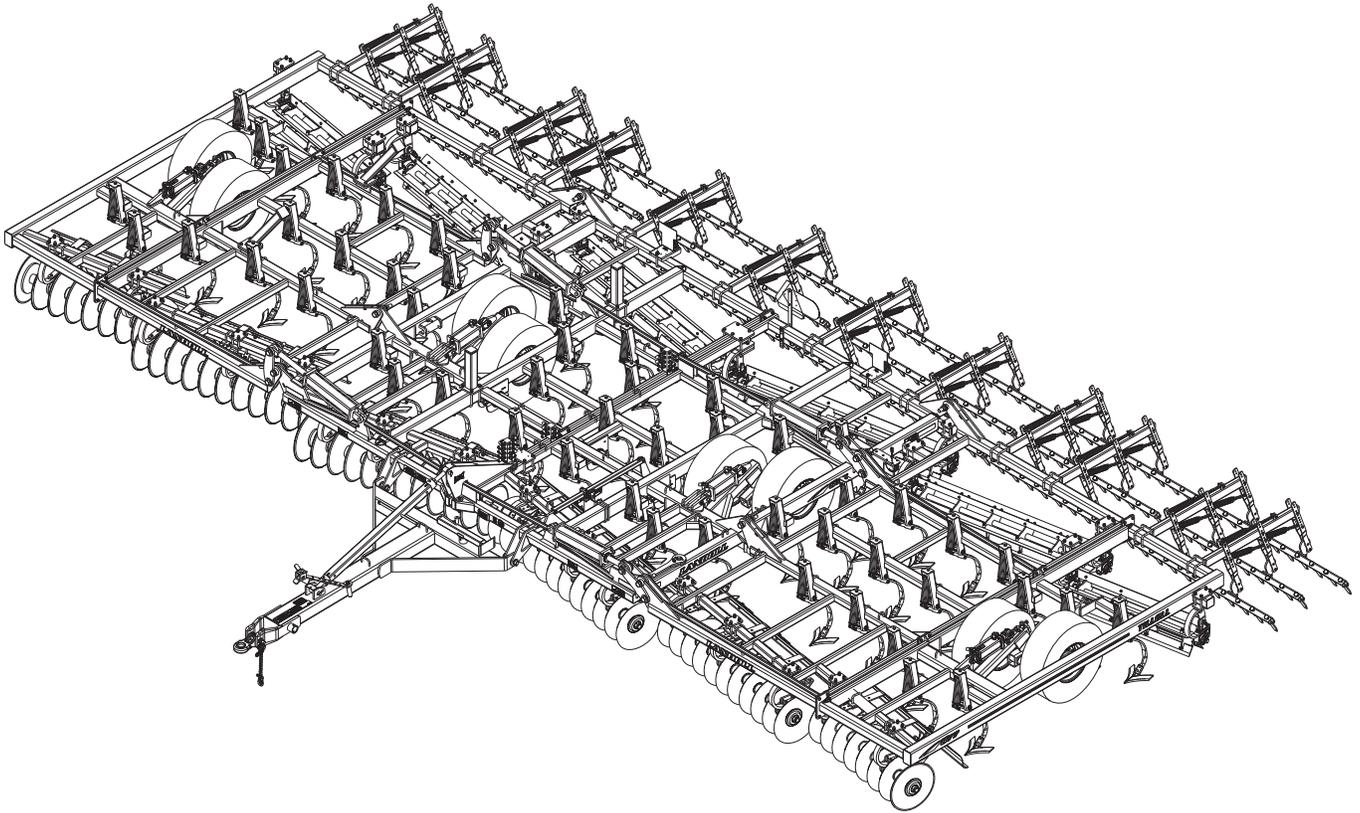




Model 877 Tillage Operator's Manual

Serial Number: 01B2002332 to Present



LANDOLL COMPANY, LLC

1900 North Street

Marysville, Kansas 66508

(785) 562-5381

800-428-5655 ~ **WWW.LANDOLL.COM**

Manuals for the 877 Tilloll

MANUAL NUMBER	MANUAL NAME
F-1072	877 Operator's Manual
F-1073	877 Parts Manual

Table of Contents

1 Introduction and Safety Information

Understanding Safety Statements	1-2
Decal Safety	1-2
Transporting Safety	1-2
Attaching, Detaching, and Storage	1-3
Maintenance Safety	1-3
High Pressure Fluid Safety	1-3
Protective Equipment	1-3
Chemical Safety	1-3
Prepare for Emergencies	1-3
Tire Safety	1-4
Safety Chain	1-4

2 Standard Specifications

Introduction	2-1
Owner Assistance	2-1
Warranty Registration	2-1
General Torque Specifications	2-4
Hydraulic Fitting Torque Specifications	2-5
Model Specifications	2-6

3 Assembly Instructions

Center Frame Assembly	3-2
Center Frame Tire Installation	3-2
Hitch Assembly	3-4
Wing Frame Assembly	3-6
Wing Fold Support Assembly	3-10
Shank, Clamp, and Sweep Assembly	3-18
Disc Gang and Spray Shield Installation	3-20
Rephasing Hydraulic Cylinder Change	3-22
Cross Reference Matrix For Model 877 Tilloll	3-23
Hydraulic Lift Installation	3-24
Hydraulic Fold Installation	All Models 3-32
Reel Assembly Installation	3-38
Harrow Assembly Installation	3-40
LED Light Installation	3-44

4 Operation and Maintenance

Tractor Preparation	4-2
Tilloll Preparation	4-2
Attaching to the Tractor	4-2
Hydraulic Lift System	4-3
Hydraulic Fold System	4-4
LED Light Operation	4-4
General Operation	4-5
Field Operation	4-5
Depth Stop Adjustment	4-5
Leveling (Side to Side)	4-6

Leveling (Front-to-Rear)	4-6
Disc Blades	4-7
Disc Gang Assembly	4-7
Scraper Adjustment	4-8
Spring Shank	4-8
Sweeps	4-8
Spray Shield Adjustment	4-9
Spray Boom Location	4-9
Reel Adjustment	4-9
Harrow Adjustment	4-10
Wheel Bearing Maintenance – Non Triple-Lip	4-11
Wheel Bearing Maintenance -- Triple-Lip	4-11
Hydraulic Maintenance	4-12
Transport	4-12
Lubrication Maintenance	4-14
Storage	4-15

5 Troubleshooting Guide

Introduction and Safety Information

Introduction

The Landoll Model 877 Tilloll 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 877 Tilloll. When these procedures are correctly followed, your equipment should provide you years of trouble-free operation and service.
- CHAPTER 4** Instructs how to operate your equipment before using it, and describes adjustments needed. Gives practical advice for the care and maintenance of your Landoll equipment. Drawings in this section locate adjustment points on the equipment.

IF YOU HAVE ANY QUESTIONS CONTACT:

**LANDOLL CORPORATION
1900 NORTH STREET
MARYSVILLE, KANSAS 66508**

PHONE # (785) 562-5381 or (800) 428-5655

OR

FAX # (888) 527-3909

- CHAPTER 5** Is a troubleshooting guide to aid in diagnosing and solving problems with the 877 Tilloll.
- PARTS MANUAL** 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 CORPORATION
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 877 Tillage.

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 field cultivator.**
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, that 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 Tilloll 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. Install hydraulic 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 manufacture's instructions and store or dispose of unused chemicals as specified.
3. Handle chemicals with care and avoid inhaling smoke from any type of chemical fire.
4. Store or dispose of unused chemicals as specified by the chemical manufacturer.

Prepare for Emergencies

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

Tire Safety

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

Safety Chain

1. Use a chain with a strength rating equal to or greater than the gross weight of towed machinery, which is 10,100 pounds minimum in accordance with ASAE S338.2 specifications. If two or more implements are pulled in tandem, a larger chain may be required. Chain capacity must be greater 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.

Standard Specifications

Introduction

This manual is compiled as a guide for owners and operators of the 877 Tilloll. 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 Icon dealer. They have trained personnel, parts and service equipment specially designed for Icon products. Your machine's parts should only be replaced with Icon parts. Have the Serial Number and complete Model Number available when ordering parts from your Icon dealer [See Figure 2-1](#)



Figure 2-1: ID Plate

Warranty Registration

Be certain to register the adjustable vt plus 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 Figure 2-2](#) and [See Figure 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 Landoll 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 defective.

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 OBLIGATION:

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 responsible 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 Dconnection 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	-----	-----

FORM NO. F-263-2304 (1 of 3)

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	-----	-----

FORM NO. F-263-2304 (2 of 3)

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

877 Tilloll			
Model Number	877-30	877-35	877-40
Working Width	30'-0"	34'-6"	40'-0"
Transport Width	16'-6"	20'-4"	17'-9"
Transport Height	8'-6"	13'-0"	13'-9"
Number of Shanks	40	46	52
Number of 20" Blades	46	54	60
Estimated Weight (lbs.)	17,580	19,580	22,240
Tire Size	320/70 R15	320/70 R15	320/70 R15
Spindle Size	3"	3"	3"
Wheel Bolt Pattern	8 Bolt Wheels	8 Bolt Wheels	8 Bolt Wheels
NOTE: Specifications Are Subject To Change Without Prior Notification			

Tire Inflation			
Tire Size	Tire Manufacturer	Ply/Load Rating	Inflation Pressure (Psi) (Max.)
320/70 R15	Firestone	Load Range 144/6,150 lbs. @ 40mph	70 psi

Specific Bolt Torques	
Lug Bolts & Nuts	Torque (FT. LBS.)
Disc Gang Shafts	1,200 Ft./Lbs.
5/8-18 Lug Bolts & Nuts (Heavy Duty Disc)	85-100 Ft./Lbs.

