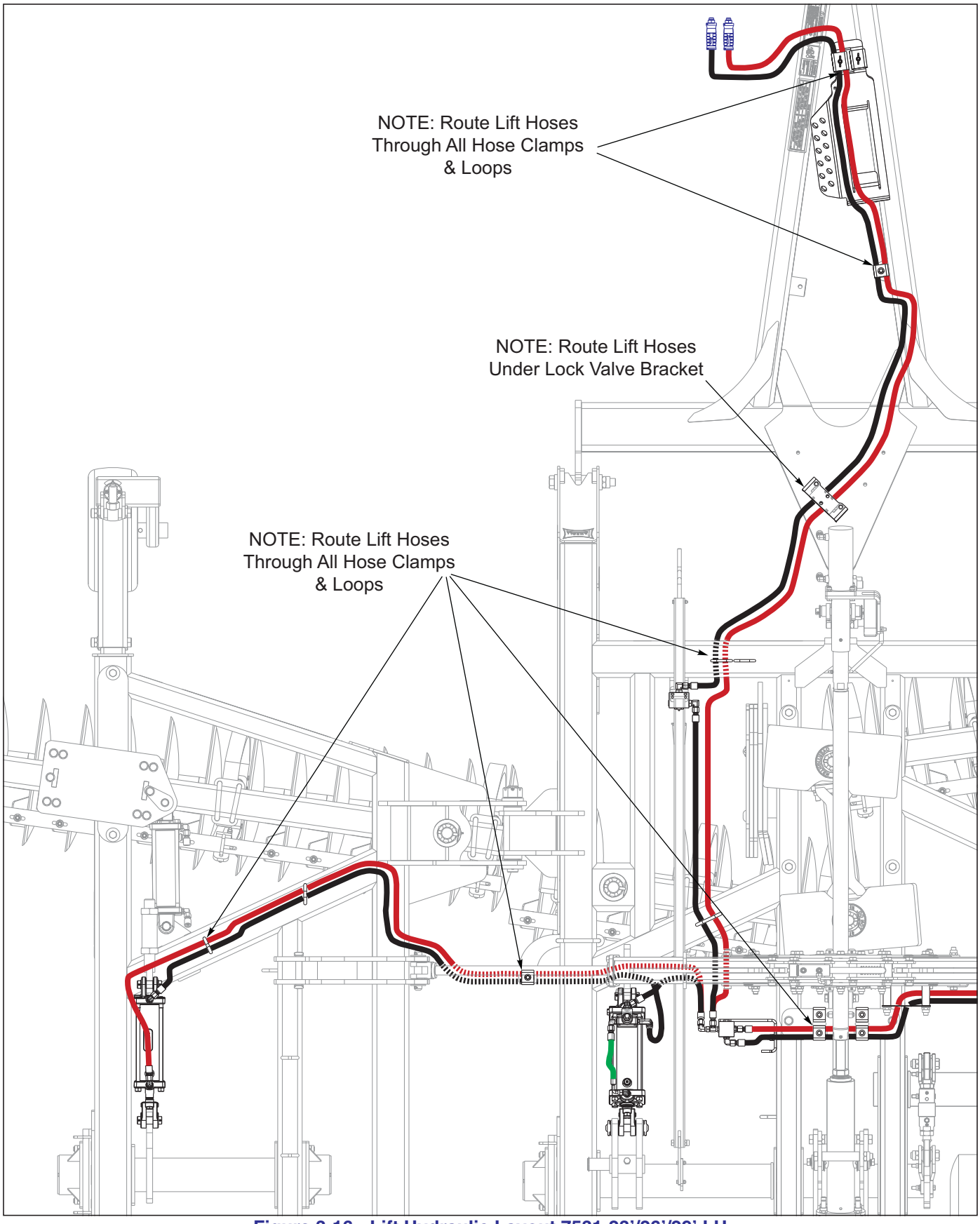


Figure 3-16: Lift Hydraulic Layout 7531-23'/26'/29' LH

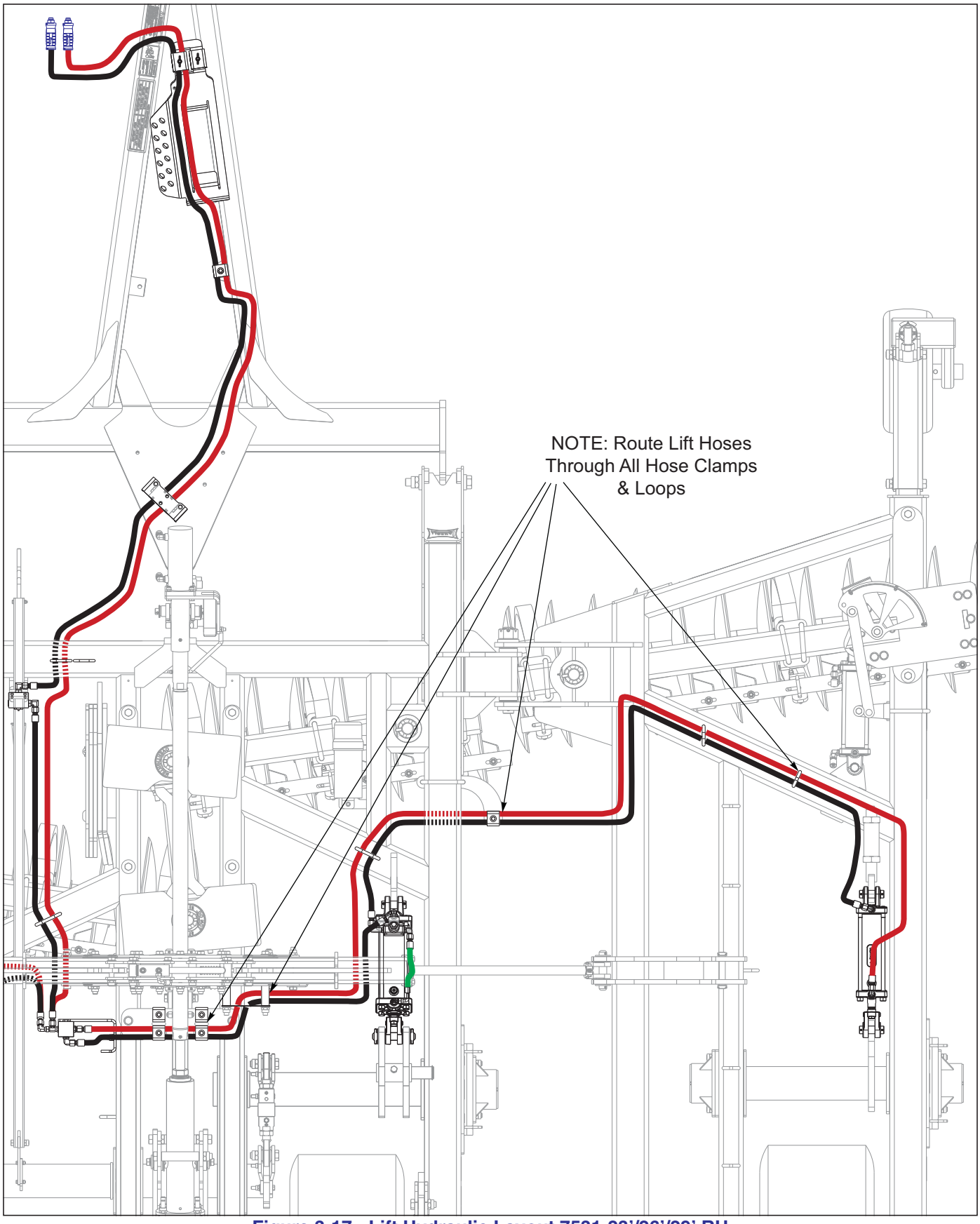


Figure 3-17: Lift Hydraulic Layout 7531-23'/26'/29' RH

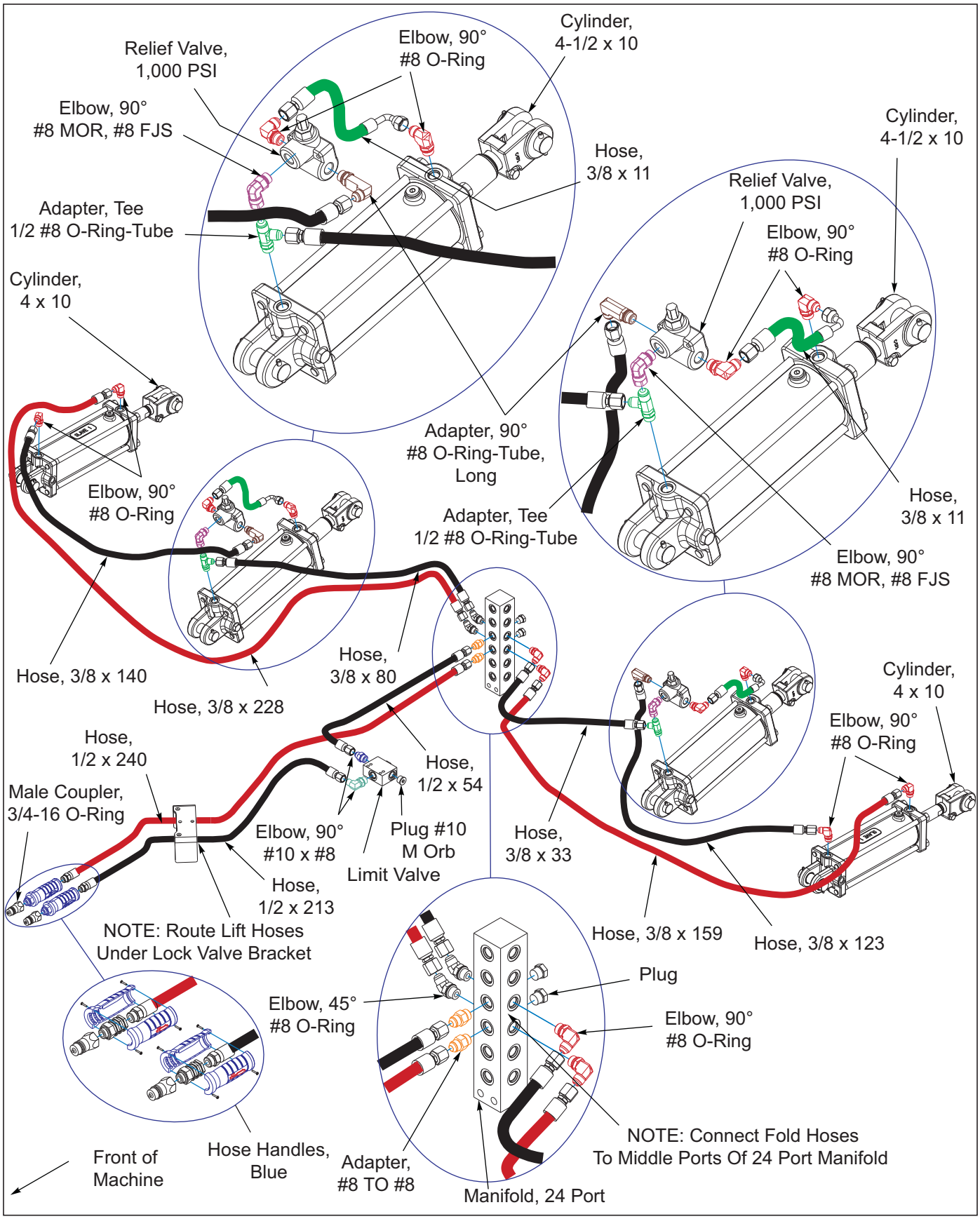


Figure 3-18: Lift Hydraulic Installation 7531-32'/35'

Table provided for general use.

NOTES:

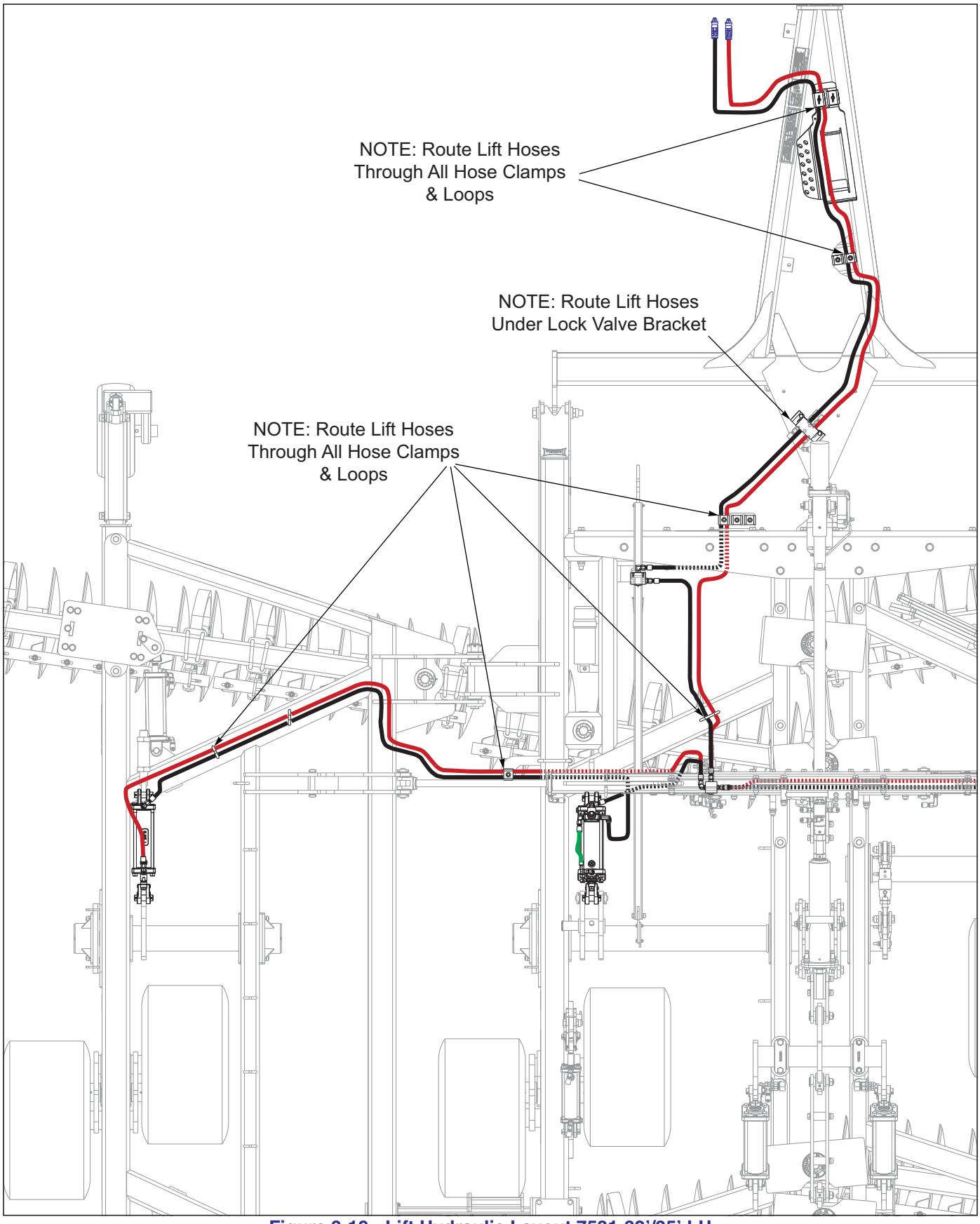


Figure 3-19: Lift Hydraulic Layout 7531-32'/35' LH

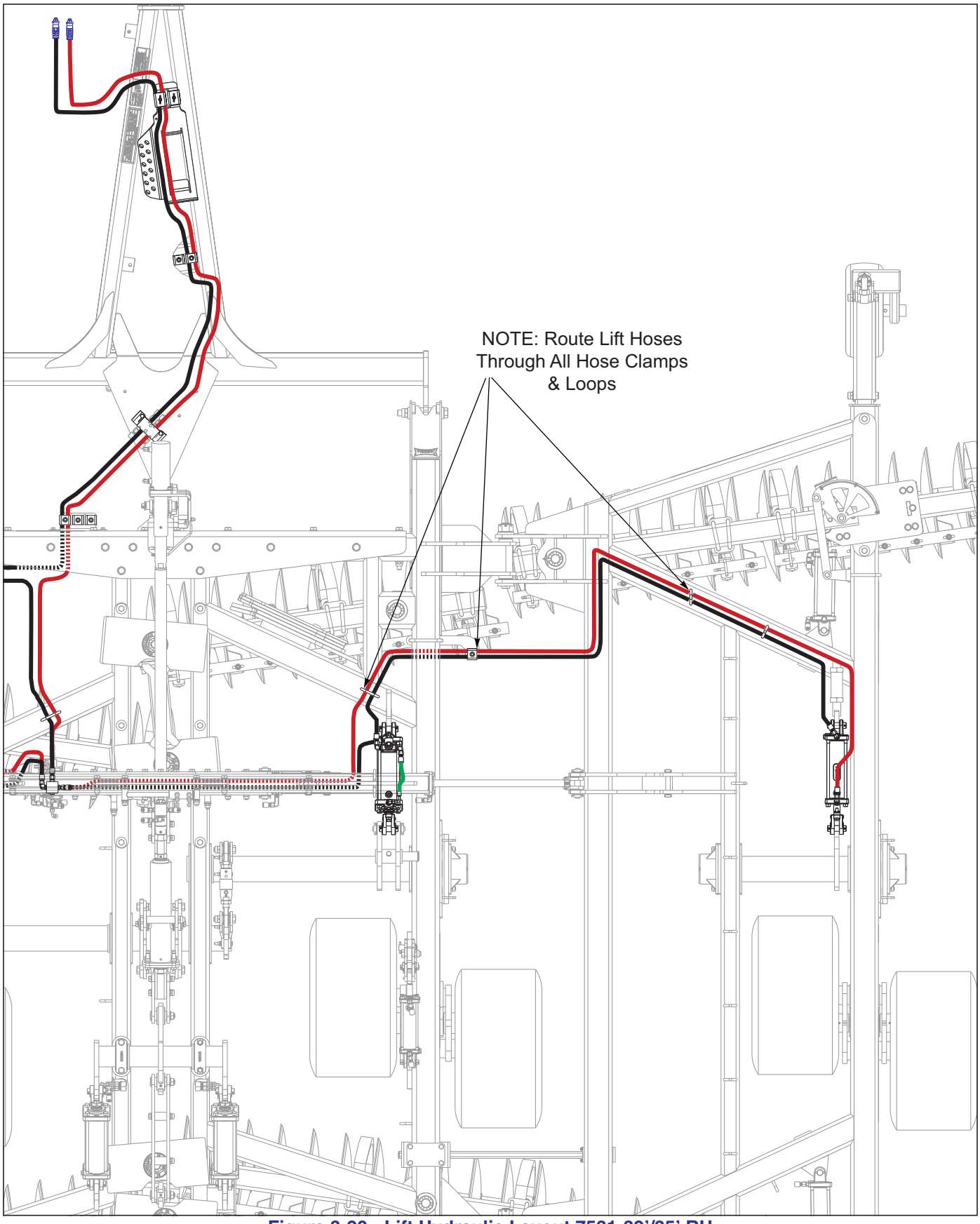


Figure 3-20: Lift Hydraulic Layout 7531-32'/35' RH

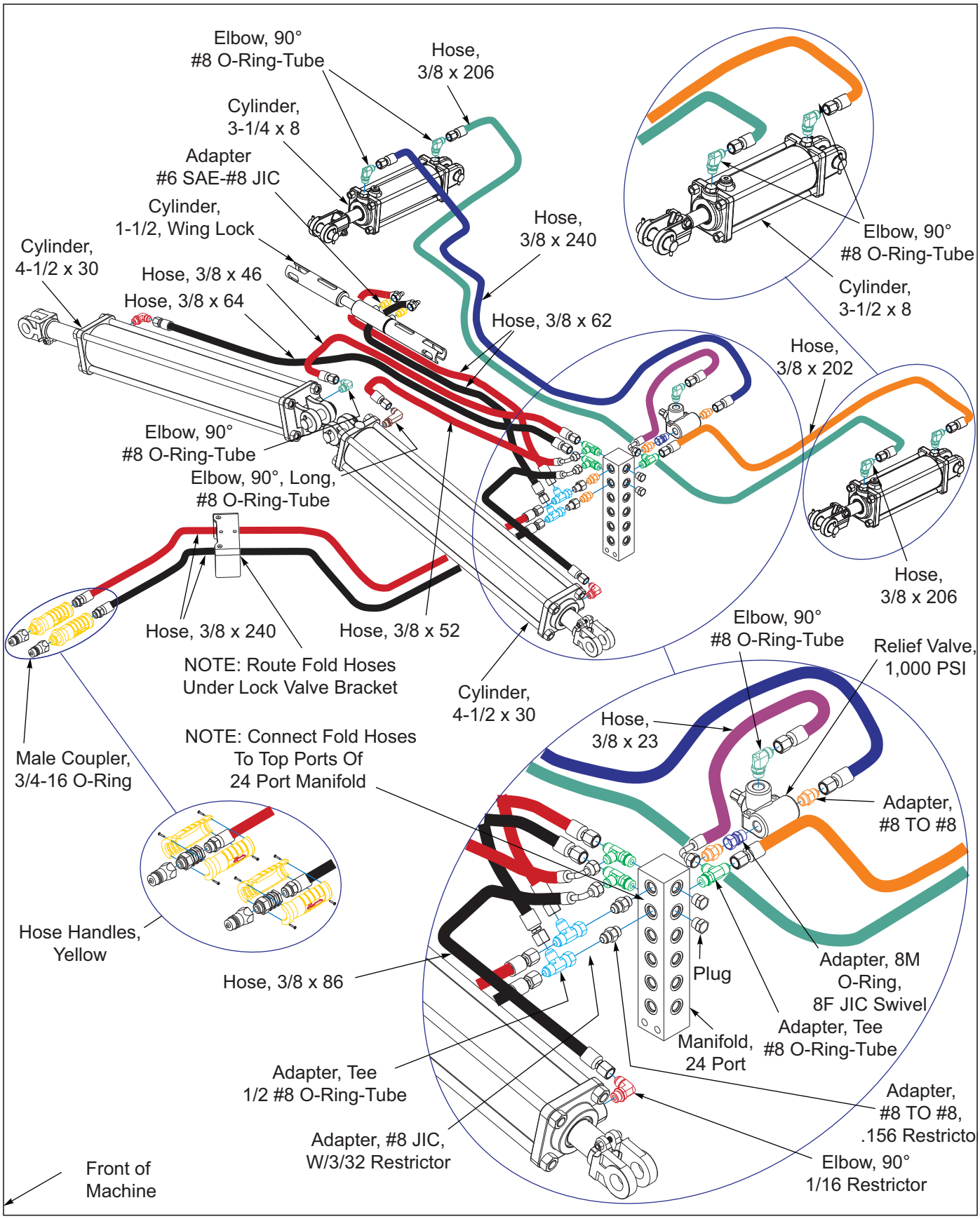


Figure 3-21: Fold Hydraulic Installation 7531-23'

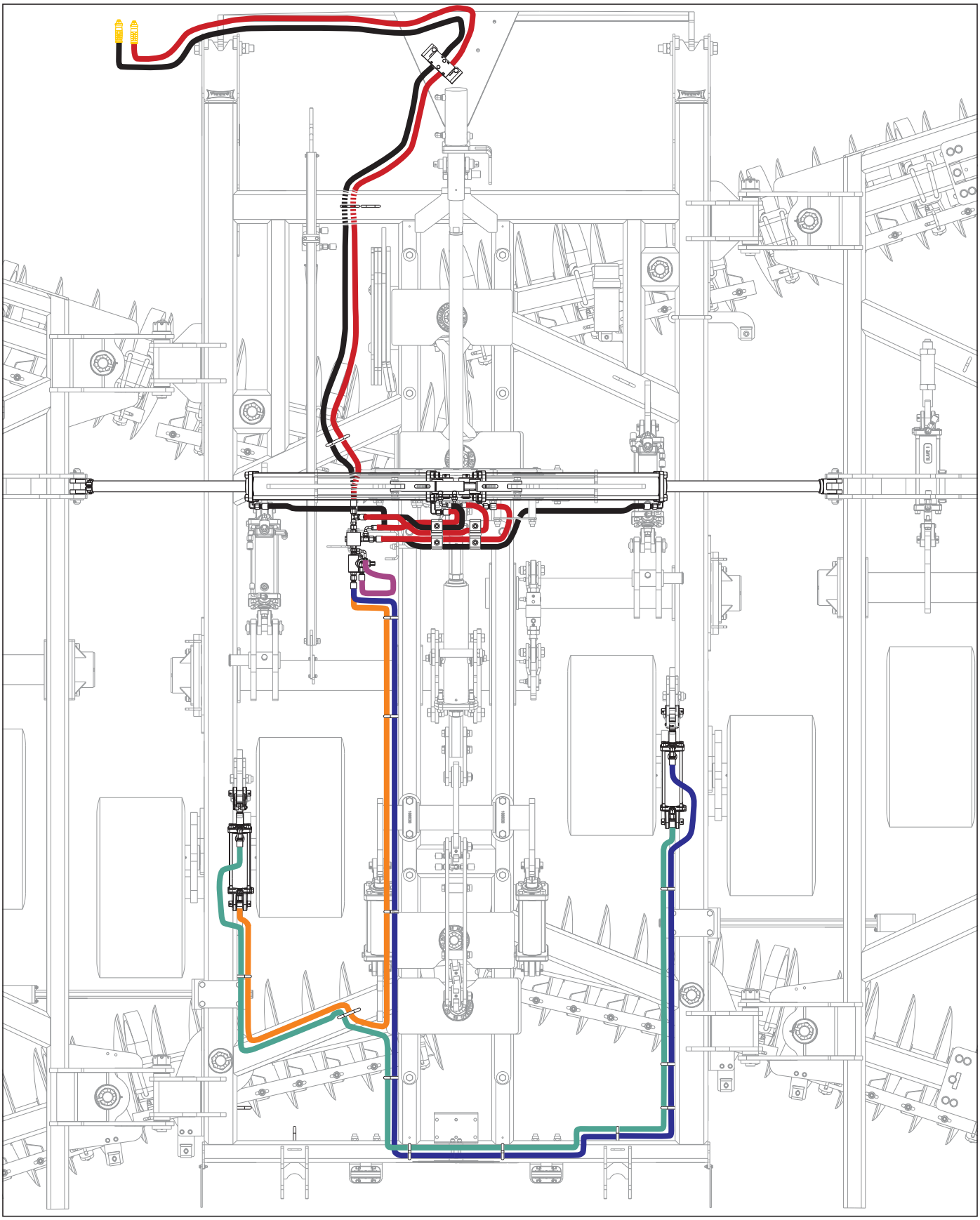


Figure 3-22: Fold Hydraulic Layout 7531-23'

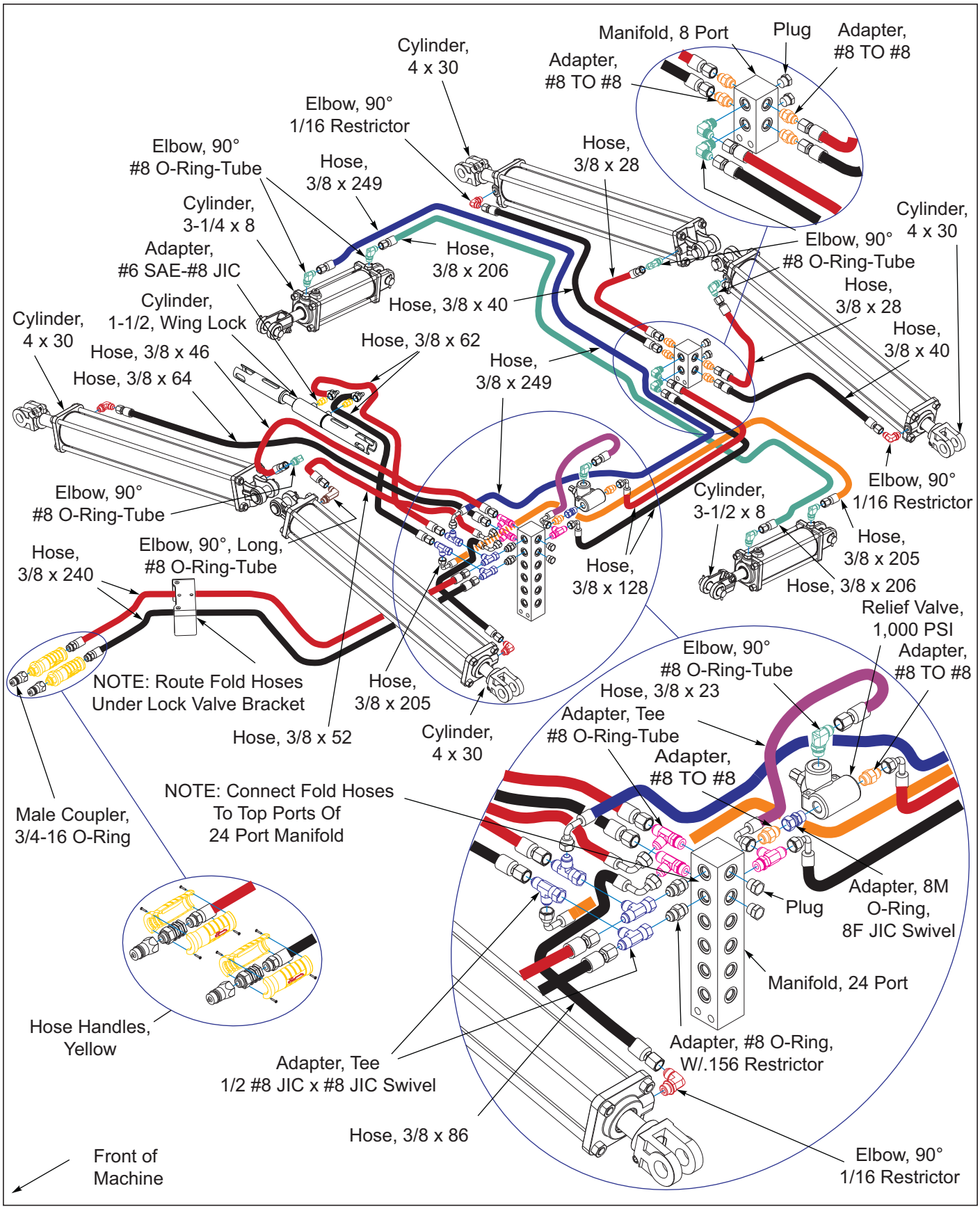


Figure 3-23: Fold Hydraulic Installation 7531-26'-29'

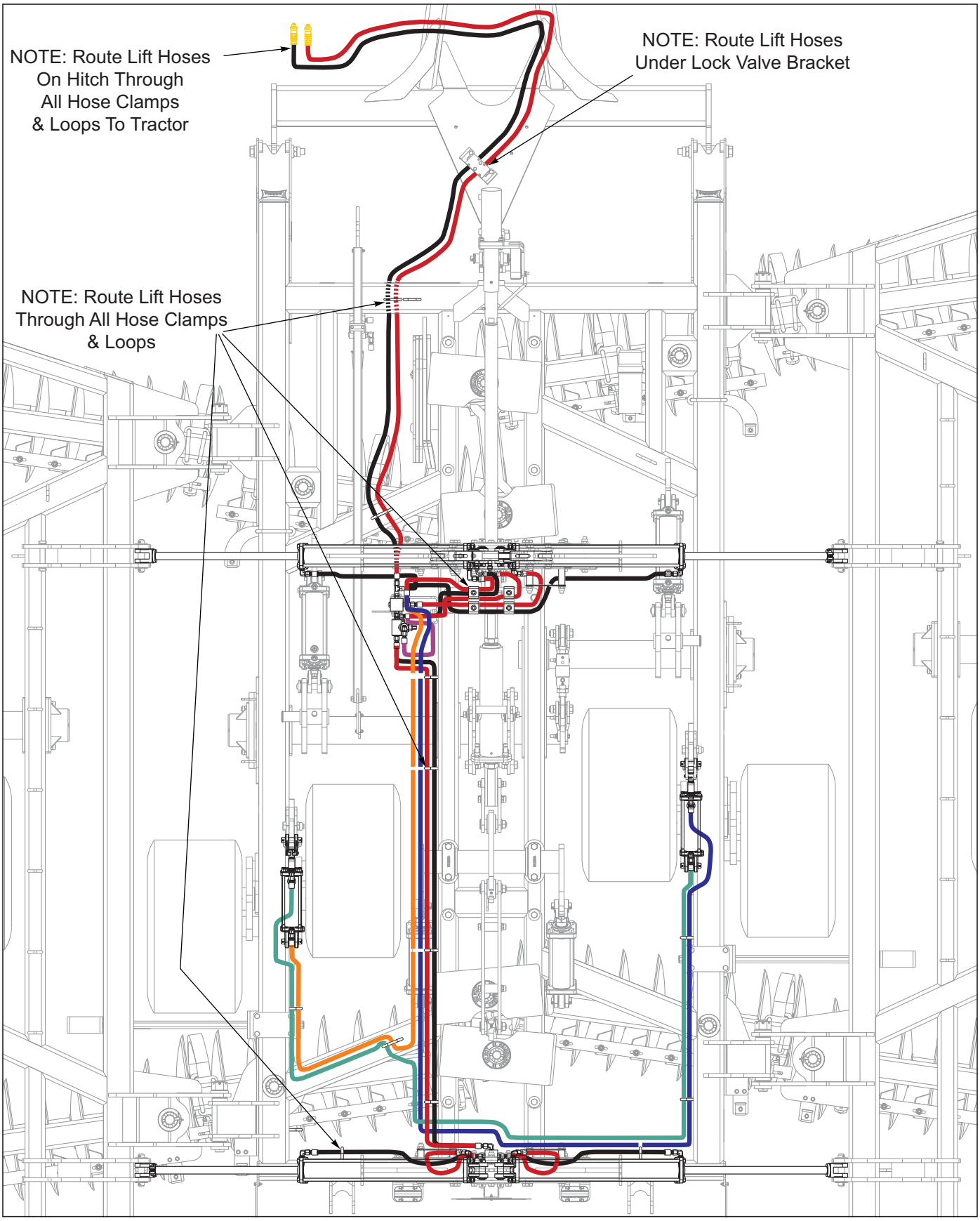


Figure 3-24: Fold Hydraulic Layout 7531-26'-29'

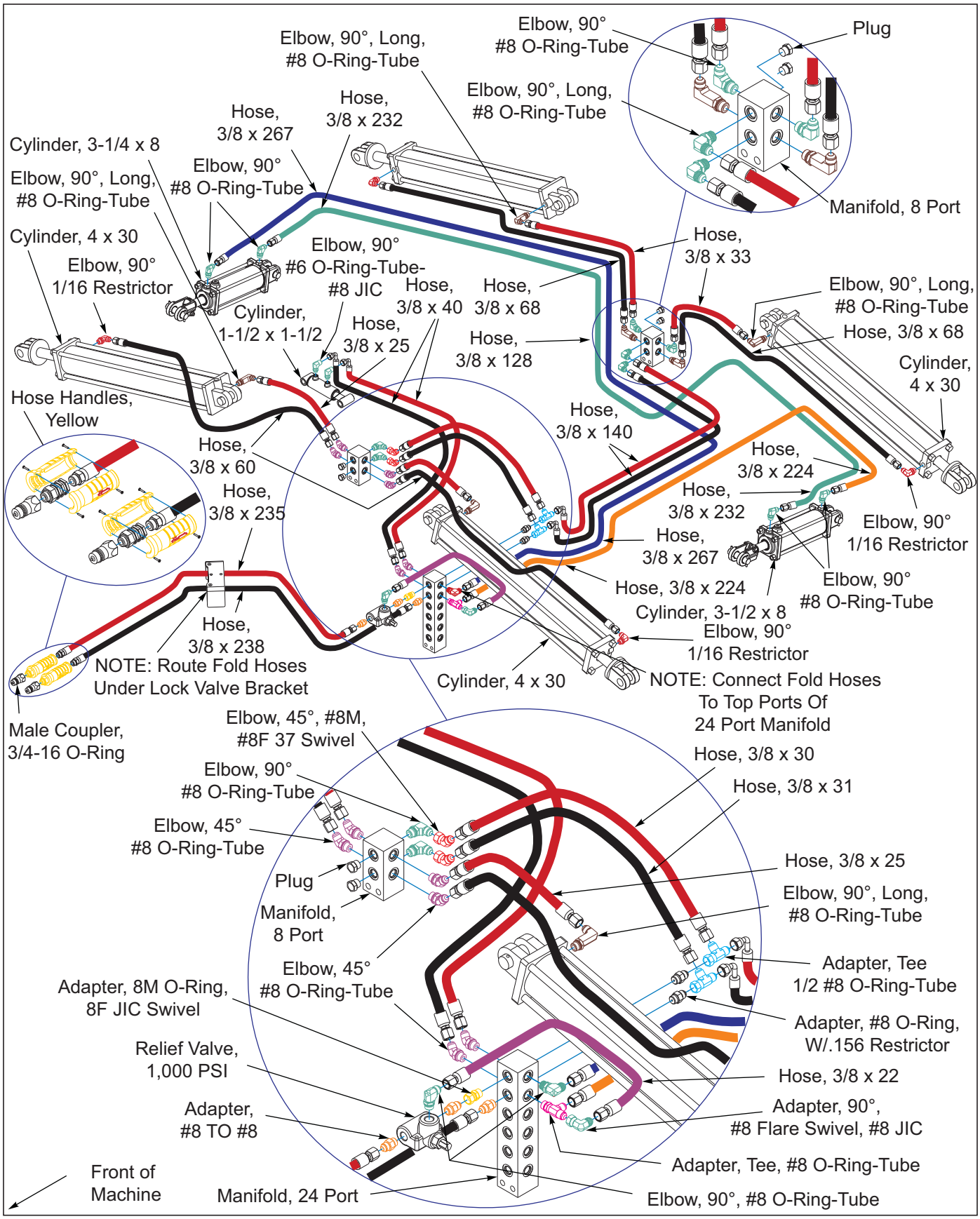


Figure 3-25: Fold Hydraulic Installation 7531-32'-35'

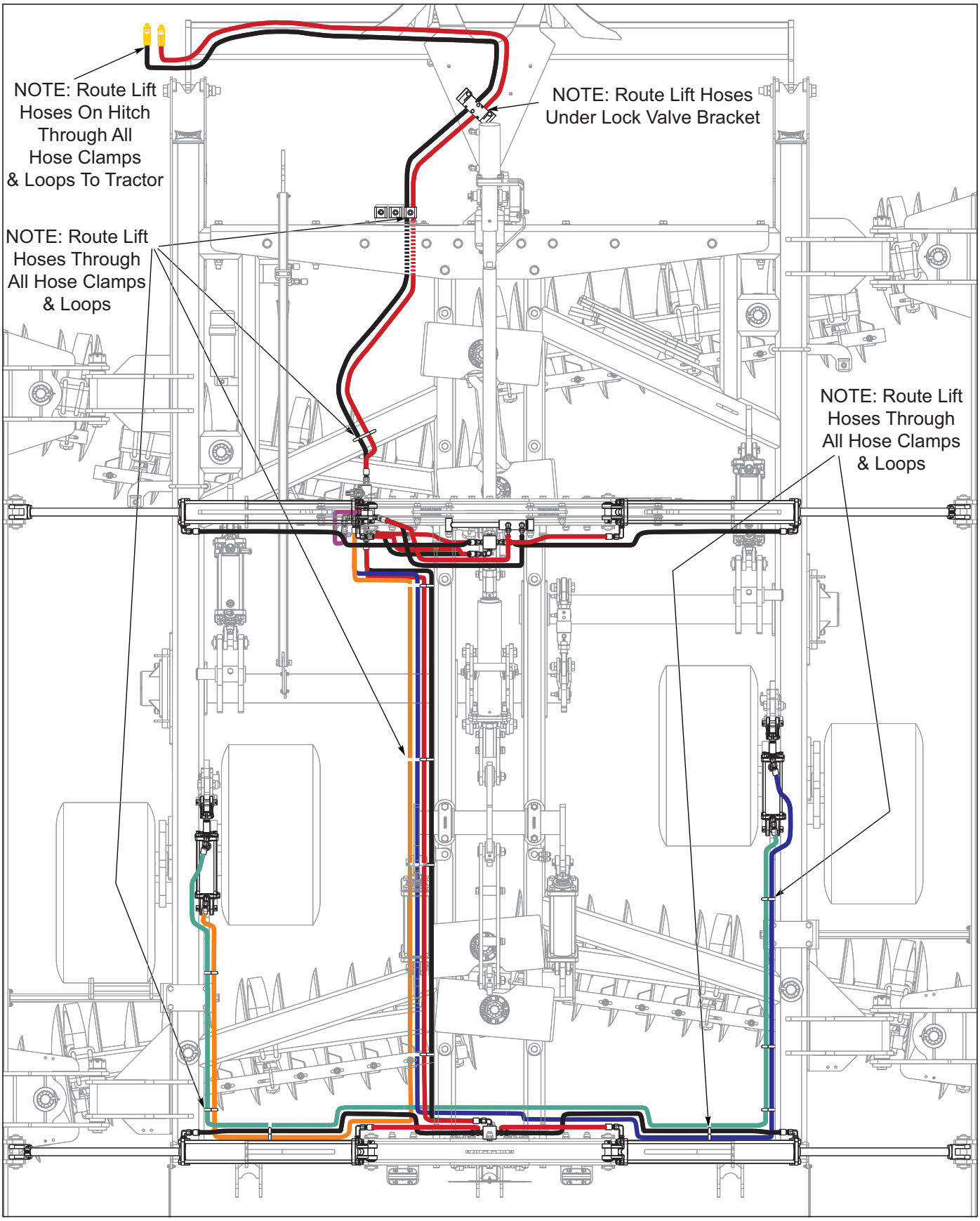


Figure 3-26: Fold Hydraulic Placement 7531-32'-35'

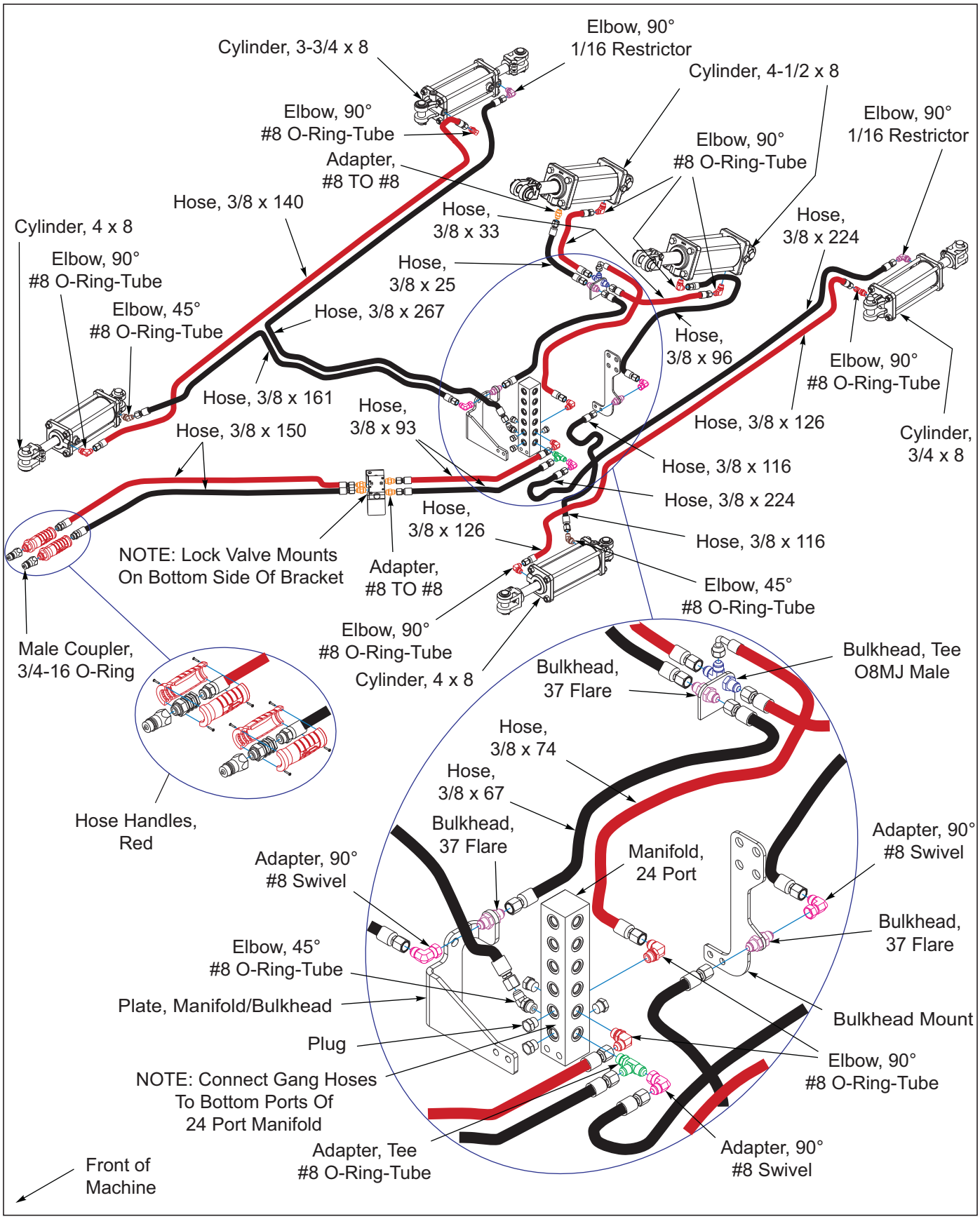


Figure 3-27: Gang Hydraulic Installation 7531-23'

Table provided for general use.

NOTES:

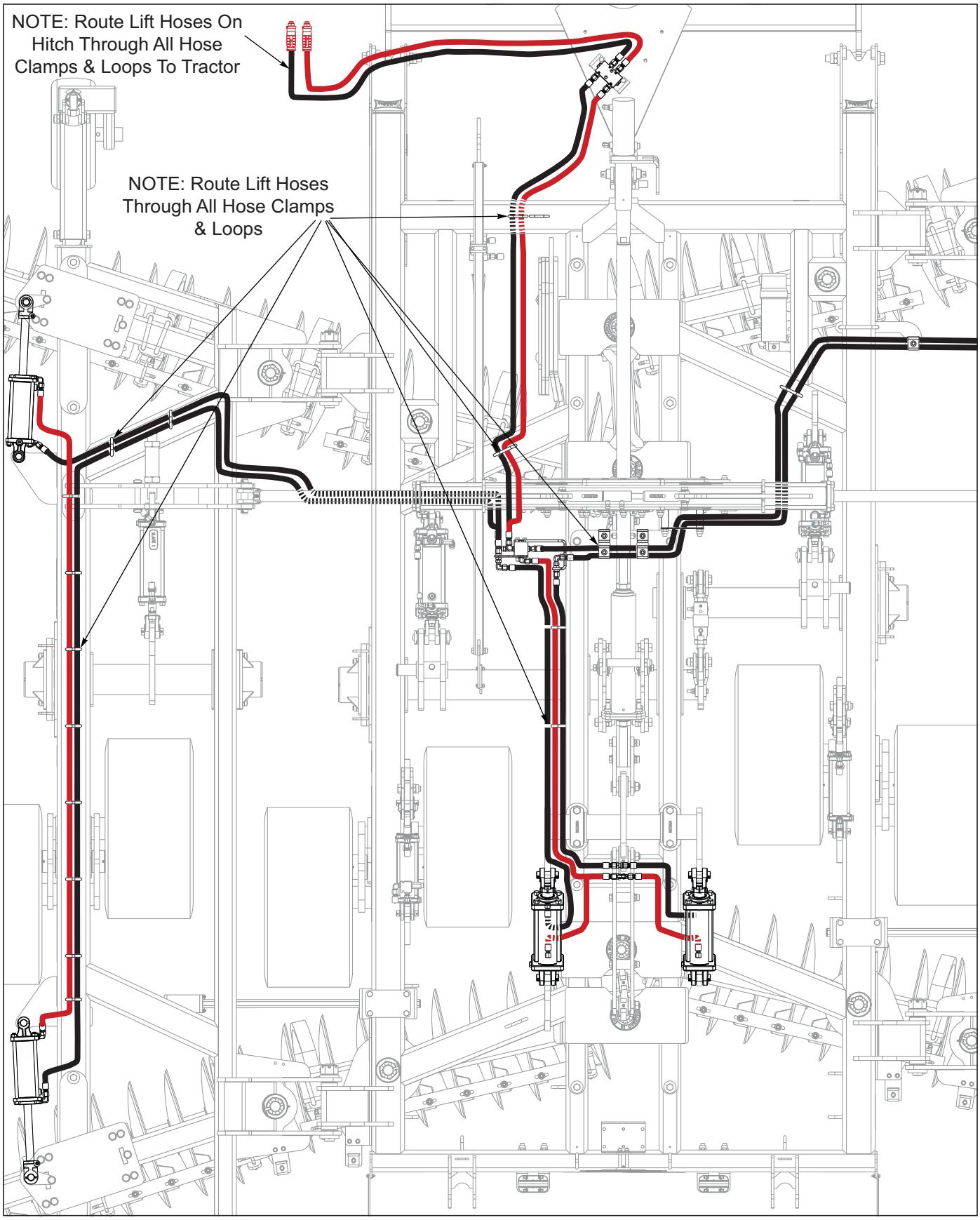


Figure 3-28: Gang Hydraulic Placement 7531-23' LH

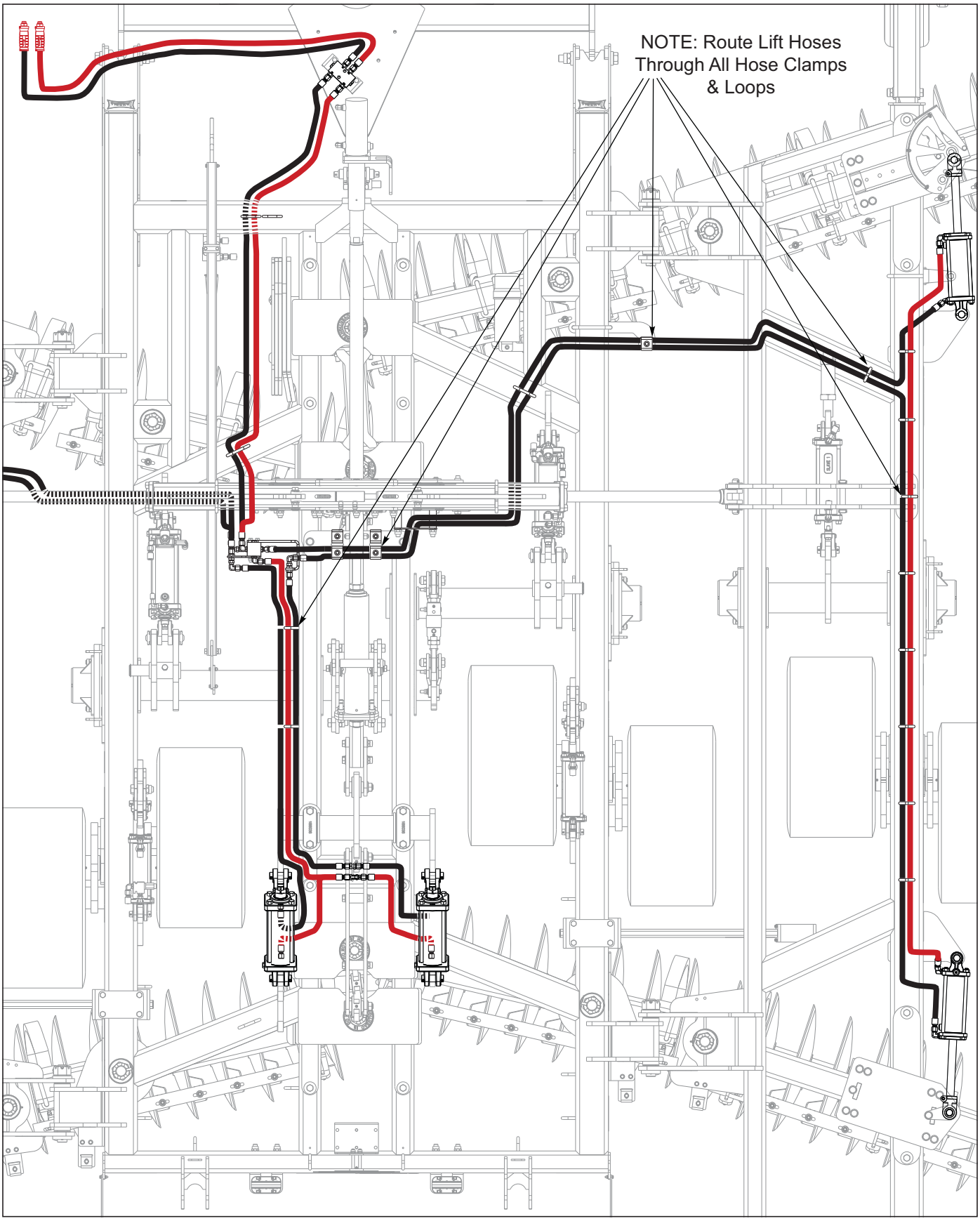


Figure 3-29: Gang Hydraulic Placement 7531-23' RH

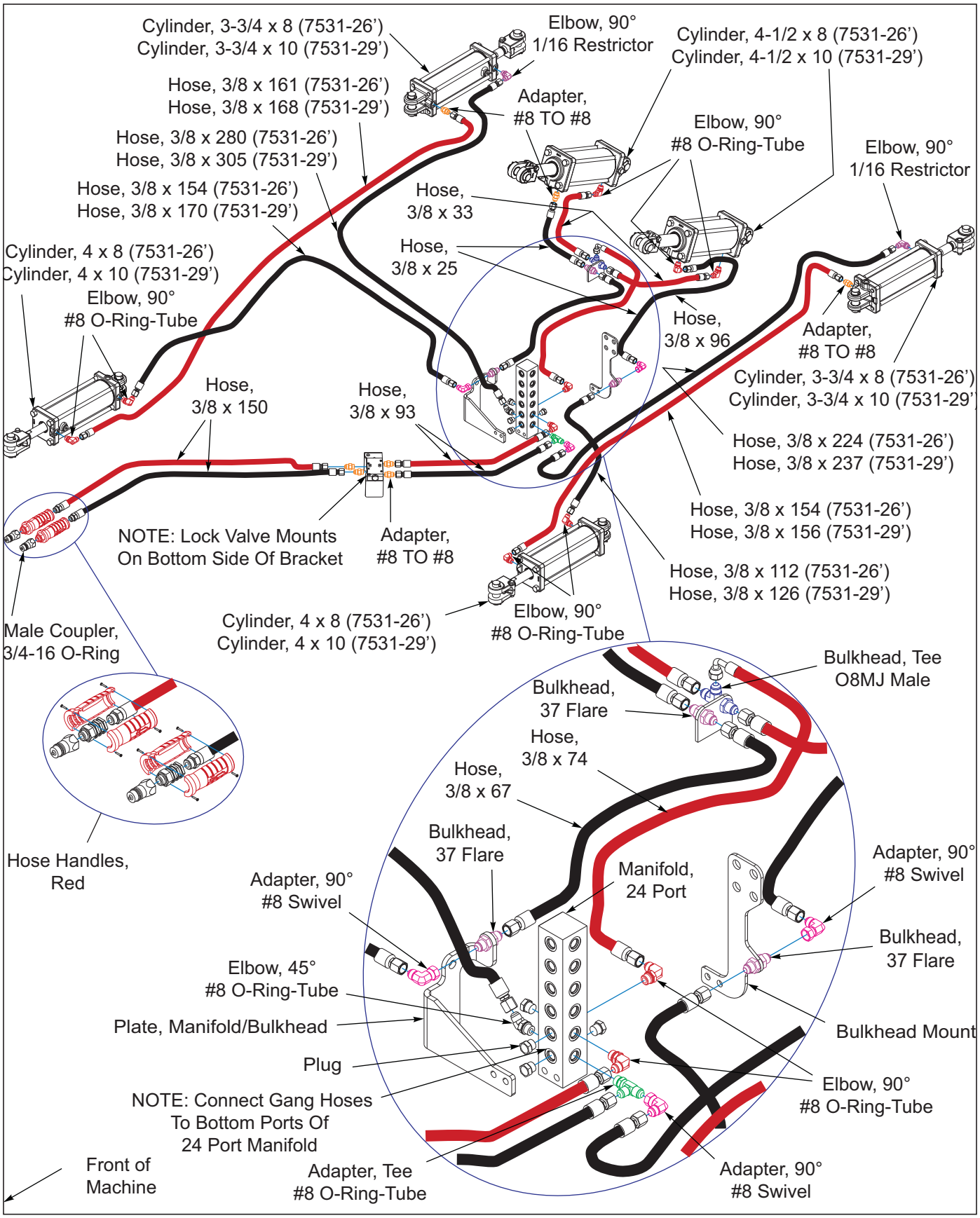


Figure 3-30: Gang Hydraulic Installation 7531-26'-29'

Table provided for general use.

NOTES:

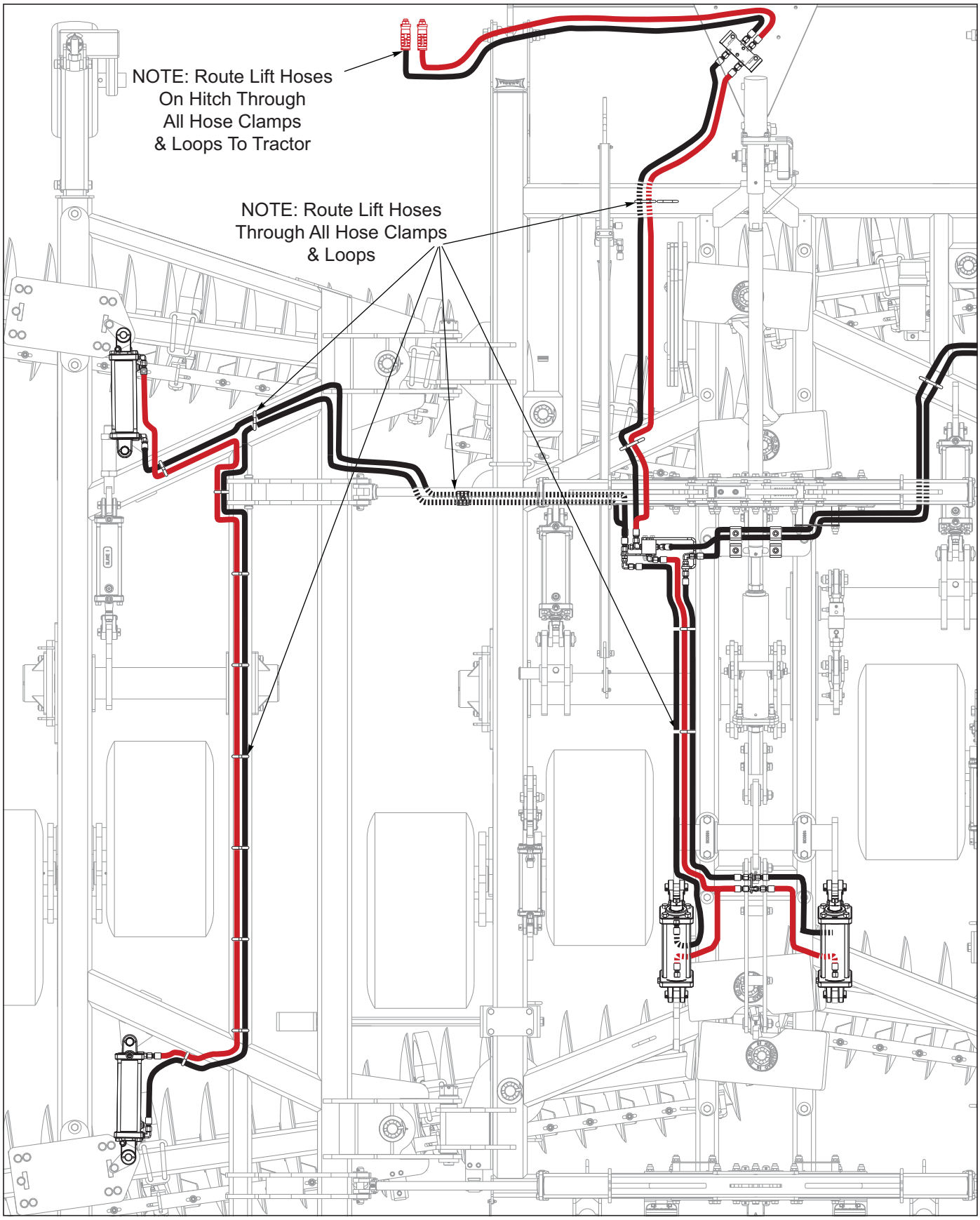


Figure 3-31: Gang Hydraulic Placement 7531-26'-29' LH

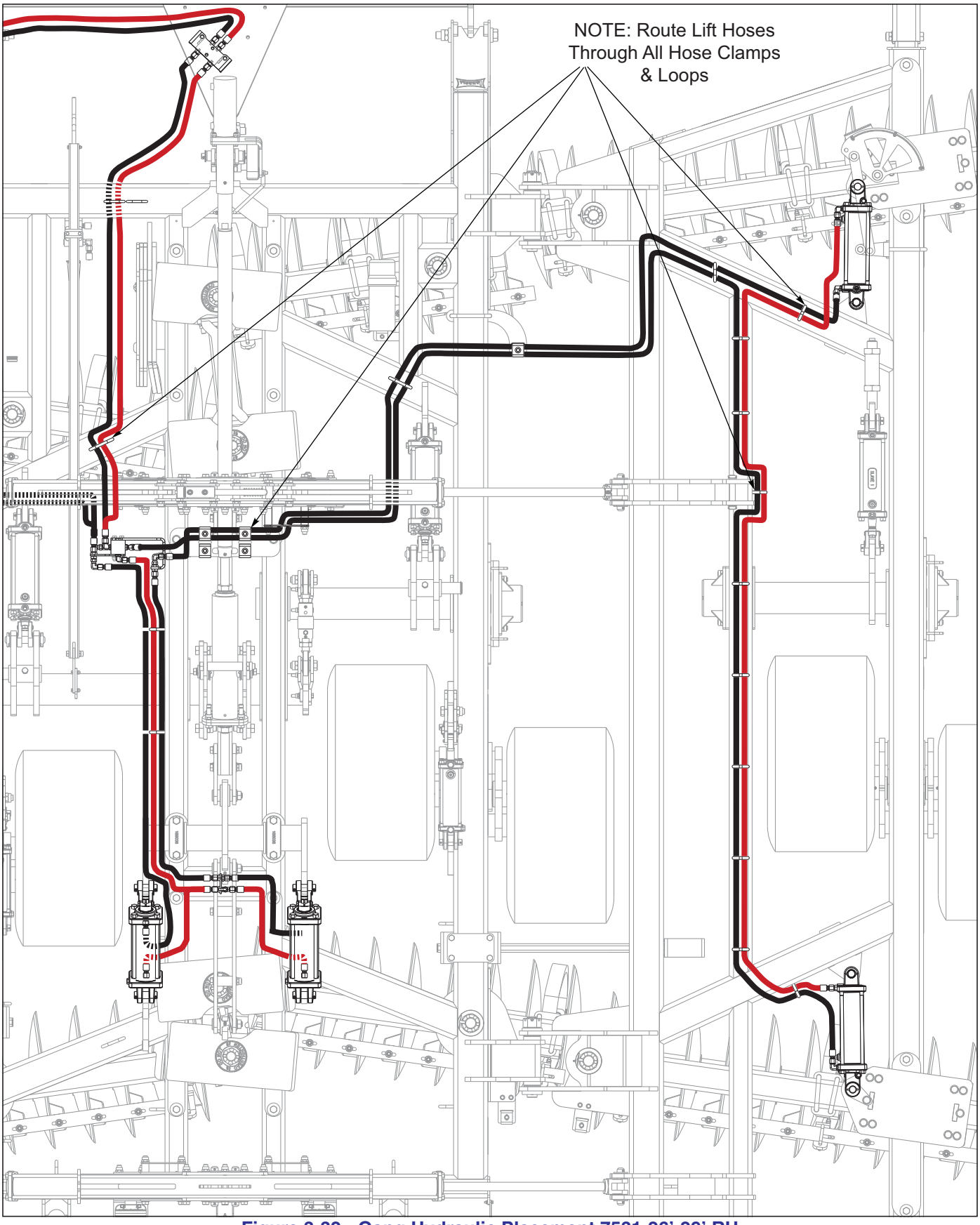


Figure 3-32: Gang Hydraulic Placement 7531-26'-29' RH

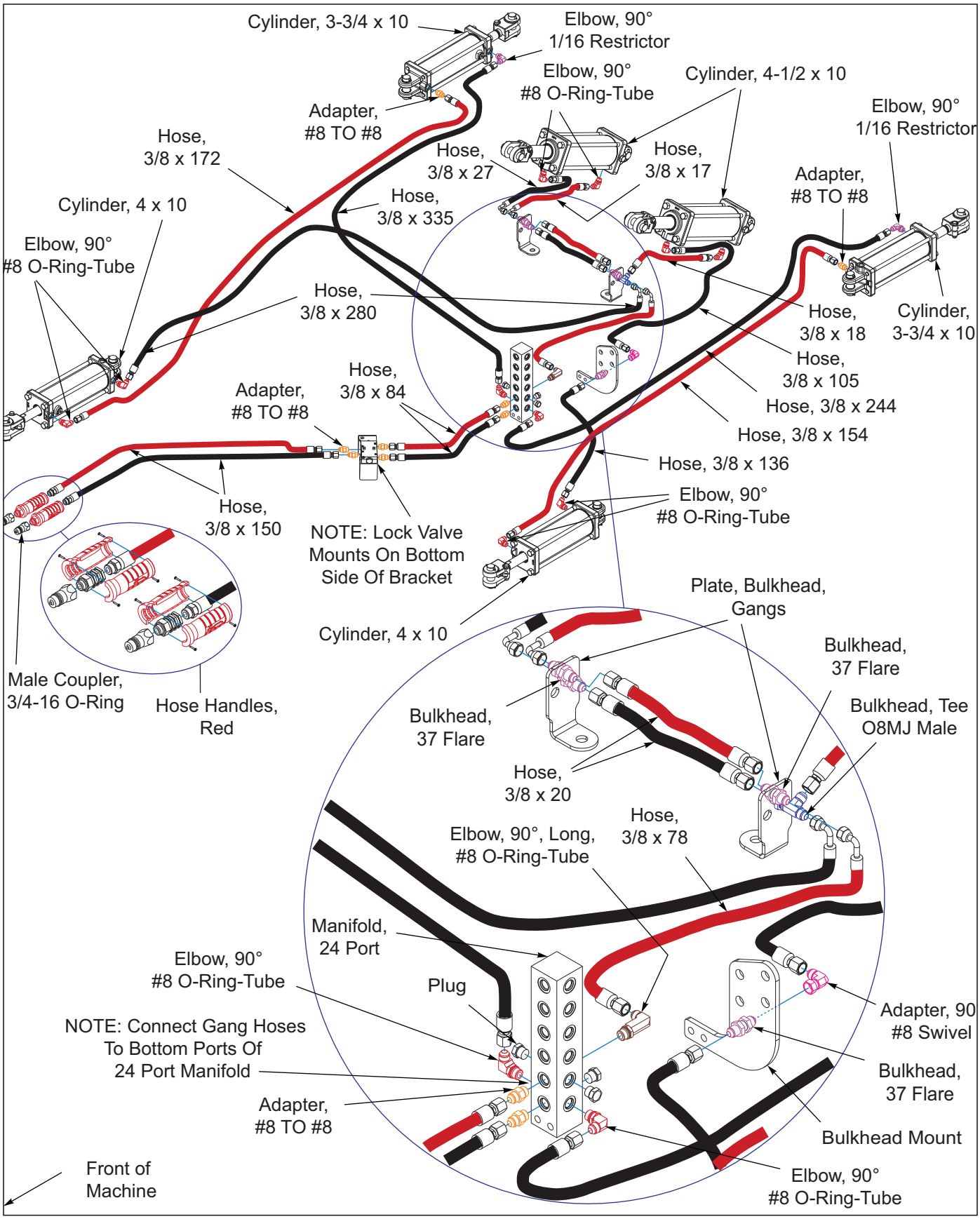


Figure 3-33: Gang Hydraulic Installation 7531-32'-35

Table provided for general use.

NOTES:

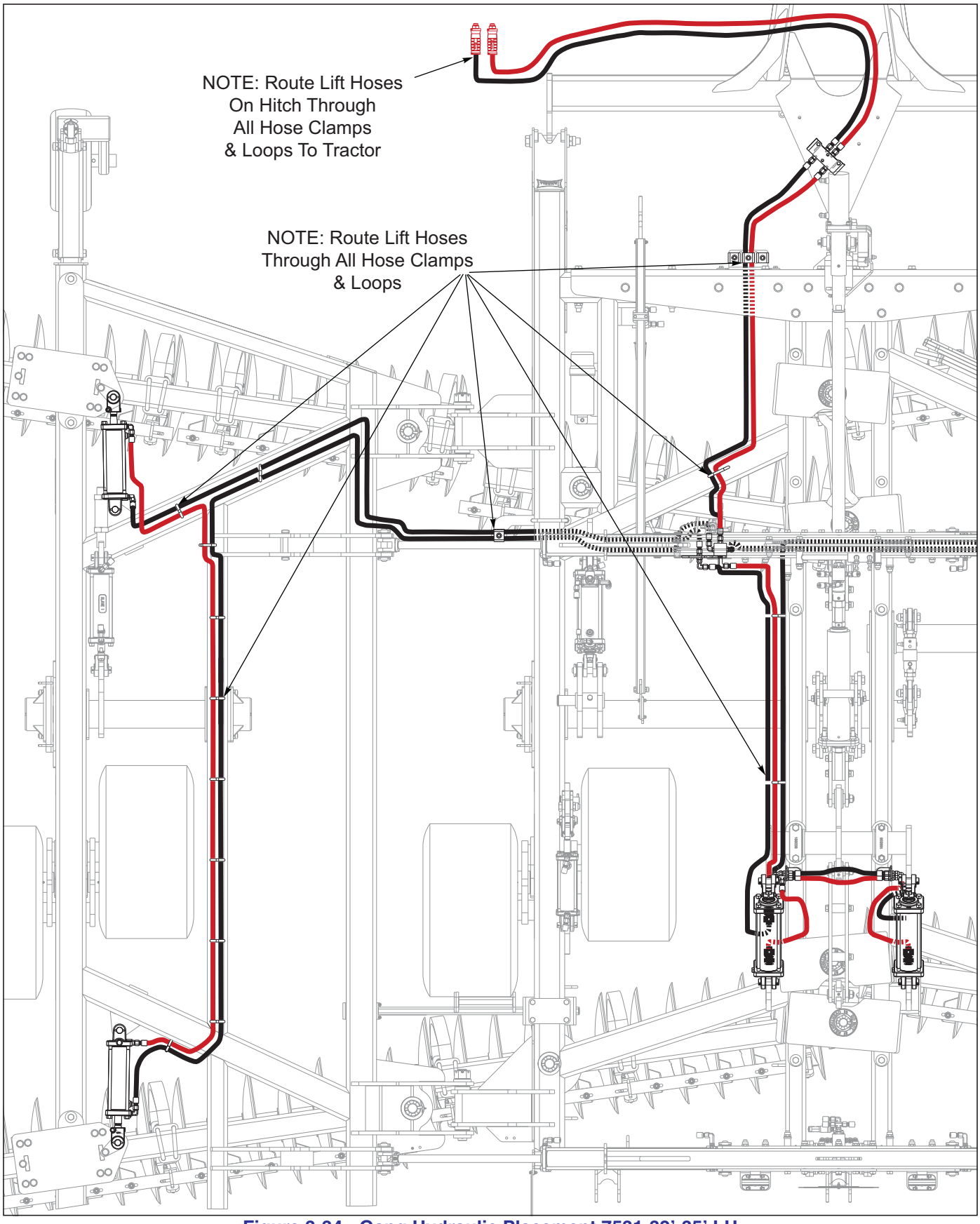


Figure 3-34: Gang Hydraulic Placement 7531-32'-35' LH

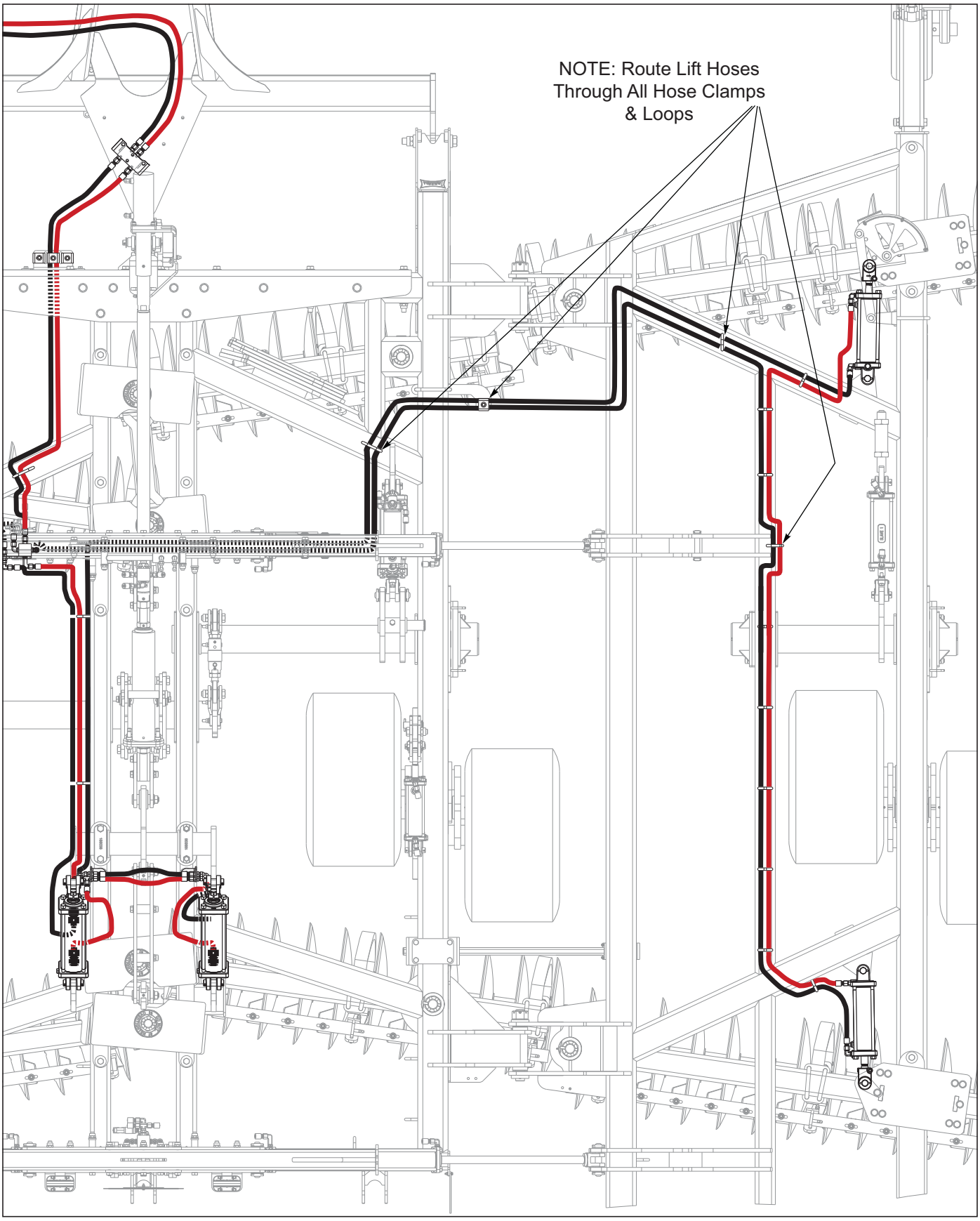


Figure 3-35: Gang Hydraulic Placement 7531-32'-35' RH

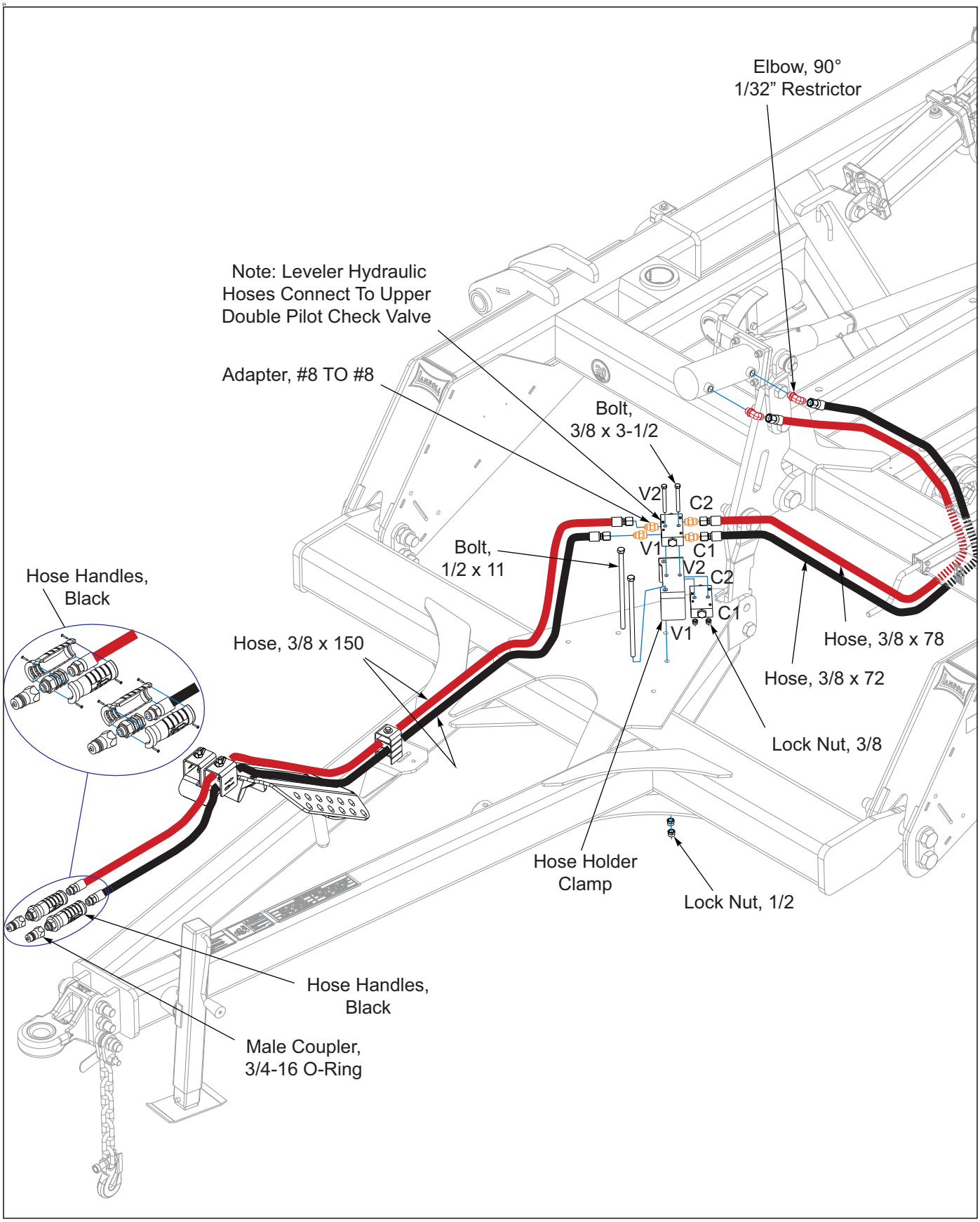


Figure 3-36: Leveler Hydraulic Installation

Center Disc Gangs

There are several ways to install the gangs on the 7531. 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 3-37*.)** 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 center frame. Install the 2" diameter blue steel washer to the threaded end of the gang pivot pin along with the stainless steel thrust washer and 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. Next loosly install the gangbar slide on top of 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 3-37*.)** 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 1 stainless steel washer or 2 on top of the bearing inserts and reinstall the gang bar slides, 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 3/4 x 10 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. Check the four center frame slides after tightening, that the stainless steel washers are not clamped down tight, they should still spin freely. ***If not remove one of them.***

IMPORTANT

Grease the zerk on the pivot pin bushings until grease is purged from the pivot joint. Install (4) plastic plugs on center frame to keep zerk clean.

7. Install a clevis pin and 1/8 hairpin to prevent gang pivot nut from loosening.
8. The center (4) pins require a 3/8 diameter pin, and the other (8) use a 7/16" diameter clevis pin.

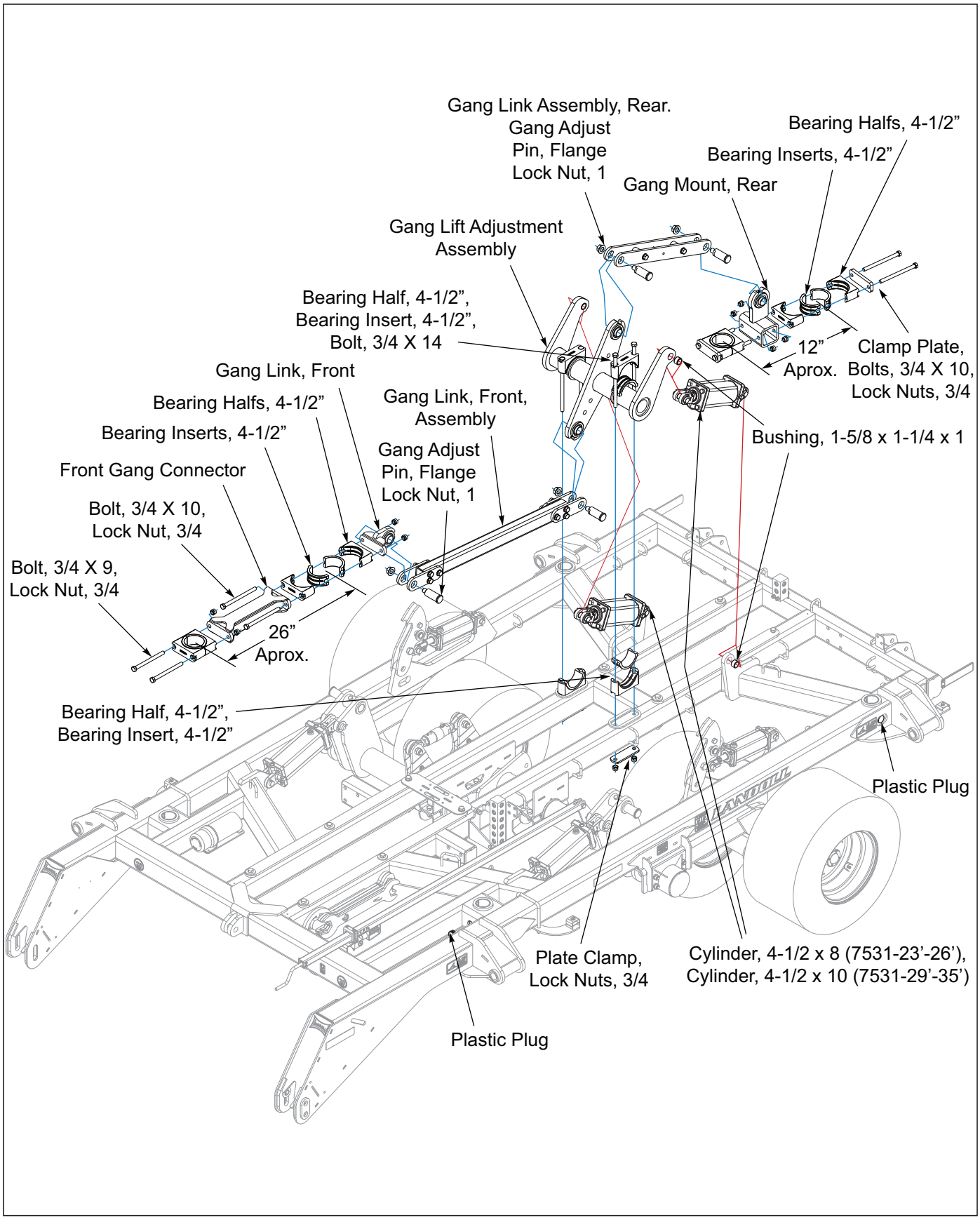


Figure 3-37: Center Gang Adjut Installation

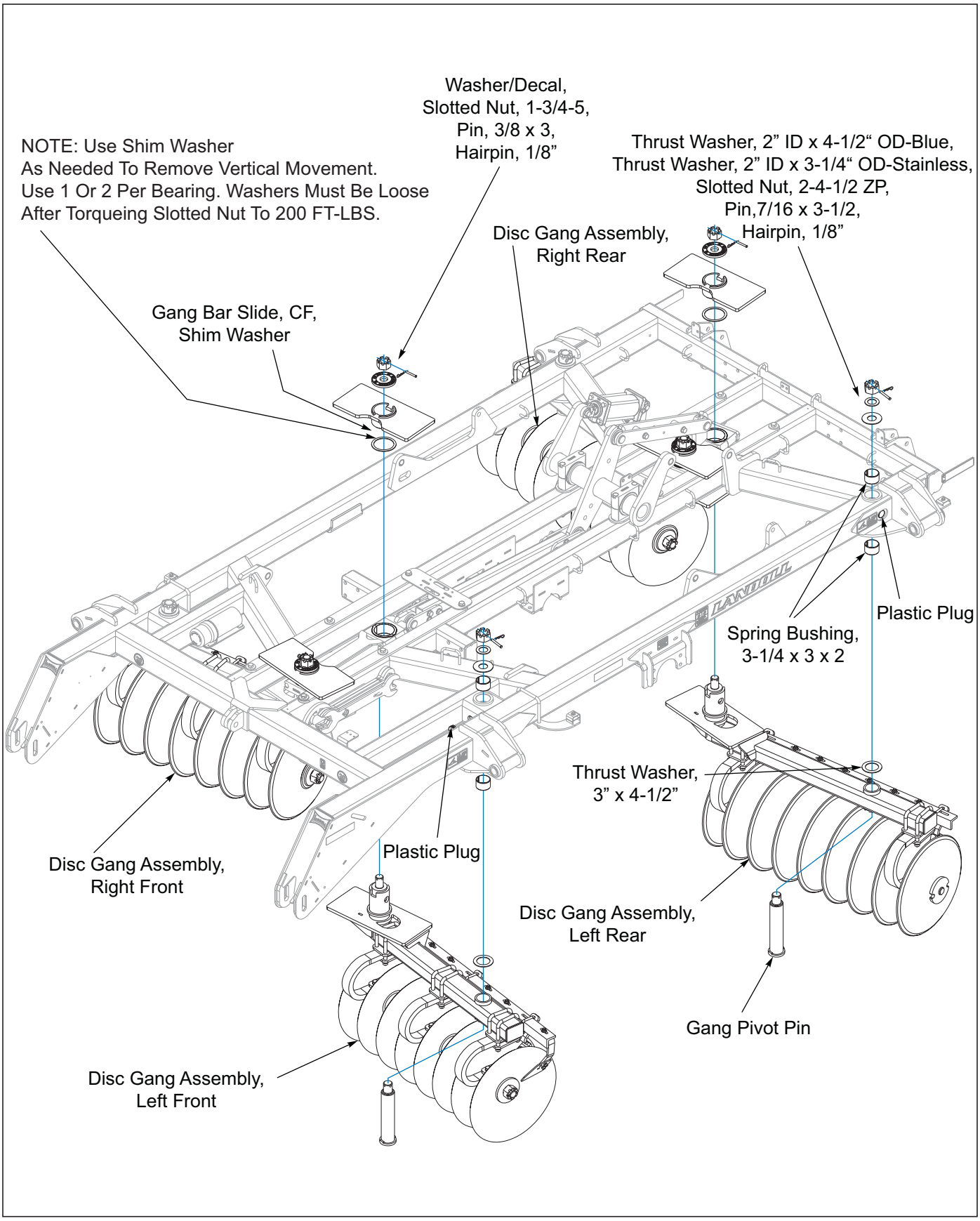


Figure 3-38: Center Disc Gang Installation

Table provided for general use.

NOTES:

Wing Disc Gangs

1. Like the center frame gangs, install the front gangs first to keep the front end from coming up uncontrolled. Position the gang assemblies under the wing frame ***See Figures 3-39*, 7531-23', *See Figure 3-41* and *See Figure 3-41*, 7531-26'-35'** and insert the 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 inside of the wing frame hinges. Install the 2" diameter blue steel washer to the threaded end of the gang pivot pin along with the stainless thrust washer and gang pivot nut. If the top bushing in the wing 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.

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.

2. Align the slide plates on the outer part of the wing up to the gang bar and install eight 3/4 x 10 bolts into the slide plates and through the angle iron on the gang bar, ***See Figures 3-39*, 7531-23', *See Figures 3-41*, 7531-26'-35',** for placement of the bolts. Flat washers will be used on bolt head.
3. Tighten down all four of the slotted nuts on the inner wing 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.

IMPORTANT

Grease the zerk on the pivot pin bushings until grease is purged from the pivot joint.

4. Install a 7/16 x 3-1/2 clevis pin and 1/8 hairpin and locking nut to prevent gang pivot nut from loosening.
5. Tighten the 3/4-10 x 10 bolts on the outer part of the wings to secure the disc gangs. Do not over tighten to where the plates are bowed.
6. Install the gang adjust gauge as shown ***See Figures 3-40*, 7531-23', *See Figures 3-42*, 7531-26'/29'/32'/35'** The gauge link will need to be mounted to the second hole in the gang adjust dial for the 7531-23'/26' VT and the first hole for the 7531-29'/32'/35' VT.

NOTE

*To calibrate gauge the disc gangs will need to be adjusted to the 18° angle with hydraulics. Then manually rotate gang adjust dial to 18° setting in indicator gauge. Now the 5/8 x 6-11/16 x 7-1/2 u-bolts and lock nuts may be tightened **See Figures 3-40*, 7531-23', *See Figures 3-42*, 7531-26'/29'/32'/35'.*

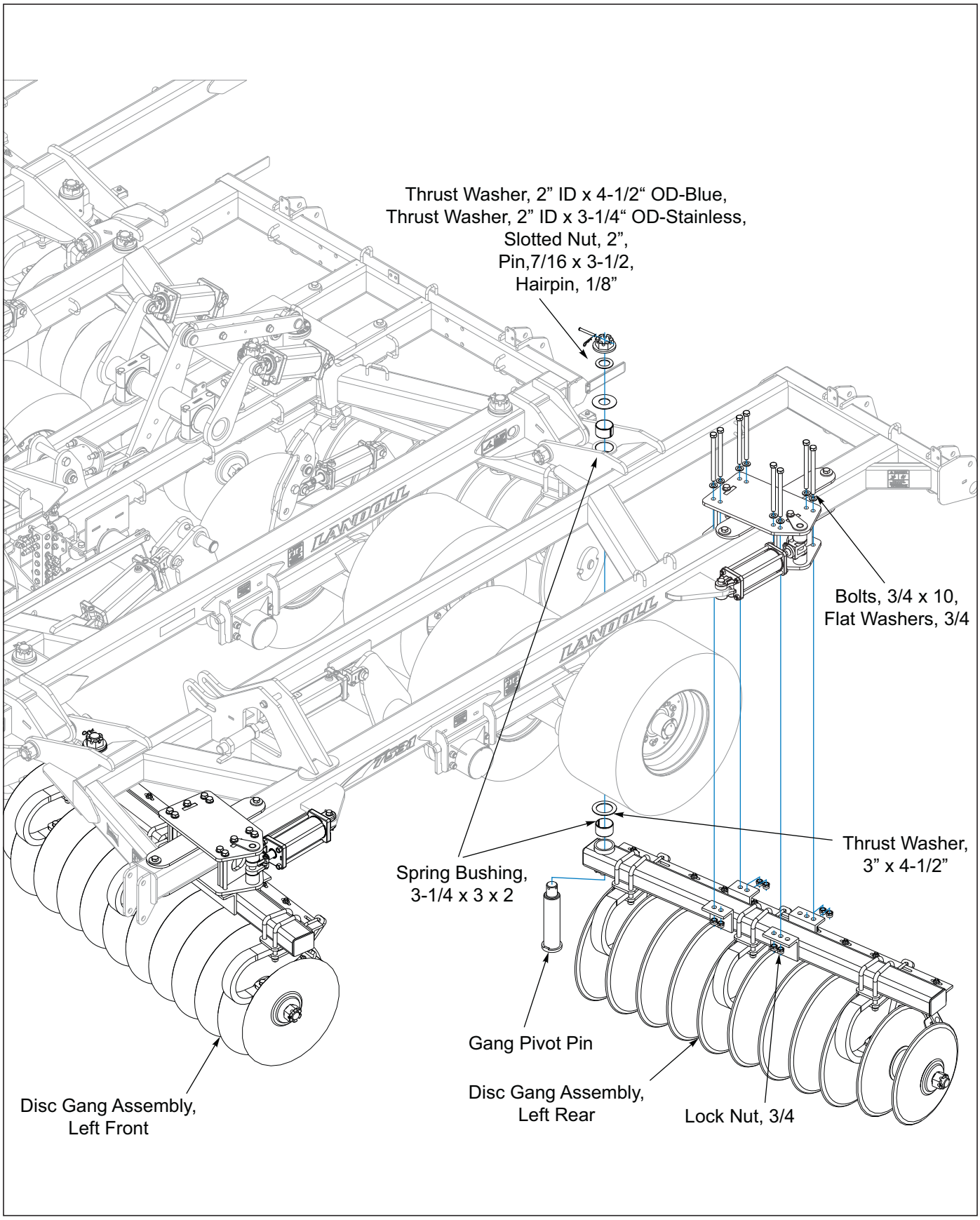


Figure 3-39: Wing Disc Gang Installation 7531-23’