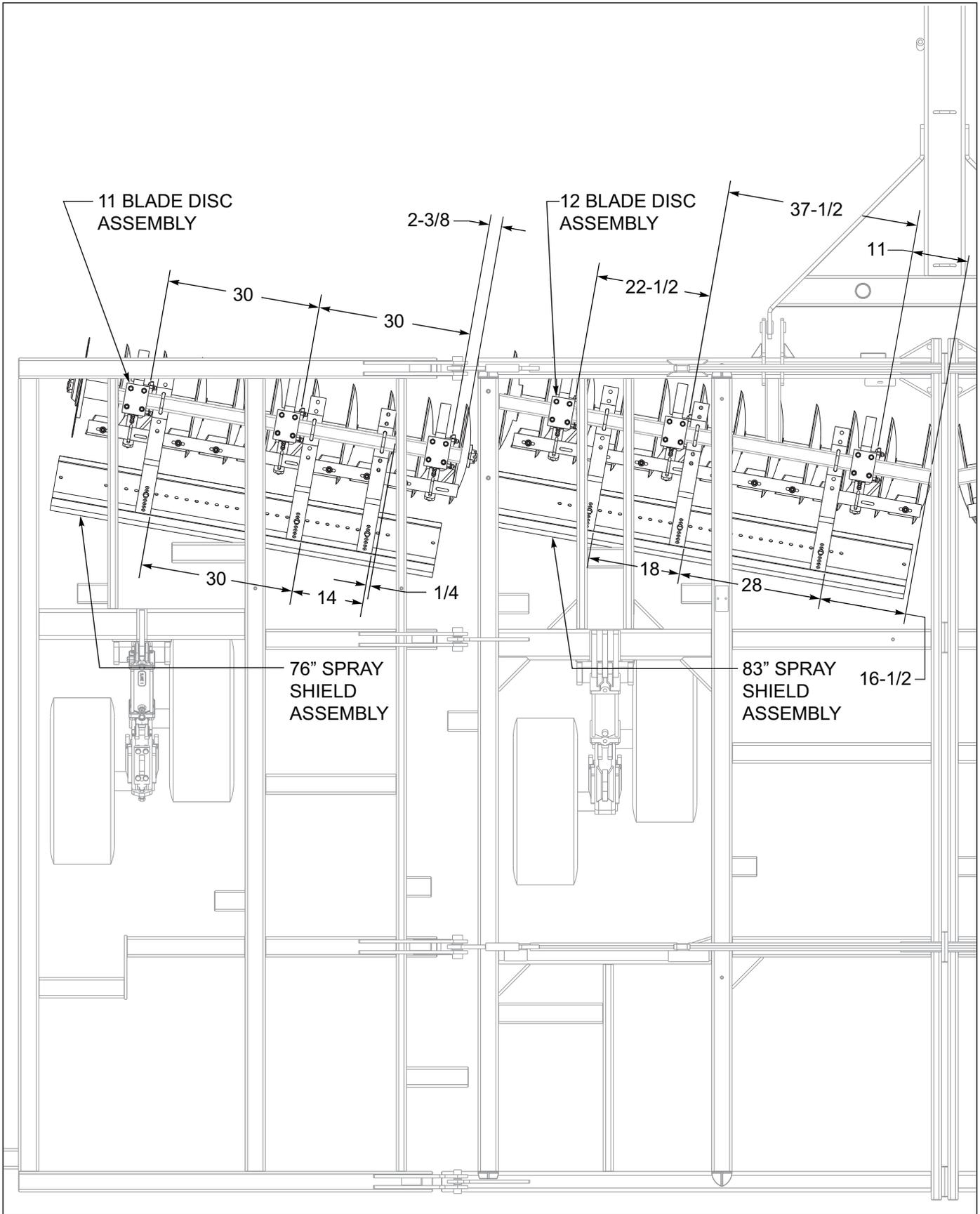


Figure 2-6: Disc Gang & Spray Shield Placement 30' LH

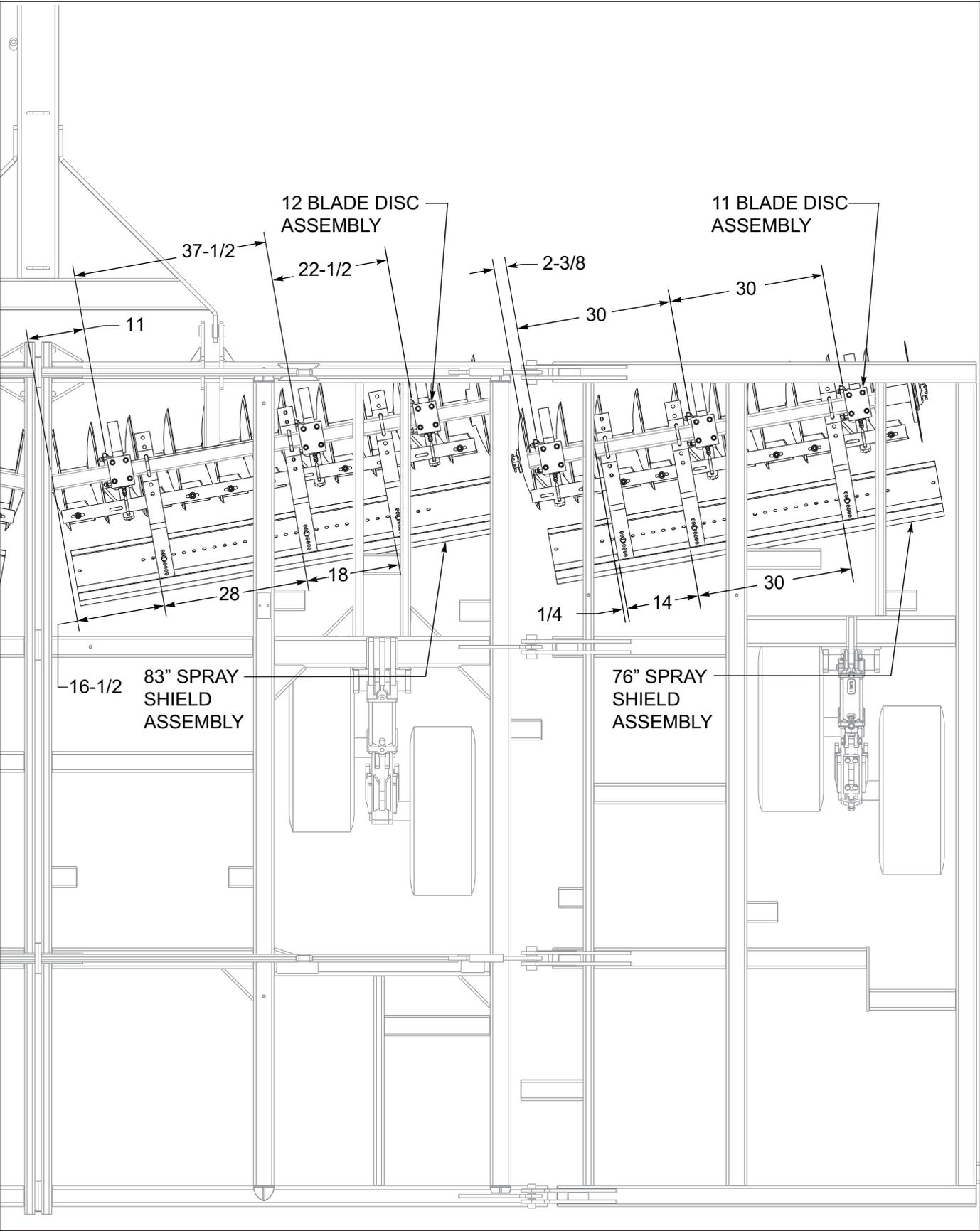


Figure 2-7: Disc Gang & Spray Shield Placement 30' RH

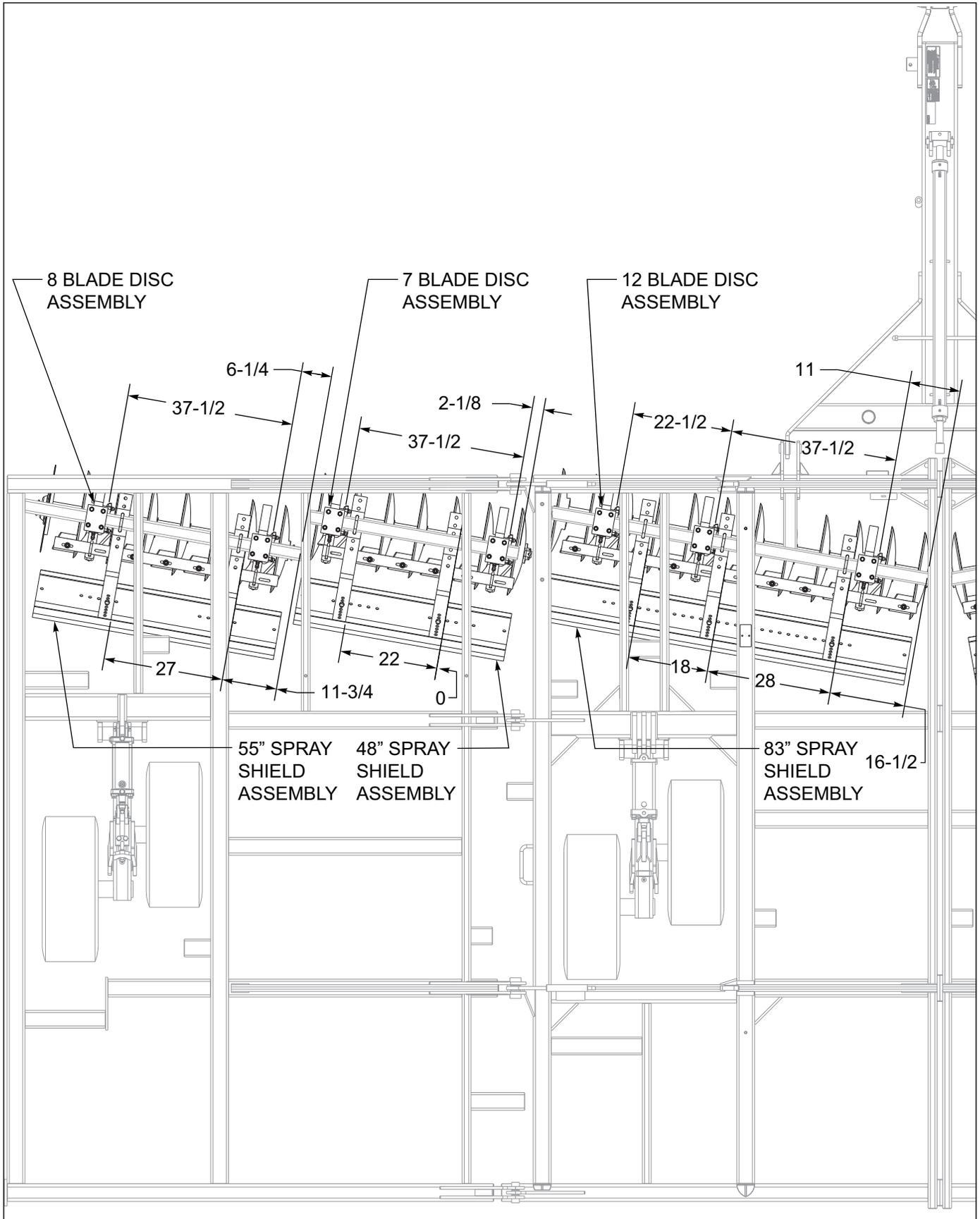


Figure 2-8: Disc Gang & Spray Shield Placement 35' LH

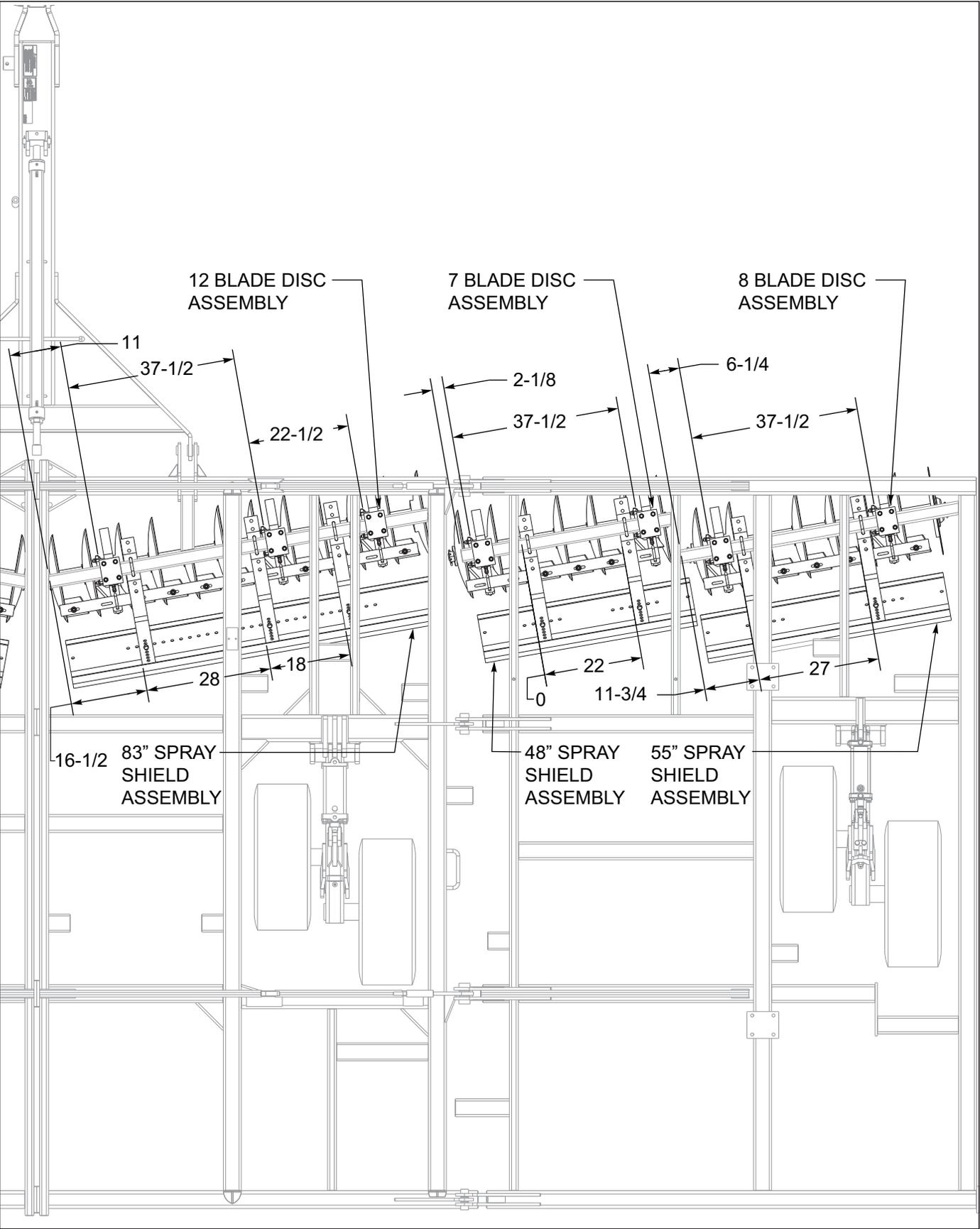


Figure 2-9: Disc Gang & Spray Shield Placement 35' RH

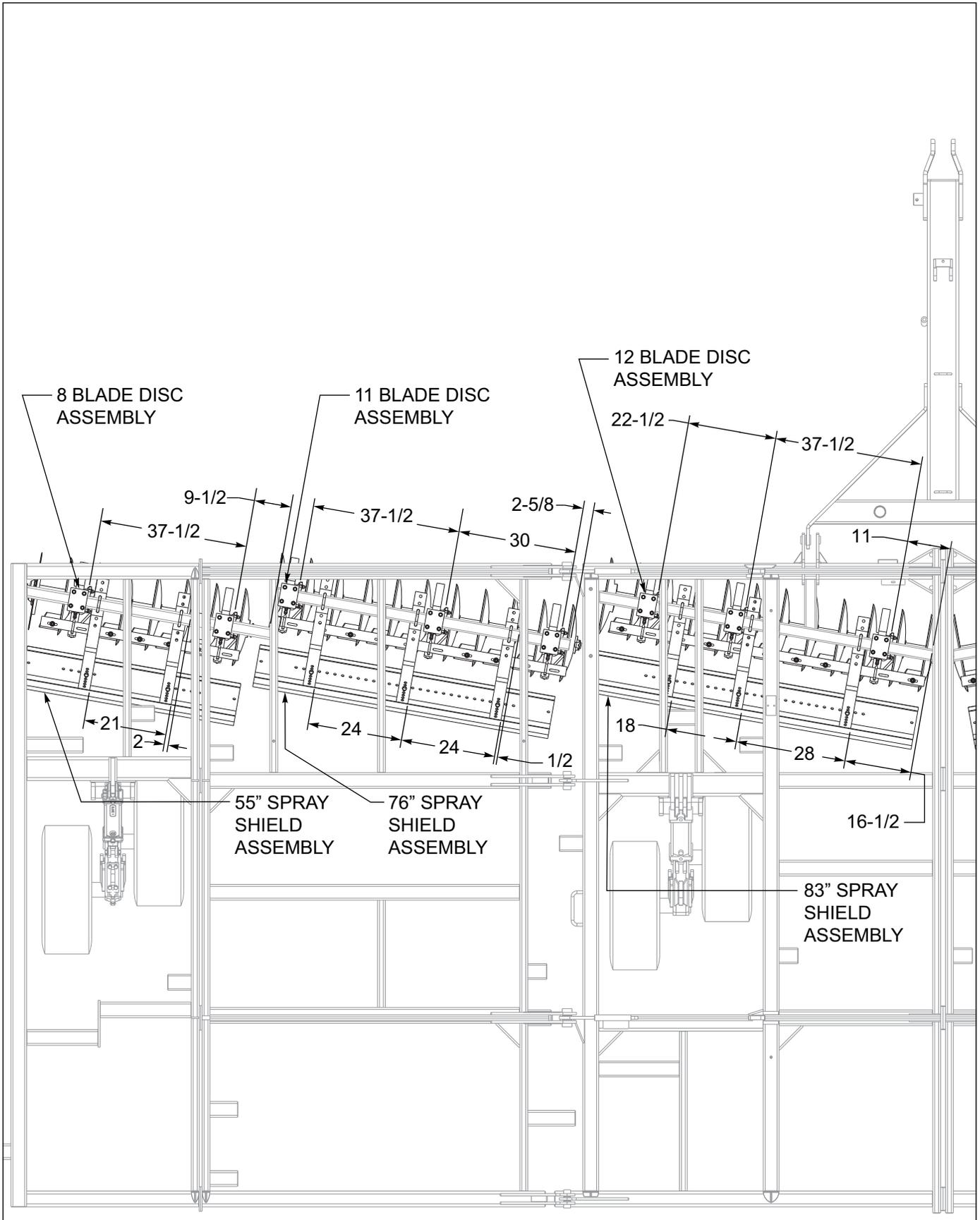


Figure 2-10: Disc Gang & Spray Shield Placement 40' LH

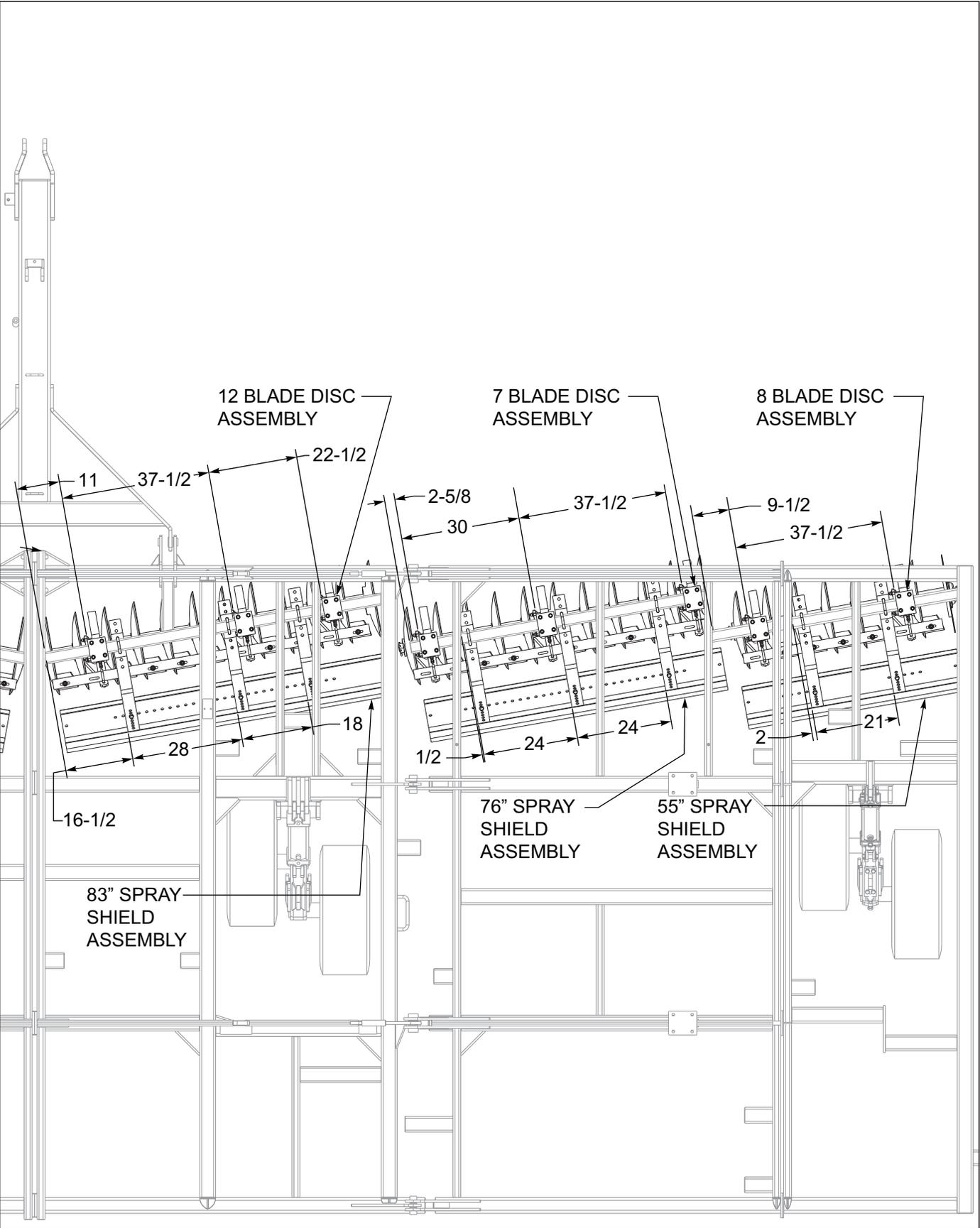


Figure 2-11: Disc Gang & Spray Shield Placement 40' RH

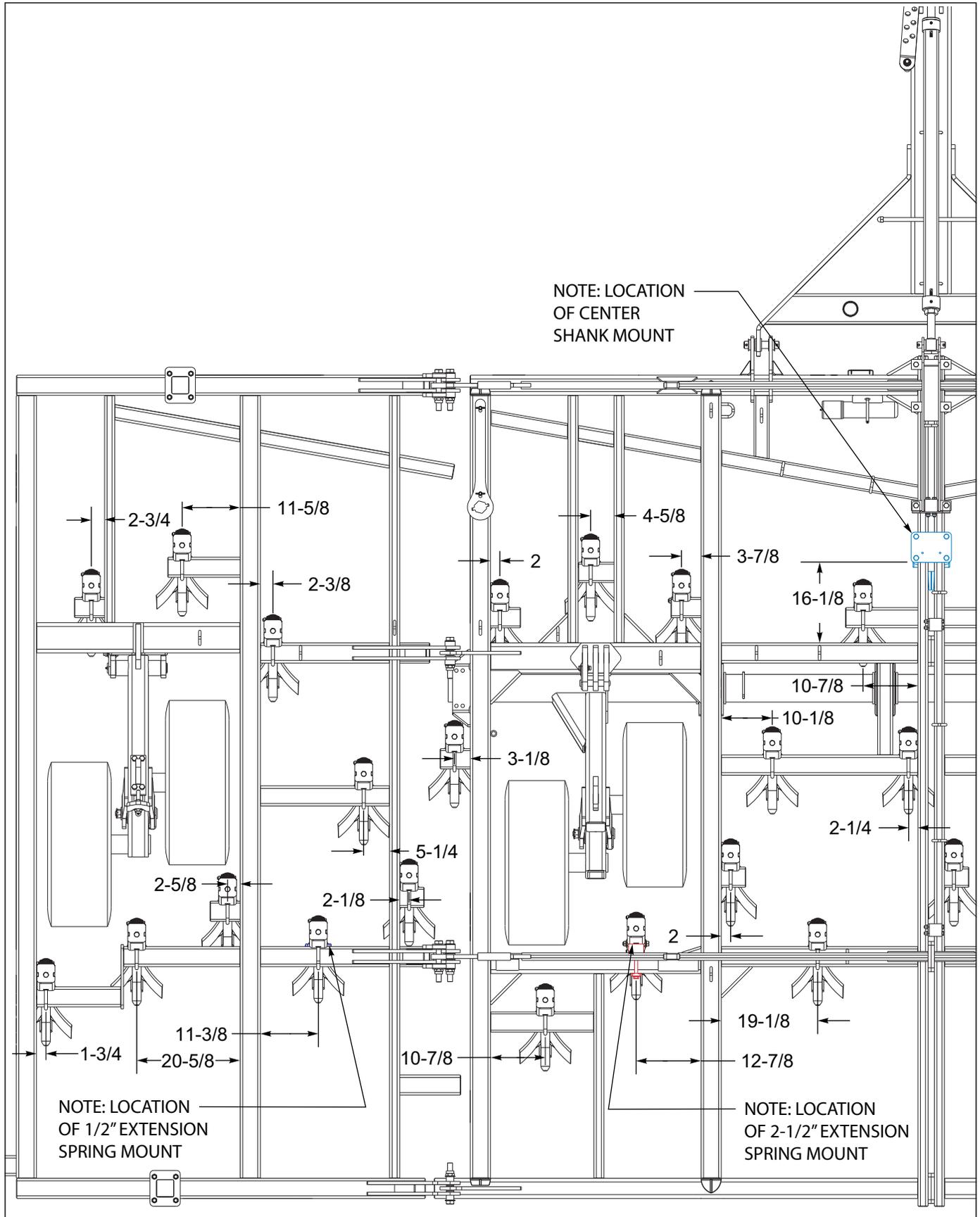


Figure 2-12: Shank Placement 30' LH

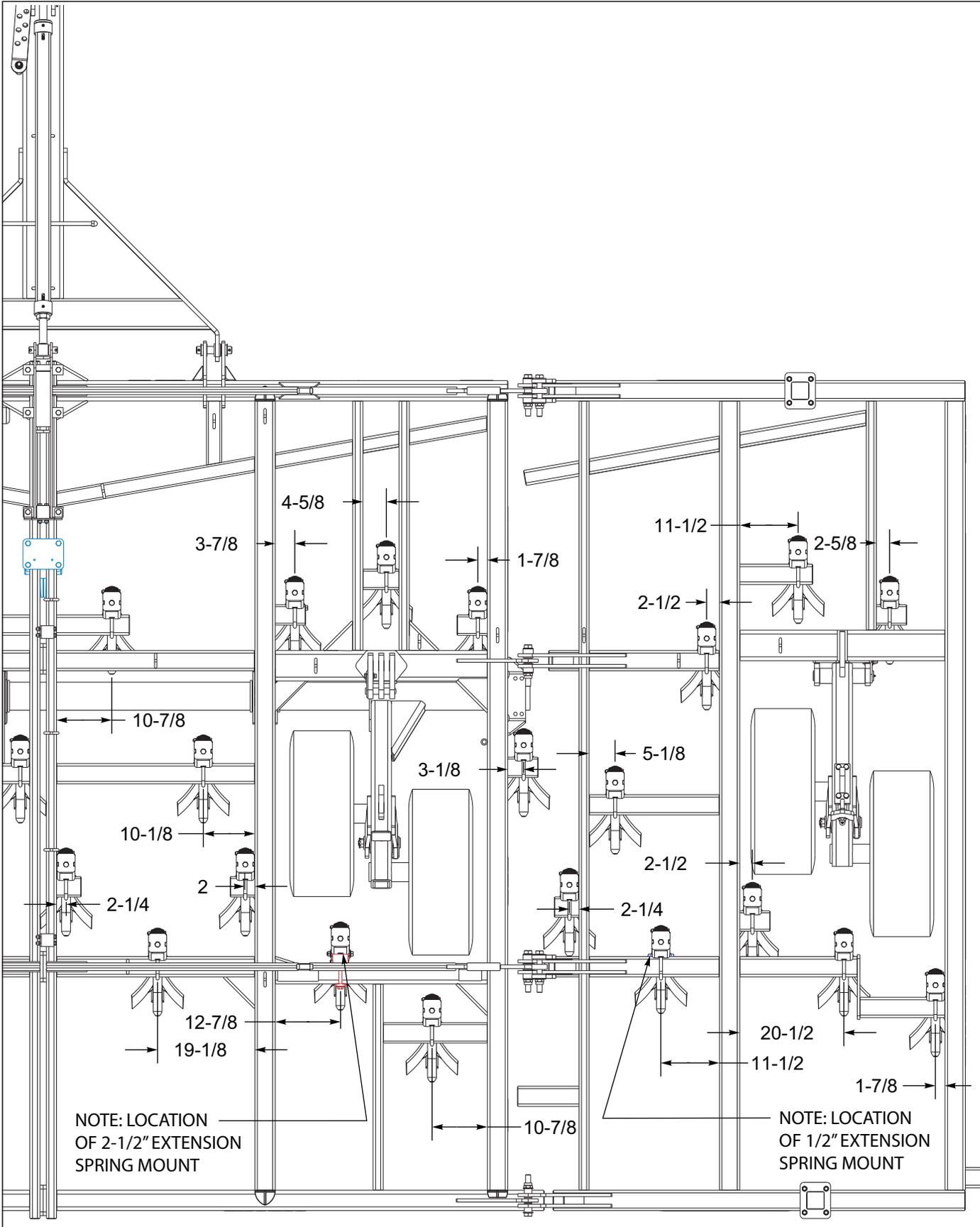


Figure 2-13: Shank Placement 30' RH

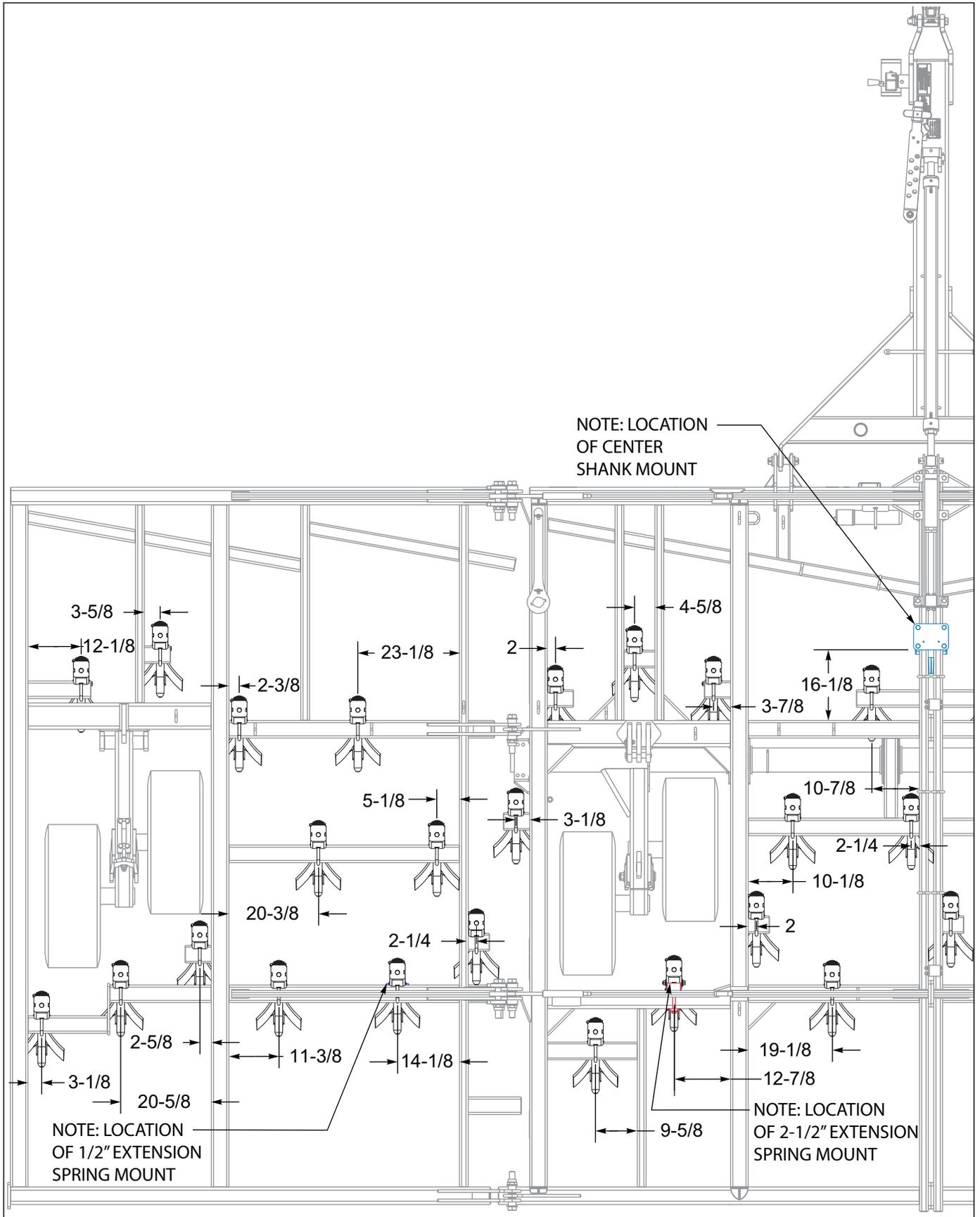


Figure 2-14: Shank Placement 35' LH

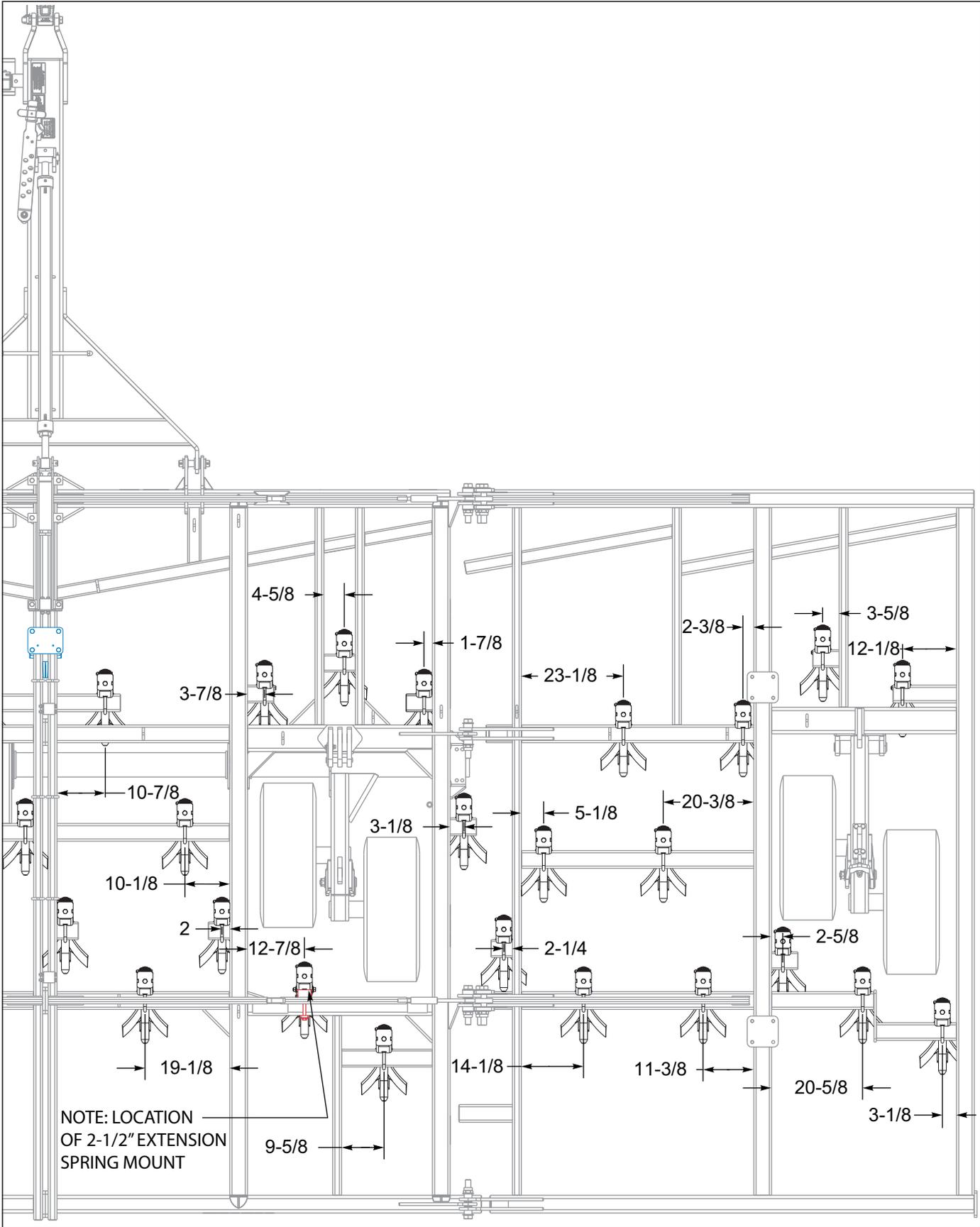


Figure 2-15: Shank Placement 35' RH

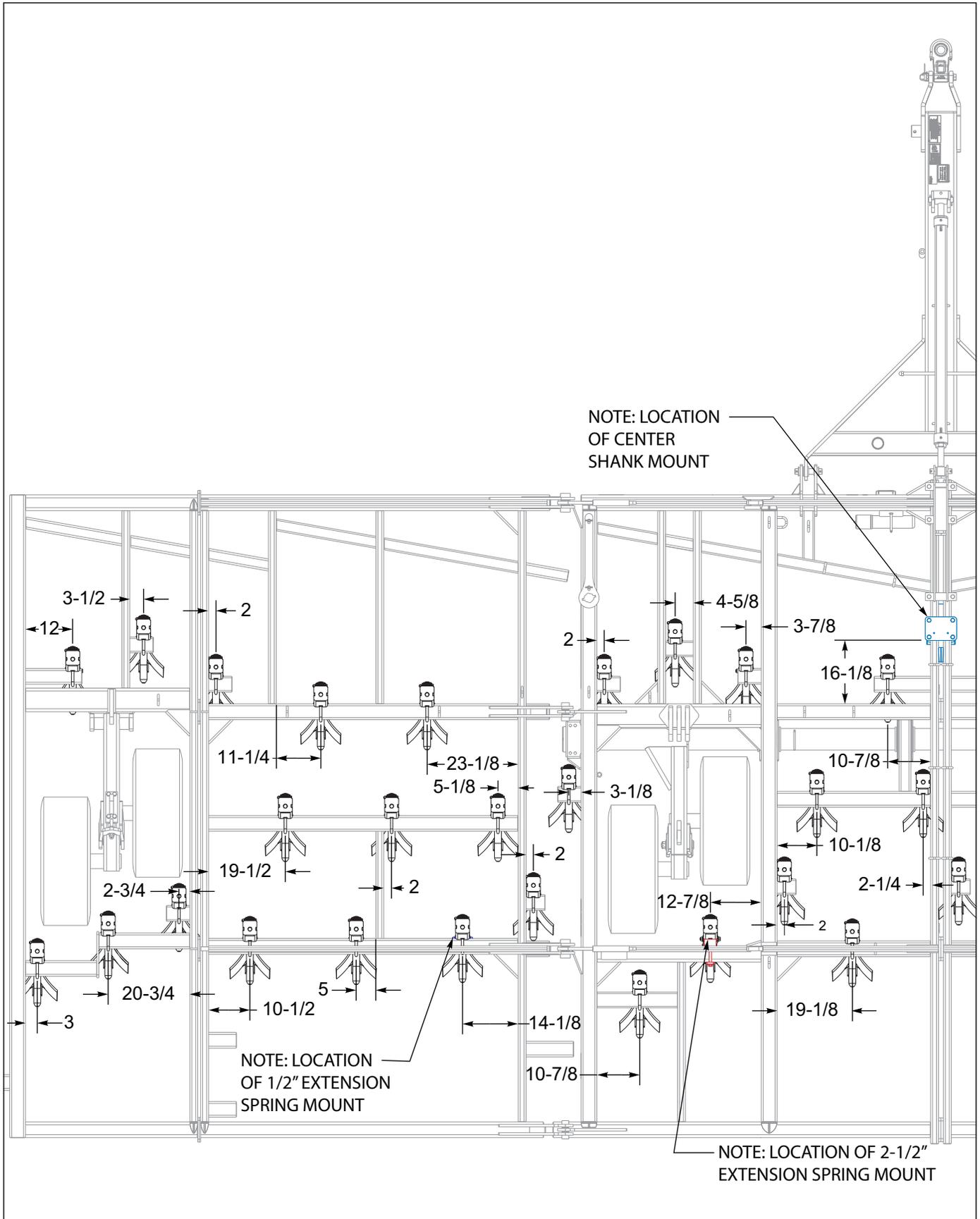


Figure 2-16: Shank Placement 40' LH

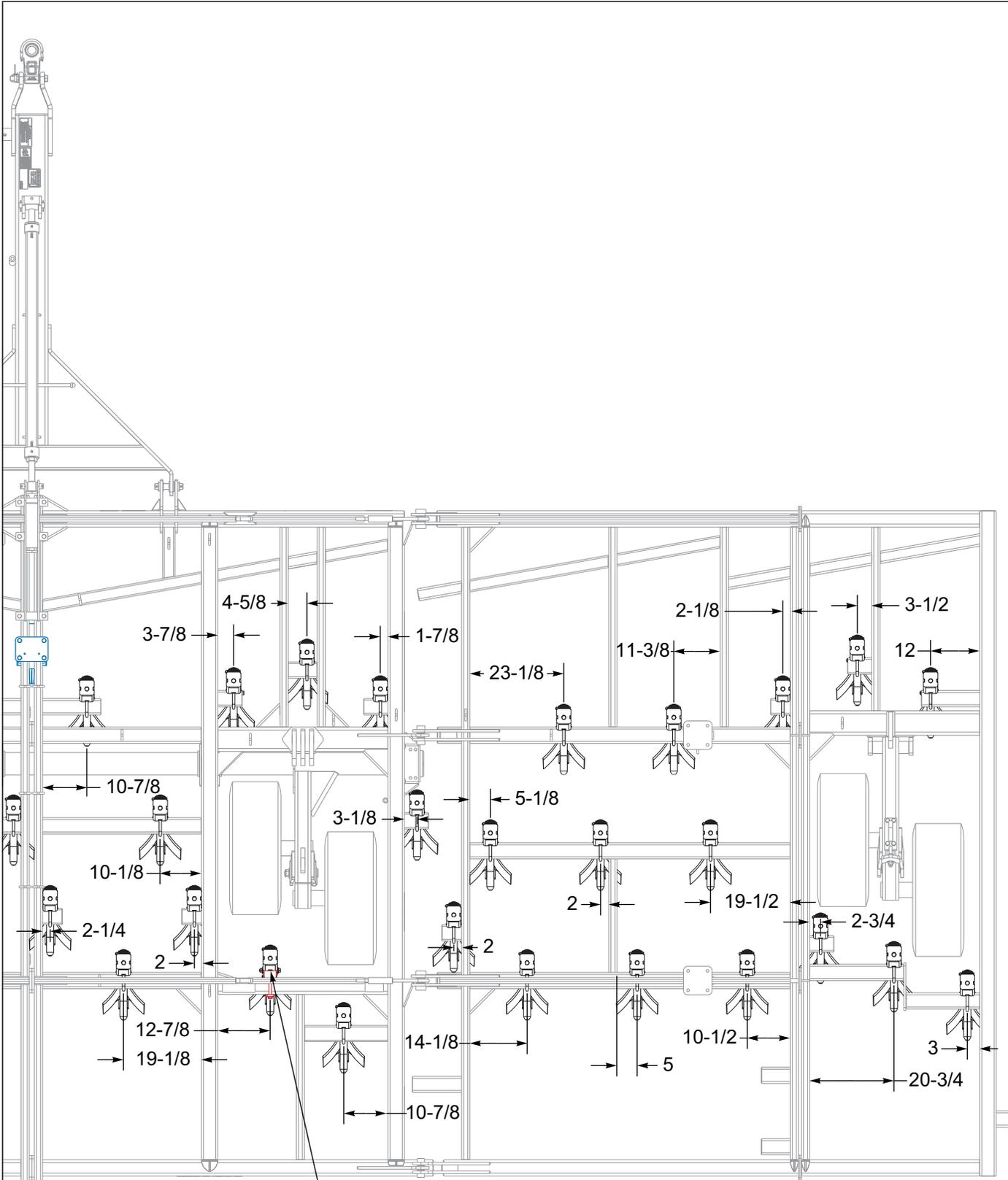


Figure 2-17: Shank Placement 40' RH

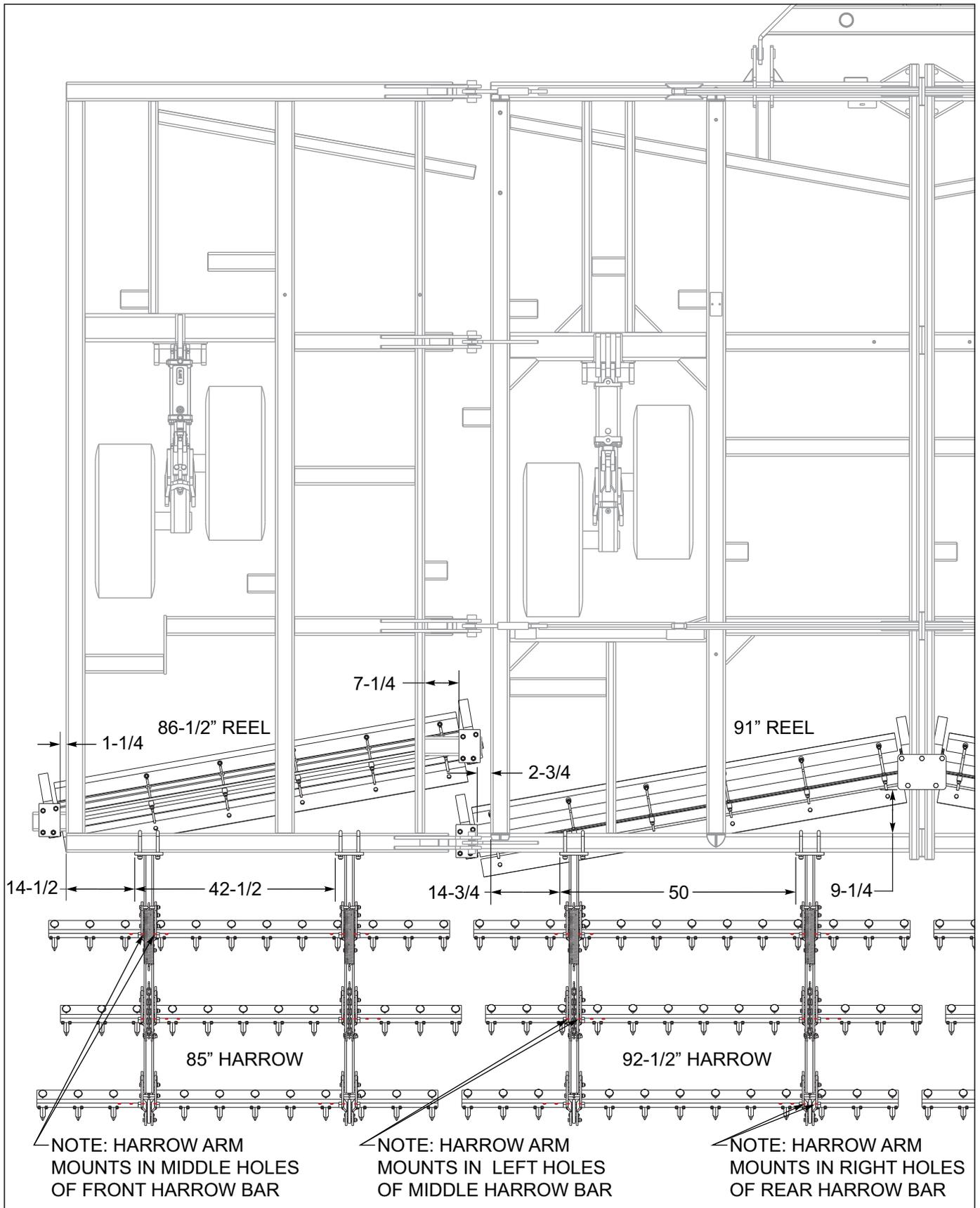


Figure 2-18: Reel & Harrow Placement 30' LH

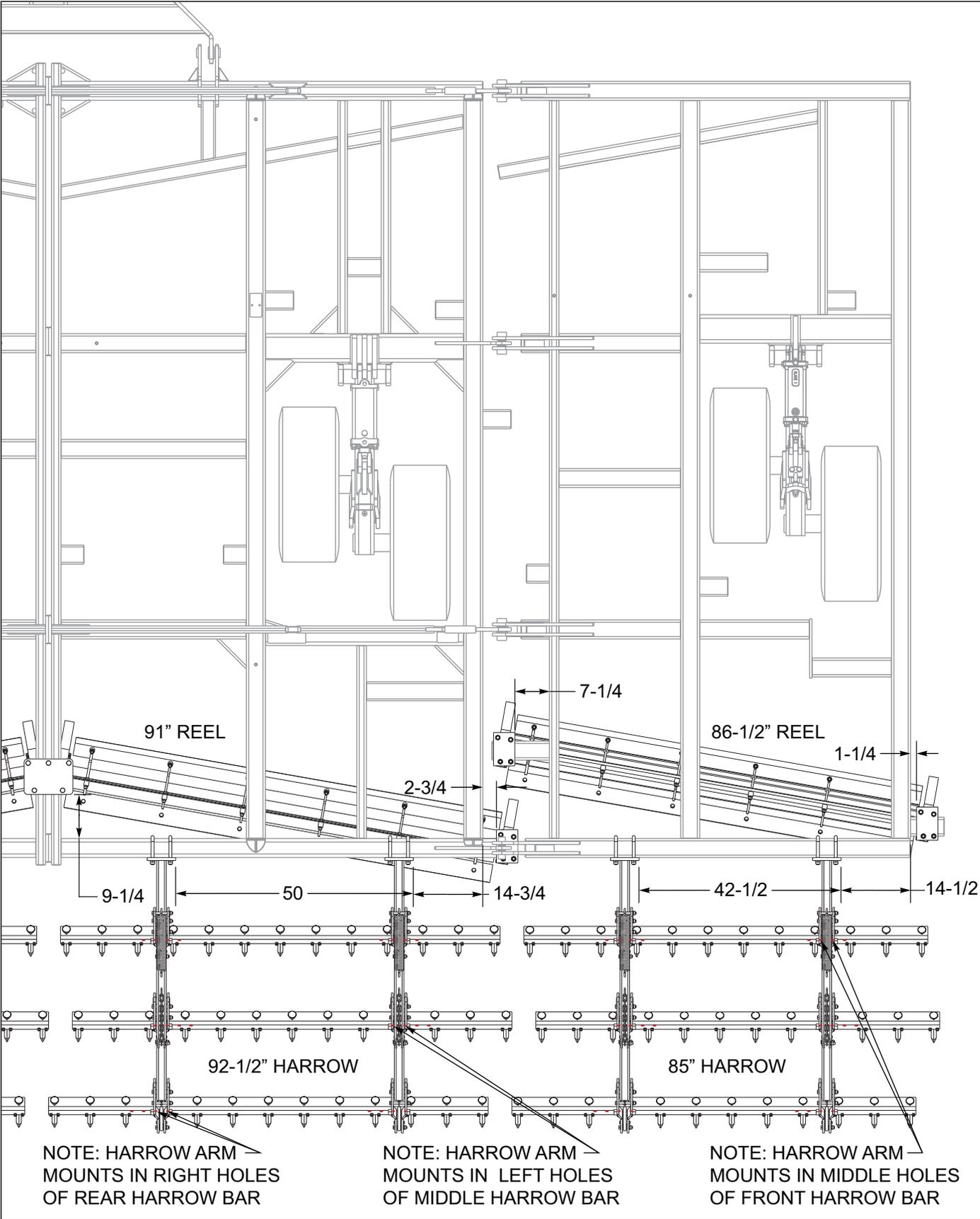


Figure 2-19: Reel & Harrow Placement 30' RH

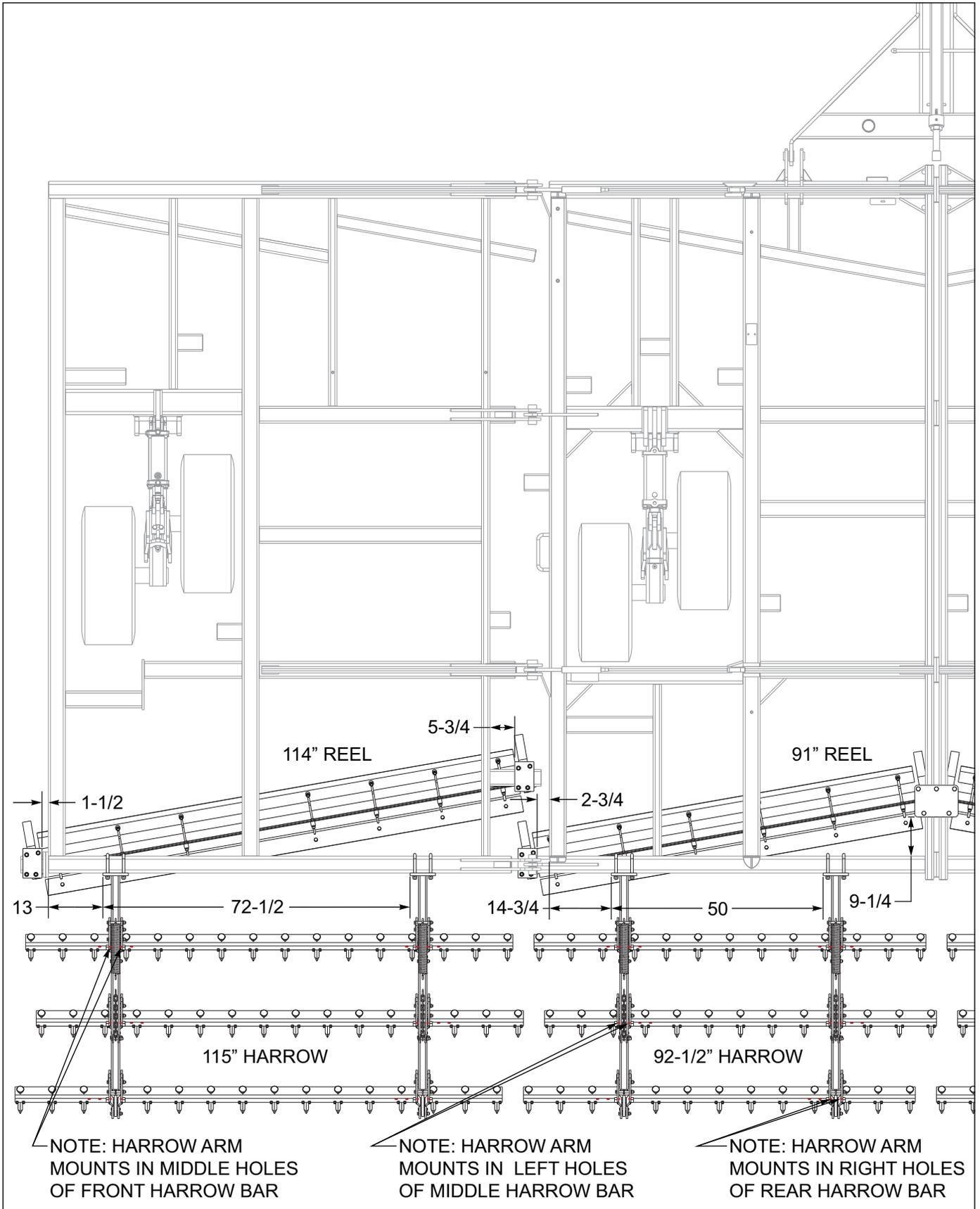


Figure 2-20: Reel & Harrow Placement 35' LH

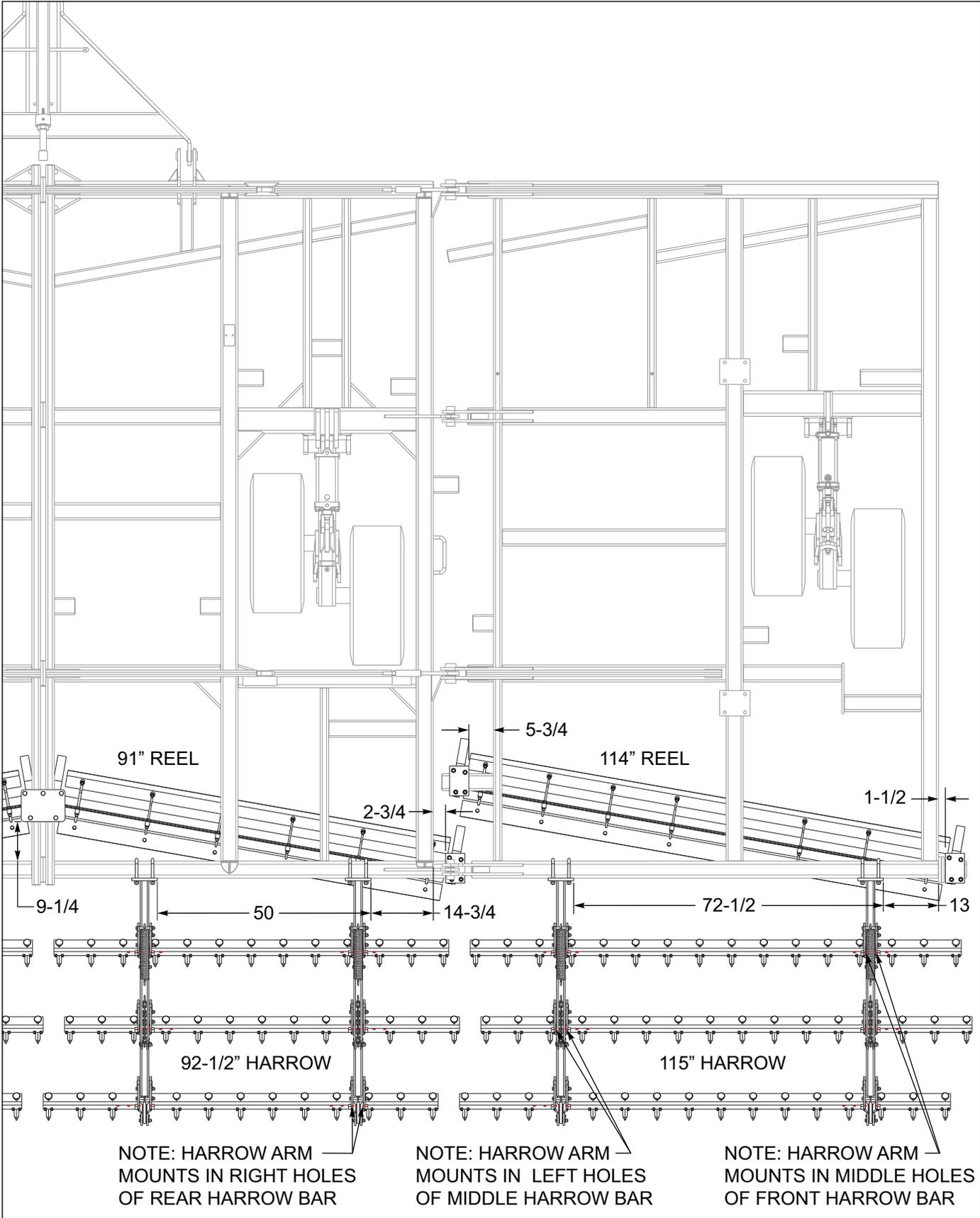


Figure 2-21: Reel & Harrow Placement 35' RH

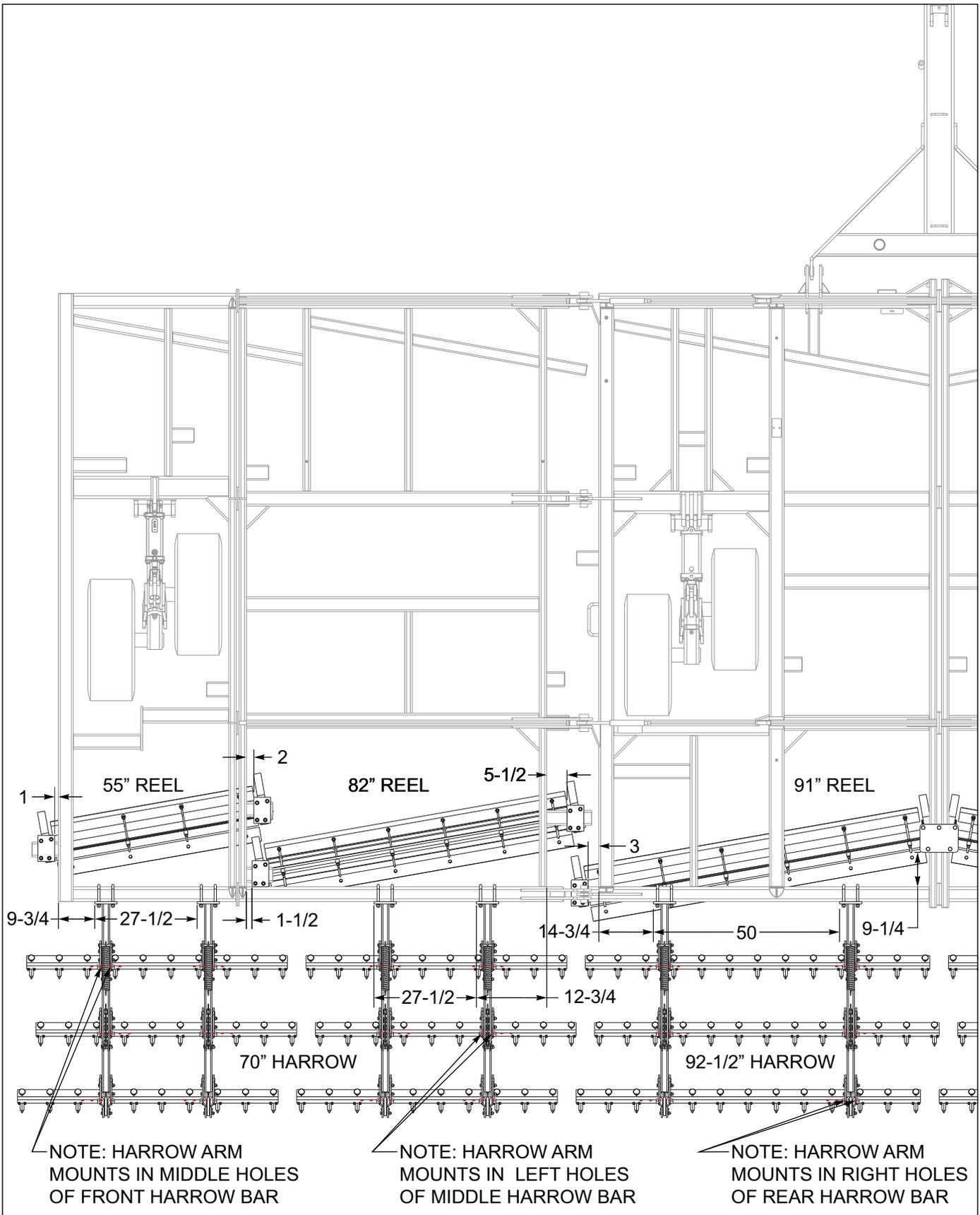


Figure 2-22: Reel & Harrow Placement 40' LH

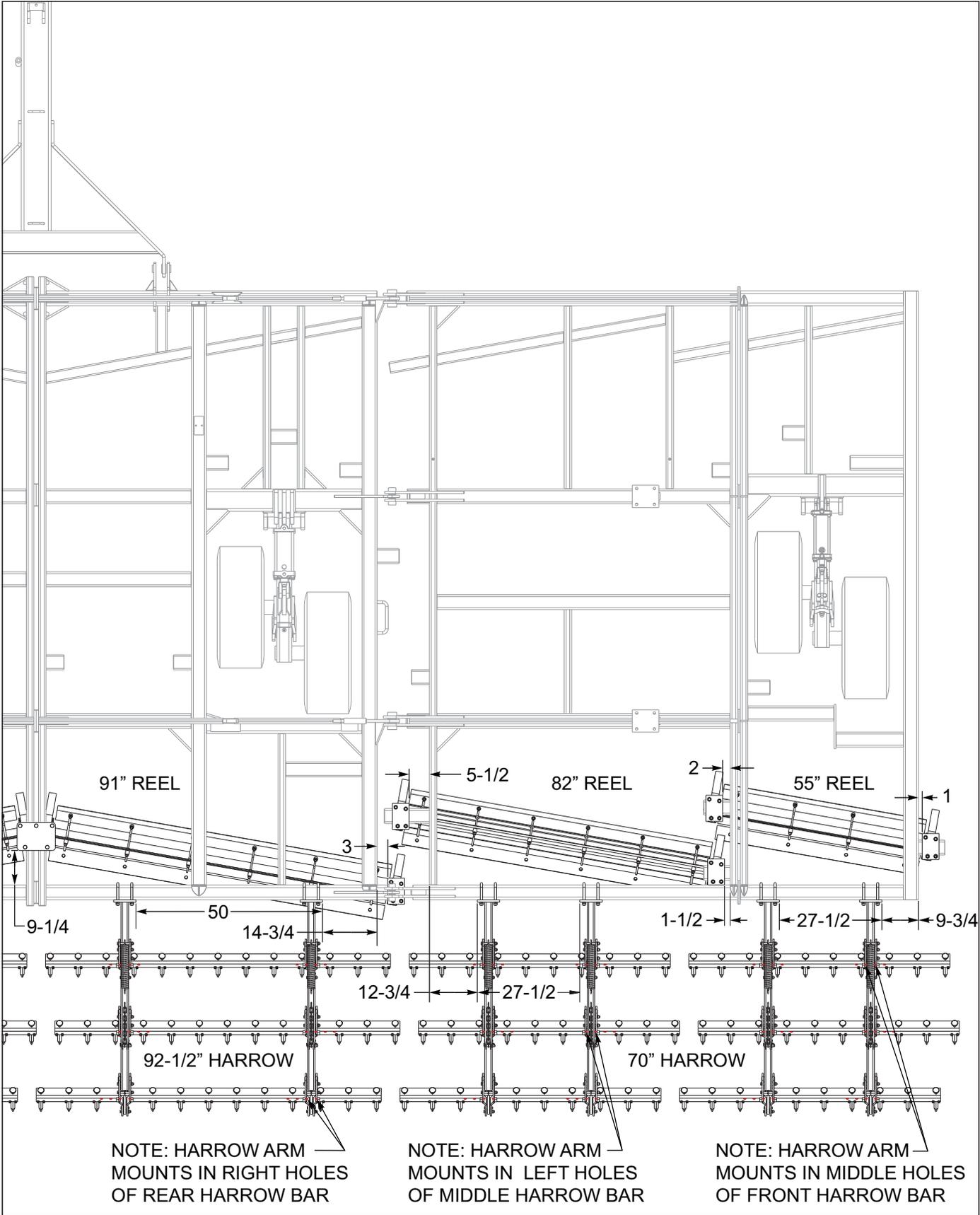


Figure 2-23: Reel & Harrow Placement 40' RH

Assembly Instructions