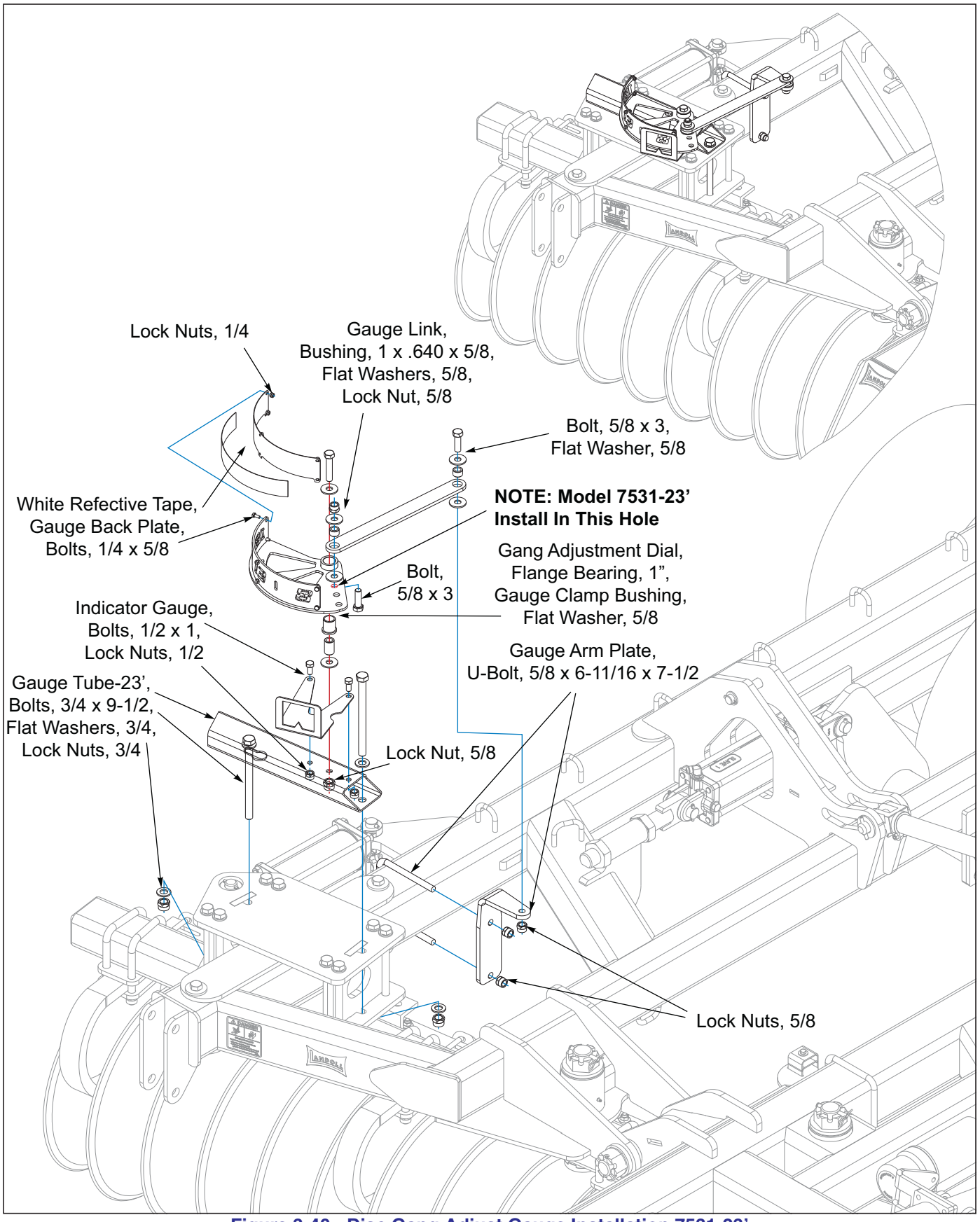


Figure 3-40: Disc Gang Adjust Gauge Installation 7531-23'

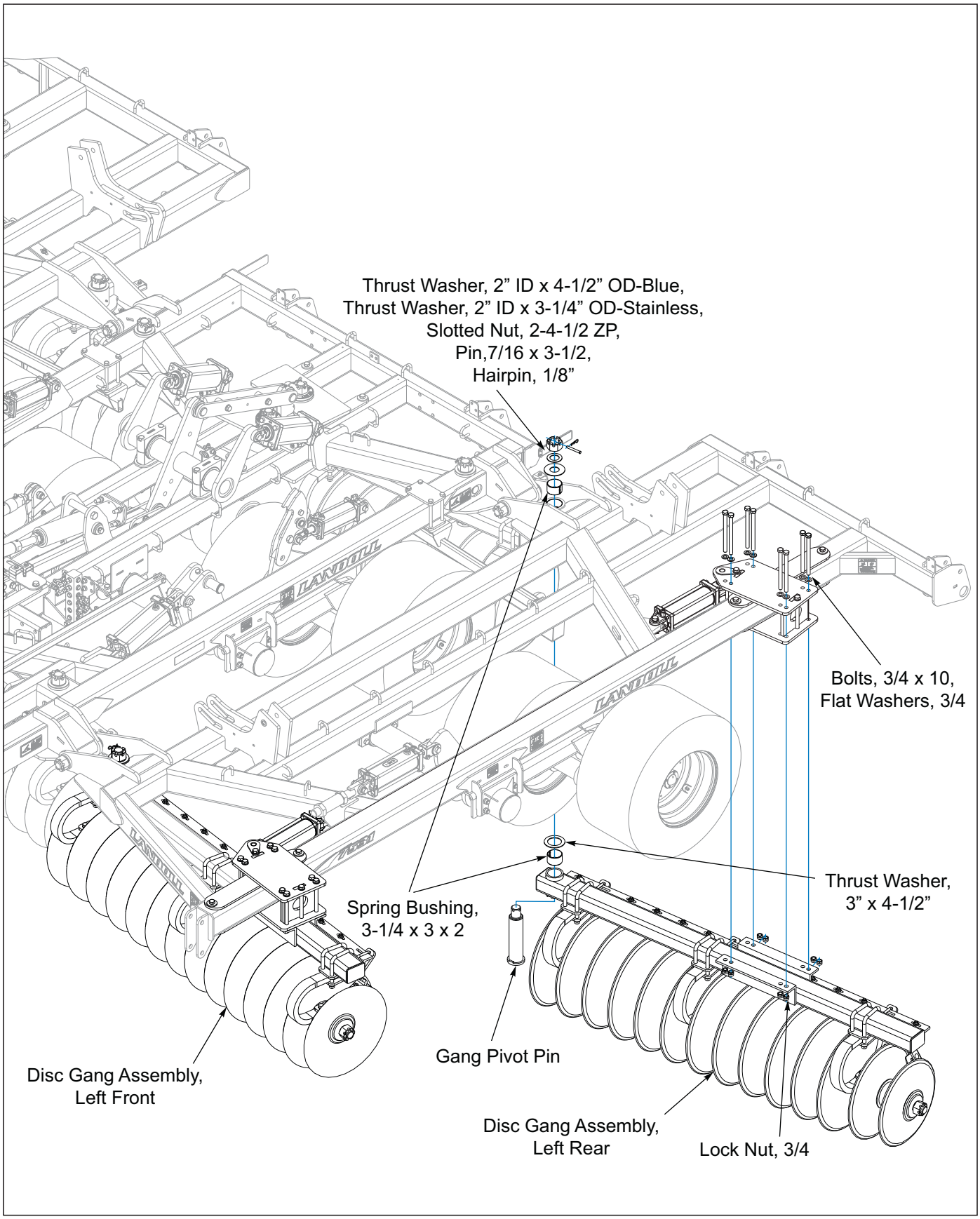


Figure 3-41: Wing Disc Gang Installation 7531-26’-35’

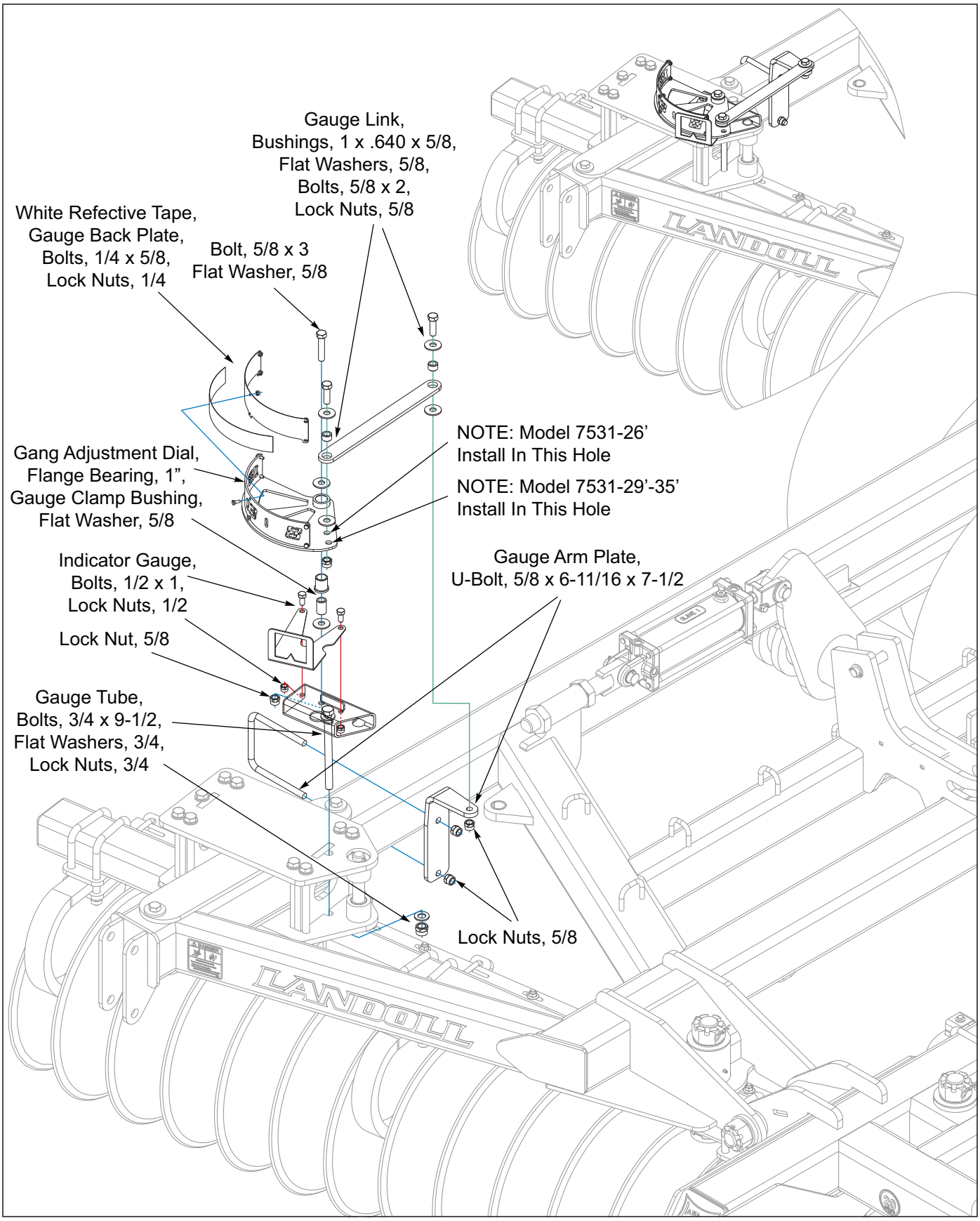


Figure 3-42: Disc Gang Adjust Gauge Installation 7531-26'-35'

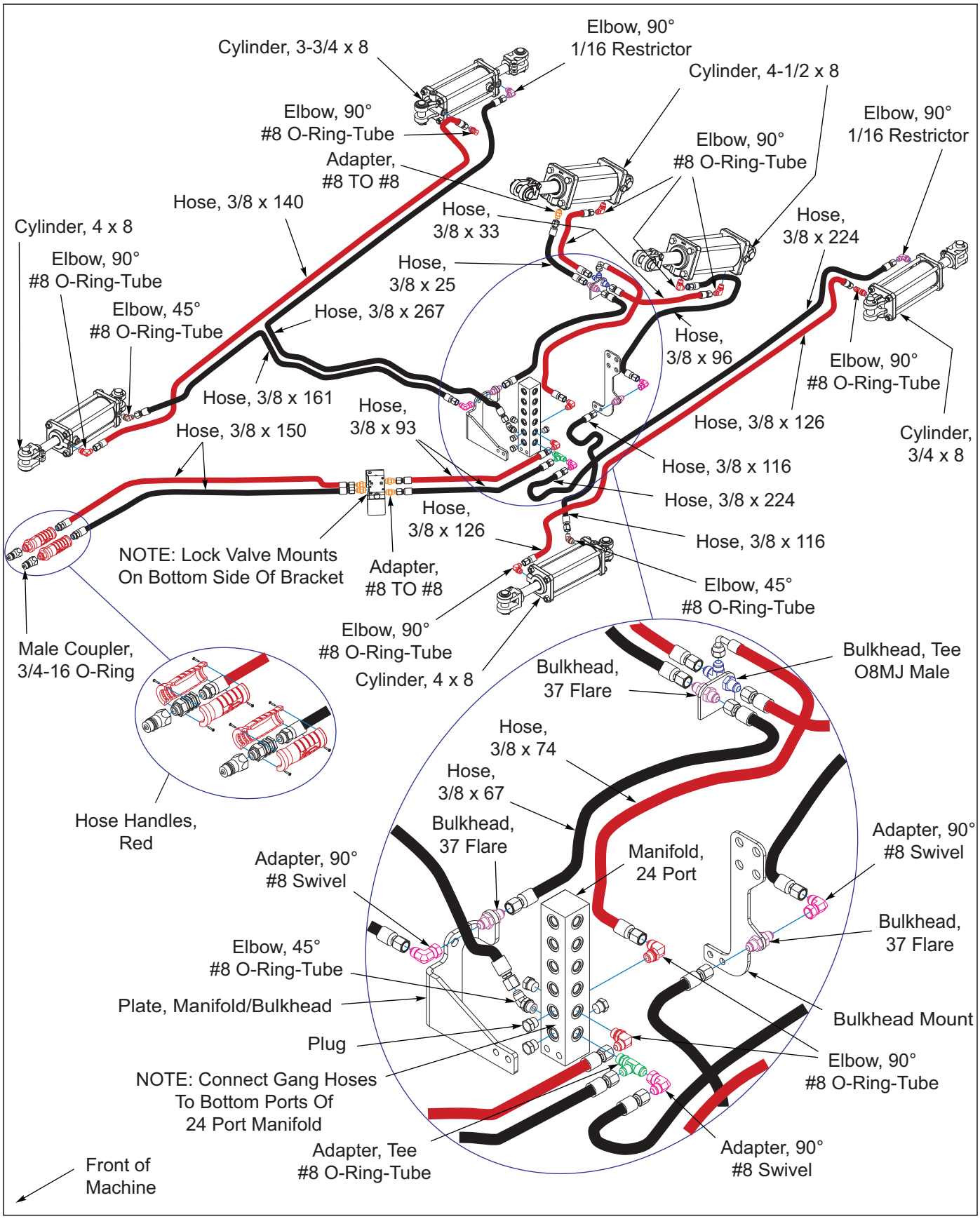


Figure 3-43: Gang Hydraulic Installation 7531-23'

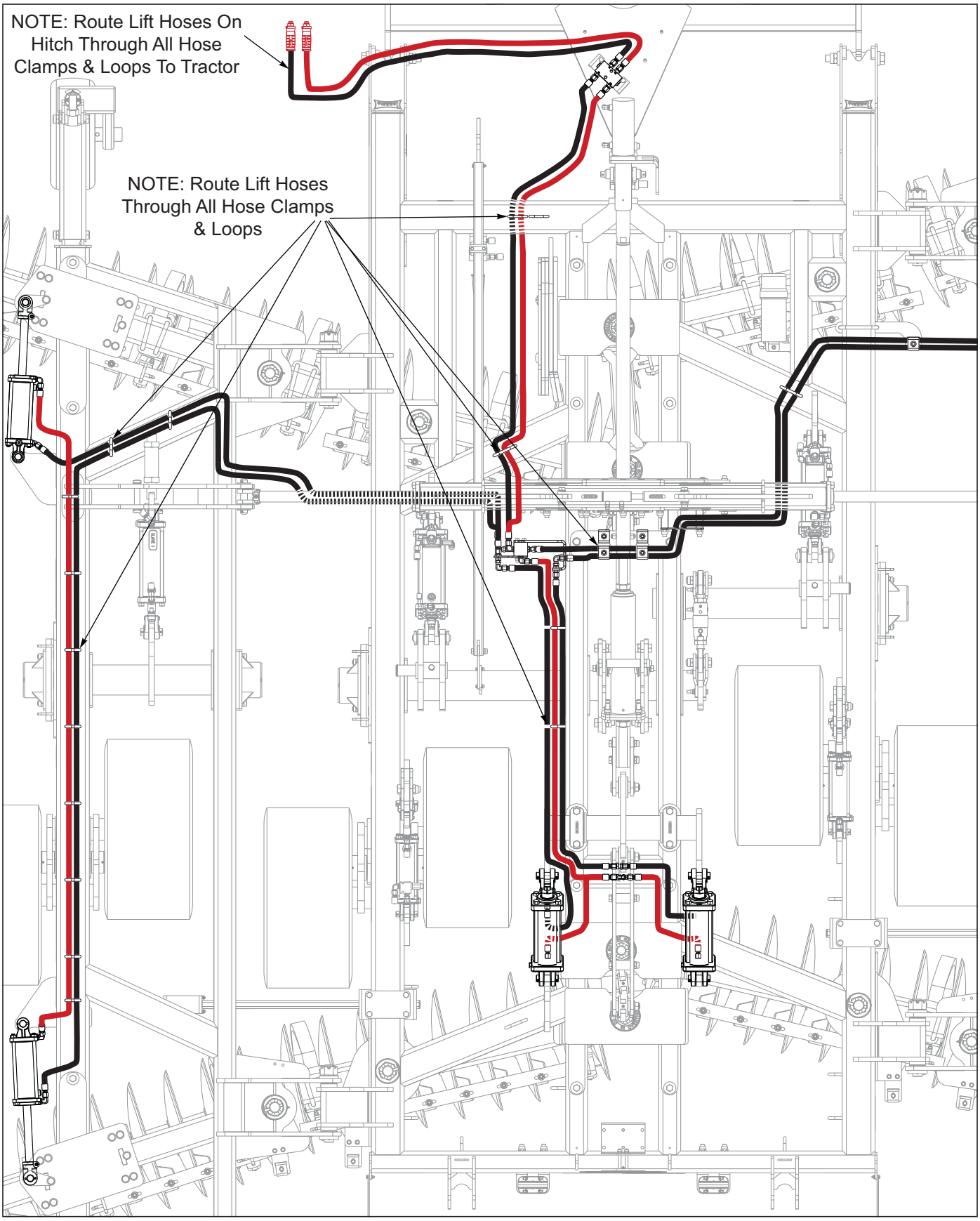


Figure 3-44: Gang Hydraulic Layout 7531-23' LH

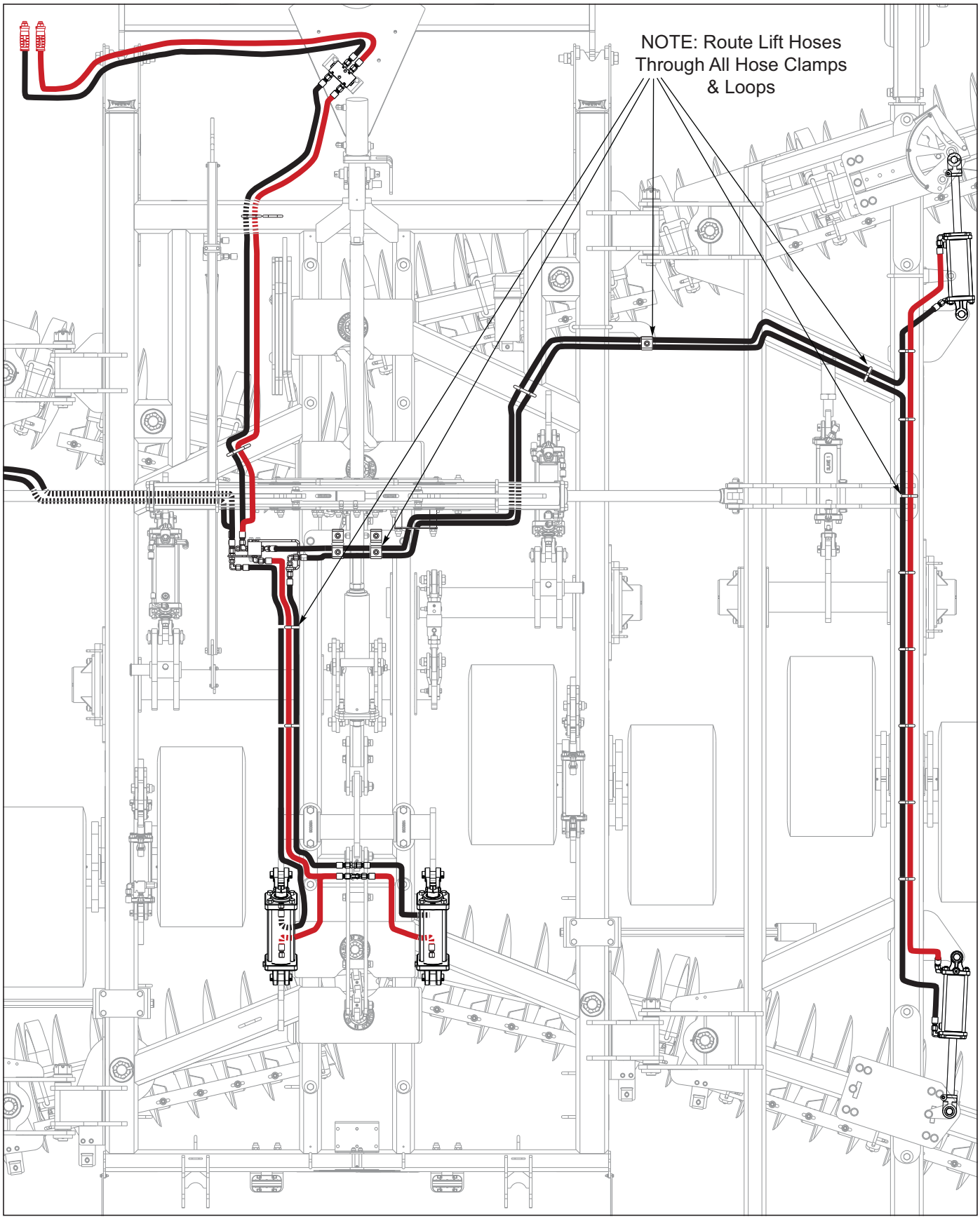


Figure 3-45: Gang Hydraulic Layout 7531-23' RH

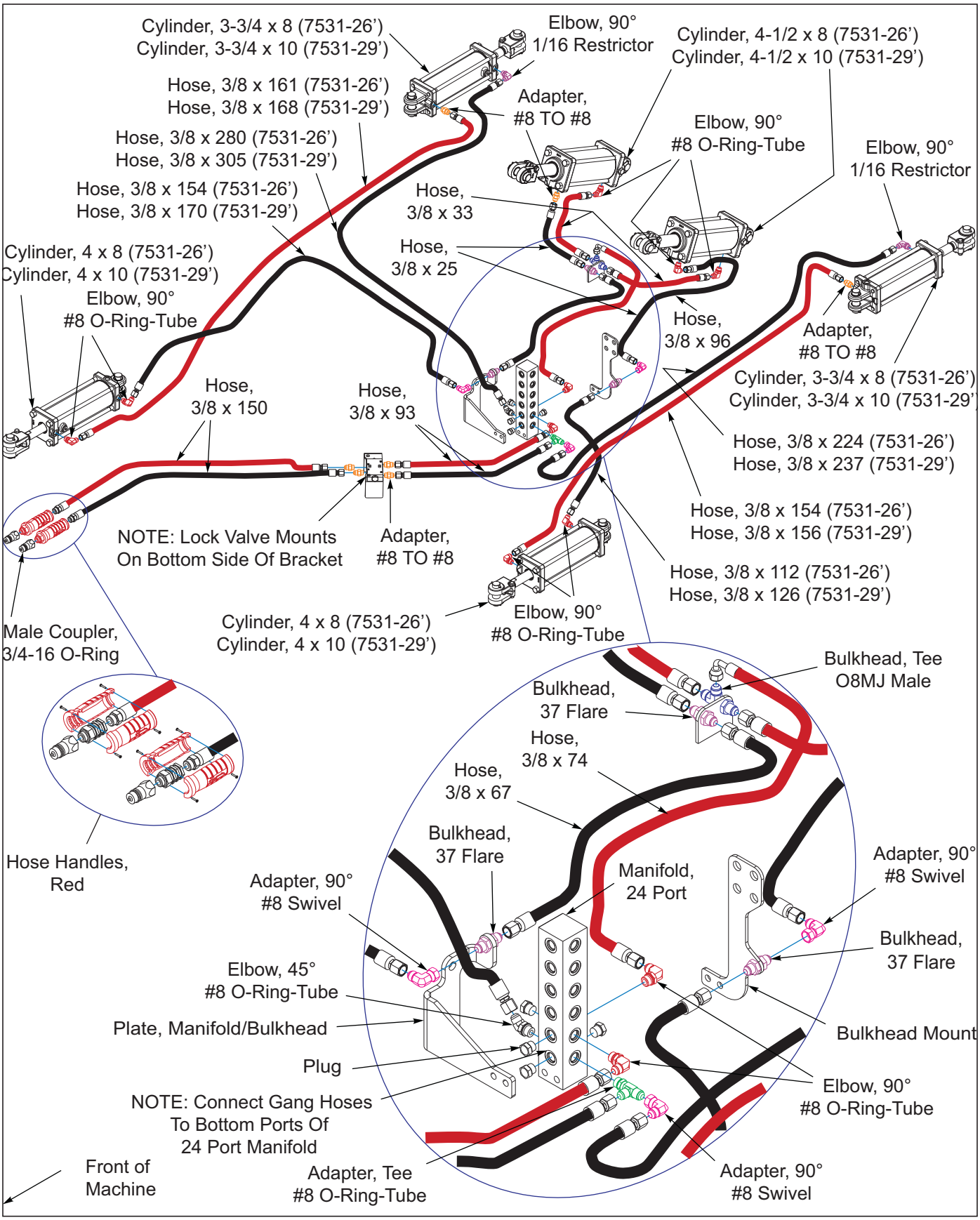


Figure 3-46: Gang Hydraulic Installation 7531-26'-29'

Table provided for general use.

NOTES:

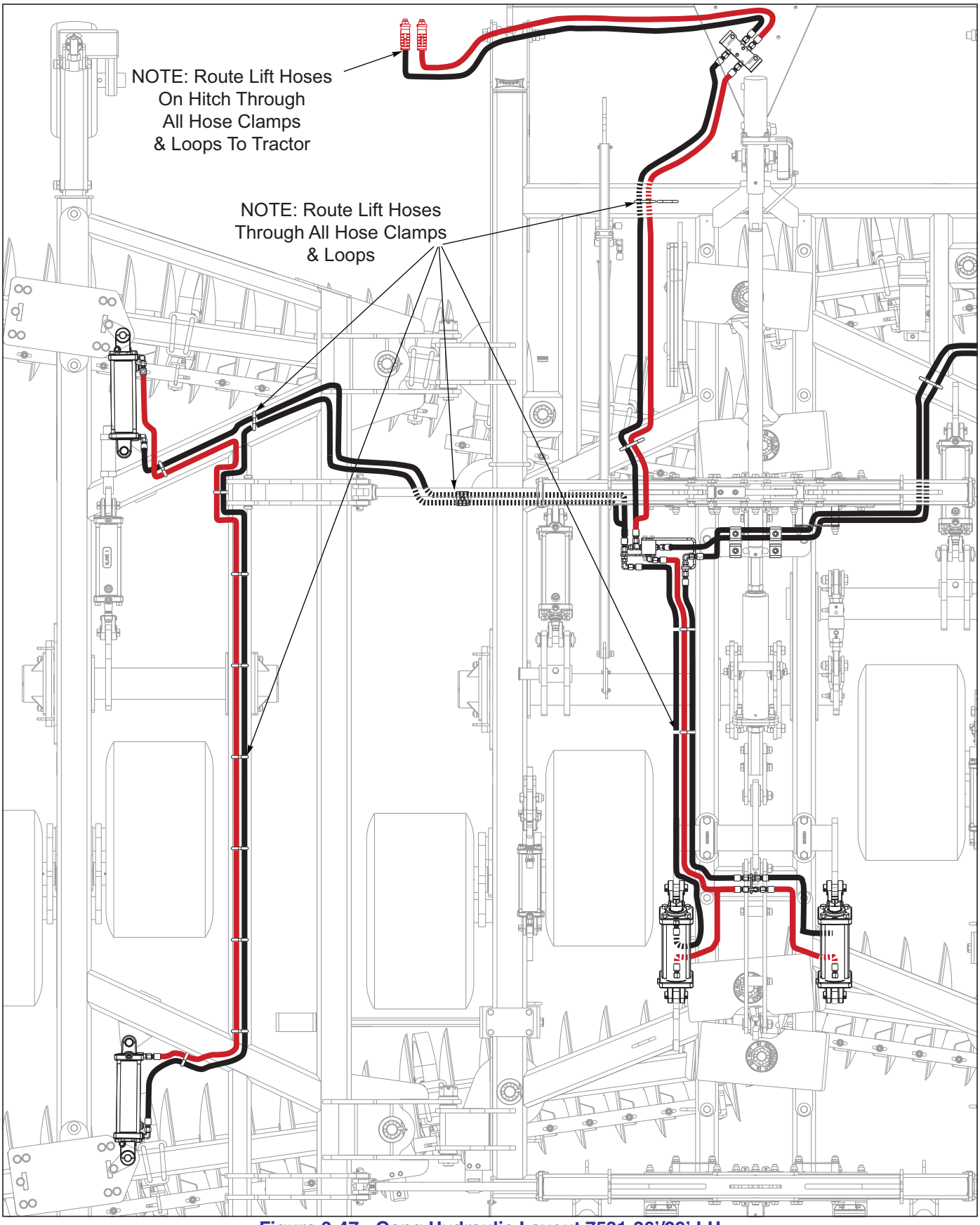


Figure 3-47: Gang Hydraulic Layout 7531-26'/29' LH

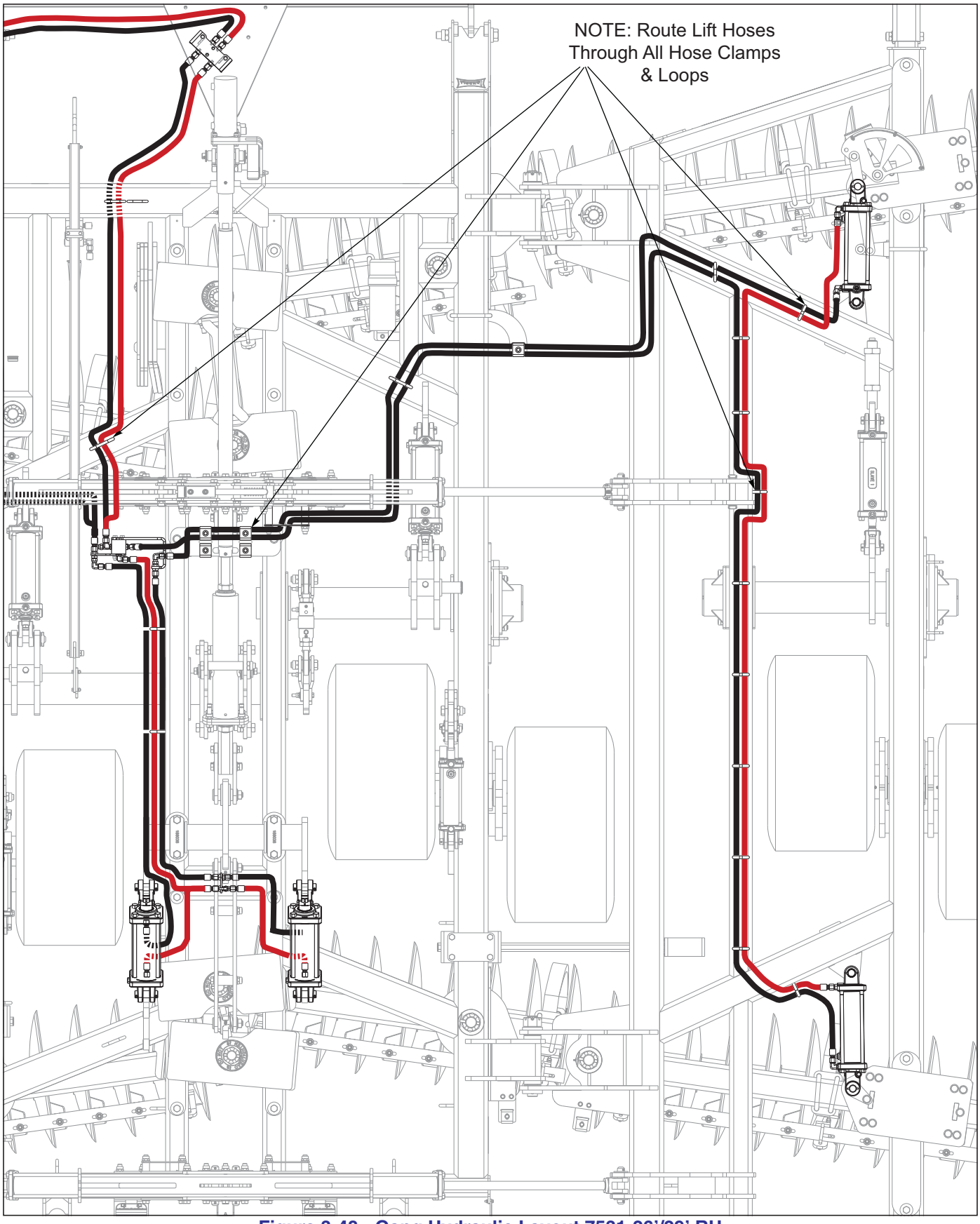


Figure 3-48: Gang Hydraulic Layout 7531-26'/29' RH

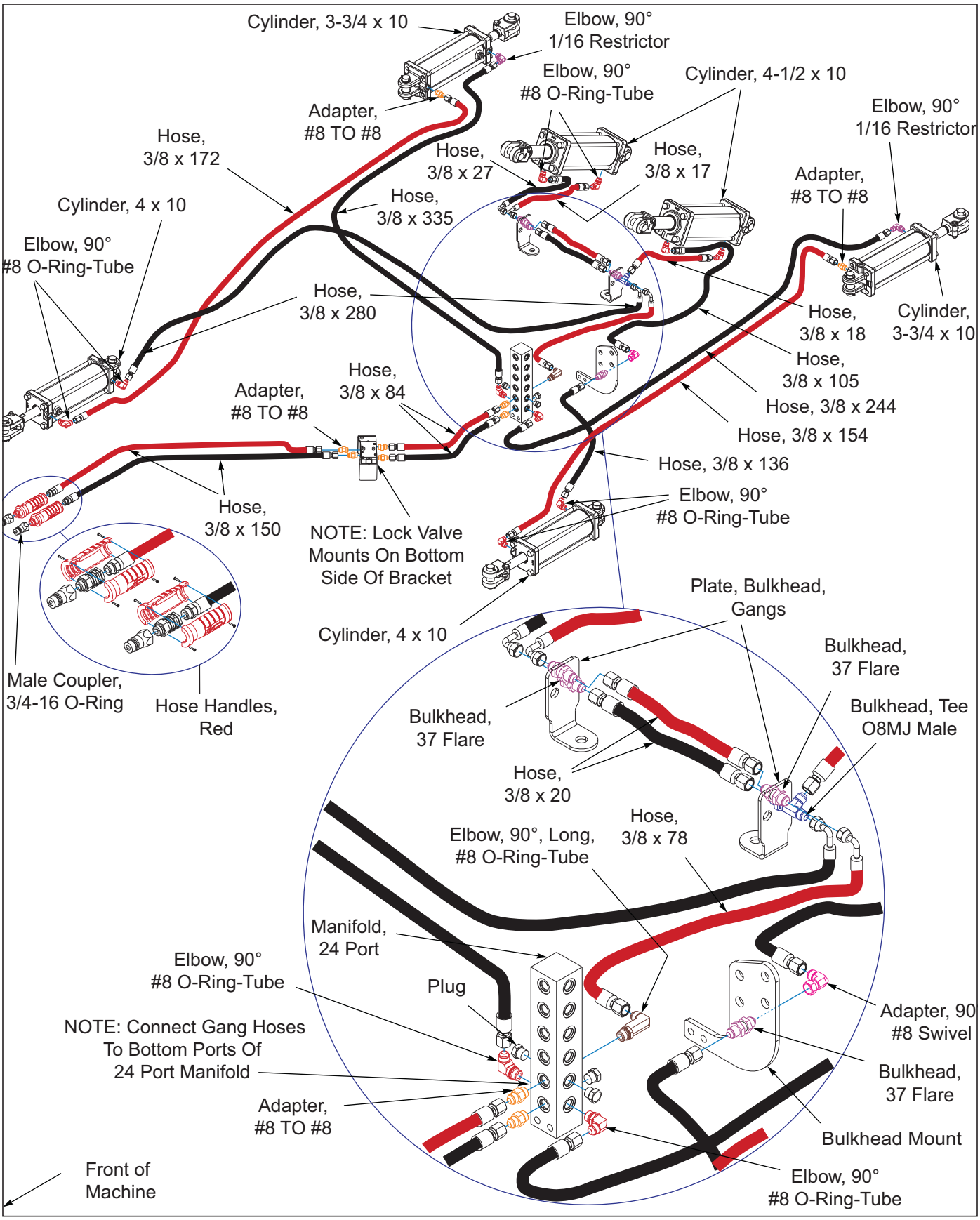


Figure 3-49: Gang Hydraulic Installation 7531-32'-35'

Table provided for general use.

NOTES:

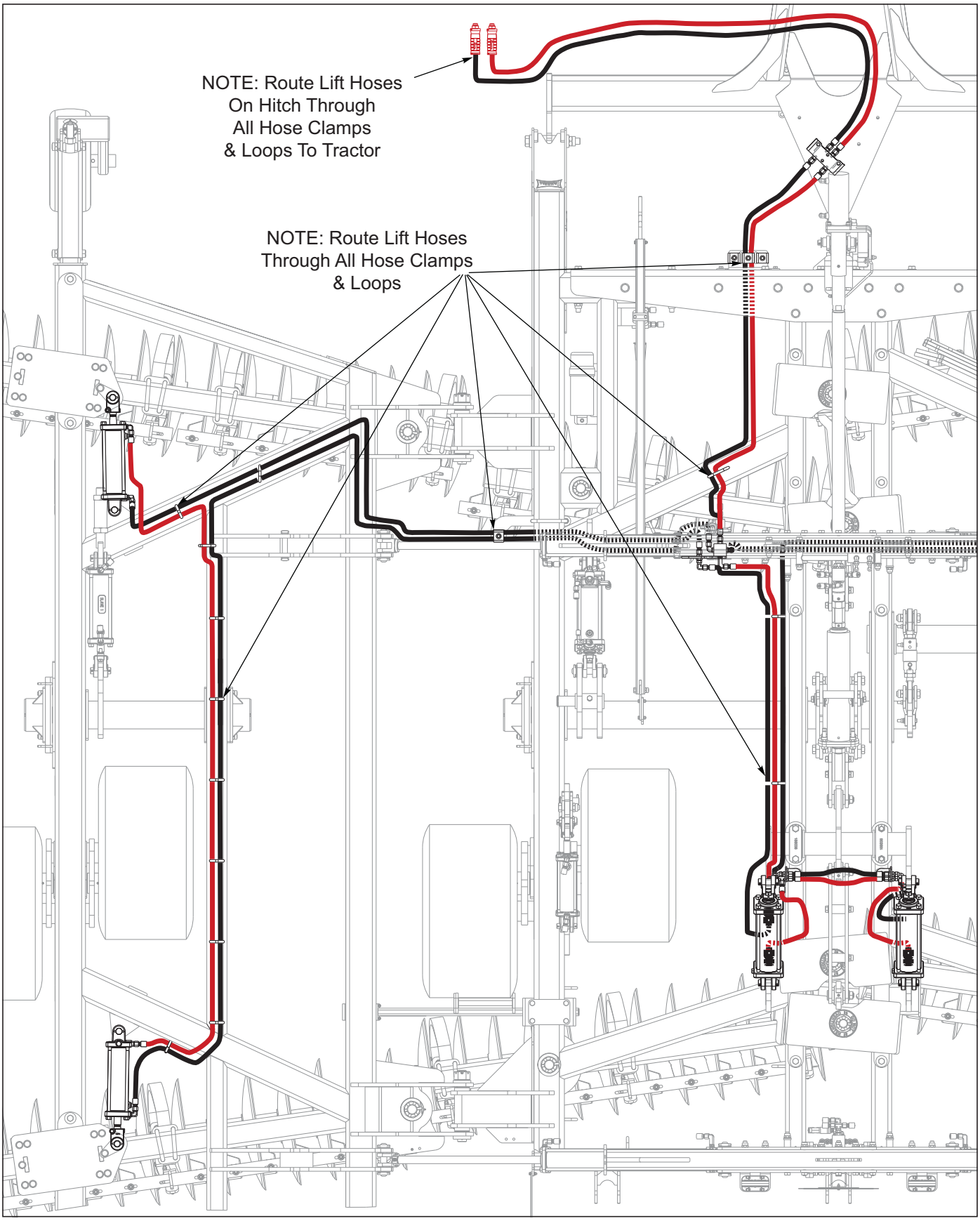


Figure 3-50: Gang Hydraulic Layout 7531-32'-35' LH

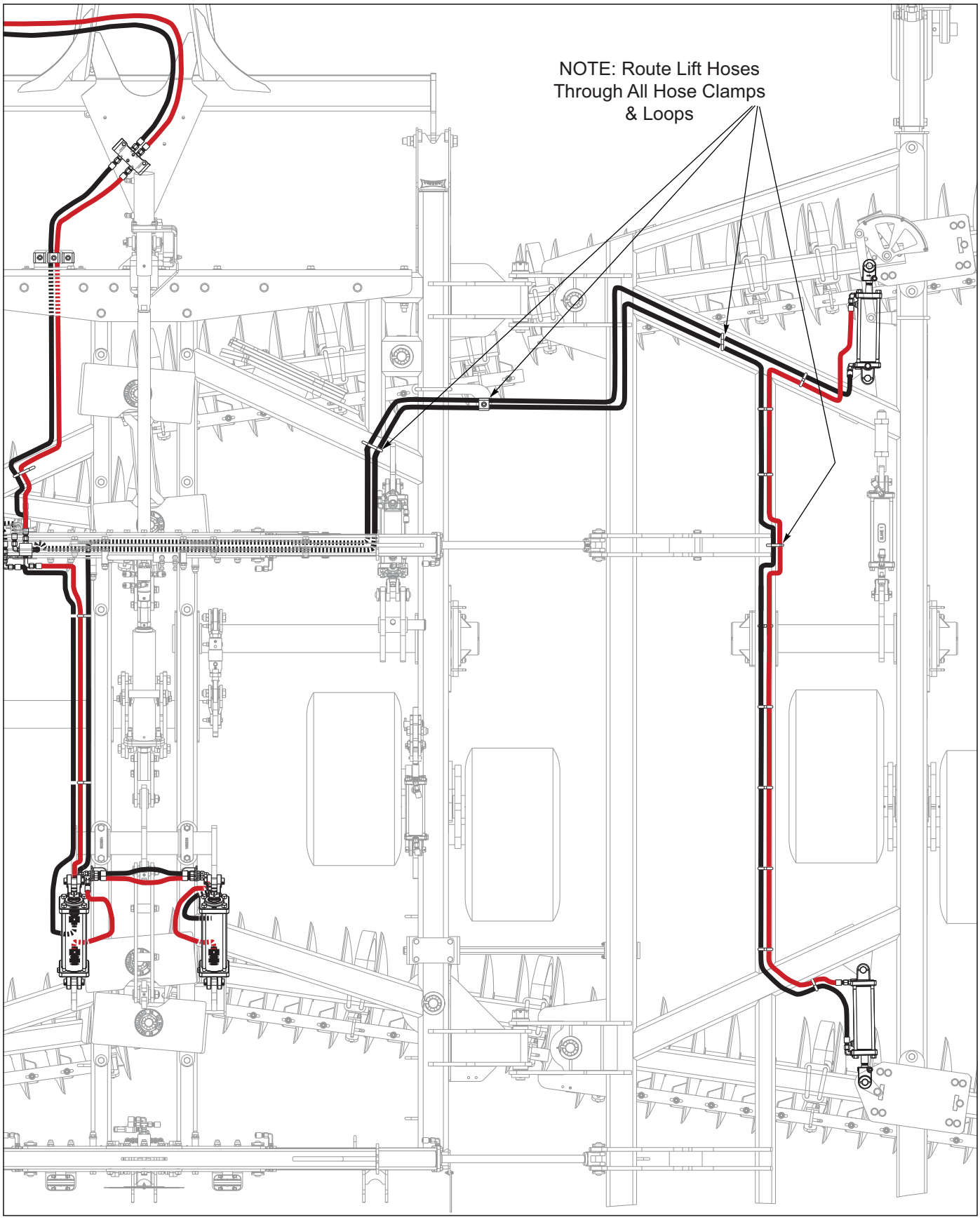


Figure 3-51: Gang Hydraulic Layout 7531-32'-35' RH

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
(NOTE: The Color Of The Wire Jacket Does Not Necessarily Match The Color Of The 7 Pin Connector)

	RIGHT AMBER	RIGHT RED		LEFT RED	LEFT AMBER
	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 3-52: Electrical Assembly W/LED Lights Wiring Chart

LED Light Installation

NOTE

Refer to See Figure 3-55 through See Figure 3-57 for light bracket placements.

1. Attach left and right light brackets w/ref to center frame using light arm plates, 5/8 x 8 bolts ***See Figure 3-53*** and 5/8 lock nuts. The yellow reflectors go to the front side.
2. **Models 7531-32'/35' dual wheel option**, attach the RH/LH light assemblies to outer dual wheel scraper tube as shown ***See Figure 3-53***, (Detail View) with light arm bracket, 5/8 x 6-1/2 bolts, 5/8 flat washers and 5/8 lock nuts. Attach RH/LH light assemblies to front side of light arm bracket with 1/2 x 3-1/2 x 3 u-bolts and 1/2 lock nuts. The yellow reflectors go to the front side.
3. Model 7531-23' attach the ag module mount to front side of 2 hole plate and SMV mount to back side of 2 hole plate ***See Figure 3-54***. Secure mounts with 1/2 x 1-1/2 bolts and 1/2 lock nuts.
4. Model 7531-23' attach the tail light mounts to rear tube of center frame ***See Figure 3-54*** using 3/4 x 5-1/2 bolts, 3/4N flat washers and 3/4 lock nuts.

NOTE

Mounting location of ag flasher module, red led ag lamps and smv for Models 7531-23' and 7531-26'-35', See Figure 3-54.

5. Attach ag flasher control module with 1/4 x 1-1/2 bolts and 1/4 lock nuts. Be sure that the control module is set so that the 6 pin connector faces the right side of the machine. The tube mount used for control module on models 7531-26'-29'-35' has a slotted hole where it mounts with the 3/4" bolt. It will need slid up on some models, to clear the aluminum manifold used with hydraulic reels.
6. Attach the ag red single led lamps to tail light mounts using 1/4 x 1-1/4 bolts and 1/4 lock nuts.
7. Install the rear warning light harness to the frame. Connect 2 pin and 3 pin ends to each of the warning lights. The right side amber light will require a 36"-2 pin harness extension to connect with light. Connect 6 pin to the ag flasher control module.

NOTE

Standing from the rear, the yellow marked wires go to the left side lights and the green marked wires to the right side lights.

8. ***See Figure 3-52*** **for LED harness wire designations.**
9. Attach ag amber single LED lamps to light brackets using 1/4 x 1-1/4 bolts and 1/4 lock nuts ***See Figure 3-53***.
10. Attach main harness to frame. Connect 4 pin end to the ag flasher control module.
11. Insure that the harnesses are clear of any moving parts and secure the harnesses with tie straps provided.
12. Install the stor-away holder to hose holder on hitch with 1/4 x 1 bolts and 1/4 lock nuts **.**
13. Attach smv mount, SIS 20mph mount, sis decal, smv emblem with 1/4 x 1 bolts, and 1/4 lock nuts**.**

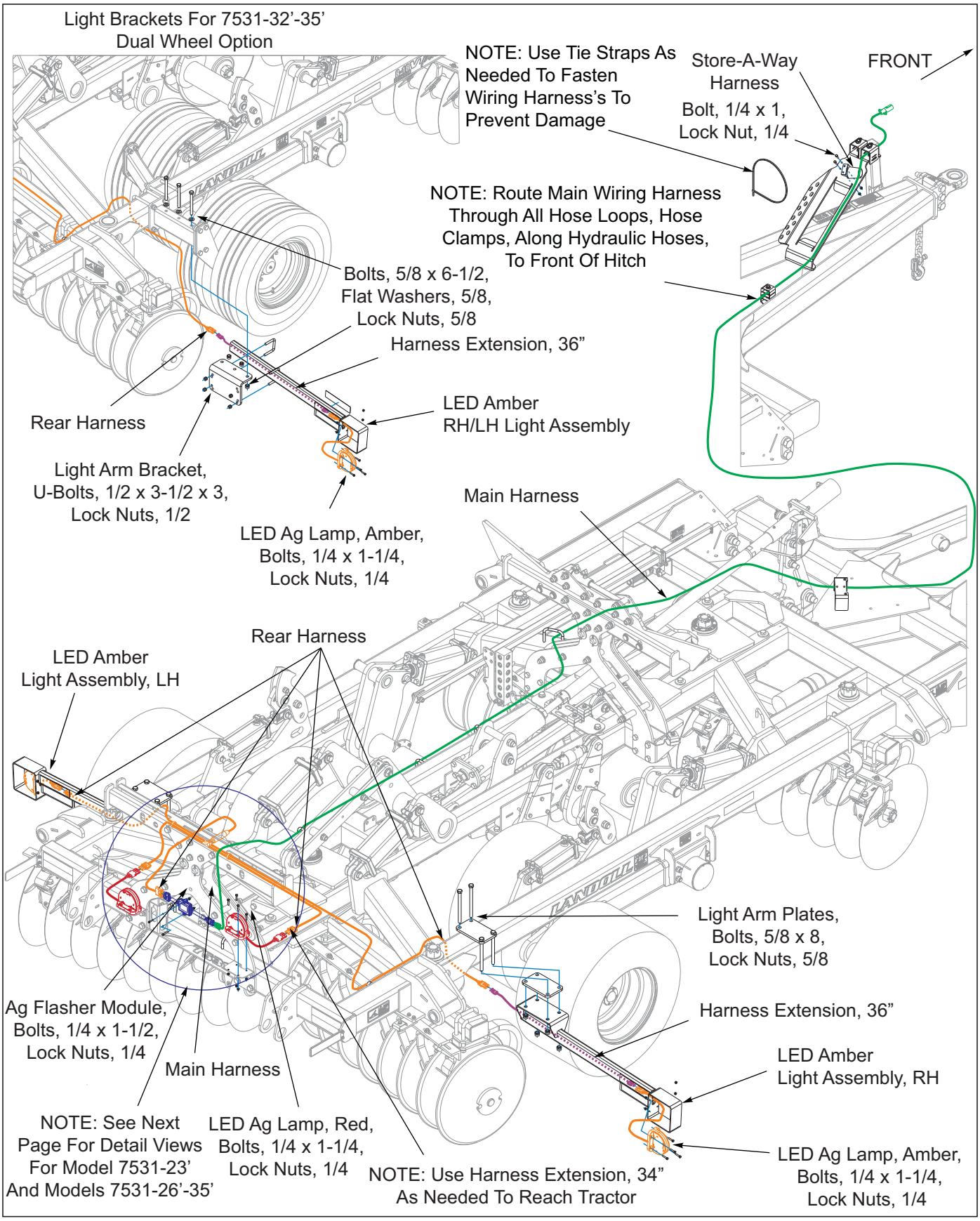


Figure 3-53: Electrical Assembly W/LED Lights (Page 1 of 5)

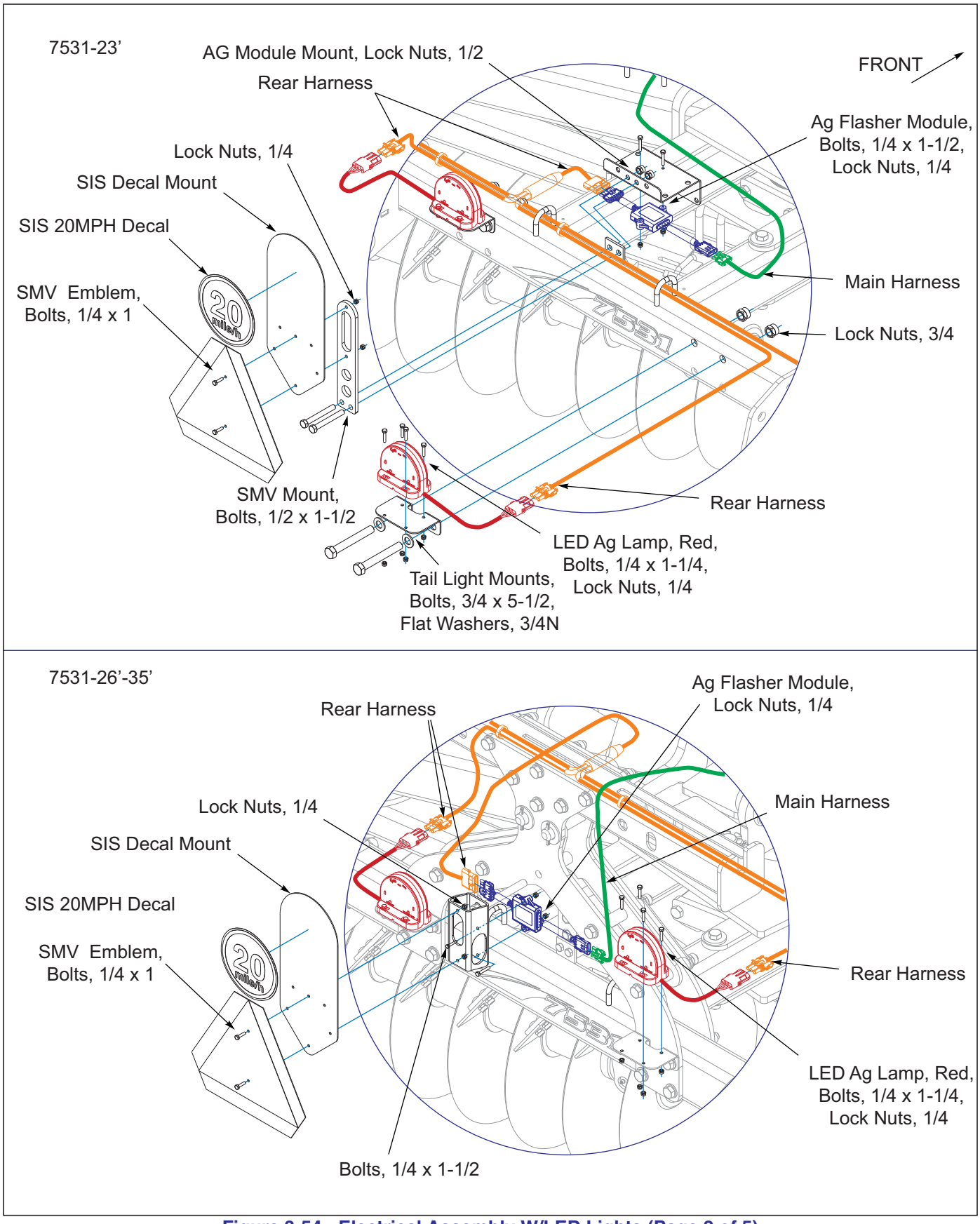


Figure 3-54: Electrical Assembly W/LED Lights (Page 2 of 5)

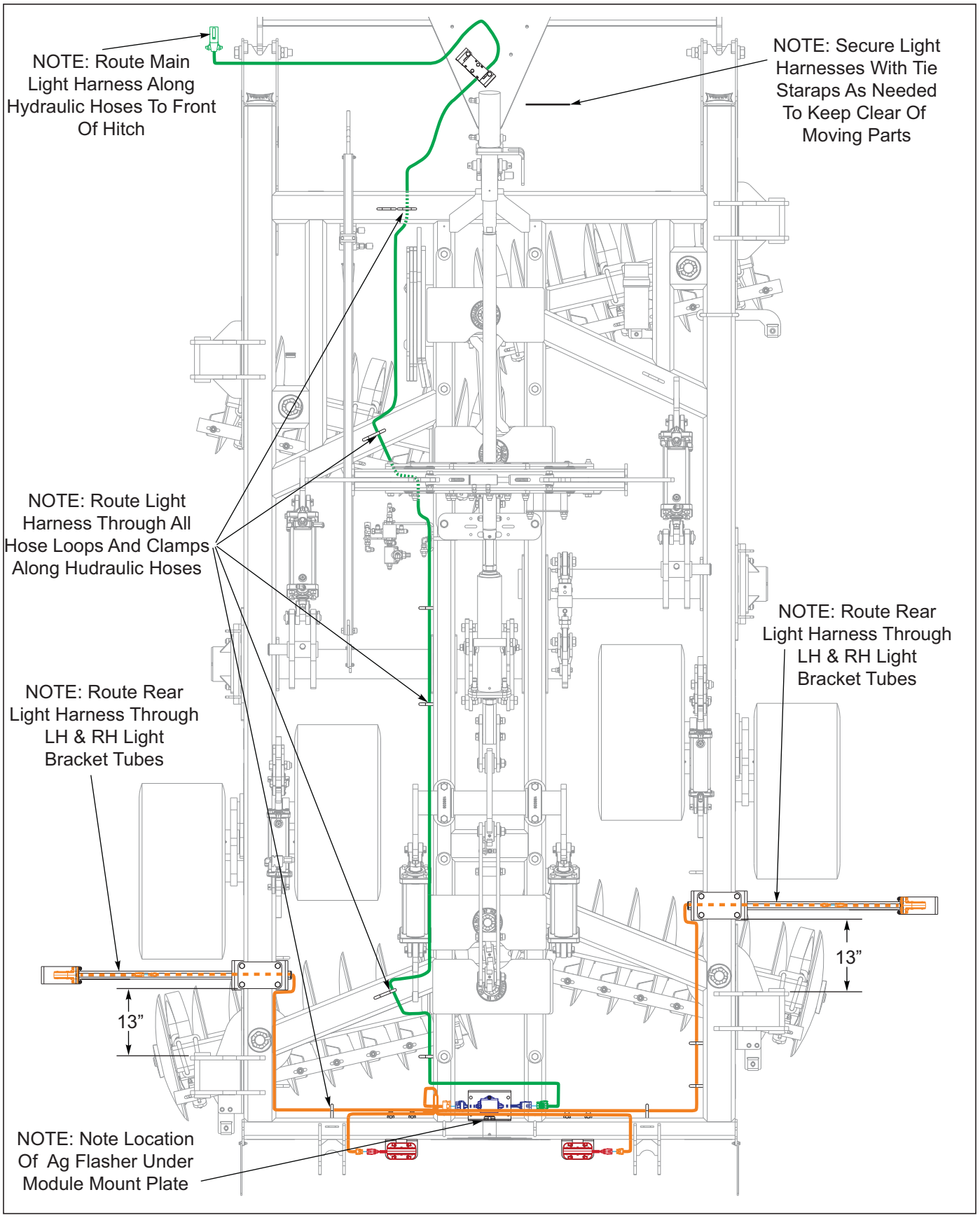


Figure 3-55: Electrical Layout W/LED Lights (7531-23’) (Page 3 of 5)

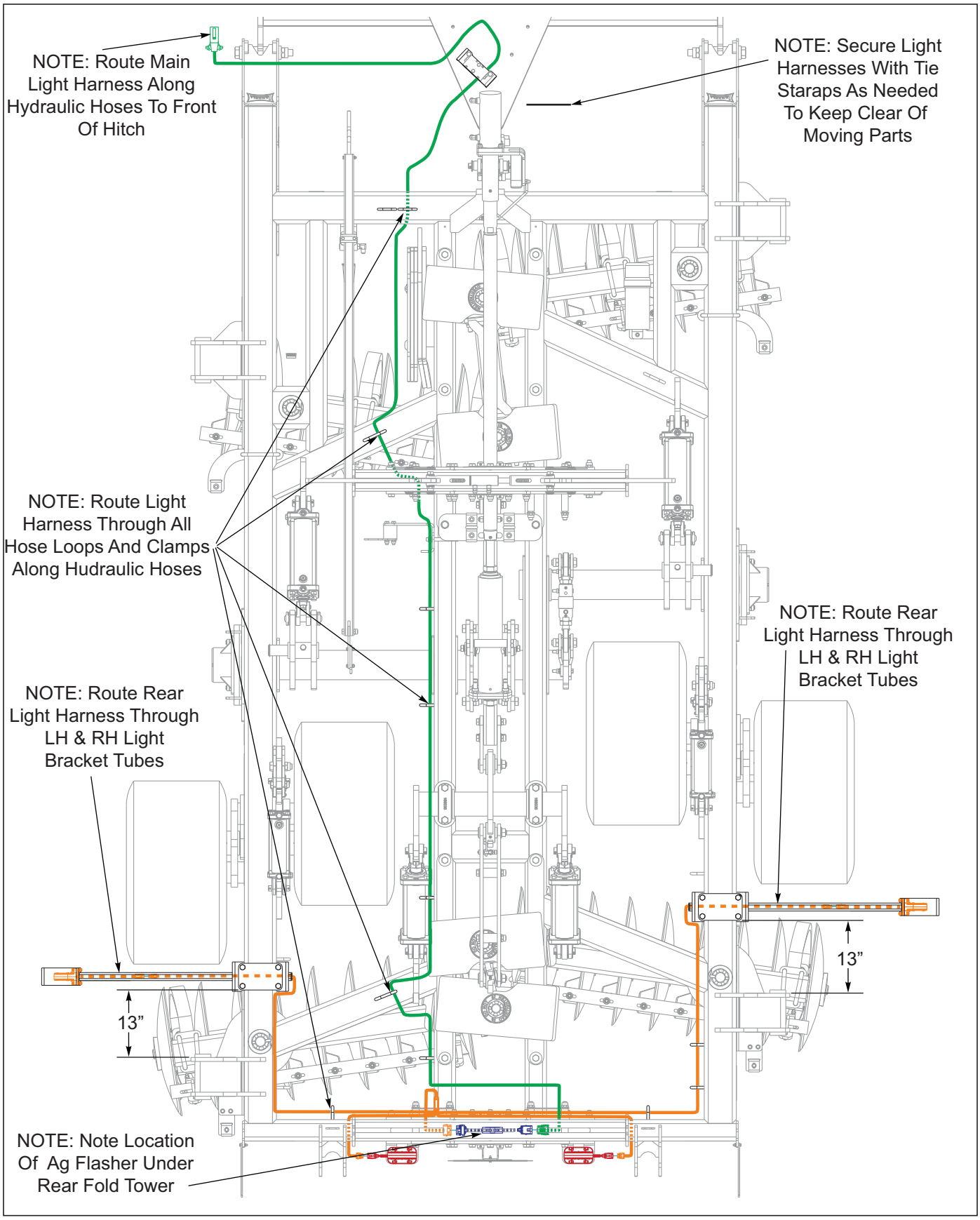


Figure 3-56: Electrical Layout W/LED Lights (7531-26’-35”) (Page 4 of 5)

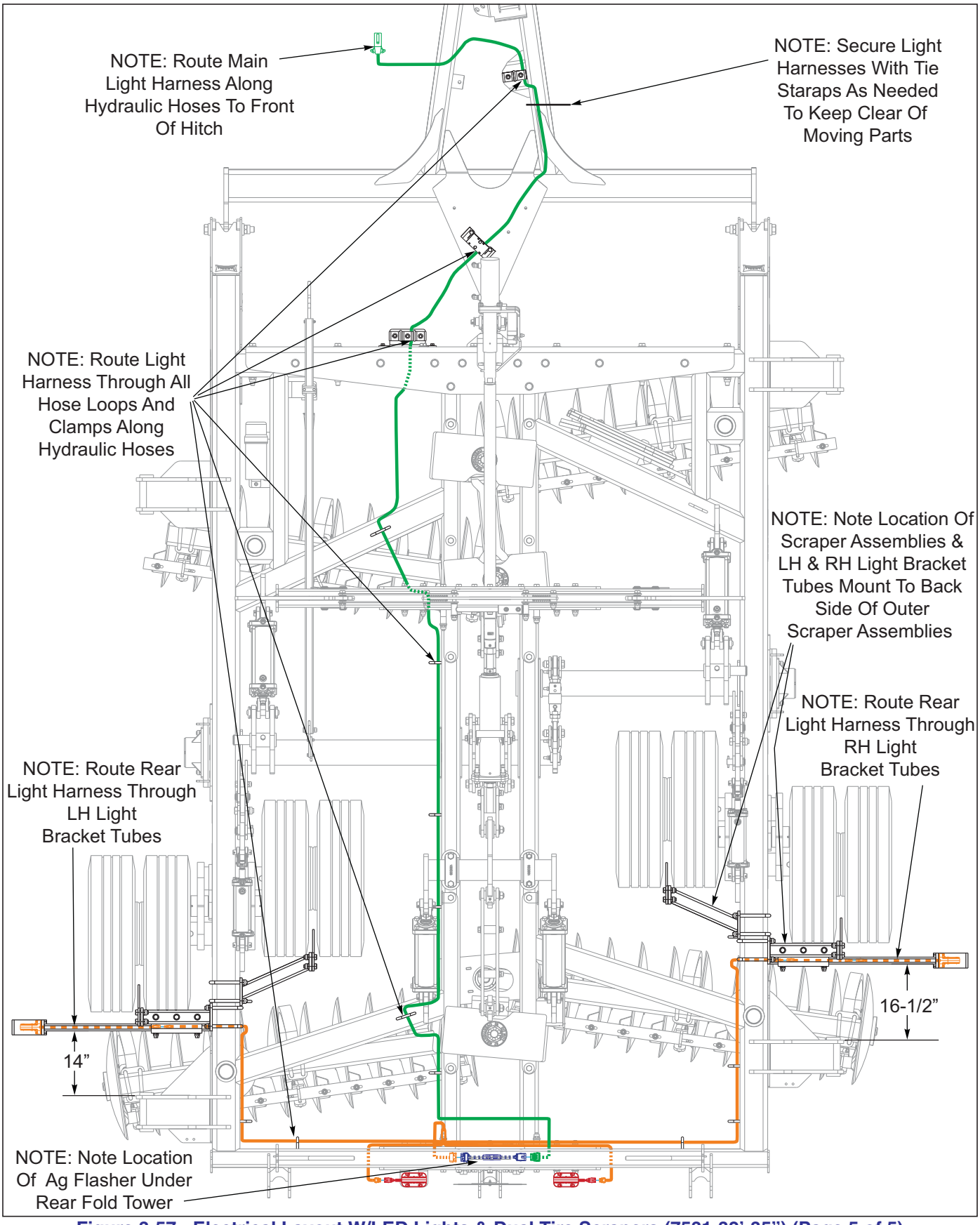


Figure 3-57: Electrical Layout W/LED Lights & Dual Tire Scrapers (7531-32’-35”) (Page 5 of 5)

Table provided for general use.