It is very important that your new 877 Tilloll be properly assembled, adjusted and lubricated before use. 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.

- Use lock washers or flat washers as specified.
- Tighten all screws and nuts to the recommended torques shown in *(See “General Torque Specifications” on page 2-4.)* and *(See “Hydraulic Fitting Torque Specifications” on page 2-5.)*



WARNING

Do not attempt to lift heavy parts (such as the frame, rock shaft, and pull hitch) manually. Use a hoist or a forklift 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.



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 permanent equipment damage.

Center 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 and rock shaft) manually. Use a hoist or a fork lift to move these parts into position.

1. Place the LH and RH center frame assemblies on stands approximately 36" off the ground [See Figures 3-2](#). Bolt the two halves together using 5/8 x 2 bolts and lock nuts.
2. Install a 4" UHMW bearing in all bearing and lift cap bearing locations around the center lift assembly.
3. Raise the center lift assembly into the center frame and attach each end bearing cap to the center frame with 5/8 x 2 bolts and 5/8 lock nuts
4. Install the three inner lift bearing mounts with 3/4 x 2 bolts, 3/4 lock nuts and 5/8 x 2 bolts, 5/8 lock nuts.

NOTE

Make sure the center lift will rotate freely in the center frame after it is assembled.

5. Install the depth control mount to the top of the center lift assembly using 3/8x1-1/4 bolts and lock nuts
6. Attach the DCV mount bracket to the side of tube of LH center frame assembly with 1/2 x 5-1/4 x 6-1/16 u-bolts and 1/2 lock nuts. [See Figures 3-1](#) for placement.

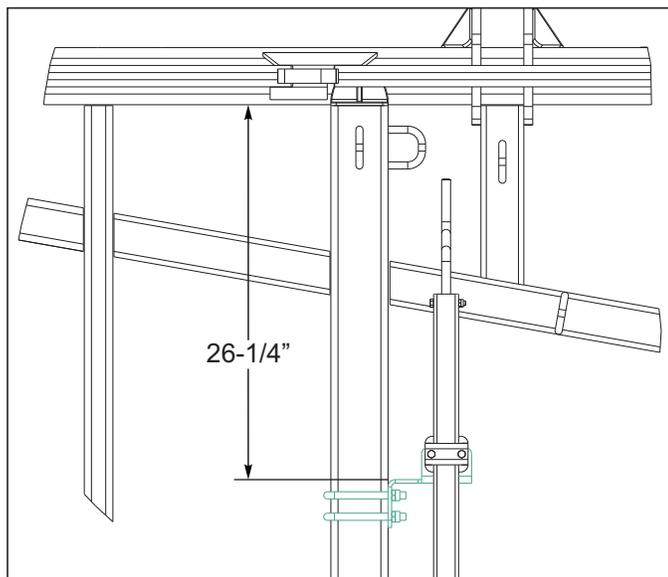


Figure 3-1: DCV Mount Placement

7. Install a slide pad, 47" depth stop assembly, depth stop guided on top of DCV mount bracket.
8. Install a 90 deg elbow in the right side of the limit valve facing forward and adapter to front side of limit valve facing forward (opposite the button) [See Figures 3-16](#).
9. Fasten the limit valve on bottom of DCV mount bracket, secure with 5/16 x 5 bolt and lock nut [See Figures 3-2](#)
10. Attach the rear of the tube assembly to the depth control mount on the top of the center lift assembly using a 5/8 x 2-1/2 bolt and 5/8 lock nut. Do not over-tighten this bolt as the tube must pivot freely on the depth control mount.
11. Align the holes in the base end of 4-1/2 x 8 master cylinders with holes in welded lugs on center frame. Ensure ports are facing upwards. Secure with lift cylinder pin, 1/2 x 2 bolt, 1/2 flat washers and 1/2 lock nut. Attach rod end of cylinders to lug on center lift assembly with cylinder pins and roll pins provided with cylinders [See Figures 3-2](#).

Center Frame Tire Installation

1. Install any hub and spindle assemblies into the main lift assembly that may have been removed for shipping. Use 7/16 x 4-1/2 bolts and lock nuts for 2-1/4 spindles and 1/2 x 4-1/2 bolts and lock nuts for 3" spindles.
2. Install the tire/wheel assemblies with 5/8 lug nuts on the center lift assembly. 320/70R15 on all sizes.
3. Remove the transport locks from the storage position and install over the master lift cylinder rods. Install the lock pins to secure the transport locks in place.

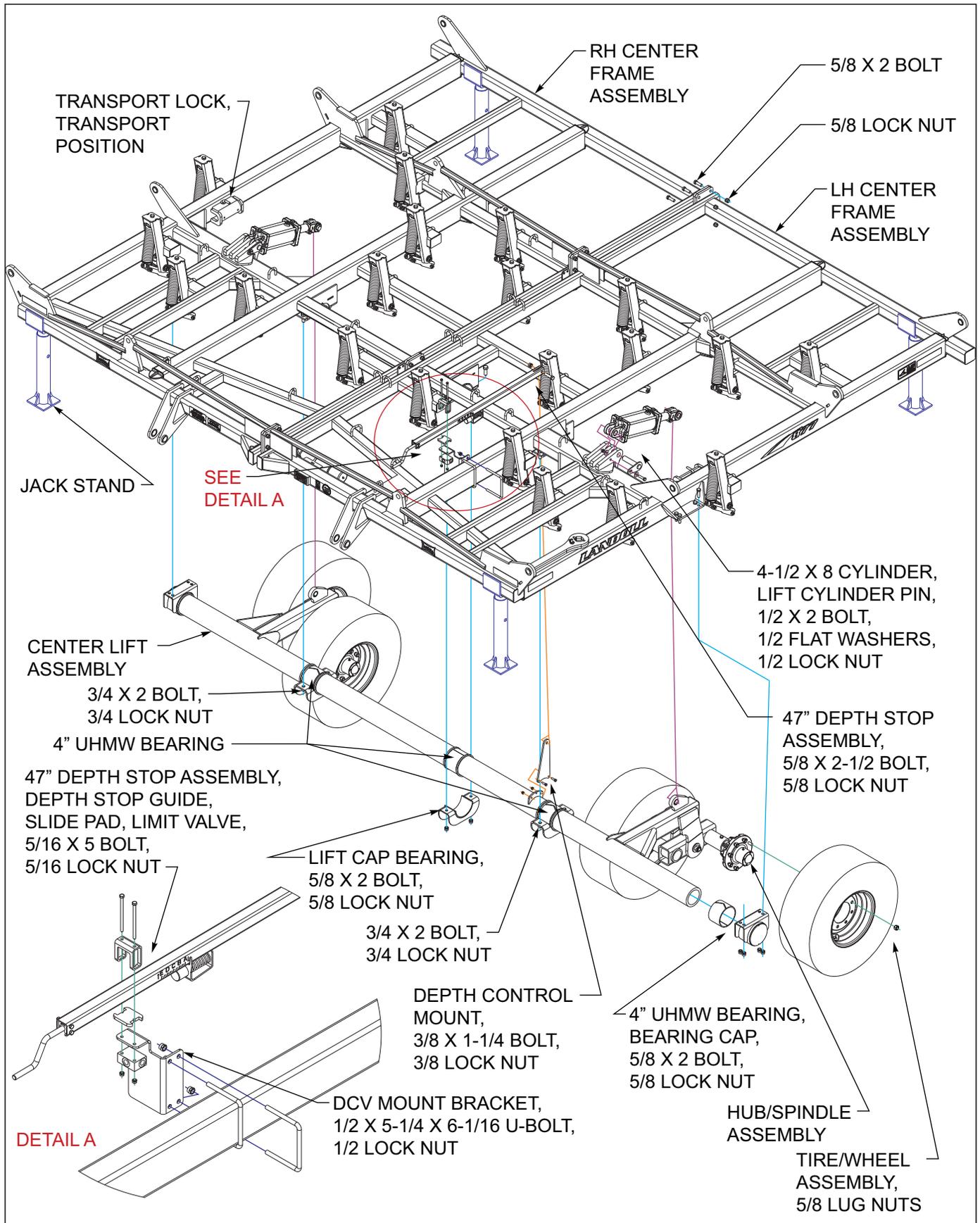


Figure 3-2: Center Frame Assembly