NOTES:

Conditioner Reel Installation (Option)

1. **For Standard Reel Option**, *See Figure 3-58*. Slide the adjustment pin through the rear of single reel arm. Center frame secure with (2) 2-1/2 snap rings, Wings slide slotted hole end of reel arm stop over outer side of LT/RT wings, 2-1/2 thrust washer and 2-1/2 snap ring, both sides.
2. Assemble the 1 x 9 bolt through adjustment pin, 1” lock washer, (2) 1” hex nuts, and 17" spring (1” threads) assembly.
3. Install 1-1/2 flange bearing into single reel arm. Slide in 1-1/2 pivot bushing.
4. Attach single reel arm to upper hole on rear center frame plates and wing frames using 1 x 6-1/2 bolt and lock nut.
5. Center frame, align hole in 17" spring (1” threads) assembly with lower holes of rear center frame plates. Install spring guide to both sides, secure with 1” plate washer 1 x 7-1/2 bolt and 1” lock nut,

NOTE

Do not over tighten, spring must pivot.

6. Set pin centers to 21" dimension as shown *See Figure 3-58*.
7. **For hydraulic reel option** *See Figure 3-58*. Attach the cylinder 2-1/2 x 2-1/2, 1-1/8 jam nut, and 17” spring (1-1/8” threads) to rear of single reel arm. Center frame secure with trunnion mount assembly, 1/2 lock washers, 1/2 x 2-1/4 bolts, both sides. Wings slide slotted hole end of reel arm stop over outer side of LT/RT wings, trunnion mount assembly, 1/2 lock washers, 1/2 x 2-1/4 bolts, both sides.

NOTE

Snap ring must be visible after tightening bolts.

8. Install 1-1/2 flange bearing into single reel arm. Slide in 1-1/2 pivot bushing.
9. Attach single reel arm to upper hole on rear center frame plates and wing frames using 1 x 6-1/2 bolt and lock nut.
10. Center frame, align hole in 17" spring (1-1/8” threads) assembly with lower holes of rear wing frame plates. Install spring guide to both sides, the other end of reel arm stop to outside of LT/RT wings, secure with 1” plate washer, 1 x 7-1/2 bolt and 1” lock nut.

NOTE

Do not over tighten, spring must pivot.

11. Set pin centers to 21” dimension as shown *See Figure 3-58*.

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.

12. Attach conditioner reel/gang bar assembly to reel arms using gang bar mount plate, 3/4 x 5-1/2 bolts and 3/4 lock nuts as shown in *See Figure 3-58*. **Refer to** *See Figure 2-6* **through** *See Figure 2-15* for conditioner reel gang bar placement locations.
13. Alternate corner to corner while tightening mount plate. Tighten center bolt last.

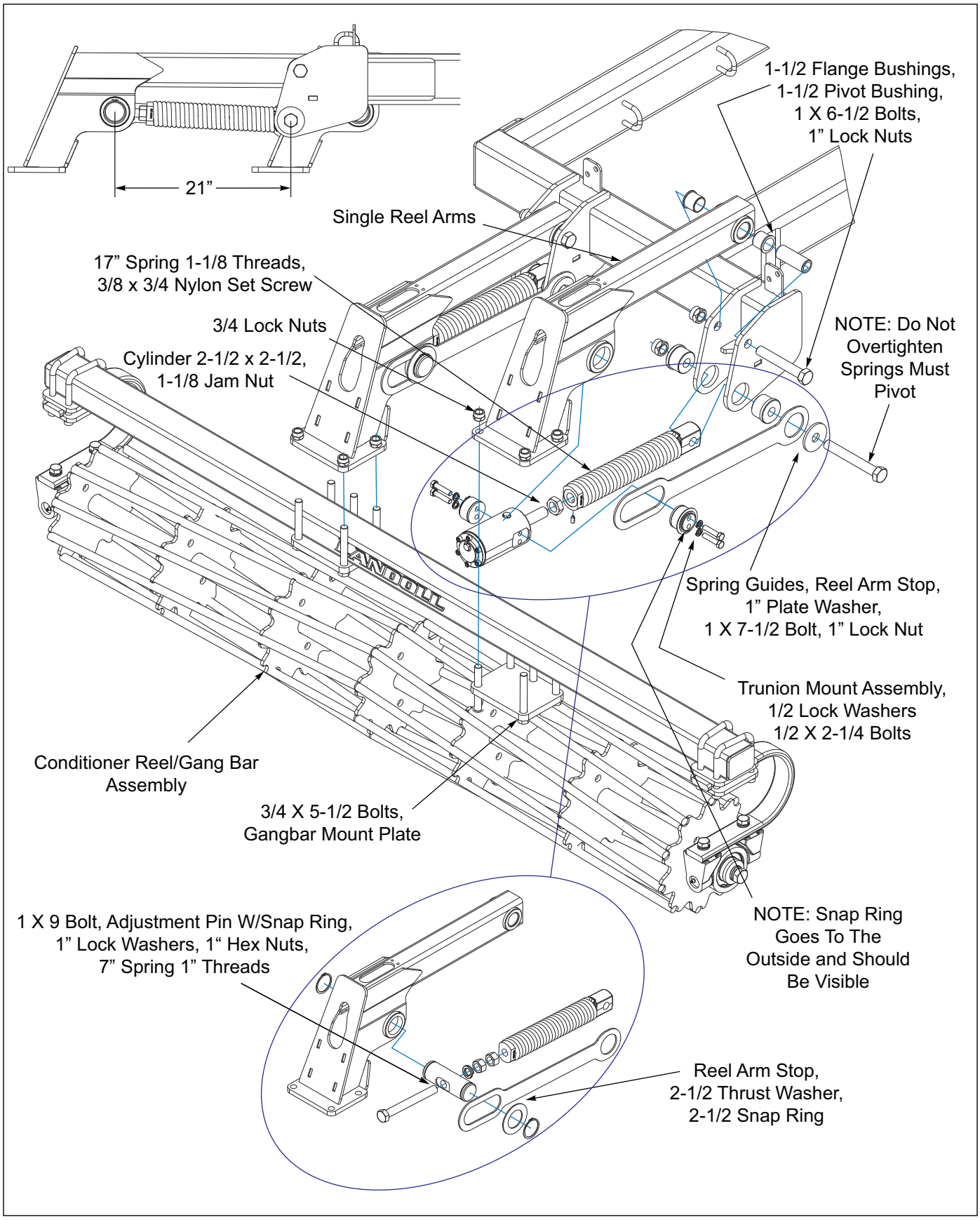


Figure 3-58: Conditioner Single Reel Installation 7531-23’-35’

Double Reel Installation (Option)

NOTE

The 3 double reel options. Double Round, Double Flat and Double Flat/Round are all attached to the same double reel arms.

1. **For Standard Reel Option**, ***See Figure 3-59***. Slide the adjustment pin through the rear of double reel arm. Center frame secure with (2) 2-1/2 snap rings, Wings slide slotted hole end of reel arm stop over outer side of LT/RT wings, 2-1/2 thrust washer and 2-1/2 snap ring, both sides.
2. Assemble the 1 x 9 bolt through adjustment pin, 1” lock washer, (2) 1” hex nuts, and 17" spring (1” threads) assembly.
3. Install 1-1/2 flange bearing into double reel arm. Slide in 1-1/2 pivot bushing.
4. Attach double reel arm to upper hole on rear center frame plates and wing frames using 1 x 6-1/2 bolt and lock nut.
5. Center frame, align hole in 17" spring (1” threads) assembly with lower holes of rear center frame plates. Install spring guide to both sides, secure with 1” plate washer 1 x 7-1/2 bolt and 1” lock nut,

NOTE

Do not over tighten, spring must pivot.

6. Set pin centers to 21" dimension as shown ***See Figure 3-59***.
7. **For hydraulic reel option** ***See Figure 3-59***. Attach the cylinder 2-1/2 x 2-1/2, 1-1/8 jam nut, and 17” spring (1-1/8” threads) to rear of double reel arm. Center frame secure with trunnion mount assembly, 1/2 lock washers, 1/2 x 2-1/4 bolts, both sides. Wings slide slotted hole end of reel arm stop over outer side of LT/RT wings, trunnion mount assembly, 1/2 lock washers, 1/2 x 2-1/4 bolts, both sides.

NOTE

Snap ring must be visible after tightening.

8. Install 1-1/2 flange bearing into double reel arm. Slide in 1-1/2 pivot bushing.
9. Attach double reel arm to upper hole on rear center frame plates and wing frames using 1 x 6-1/2 bolt and lock nut.
10. Center frame, align hole in 17" spring (1-1/8” threads) assembly with lower holes of rear wing frame plates. Install spring guide to both sides, the other end of reel arm stop to outside of LT/RT wings, secure with 1” plate washer, 1 x 7-1/2 bolt and 1” lock nut.

NOTE

Do not over tighten, spring must pivot.

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.

11. Attach double reel assembly to reel arms using (2) gang bar plates, bottom plate, (4) 1-3/4 torsion springs, 3/4 x 7-1/2 bolts and 3/4 lock nuts as shown in ***See Figure 3-59***.
12. Install the front and rear gang bar plates into the bottom plate with the longer tabs positioned upwards. Install (2) 1-3/4 torsion springs and position under reel gang bar, while lifting gang bar up close to double reel arm. Before the upper tabs engage slide in the top (2) 1-3/4 torsion springs. Insert the 3/4 x 7-1/2 bolts from the bottom upward and tighten alternating corner to corner until plates are tightly clamped together.
13. Attach the 3 x 3 clamp tubes, 1/2 x 5-1/2 bolts and 1/2 lock nuts on wings as shown ***See Figure 3-59***.
14. **Refer to** ***See Figure 2-16*** **through** ***See Figure 2-45*** for double reel placement and clamp tube locations.

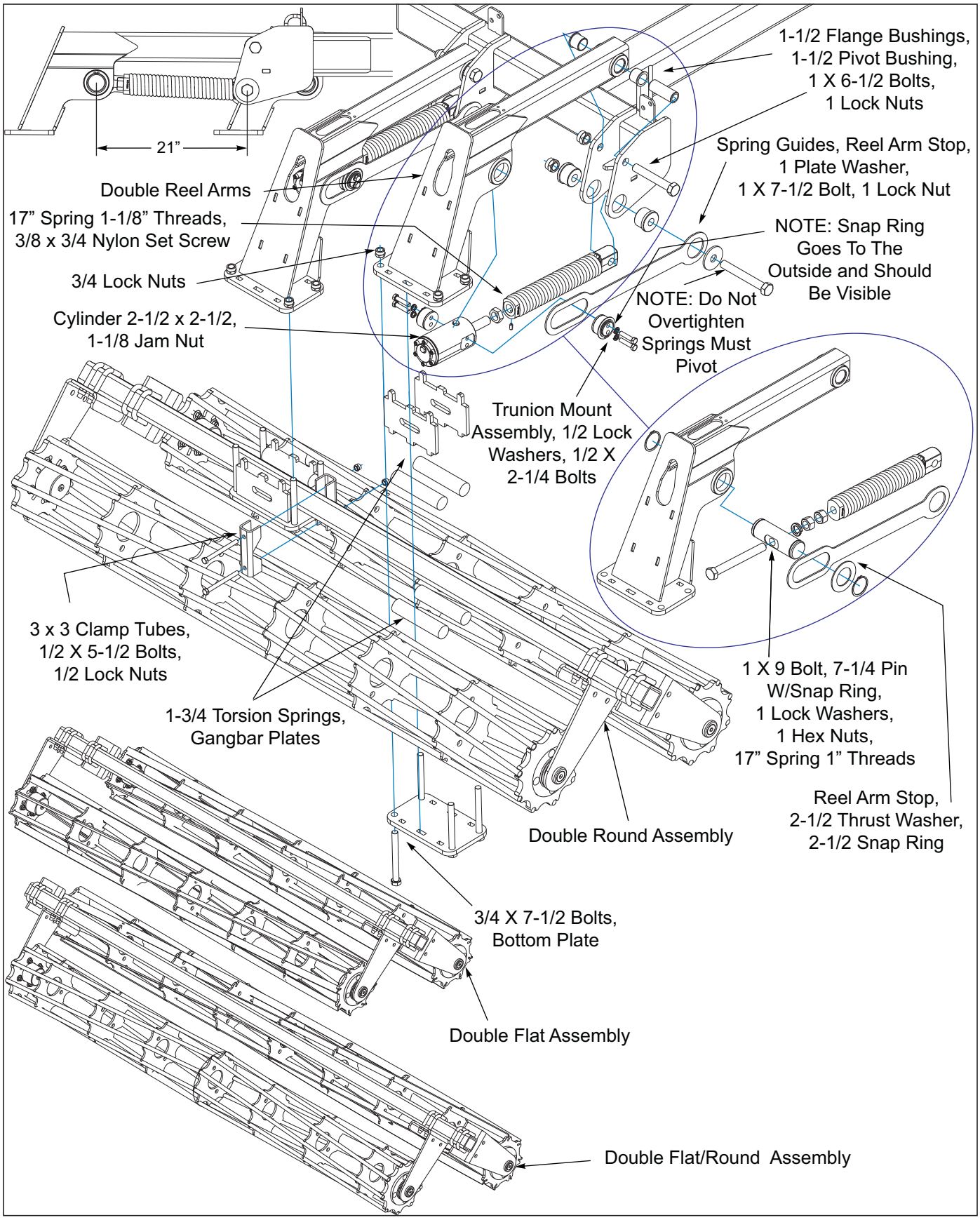


Figure 3-59: Double Reel Installation 7531-23’-32’

Reel Hydraulic Installation (Option)

1. Install the 8 port manifold bulkhead fittings and hose clamps ***See Figure 3-60***. Hose clamp mounting plates are positioned near the rear hinge. Holes will be in the frame to locate them.
2. Install cylinders, fittings and hoses as shown ***See Figure 3-61*****.**
3. Route hoses through all hose clamps and loops on center frame, hitch assembly to tractor.
4. Install (4), 1/2 clamps at the rear of the reel arm support the hoses. The bottom hose should be 33” going to rod end of the cylinders. The top hole is 38” going to the base end, the 45° fitting attaches to the cylinder.
5. Install purple colored hose ends at coupler.

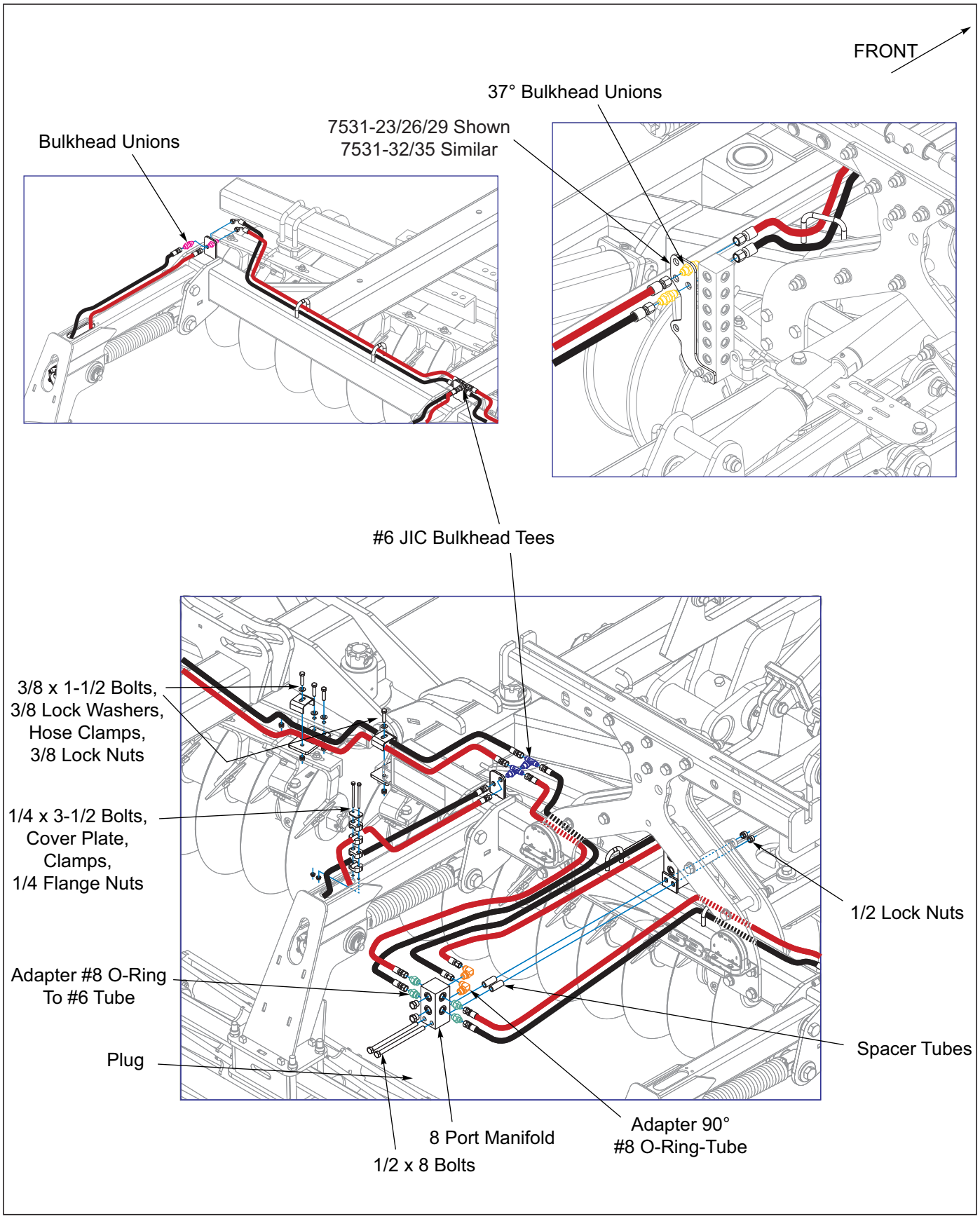


Figure 3-60: Reel Hydraulic Manifold & Hose Clamp Assembly

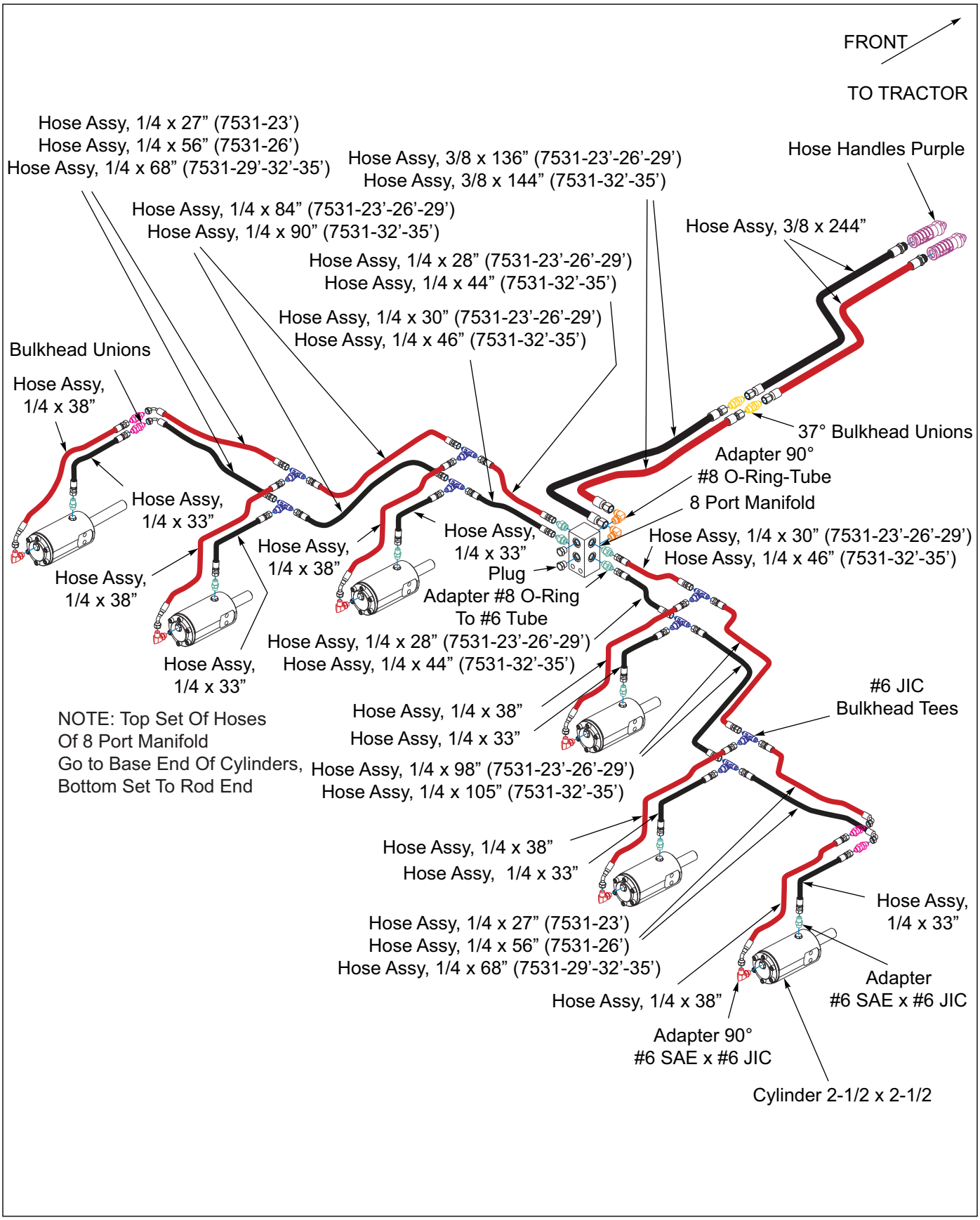


Figure 3-61: Reel Hydraulic Assembly

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. Connect the hydraulic hoses on the hydraulic leveler to the tractor. Fully extend and retract the hydraulic leveler several times to remove any air. **See** ***"Hydraulic Leveler Adjustment" on page 4-8*** for any further adjustments.
3. Connect the hydraulic hoses for the adjustable disc gangs. Fully extend the cylinders and hold tractor lever for 10-15 seconds to fully rephase the system. Then fully extend and retract several times to remove any air.
4. The fold system must be purged of air and filled with oil BEFORE attempting to fold the implement. Air in the system will allow the wings to fall uncontrollably and may result in implement damage. Follow instructions for charging the hydraulic fold system as described in ***"Hydraulic Fold System" on page 4-4*****.**
5. Connect lights to the tractor and verify operation.
6. Check tires for proper inflation
7. Level the disc from side to side as described in ***"Leveling (Side to Side)" on page 4-6***.
8. Inspect the final implement assembly, and verify that all bolts have been tightened, and that there are no leaking hydraulic connections.
9. Rotate each disc gang to verify that each gang rotates freely. Adjust any scrapers that may have shifted during shipment or assembly.
10. Lubricate the disc at all locations ***(See "" on page 4-16.)***
11. Touch up with paint any areas that may have been scratched during moving, handling, or assembly.
12. Thoroughly read and understand the operating section before using the disc.

Table provided for general use.

NOTES:

Chapter 4

Operation

DANGER

Never allow anyone to ride on the 7531 VT at any time. Allowing a person to ride on the machine can inflict serious personal injury or death to that person.

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

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.

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

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.

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 7531 VT 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.

7531 VT Preparation

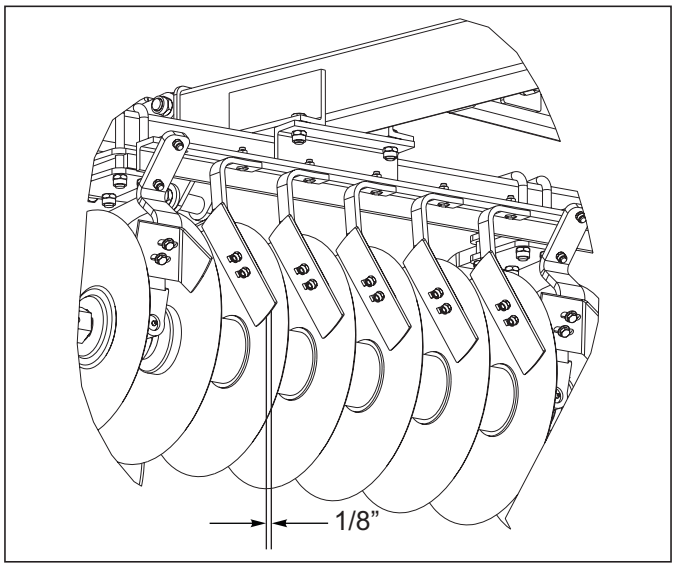


Figure 4-1: Disc Scraper to Disc Blade

1. Prior to operating the 7531 VT, 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 ***“Lubrication Maintenance” on page 5-3***.

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. A decal located on the hitch specifies what function goes with each color of hydraulic hose handles.
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.

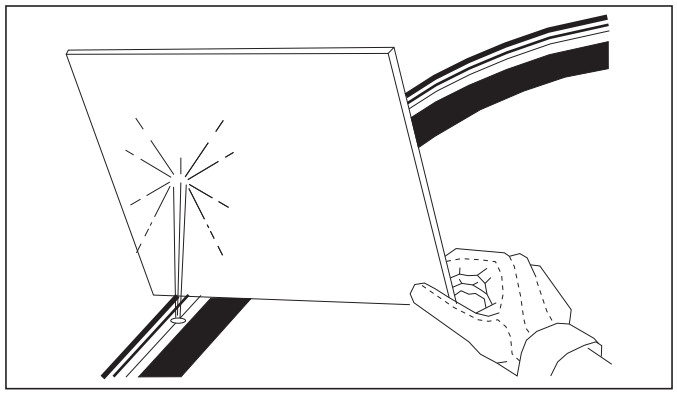


Figure 4-2: Hydraulic Leak Detection

⚠ 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.

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.
4. The hydraulic lift system has latching hooks that are activated with the hydraulic fold system. Before folding the VT Plus **FULLY RAISE** the lift hydraulic system to assure the hooks can latch. During folding the hooks will rotate over to secure the lift making the unit safer to transport. Before unfolding **FULLY RAISE** the lift as some settling may occur, to allow the hooks to release during the unfold cycle. The hooks should rotate back to where the cylinders operating them are fully retracted. Periodically check the hooks and the pin they latch to for any kind of wear.

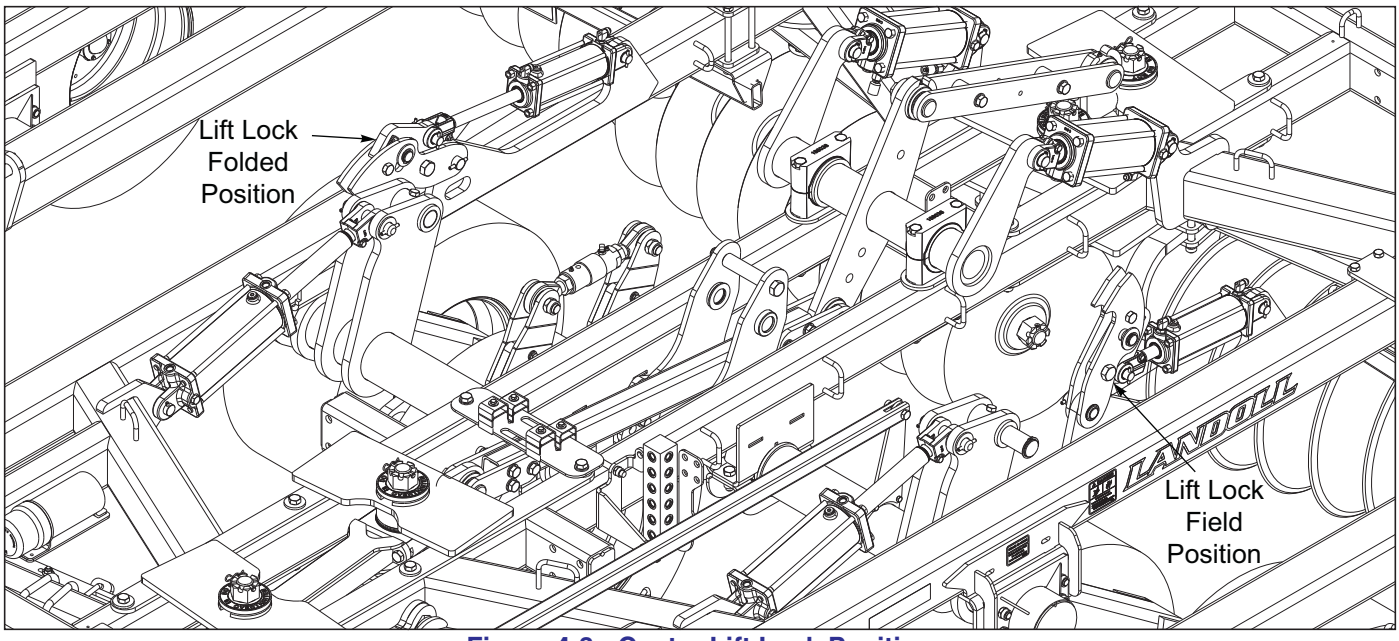


Figure 4-3: Center Lift Lock Position

Hydraulic Fold System

1. The VT Plus is equipped with a hydraulic fold system to raise and lower the wing frames for narrow transport.
2. Be sure the system is fully charged with hydraulic oil before attempting to fold/unfold the unit. Air in the system can allow uncontrolled dropping of the wing frames causing serious personal injury or machine damage. The system needs to be charged with oil initially and any time the system has been opened for repair such as cylinder, hose, or fitting replacement/repair.