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, rock shaft, and pull hitch) manually. Use a hoist or a fork lift to move these parts into position.

1. Attach the rear of the hitch assembly to the front of the center frame using 1-7/16 x 7 pins, machine washers, and 3/8 x 2-1/2 roll pins.
2. Install the tongue jack in the forward mounting tube and rotate to parking position to support the front of the hitch.
4. Install mast leveler onto main frame using coultter support bars, 5/8 x 6 hex bolts and 5/8 lock nuts.
5. Adjust the radius rod assembly to approximately 71-3/4 hole centers. Visible threads at the top and bottom of the radius rod should be nearly equal. Fasten the radius rod assembly to the front hole using 1-1/4 x 6-1/2 pin and cotter pins. Fasten the top to the leveler mast using 1-1/4 x 5-5/8 pin and cotter pins.

6. Insert a 3/4 x 7 hex head cap screw into the hose holder tube on the left side of the hitch from the bottom side so the threads point upward. Hold in place with a 3/4 prevailing torque 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.
7. Slide the hose holder bracket over the screw and secure with another 3/4 prevailing torque flange nut.
8. Install a 3/8 x 3-1/2 all-thread screw in the front of the hose holder bracket and secure with a 3/8-16 hex nut. Insert the bolt from the bottom so the threads point upward.
9. Slide the hose holder clamp over the 3/8" screw and loosely start the wing nut on top of the clamp. Hydraulic hoses will be routed through the clamp after assembly.

NOTE

The clamp has two sides, so that extend hoses can be located on one side and retract hoses can be located on the other side for reference.

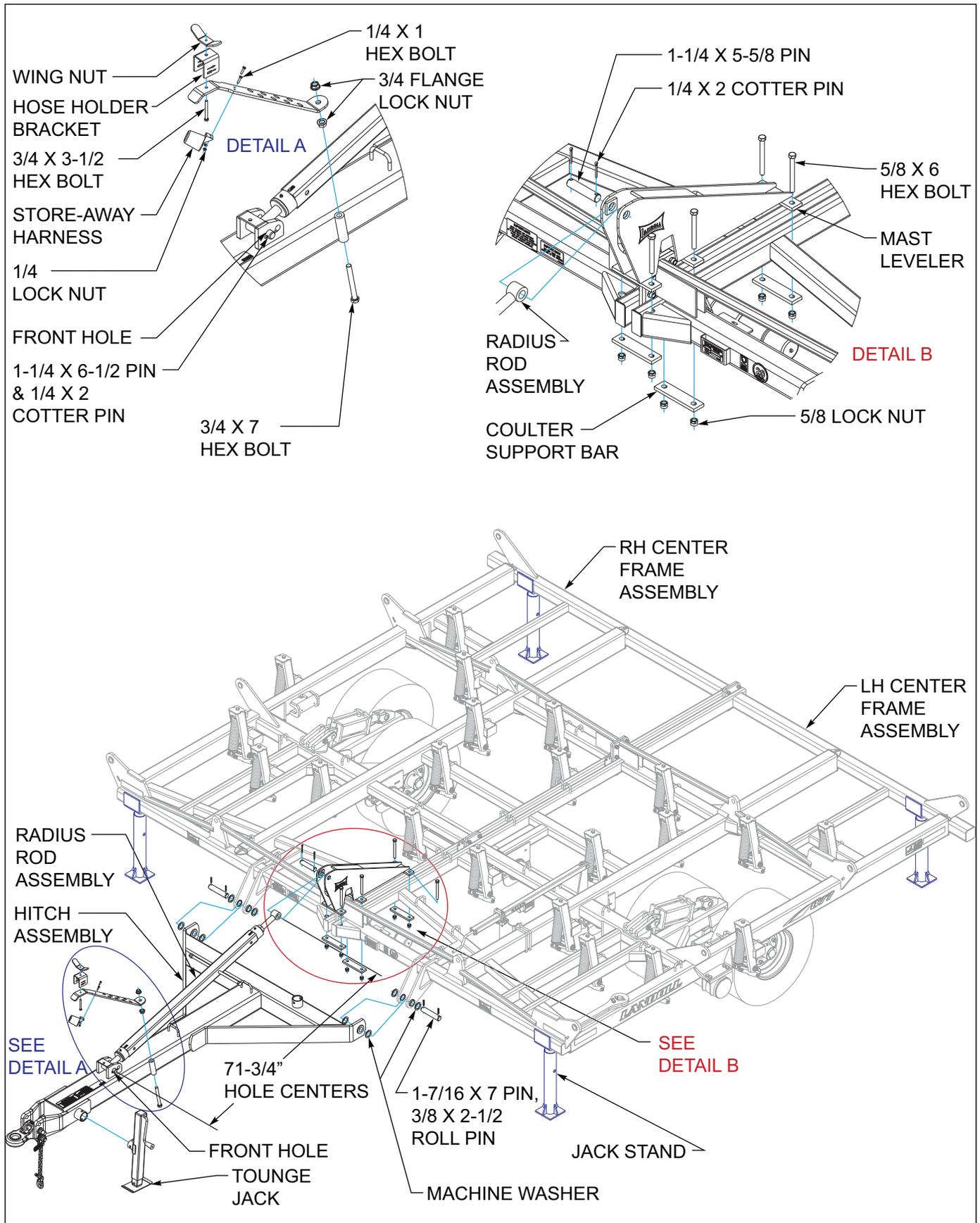


Figure 3-3: Hitch Assembly

Wing Frame Assembly

1. On 30' models, assemble the wing frames to the center frame using 1 x 7-1/2 hex bolts, 1 narrow flat washers and 1 lock nuts **See Figure 3-4**. Assemble the wing fold plates to the wing frames using 1 x 7-1/2 hex bolts, 1 flat washers and 1 lock nuts. Use flat washers on both outside and inside of the wing fold plates.
2. On 35' models, assemble the wing frames to the center frame using 1-1/4 x 8 hex bolts, 1-1/4 narrow flat washers and 1-1/4 lock nuts **See Figure 3-5**. Install wing extensions to wing frames using 5/8 x 2 hex bolts and 5/8 lock nuts. Assemble the wing fold plates to the wing frames using 1-1/4 x 8 hex bolts, 1-1/4 flat washers and 1-1/4 lock nuts. Use flat washers on both outside and inside of the wing fold plates.
3. On 40' models, assemble the wing frames to the center frame using 1-1/4 x 8 hex bolts, 1-1/4 narrow flat washers and 1-1/4 lock nuts **See Figure 3-6**. Install wing extensions to wing frames using 5/8-11 x 1-1/2 hex bolts and 5/8 lock nuts. Assemble the wing fold plates to the wing frames using 1-1/4 x 8 hex bolts, 1-1/4 flat washers and 1-1/4 lock nuts. Use flat washers on both outside and inside of the wing fold plates.
4. Install the tire/wheel assemblies with 5/8 lug nuts on the wing frames. 320/70R15 on all sizes.

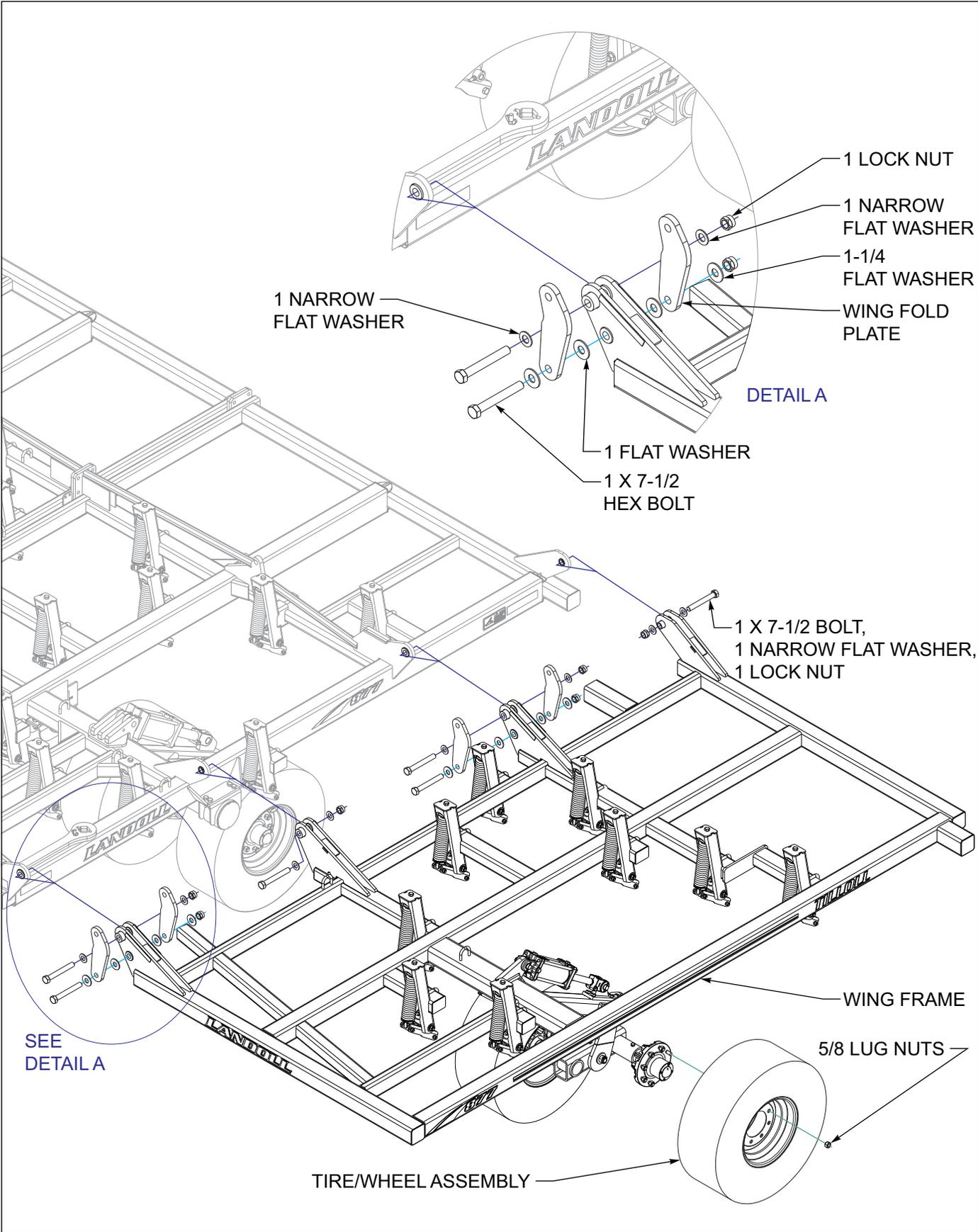


Figure 3-4: Wing Frame Assembly 30'

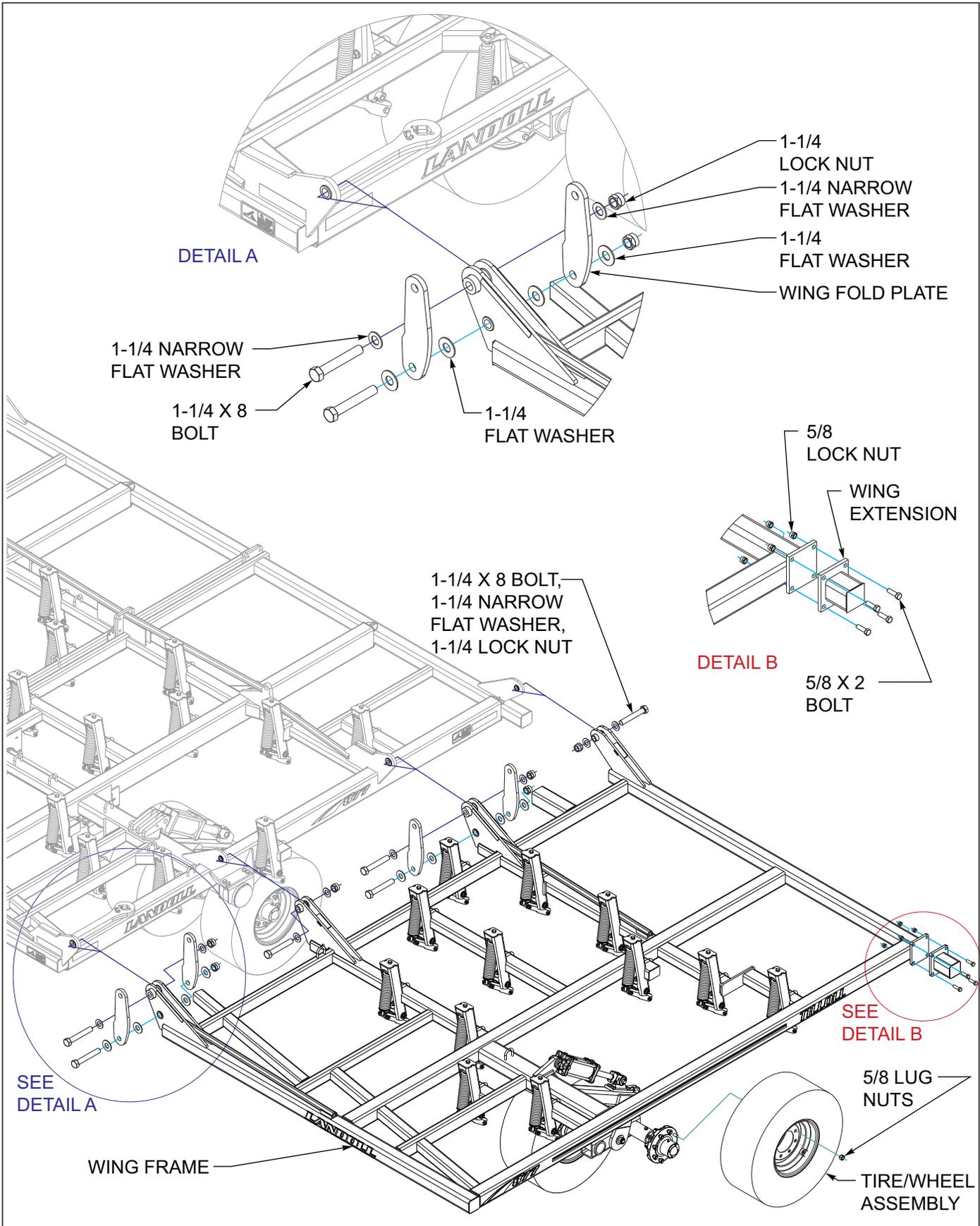


Figure 3-5: Wing Frame Assembly 35'

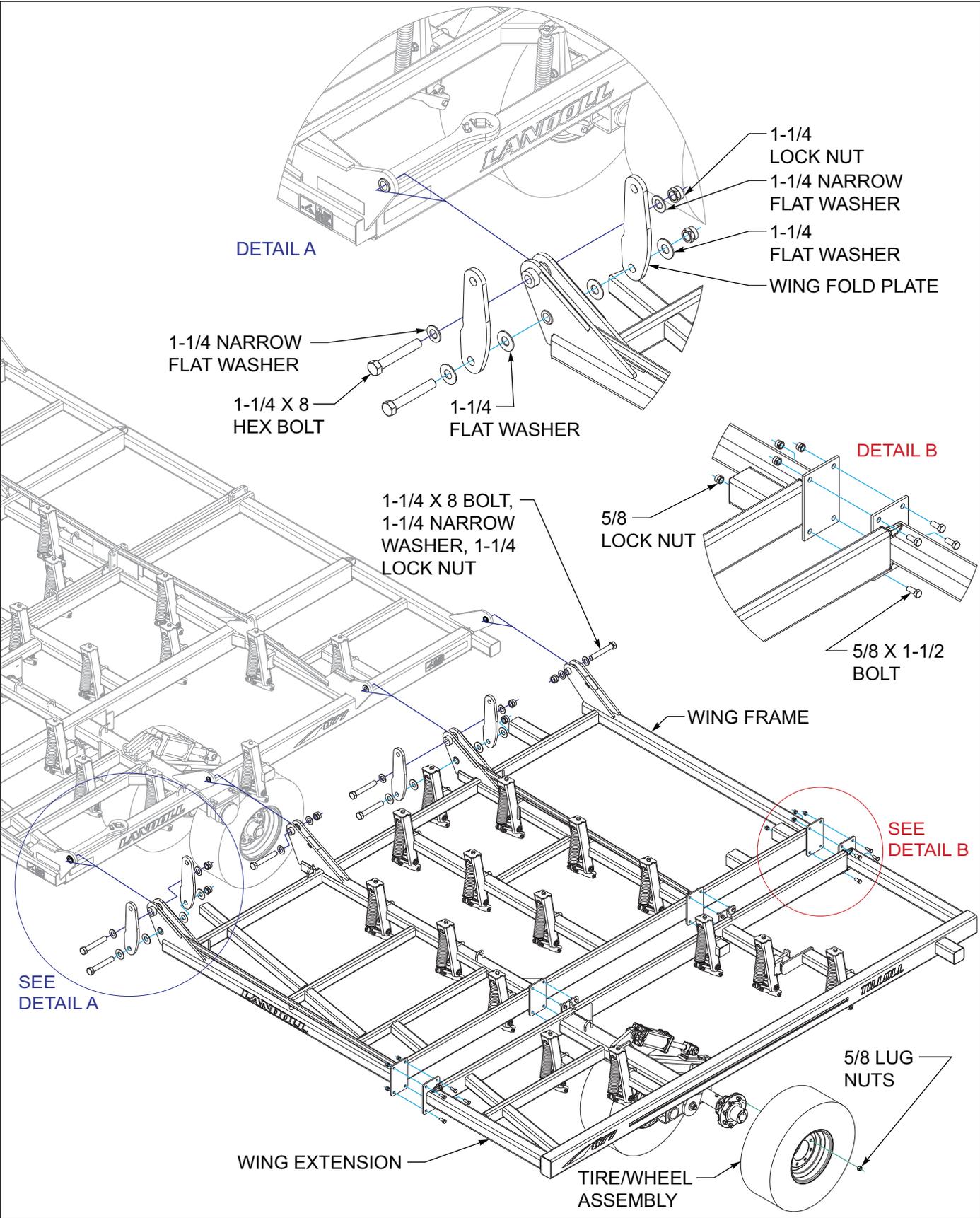


Figure 3-6: Wing Frame Assembly 40'

Wing Fold Support Assembly

1. **See Figures 3-7** for 30' models, assemble the wing supports to the RH and LH wing frames using 5/8 x 4-11/16 x 5-1/2 u-bolts and 5/8 lock nuts (**See “Wing Supports Placement 30” on page 3-14.**).
2. **See Figures 3-8** for 35' models, assemble the wing supports to the RH center frame using 5/8 x 4-11/16 x 5-1/2 u-bolt, rear, 5/8 x 4-11/16 x 4-1/2 u-bolt, front and 5/8 lock nuts and to the RH wing frame using 5/8 x 2 bolts and lock nuts (**See “Wing Supports Placement 35' RH” on page 3-15.**).
3. **See Figures 3-9** for 40' models, assemble the wing supports to the RH center frame using 5/8 x 4-11/16 x 7-3/4 u-bolts and 5/8 lock nuts and to the RH wing frame using 5/8 x 2 bolts and 5/8 lock nuts (**See “Wing Supports Placement 40' RH” on page 3-16.**).
4. Install the 8 or 16 port manifolds to center frame using 1/2 x 3-1/2 bolts and 1/2 lock nuts. **See Figures 3-7** (877-30' model), **See Figures 3-11** (877-35' model), **See Figures 3-9** (877-40')

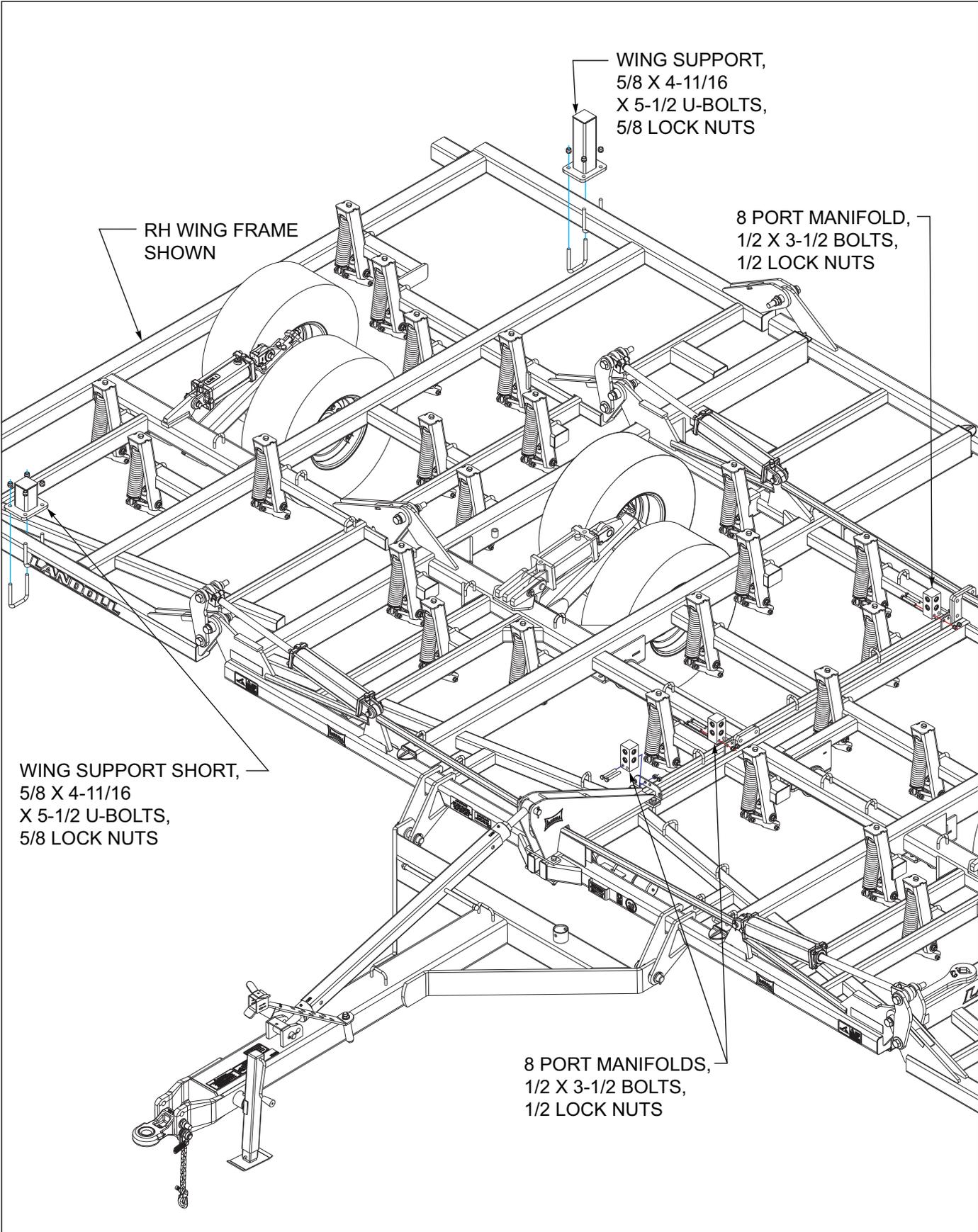


Figure 3-7: Wing Support Assembly 30'