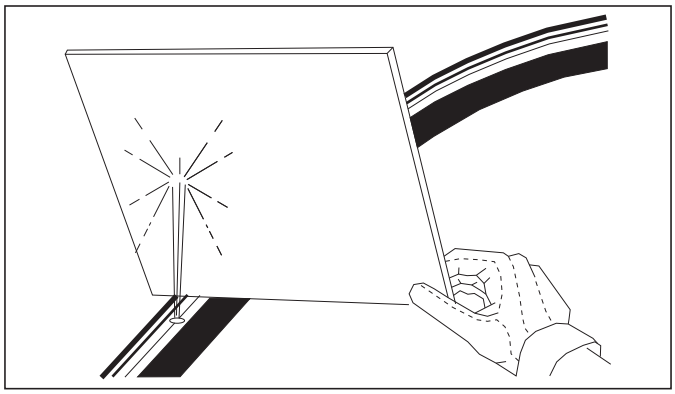


Figure 4-4: Hydraulic Leak Detection

3. To charge the system, carefully hitch the VT Plus to the tractor. Unpin the end(s) of the fold cylinders, and position them so they can extend and retract without contacting any frames or other parts. Check the tractor hydraulic fluid level to make sure it is full of the manufacturer's recommended hydraulic fluid. Connect the cylinder hoses to the tractor and fully extend and retract the cylinders several times. The cylinder rod travel should be smooth and positive when all air has been purged from the system. Due to large amounts of hydraulic oil required, recheck the tractor fluid level to make sure it is within proper operating limits.
4. The hydraulic fold system is equipped with restrictors in the rod end of cylinders to prevent uncontrolled falling of wing frames when unfolding. Removal or improper assembly of these restrictors can cause the machine to fold improperly and result in serious machine damage.

⚠ WARNING

Escaping hydraulic fluid can cause serious personal 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 4-4*. Keep all components (cylinders, hoses, fittings, etc.) in good repair.

5. To fold/unfold the VT Plus, find a level area large enough to accommodate the VT Plus when it is fully unfolded. The tractor should be stopped and not moving while unfolding. Fully raise the lift hydraulic system to release any pressure on the transport lift cylinder locks when unfolding or to allow the hooks to engage if folding.
6. **Folding:** Fully raise the hydraulic lift system. Then slowly engage the tractor lever and fold the wing frames. During folding the wing lock cylinder (on top of the front fold tower) should extend which drops the hooks down to where they will secure the wings if they unfold unintentionally. The transport lift cylinder locks should rotate forwards and engage on the lock pin. Fully retract the fold cylinders to assure the unit is completely folded and the wings are against the wing fold stabilizers.
7. **Unfolding:** Fully raise the hydraulic lift system. Then slowly engage the tractor lever and unfold the wing frames. The first thing that should happen when unfolding is the wing lock cylinder (on top of the front fold tower) should retract unhooking the wing lock pins. As the wings start to unfold the transport lift cylinder locks should also disengage and rotate to the rear. When the wings are unfolded continue to hold the tractor lever to fully extend all fold cylinders. This will allow the wings to fully flex in the field.
8. During folding the wings if the VT Plus is not fully raised the hooks that engage with the transport lift cylinder lock pins are spring loaded to give away and not cause any damage. These hooks should be checked occasionally to be sure they are still able to pivot.

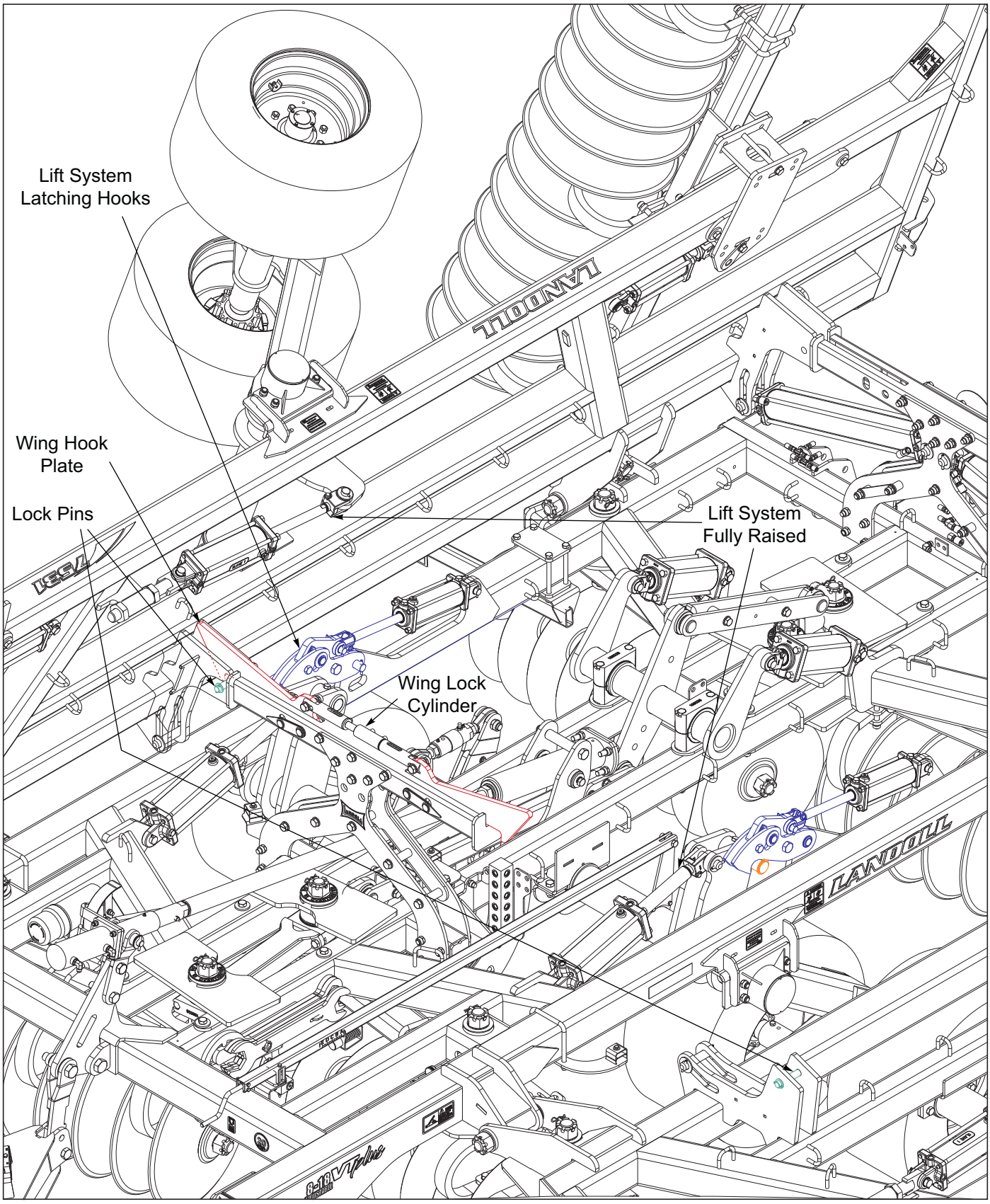


Figure 4-5: Wing Fold Transport Locks

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. The gang angle is adjustable while being pulled through the field. The more aggressive the angle, the more horsepower it will take to pull the 7531. The gang angle may be adjusted from 8 to 18° and gang adjust gauge is located on right, front wing and is visible from tractor.

NOTE

As the gang angle is increasing, tractor speed will need to be decreased so the front gangs are not rolling soil out further than the rear gangs can bring it back in.

3. 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.
4. 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.
5. 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.

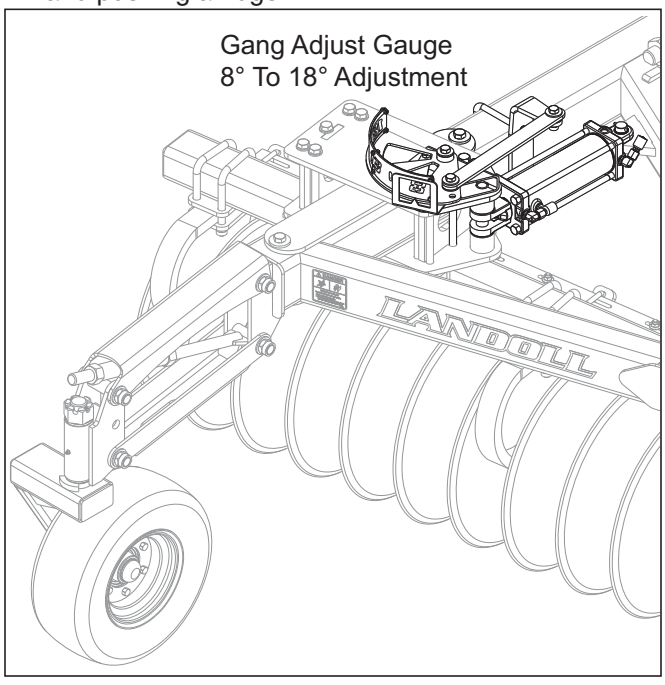


Figure 4-6: Gang Angle Gauge

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 removing the 1 x 4 bolt on one end, fully retracting the lift cylinders and adjusting the radius rod until it fits, then put back in and tighten 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 10-15 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 gold cap on the side of the walking beam 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 4-8***.

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 screw from one end from the radius rod assembly and remove from frame ***See Figure 4-7*****.**

f. Loosen the cross bolt on the cylinder 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 1/8“, are acceptable for operating. If the cylinder rod is hard to turn remove cylinder pin and turn clevis.

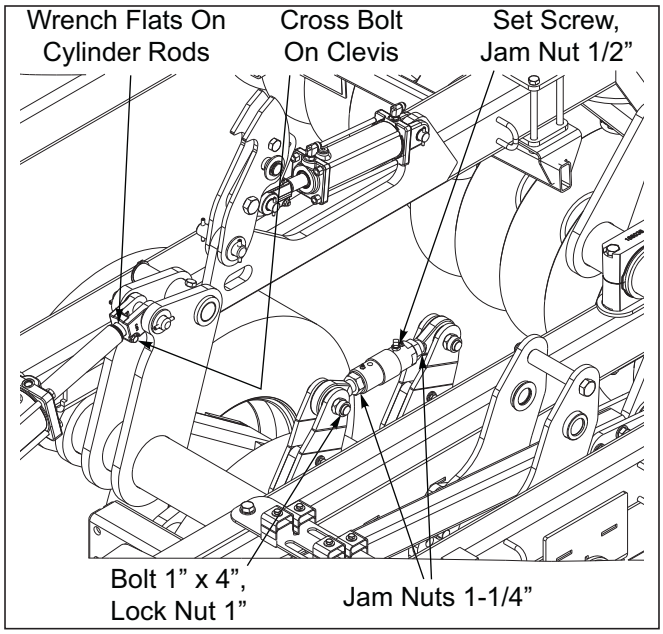


Figure 4-7: Center Frame Leveling

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” x 4” bolts, tighten 1” jam nuts, 1/2 x 1-1/4 square head cup point set screw and jam nut to prevent radius rod from turning.
4. Leveling the VT Plus side-to-side involves leveling the wing frame to the center frame. The unit should be level side-to-side when operating in the field.
5. **To level the wings:**
   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 10-15 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 gold cap on walker to the top side of the frame ***See Figure 4-8***.
   e. Measure the same distance on the wing frame. The wing frames are generally set to the center frame distance plus 1/2” or slightly higher.
   f. Adjusting the anchor at the base end of each wing lift cylinder sets wing frame height ***See Figure 4-9***.
6. An adjusting wrench is provided to make this adjustment. It may be necessary to lower the wing to the ground and relieve weight on the cylinder anchor to make this adjustment ***See Figure 4-9***. If required, fully raise the implement, lower to just above the ground, and re-verify measurements ***See Figure 4-8***. Repeat as necessary and securely tighten the cylinder anchor when complete.

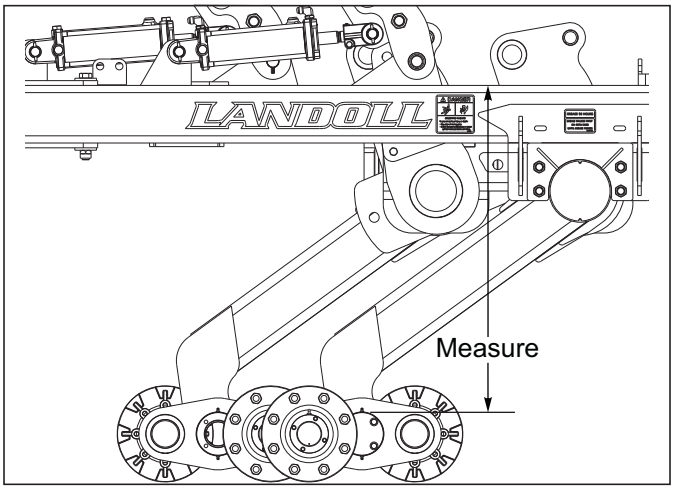


Figure 4-8: Leveling from Side to Side

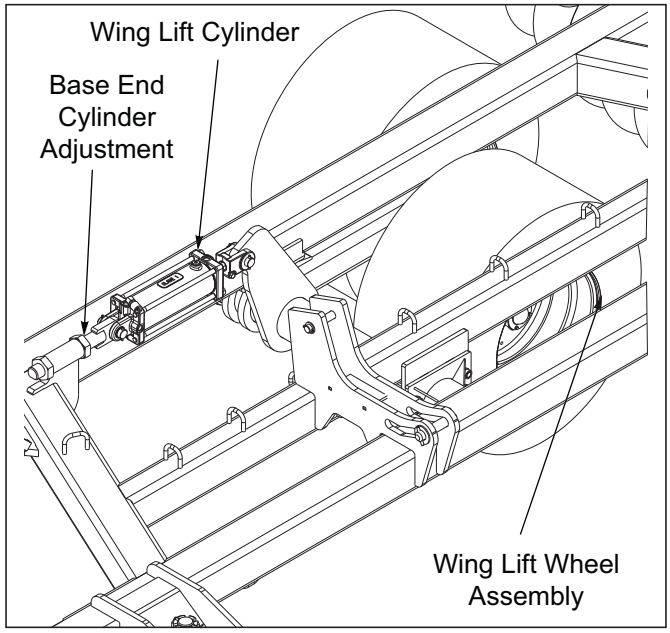


Figure 4-9: Wing Lift Adjustment

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. The hydraulic leveler, can make adjustments on-the-go from the tractor. A reference gauge is provided on the implement for a guide.

IMPORTANT

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

Hydraulic Leveler Adjustment

The 7531 VT will be set at the factory at the 5” 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 4-10*** and ***“Leveler Assembly” on page 3-8*****.**
3. Loosen the hex jam 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.
   - Screwing the Leveler Tube inward lowers the rear gangs.
   - Screwing the Leveler Tube outward lowers the front gangs.

NOTE

- ***The maximum amount or threads showing is 7”, DO NOT screw out any further.***

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.

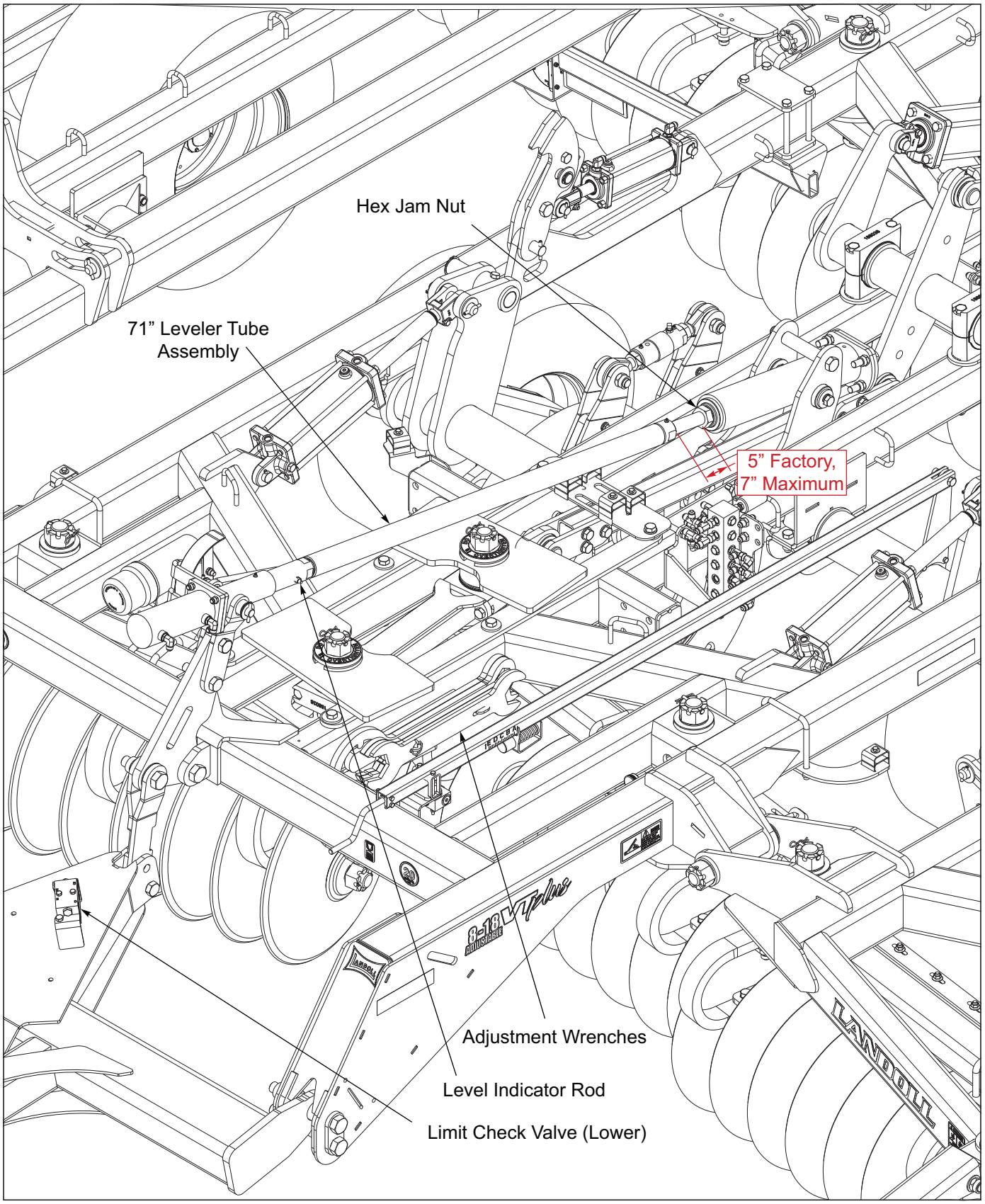


Figure 4-10: Hydraulic Leveler Adjustment

Hitch Adjustment

1. It is important for the 7531 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 7531 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 7531 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.

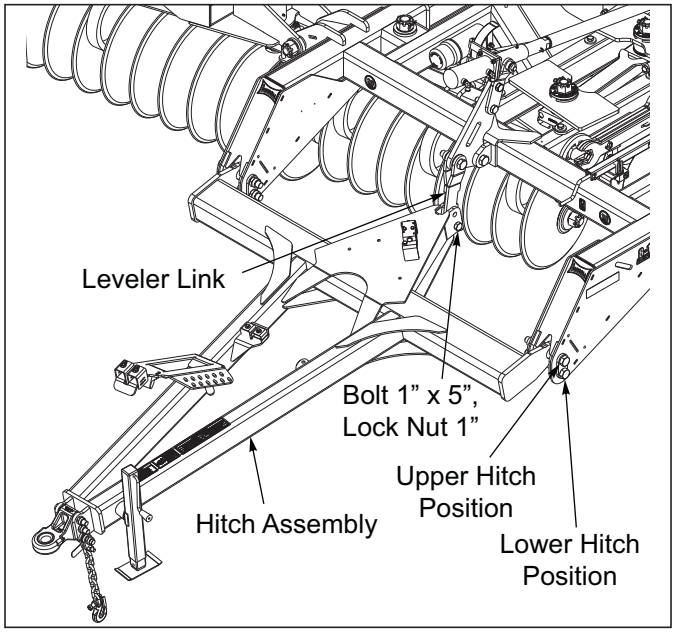


Figure 4-11: Hitch Adjustment

4. To adjust the hitch ***See Figure 4-11***
   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 4-6* and *“Leveling (Front-to-Rear)” on page 4-8*).**
   c. Remove the 1” X 5” bolt and hardware from the leveler link at the center rear of the hitch assembly.
   d. Loosen, but do not remove the bolts that pass through the 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.
   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 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.

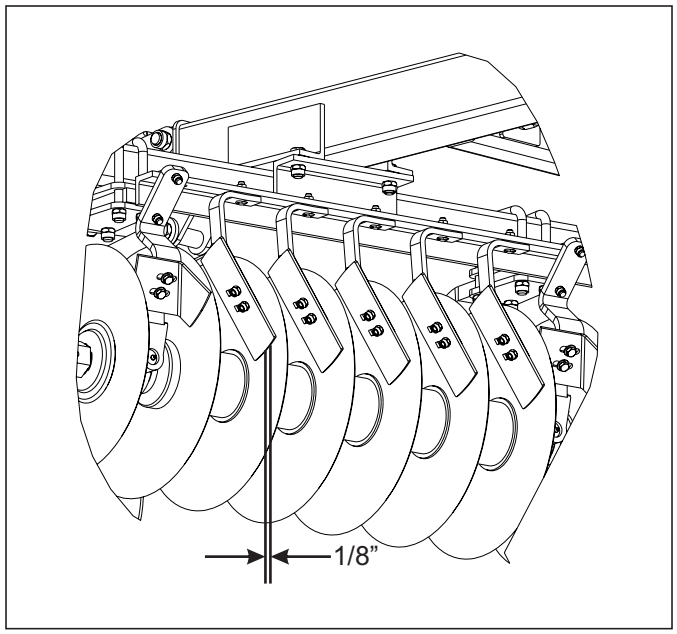


Figure 4-12: Scraper Adjustment

1. Rigid scrapers should be set initially as close to the disc blade as possible without rubbing (approximately 1/8”) ***See Figure 4-12.*** 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 wetter conditions at shallower depths. As the depth is increased, the front gangs may operate better with the scrapers in the rear position, while leaving the rear gang scrapers closer to the spools.
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.

Disc Blades

1. The 7531 VT 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.

Disc Gang Assembly

1. The disc gangs are assembled using 1-3/4" diameter gang shaft. Spring-loaded end collars are used on each end of the disc gangs to maintain clamping force of the gang shaft. Slotted hex nuts are installed at both ends of the disc gangs to allow service from either end.
2. When disassembling a disc gang, note the locations of the bearings and tapered blades. Remove the 3/8 roll pin from the end of the gang shaft and clean any remaining soil or debris from the gang shaft threads. Closed-end gang shaft wrenches are provided on the center frame to fit the gang nuts. An additional extension or cheater pipe may be required to loosen the gang shaft.
3. When reassembling the disc gang, remove any soil or mud from the disc blades and spools to ensure a clean surface when tightening the gang.Clean the gang threads and install the gang nut. Torque the disc gang shaft to a minimum of 1250 ft-lbs *See Figure 4-13*.

CAUTION

Tighten all 1-3/4" nuts to 1,250 foot-pounds of torque *See Figure 4-13*.

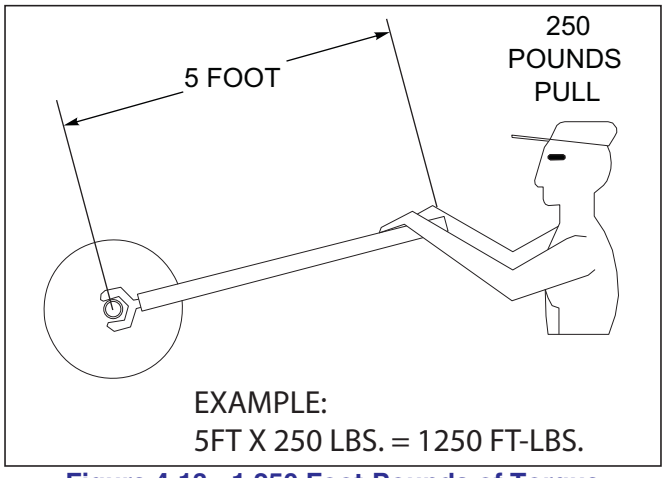


Figure 4-13: 1,250 Foot-Pounds of Torque

Front Gauge Wheels

1. The 7531 is equipped with castering gauge wheels at the outer front corners of each wing. These gauge wheels are used to limit depth of the wings, and prevent gouging and buckling of wing frames.
2. Gauge wheels are not intended to carry the wing, but prevent excessive depth. Adjust the wheels to carry some weight, but not enough to hold the wing from reaching operating depth set with the main lift hydraulics.

IMPORTANT

Excessive down pressure can cause the implement to throw a center ridge.

3. To adjust the gauge wheel depth, loosen and adjust the nuts on each side of the gauge wheel cross. A wrench is provided on the implement for this adjustment. All other connections should remain tight. Securely tighten the adjusting nuts when complete. Both gauge wheel assemblies should be set the same. Verify adjustment by measuring the length of the bolt centers of the gauge wheel adjustment rod.

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 out (counter-clockwise) to increase operating depth ***See Figure 4-14.*** Turn the handle in (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.

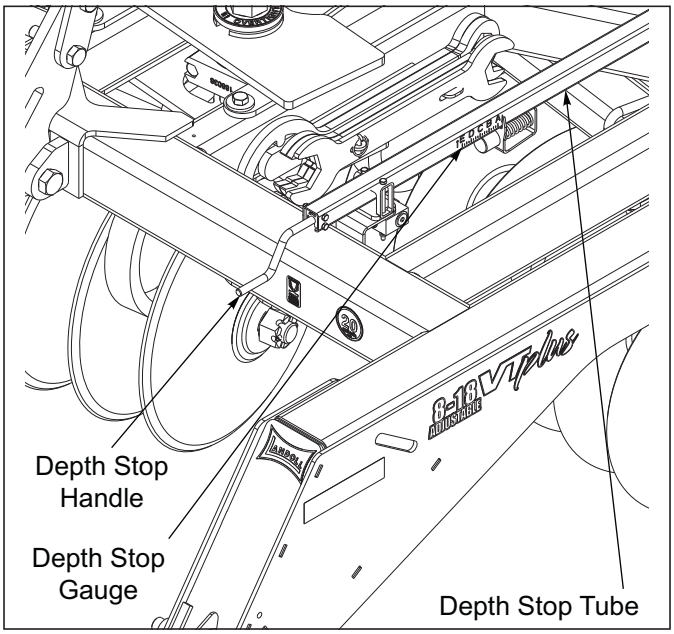


Figure 4-14: Depth Stop Adjustment

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. Call 800-428-5655.
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 engage 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* and *"Hydraulic Fold System" on page 4-4*** 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 7531 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 7531 is 20 mph for the implement and is designated on the speed identification symbol located on the front of the implement ***See Figure 4-15***.

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 4-15***. 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.

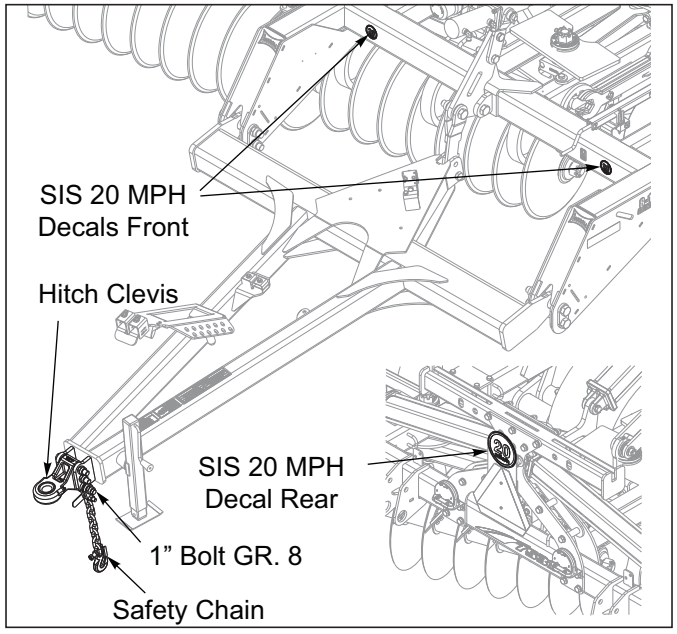


Figure 4-15: Hitch, Speed Identification Symbol, and Safety Chain

   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. Folding the 7531 will engage both the wing fold locks and the lift transport locks. Visibly look to see that both transport locks are engaged ***See Figure 4-16***.

⚠ WARNING

Failure to use transport locks 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.

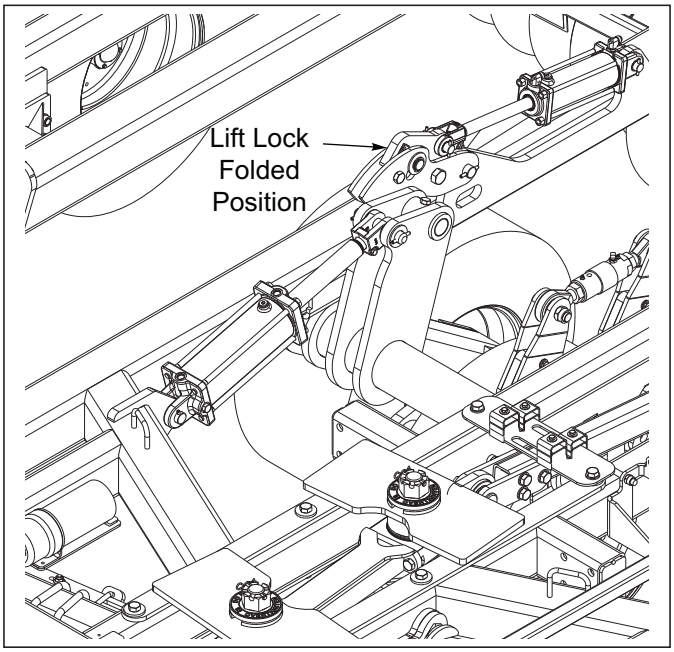


Figure 4-16: Lift Transport Locks

Field Operation

1. Fully raise the hydraulic lift system as some settling may occur during transport ***See Figure 4-17***. Unfold the wings with the hooks for the wings activating first to release them and the transport lift cylinder locks rotate to the rear to disengage. Fully extend the fold cylinders to allow the wings to flex down in the field.
2. Adjust the depth stop adjustment screw as needed for field conditions. For maximum operating depth, the lift wheels must be in contact with the ground and carry some of the machine's weight. Raising the lift wheels off the ground permits uncontrolled depth of each frame section.
3. Adjust the hydraulic leveler as needed for the machine to make a level pass. This may require changing the gauge wheels out front. If they have to much pressure on them from the wing wanting to go deeper, they will tend to roll the machine rearward and create a ridge from the rear center gangs going deeper than the front. If the front gangs are going deeper there will be a small valley out the center rear. If the hydraulic leveler will not change the finish enough refer to the "Hitch Adjustment Section"
4. Adjust the disc gang angle going across the field to the desired finish. The angle may be adjusted either while fully raised sitting still or while the machine is in operation. Disc gang depth, soil moisture, and tractor speed all affect the angle and finish.
5. Tractor speed will need to be adjusted so the front gangs do not roll out soil farther than the rear gangs can reach it to pull it back in.
6. If the reels are hydraulic, and wetter soil conditions exist the reels may be raised to avoid plugging them. For continuously leaving them raised the leveler might need adjusted to lower the front of the machine some due to the weight on the rear. The hydraulic reels are intended to run with the cylinder fully extended or fully retracted.
7. Raise the VT Plus while turning to prevent the wings from gouging and to also prevent machine damage. It is acceptable not to fully raise the lift each time a turn is made but raise it enough to get the blades and reels up out of the soil. Fully raise the VT Plus as needed on turns to keep the lift cylinders in phase though.
8. Folding the VT Plus for transport, fully raise the hydraulic lift system. Engage the fold lever and the wing transport hooks should drop along with the hydraulic transport lift cylinder locks rotating forwards to catch on the transport lock pins. Continue to fold the wings until the fold cylinders are fully retracted and the wings contact the wing fold stabilizers and are locked.