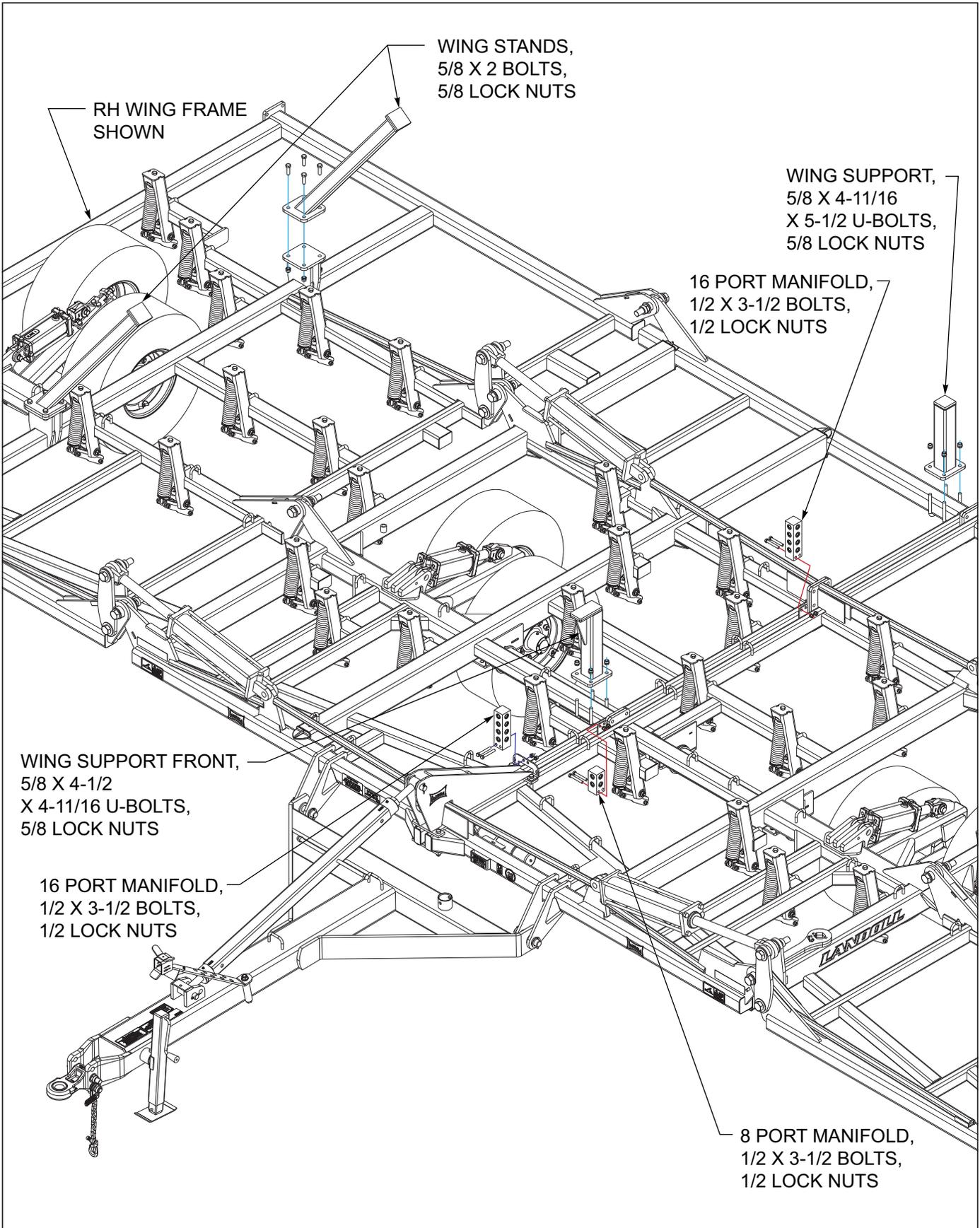


Figure 3-8: Wing Support Assembly 35'

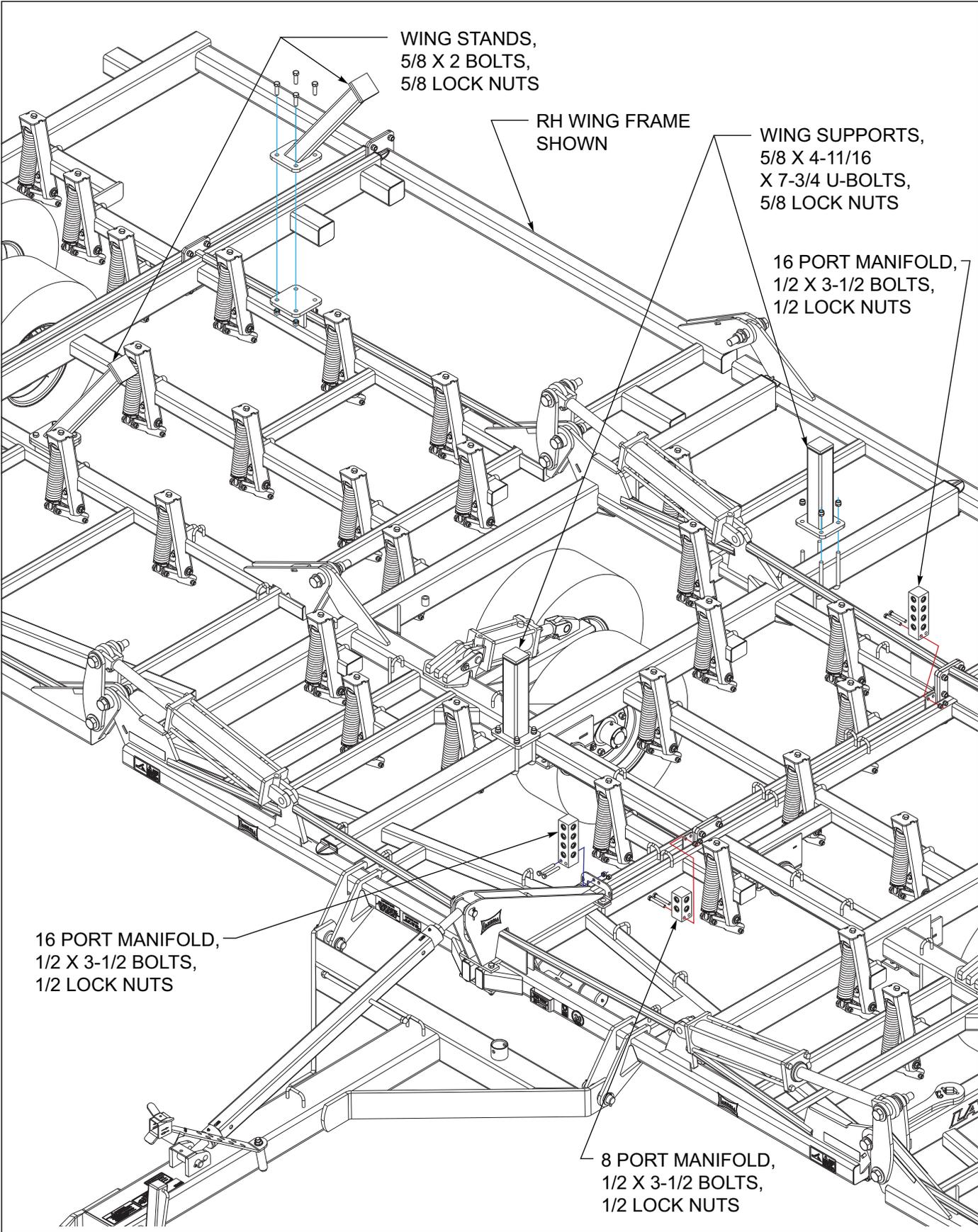


Figure 3-9: Wing Support Assembly 40'

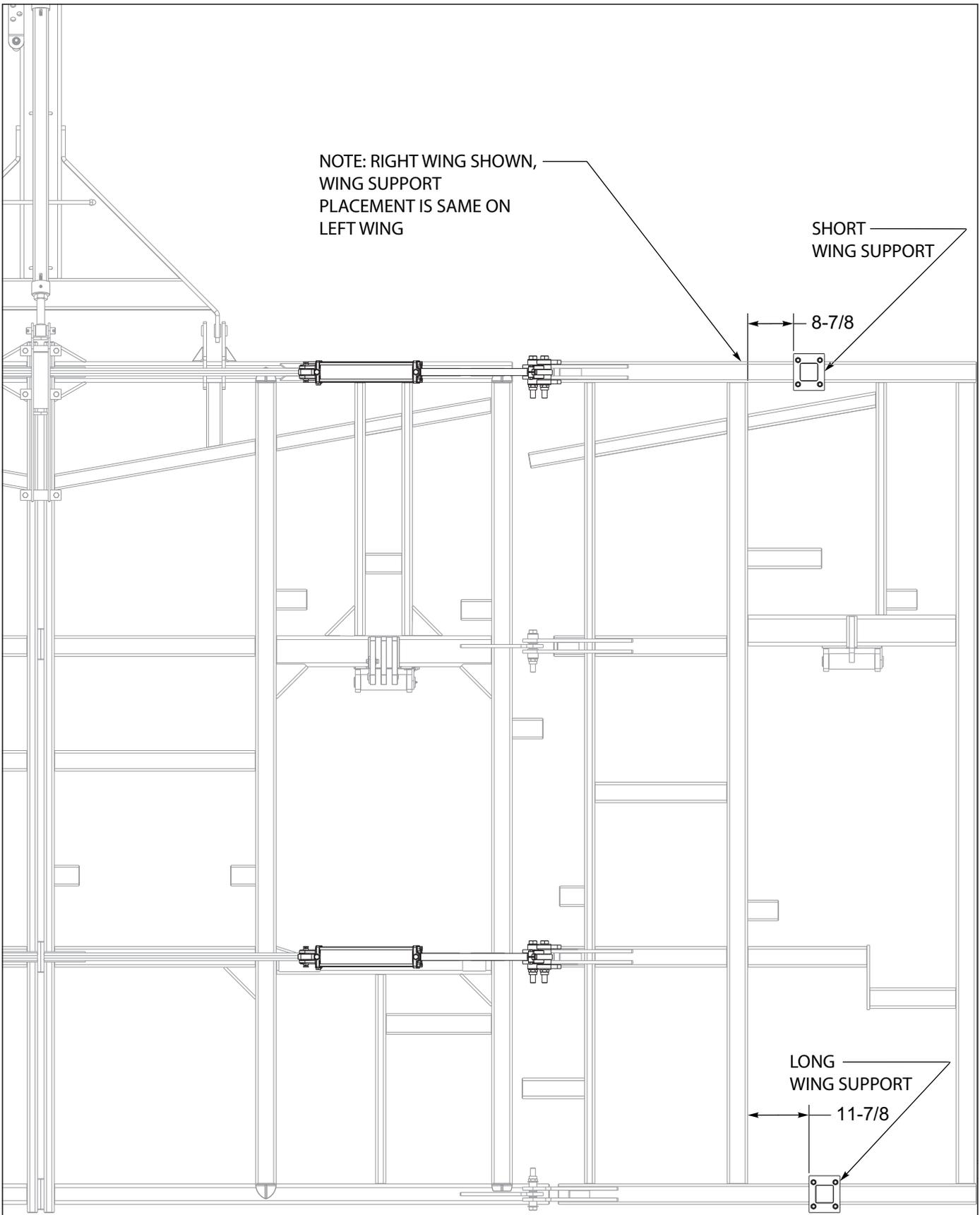


Figure 3-10: Wing Supports Placement 30'