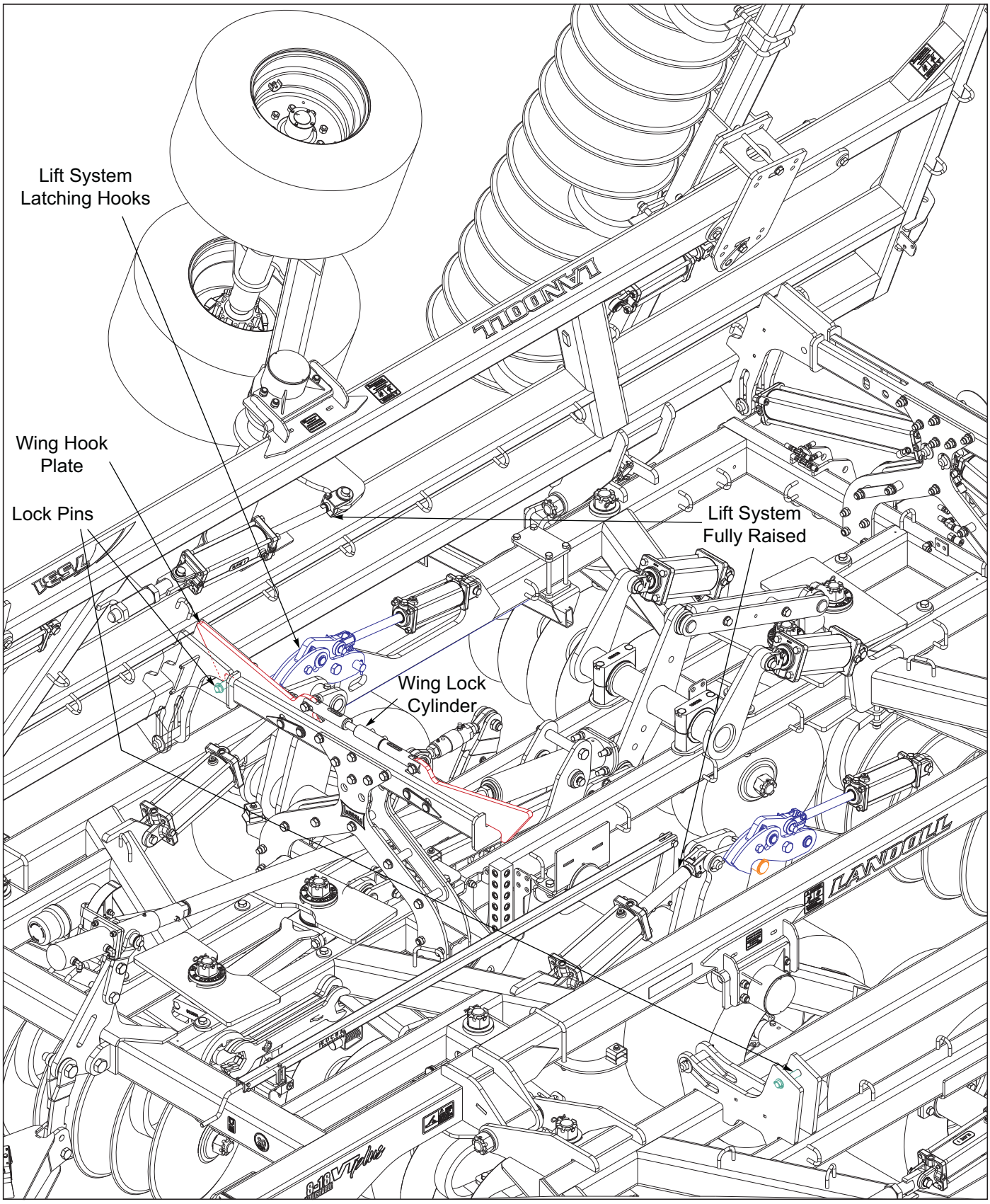


Figure 4-17: Wing Fold Transport Locks

Conditioner Reels

The 7531 VT may be equipped with optional conditioner/double reel attachment. The conditioner/double reels will help to firm the soil profile, while mixing and breaking up soil clods. It can create excellent seed beds in finishing passes, and help anchor residue in primary operations.

1. Initially set the depth of the conditioner reel with the bottom of the reel approximately 1” above the bottom of the disc gang blades. This will be approximately 21” spring centers (for 24” disc blades) ***See Figure 4-18*****.**
2. To adjust the reel height, loosen the locking 1” hex nut at the front of the spring assembly. Also loosen the 1” nut on the back side of the 2-1/2” diameter front spring pin.

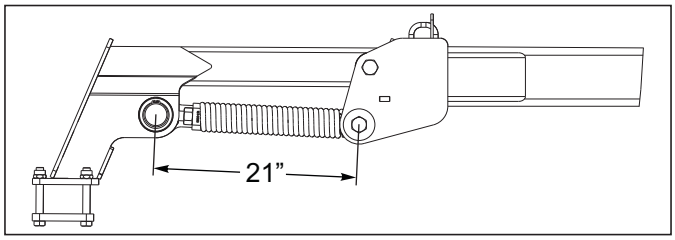


Figure 4-18: Conditioner Reel Setting

3. Turn the 1 x 9 adjusting bolt in or out to the desired height, then re-tighten both locking nuts. Repeat for each conditioner reel arm, and set all spring lengths the same.
4. Use a shallower depth setting when operating in lighter soils or wetter conditions. This will avoid plugging of the conditioner reel. Raising of the entire disc when working in a wet spot will reduce reel plugging as well. For heavier or dryer soils, an increased reel depth may be used.

NOTE

Excessive reel down pressure will try to roll the disc over on the front gangs causing the front to dip.

5. Level the disc front-to-rear after changes in reel depth or field conditions.

WARNING

Know and verify the actual implement height and width before transporting. Attachments may increase the overall transport height and width of the implement. Use caution when operating near power lines. Electrocution can occur without direct contact.

Hydraulic Conditioner Reels

An optional hydraulic controlled reel is available for the 7531 VT. The hydraulic reel functions similar to the non-hydraulic reel.

The hydraulic reel operates on a separate hydraulic circuit. The reels may be raised or lowered hydraulically from the operator seat. This can be very useful when working around a wet area to prevent plugging. The reels may be operated all the way up, or all the way down. There is no intermediate working depth.

1. Maximum reel working depth is set by adjusting the spring on each reel arm. To adjust the conditioner reel spring, with the disc raised, lower the hydraulic reels, and relieve any reel system pressure.
2. Loosen the 1-1/8” locking hex nut at the front of the spring assembly, and loosen the 3/8 set screw in spring casting.
3. Using the flats on the rod end of the hydraulic cylinder, turn the cylinder shaft in or out to the desired spring setting.
4. Re-tighten the locking hex nut and set screw, repeat for each conditioner reel arm.
5. If operating the conditioner reels in the raised position for extended lengths of time, the VT front-to-rear level may need to be adjusted to account for the extra weight now being carried by the rear of the VT. Likewise excessive reel down pressure will try to roll the disc over on the front disc gangs, requiring the VT to be leveled.

7531 Wheel Bearing Maintenance

HD Center Frame - Dual Tires

Center frame wheel bearing maintenance should be performed at the beginning of every season. Check periodically for excessive endplay. If needed, adjust or replace hub and components using the following procedure ***See Figure 5-1*****,**

Center frame hubs can be greased until grease purges seals without damage to seal.

1. Lower machine until tires are off the ground, the depth stop may have to be adjusted to allow cylinders to retract far enough.
2. Remove tires.
3. Remove hub cap and catch lubricant.
4. Straighten tab of star washer, remove outer spindle nut, star washer, spindle locking washer, inner spindle nut and bearing. Remove hub from spindle.
5. Using an appropriate driver, remove inner bearing cone and seal.
6. Clean and inspect the bearings and hub cavity. Replace any worn or defective parts.
7. **Repack** the bearings using a high-quality wheel bearing grease. Apply grease to bearing cups and a liberal amount to the center void.
8. Install inner bearing and seal, using the correct seal driver, into hub.
9. Place the hub over the spindle being careful to align the hub bore with the spindle to prevent seal damage. Support the hub until the outer bearing cone and spindle nut are installed.
10. Torque inner nut to 100 ft.-lbs. while rotating hub to insure proper seating of bearings and cups.
11. Loosen the inner spindle nut to remove preload torque.
12. Hand tighten the inner adjustment nut until contact is made with bearing.
13. Install the spindle nut lock washer so that the dowel on the inner nut will align with a hole in the lock washer and washer tang fits in the spindle keyway.

The spindle lock washer may be flipped over if needed to achieve a closer match to aligning with the dowel on the inner nut. Inner nut may also need to be rotated slightly for alignment.

14. Install the star washer aligning tang with spindle keyway.
15. Apply grease to one side of the outer nut and install with grease to the star washer side.
16. Torque outer nut to 300 ft-lbs. Endplay of .001” to .010” must be present in the adjust wheel bearing assembly.
17. Bend over 3 tabs of star washer that is aligned with a flat on the outer nut to prevent rotation.
18. Grease interior of cap lightly to prevent any corrosion.
19. Install the hub cap with the proper gasket. Tighten the cap screws of the hub cap to 15 to 20 ft-lbs of torque.
20. Reinstall tires, making sure wheel spacer is on hub.
21. Torque dual wheel nuts to 450-500 FT/LBS.

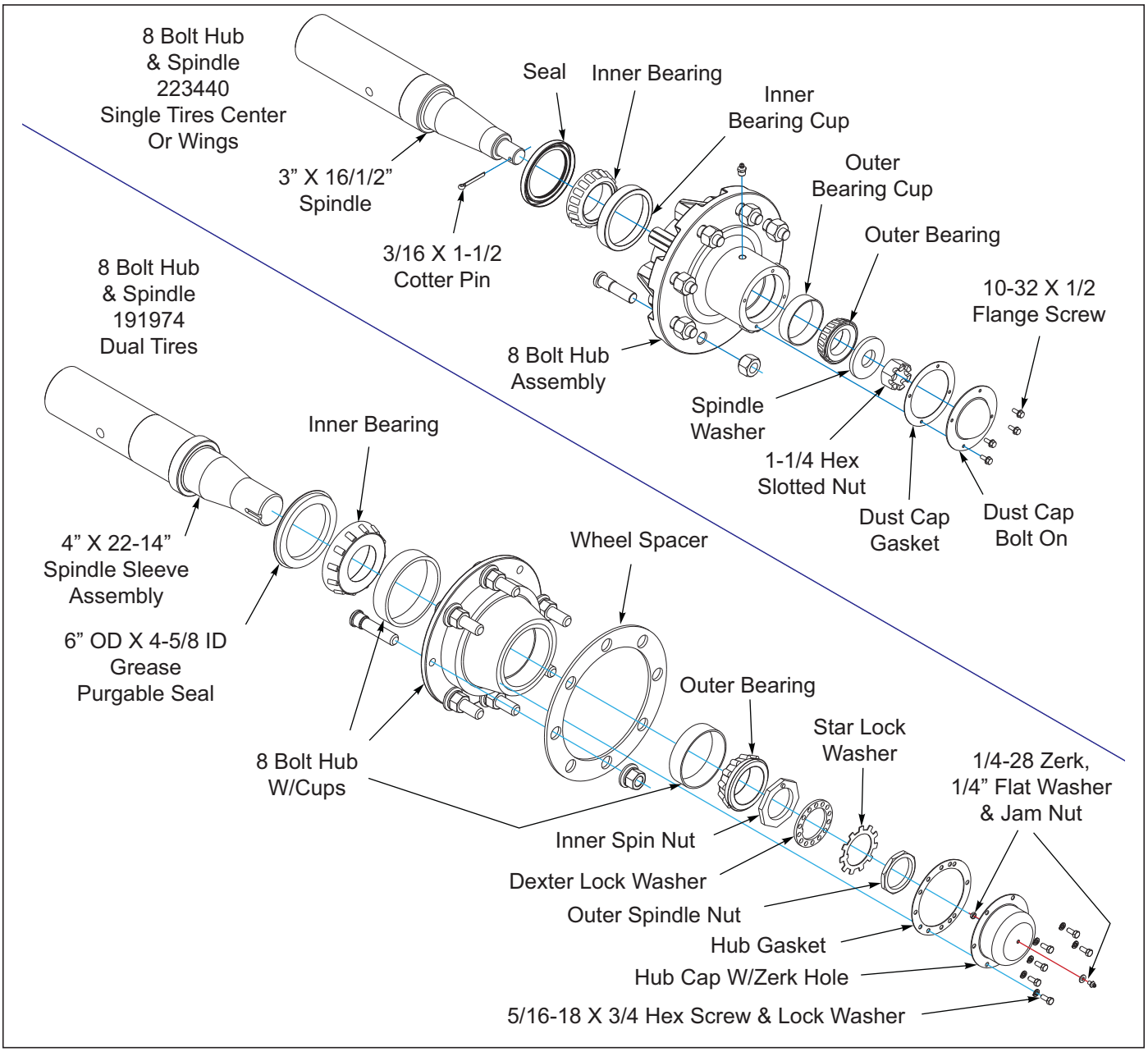


Figure 5-1: Wheel Bearing Maintenance

Single Tire - Wheel Bearing Maintenance

Transport tires use a self-contained seal with multiple lips. The seal fits tight on both the spindle and wheel hub. The seal when properly installed will rotate internally and freely. This seal is will also allow grease to pass when lubricating the hub.

Wheel bearing maintenance should be preformed 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. Lower machine until tires are off the ground, the depth stop may have to be adjusted to allow cylinders to retract far enough.
2. Remove the tire.
3. Remove the dust cap, gasket, cotter pin, slotted nut, and washer.
4. Remove the hub assembly from the spindle. 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. Install the inner bearing into the hub and install new grease seal. Use a driver to install the seal, to avoid damaging the outer edge of the seal. Drive the seal squarely into the hub to avoid any seal distortion.
7. Slide the hub, bearing, and seal onto a clean spindle.
8. Install the outer bearing, washer, and slotted nut.
9. Tighten the slotted nut while rotating the hub until there is a slight resistance to hub rotation. Then back the slotted nut off one notch or torque to 30-35 FT-LBS. A new seal will have some resistance, making the hub turn a little harder than usual.
10. Install a new cotter pin. Before installing the cap, fill hub with grease with grease gun through the zerk until it starts coming out around the washer.
11. Install the gasket and dust cap. Do not over tighten the dust cap screws causing the gasket to come out.
12. Through the zerk, give 6-8 more pumps of grease. It is not necessary to purge grease through a new seal, as they are filled ***See Figure 5-2***

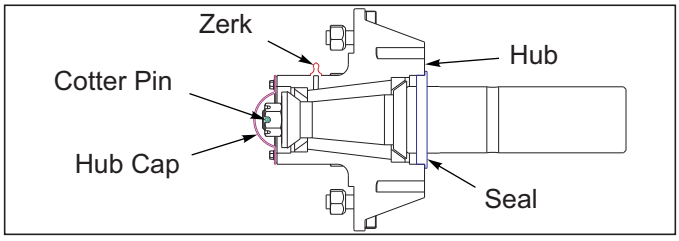


Figure 5-2: NHub Assembly

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, before disassembling the part, **contact Landoll Service at 1-800-428-5655 for further instructions**. 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.

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 engageing 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* and *"Hydraulic Fold System" on page 4-5*** on how to purge the hydraulic systems.

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 7531 ***See Figure 5-4*** **and** ***See Figure 5-7*****.**
2. When lubricating the 7531, 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 single 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. Both center frame and wing 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. Grease walking tandems on both sides of axle leg every 50 hours or as needed to purge contaminated grease hubs will purge with no harm to walking bearing.
6. The 7531 is equipped with maintenance-free bearings in the lifts, leveler, wing hinges. These areas require no lubrication.
7. On (4) center frame disc gang pivots the plastic plugs will need removed to grease the pivot pins, annually ***See Figure 5-4***. Grease until it purges out the top or bottom. Replace plastic plugs to keep contamination out.

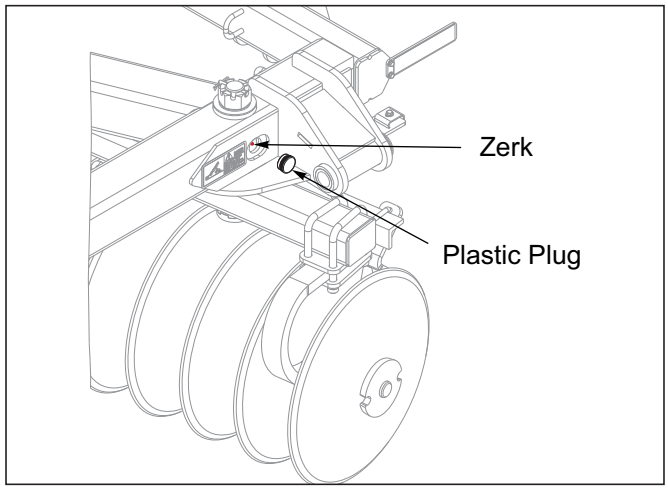


Figure 5-3: Center Frame Plastic Plug

8. Remove the 1/8 hairpin and clevis pin, annually to check to see if slotted nut is still tight ***See Figure 5-4***, 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, re-install the clevis pin and 1/8 hairpin. Grease all pivot points ***See Figure 5-3***.

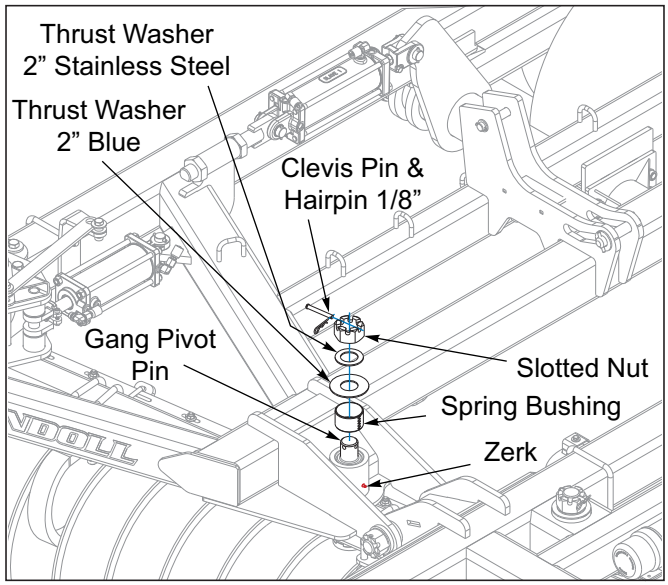


Figure 5-4: Gang Pivot Pin

Lift Cylinder Maintenance

The hard steel bushings and pins in the rod end of the lift cylinders need checked for wear and replaced if needed ***See Figure 5-5***.

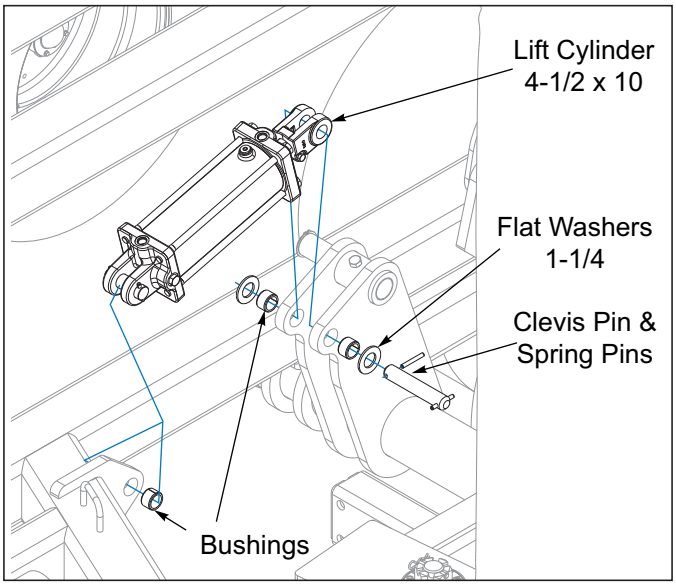


Figure 5-5: Lift Cylinder Pin and Bushings

Double Reel Bearing Replacement

1. The bearings used for the double reels are a maintenance free bearing, not requiring any grease. If a bearing needs replaced, a bearing and hub assembly is available (P/N-200222) for your convenience. Should you choose, the parts are also available to rebuild the hub as needed ***See Figure 5-6***.

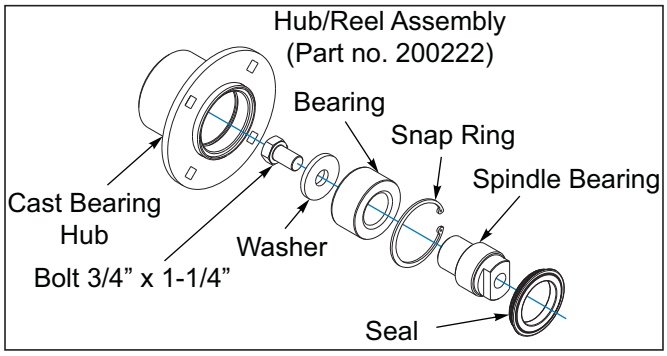


Figure 5-6: Hub Reel Assembly

2. If rebuilding the hub assembly, remove the outer seal. It will need replacement. Remove the snap ring with appropriate pliers. The bearing and spindle can now be pulled out, or the 1/2” pipe plug can be removed from the other side so it can be pressed out. Once the bearing and spindle are removed, loosen the 3/4” x 1-1/4” x 1-1/4” bolt and take it out. The spindle can now be pressed out of the bearing.
3. With a new bearing, slide it over the spindle and reinstall the 3/4” x 1-1/4” hex bolt and washer. Torque the bolt to 200 FT-LBS. Clean the bore of the hub out to aid in installing the bearing. Press the bearing and spindle assembly back into the hub with the hex bolt going in first, it will bottom out in the hub. Install the snap ring. Install a **NEW** seal over the spindle and slide down into the hub. Only tap or use a round driver on the outer edges of the seal to prevent seal damage. Reinstall the pipe plug using Teflon tape or sealant to keep water and contamination out.
4. Initially the spindle will turn with a drag on it as the seal locks onto the hub and the spindle, turning inside of itself.
5. Bearing P/N – 174526 and Seal P/N - 185757

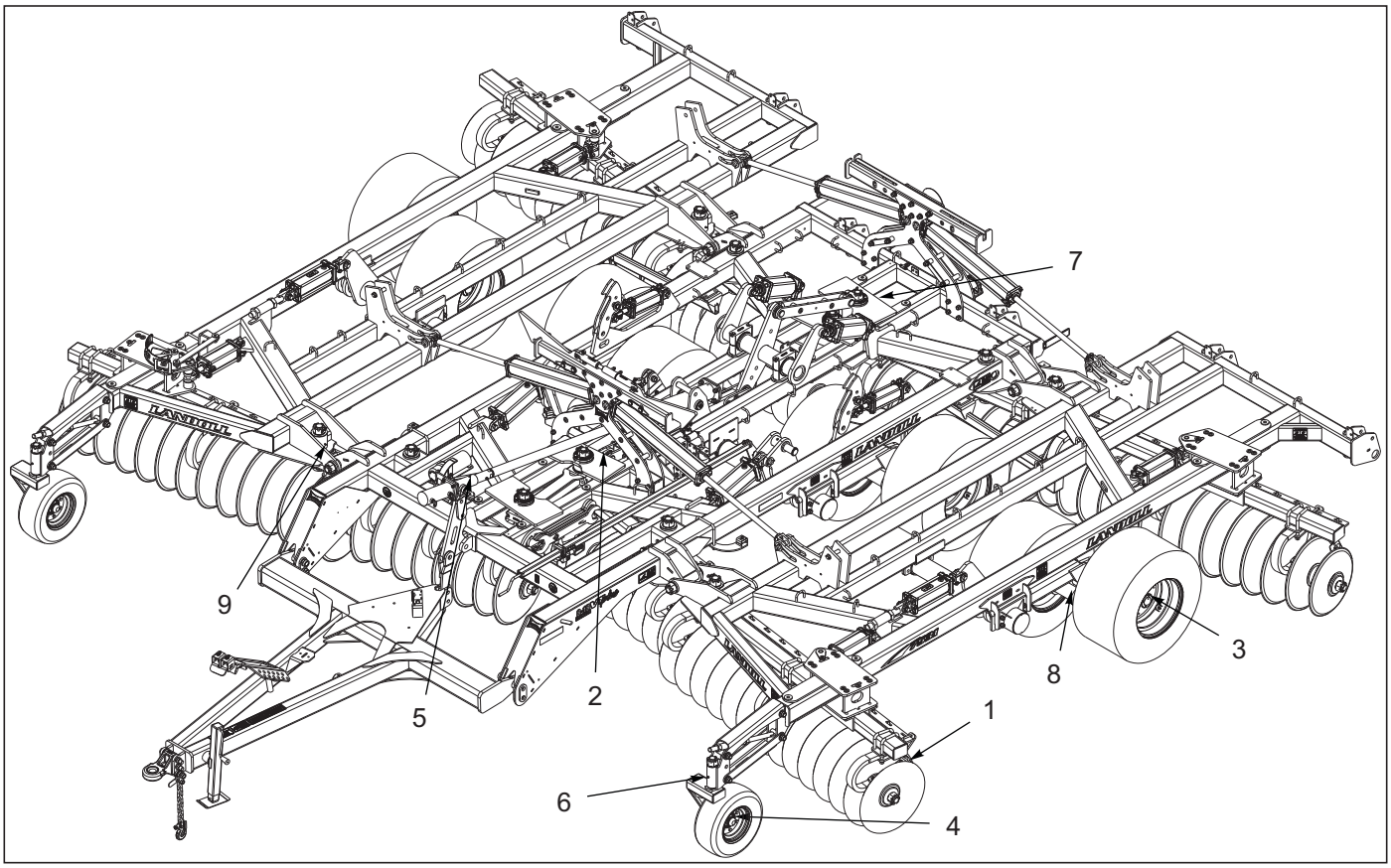


Figure 5-7: Lubrication Schedule

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	Front Gauge 6 Bolt Wheel Hubs	1 each	50
5	Hydraulic Leveler Tube	1	50
6	Front Gauge Wheel Caster Hub	1 each	10
7	Gang Adjust Linkage Bearing	1 each - 4 total	50
8	Walking Tandem Pivots	2 each - 4 total	50
9	Disc Gang Pivot Pins	1 each - 8 total	Annually

Table 5-1: 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 5-6***.
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.
3. If the unit must be stored outside, unfold the VT Plus to prevent moisture buildup in the disc gang and wheel bearings.
4. If the unit is stored in the folded position, make sure the transport lock pins are installed to prevent wing frames settling.

Table provided for general use.

NOTES:

Chapter 6

Troubleshooting Guide

The Troubleshooting Guide, shown below, is included to help you quickly locate problems that can happen using your 7531 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.
	Gauge wheels too high, allowing wings to go to deep	Properly reset gauge wheels.
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 8 BOLT SINGLE TIRE HUBS ON CENTER FRAME OR WINGS	Spindle nut not tighten properly	Torque to 25 Ft-Lbs, tighten to nearest cross hole
	Transporting at high speed	Reduce speed in transport to 20MPH
	Grease hubs more frequently if transporting long distances	Grease until seal purge contamination out

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 ONE TRANSPORT LOCK DOES NOT HOOK	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 (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 angle to aggressive	Rduce dis gang angle a few degrees
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.

Instructions for Ordering Parts

**** Repair parts must be ordered through an Authorized Dealer ****

DEALER INSTRUCTIONS FOR ORDERING PARTS FROM LANDOLL PARTS DISTRIBUTION CENTER

Phone #: 800-423-4320 or 785-562-5381 **Fax #: 888-527-3909**
Order online: dealer.landoll.com

IDENTIFICATION PLATE

The data plate, which lists the model number and serial number, is located on the front of the frame *See Figure 7-1*.

SERIAL NUMBER NOMENCLATURE

The Following information will help decode the 7531 Adj. VT Plus serial number

75H2500100 = xxmyyssssss

The 7500 series QR code decal, may be scanned to link to the most current manuals, located on the front of the frame *See Figure 7-1*.

xx	= model series (i.e. 75 for Adjustable VT Plus)
m	= month of manufacture (ex. “H” means October. The letter I is not used.)
yy	= year manufactured (ex. “25” means 2025)
sssss	= Sequential number used to track warranty and service information.

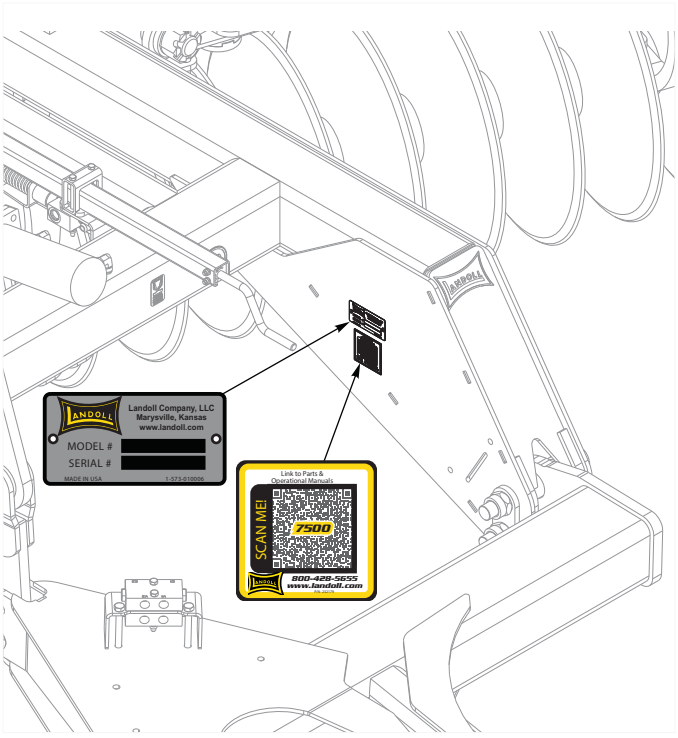


Figure 7-1: Data Plate and QR Code Decal Location

Manuals for 7531 VT Plus

Manual Number	Manual Type
F-1188	Operator’s Manual
F-1189	Parts Manual

Document Control Revision Log:

Date	Form #	Improvement(s): Description and Comments
04/04/2025	F-1188	New Manual
10/14/2025	Fi1188-2510	Initial Release

Equipment from Landoll Company, LLC is built to exacting standards ensured by ISO 9001:2015 registration at all Landoll manufacturing facilities.

Model 7531
Adjustable VT Plus
Operator's Manual
Re-order Part Number F-1188

LANDOLL COMPANY, LLC
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Marysville, Kansas 66508
(785) 562-5381
800-428-5655 ~ WWW.LANDOLL.COM