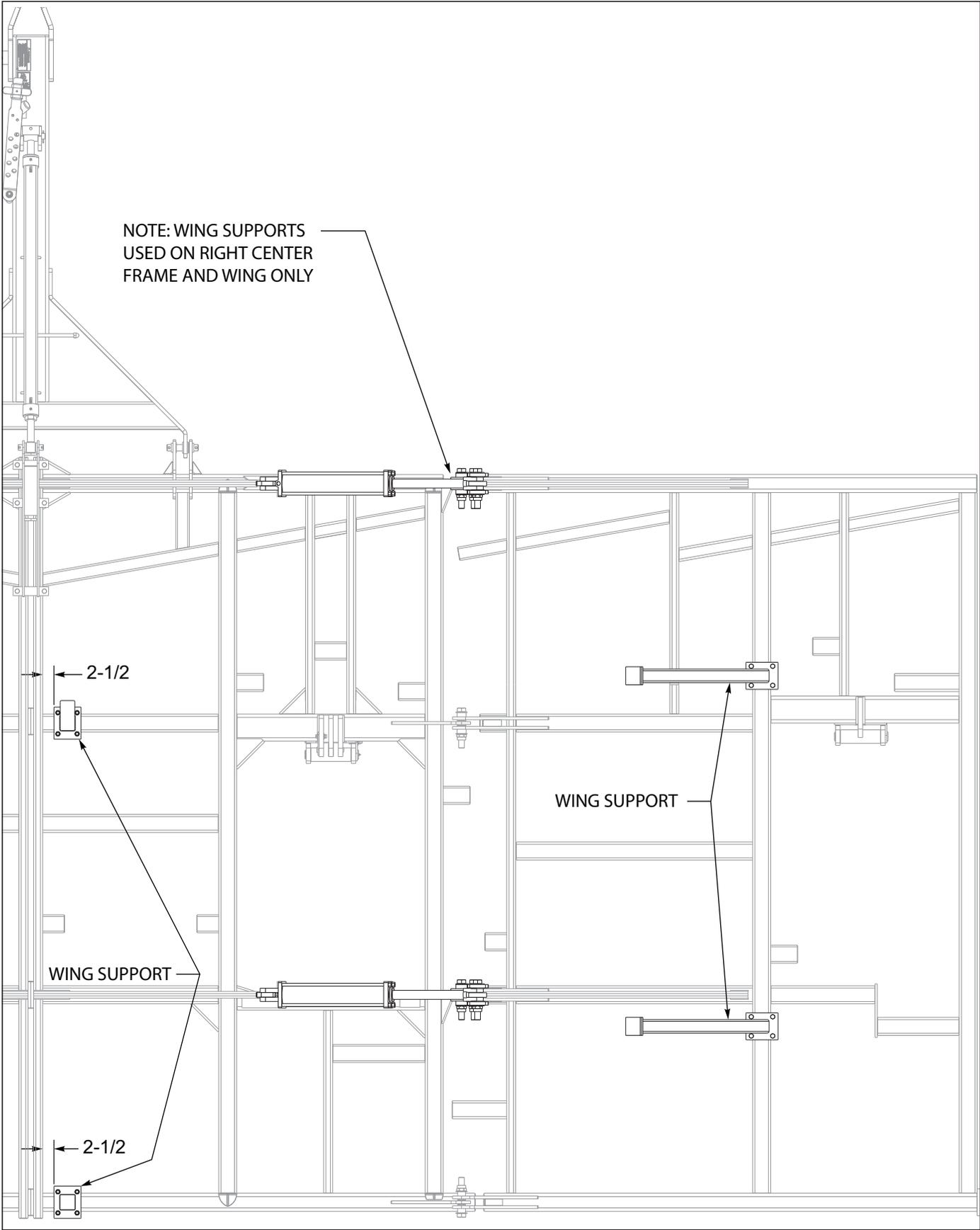


Figure 3-11: Wing Supports Placement 35' RH

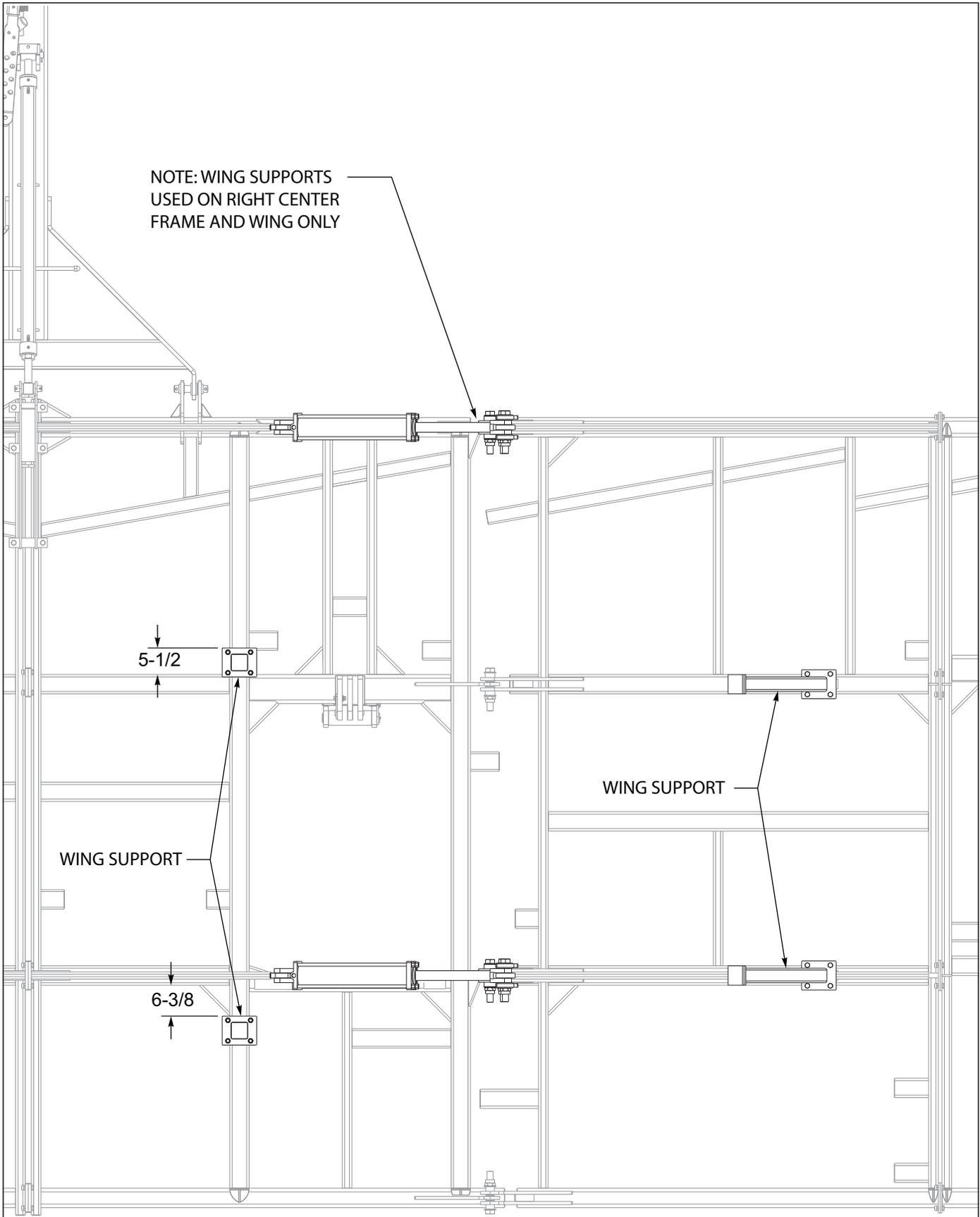


Figure 3-12: Wing Supports Placement 40' RH

Shank, Clamp, and Sweep Assembly

IMPORTANT

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

1. Attach center shank to center shank mounting plate using 1/2-13 x 2 hex head cap screw and 1/2 lock nut [See Figures 3-13](#).
2. Install center shank mount assembly to frame using top mounting bracket, 5/8-11 x 6-1/2 hex head cap screws, and hex lock nuts [See Figures 2-10](#) through [2-12](#) for location on frame.
3. Install danish sweep to center shank assembly using 3/8-16 x 1-1/2 plow bolt and hex lock nut.
4. Install shanks in spring shank assembly. Slide shank into spring clamp assembly and fasten tight using 5/8-11 x 1-3/4 round head square neck screw and 5/8-11 flange head lock nut [See Figures 3-13](#).
5. Install sweep to shank using 7/16-14 x 1-1/2 plow bolts, flat washers, split lock washers, and hex nuts.
6. Recheck all bolts to be sure they are torqued to proper specifications, inspect all pivot points to insure they are snug, but not binding. Grease all fittings.

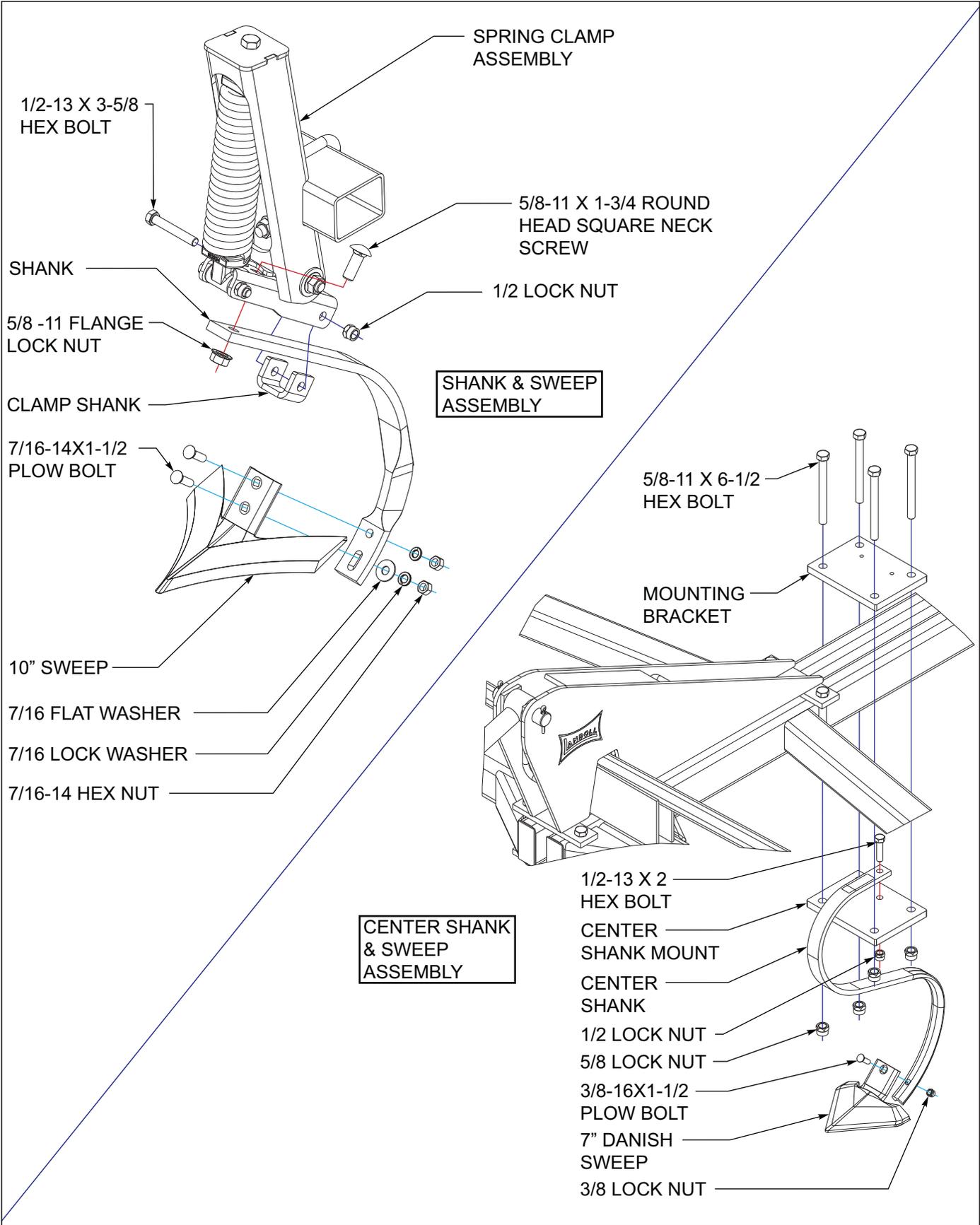


Figure 3-13: Shank & Seep Assembly

Disc Gang and Spray Shield Installation

1. See [Figures 2-1](#) through [2-6](#) for location on frame.
2. Roll correct size disc gang assembly under frame and wing assembly. Disc gangs without flat coultter blade are used on main frame. The flat coultter blade should be to the very outside of the machine.
3. Install disc gangs on main frames using 4 and 5 hole disc mount plates, 5/8 x 2-5/8 x 6-1/8 u-bolts, 5/8-11 x 5-1/2 hex head cap screws, and 1/2 lock nuts See [Figures 3-14](#). (The distance between the disc gang nuts at center of unit should be 1-1/2".)
4. Install disc gangs on wings using 4 and 5 hole disc mount plates, 5/8 x 2-5/8 x 6-1/8 u-bolts, 5/8-11 x 5-1/2 hex head cap screws, and hex lock nuts. (The distance between last blade on main frame and first blade on wing should be 7-1/2".)

NOTE

Disc rod and slotted nut should be tightened to a torque of 1200 ft. lb. Install spacer washers at end of disc rod as required.

5. Tighten 5/8-11 x 2-1/2 hex bolts attaching 5 hole plates to spring shank disc mounts. Now tighten 5/8-11 x 5-1/2 hex bolts and 5/8 x 2-5/8 x 6-1/8 u-bolts. Be sure 5 hole plate contacts frame evenly and bearings are square on disc rod when tightening or unnecessary bearing load can occur.

NOTE

Outside disc blade on all main frame disc gangs are not equipped with a scraper.

6. Attach spray shield adjustment bracket to frame, as shown for your model size, using 5/8 x 3-11/16 x 5-3/8 u-bolt, bracket clamp, and 5/8 lock nuts See [Figures 3-14](#). These brackets are attached to frame as shown to incline the shields toward the middle of the machine and carry soil back to center of the main frame. The bracket clamp is installed between adjustment bracket and bottom of frame tube and support plate is installed on the bottom of the adjustment bracket, See [Figures 2-1](#) through [2-6](#) for location on frame.
7. Attach spray shield to adjustment bracket, as shown in [Figures 3-14](#) using 5/8-11 x 2 hex head cap screw, backup plate, and hex lock nuts. Shields attached in position shown in [See Figure 2-1](#) through [2-6](#) should be set to allow the machine to operate from 3-5 inches deep. Tighten all spray shield screws and u-bolts.

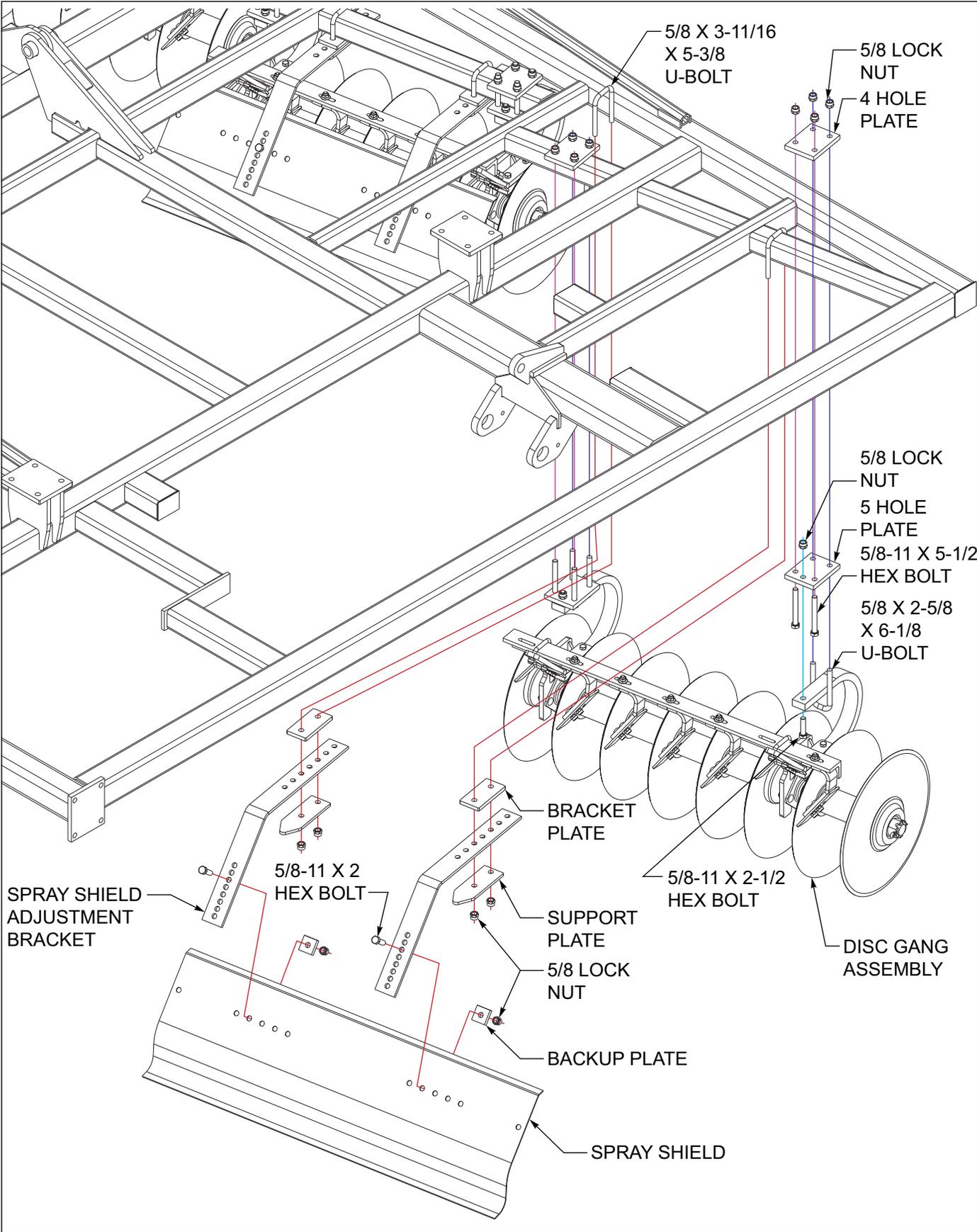


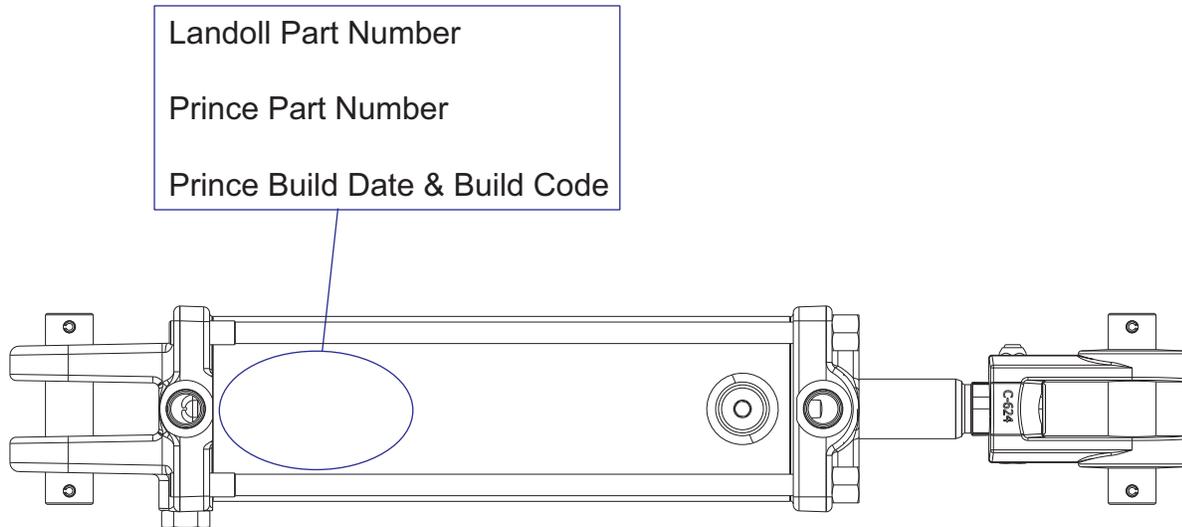
Figure 3-14: Disc Gang And Spray Shield Installation

Rephasing Hydraulic Cylinder Change

As of January 1st, 2024, the **REPHASING** cylinders that Landoll purchases from Prince Manufacturing have been modified by Prince Manufacturing. These changes have required Landoll to assign new part numbers for the cylinders and corresponding service items, i.e. packing kits, glands, clevis ends, etc.

During assembly and service of your Landoll equipment it is important to know which cylinders you are dealing with. During the modification process listed above, Landoll requested that the below two changes be implemented to help aid our customers in identifying the cylinder:

1. Engrave the Landoll part number into the barrel of the cylinder.



2. Remove spring bushings in both the butt end and rod clevises. Change both clevises to an Austempered Ductile Iron (ADI) material for improved strength and wearability.

NOTE: When ordering parts, please make sure the correct cylinder part number has been identified, ensuring that you receive the correct parts. Record the information from the identification plate (See Figure 1-1) to assist with ordering parts.

Figure 3-15: Rephasing Hydraulic Cylinder Change

Cross Reference Matrix For Model 877 Tilloll

Old Landoll Part Number	New Landoll Part Number	Landoll Part Description
102182	247555	Cylinder, 4 x 8, Rephase
134558	247556	Cylinder, 4-1/2 x 8, Rephase

Hydraulic Lift Installation

NOTE

See [Figures 3-16](#) for Hydraulic Lift Installation.

See [Figures 3-17 - 3-18](#) for proper Hydraulic Lift placement for 877-30'.

See [Figures 3-19 - 3-20](#) for proper Hydraulic Lift placement for 877-35'.

See [Figures 3-21 - 3-22](#) for proper Hydraulic Lift placement for 877-40'.

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

1. Install the base end of master cylinders on the main frame with ports up, using lift cylinder pin, secure with 1/2 x 2 bolt, 1/2 flat washer and 1/2 lock nut. Connect rod end to the center lift weldment with pin and roll pins provided [See Figures 3-2](#).

2. Install the slave cylinders on the wing frame with ports up, using pin and roll pins provided.
3. Install 90° #8 adapters into base and rod end of each lift cylinder [See Figures 3-16](#).
4. Install the 8 port manifold to front 2 hole plate of center frame using 1/2 x 3-1/2 bolts and 1/2 lock nuts [See Figures 3-24](#) through [3-26](#).
5. Install lift cylinder hoses and couplers [See Figures 3-16](#). Wrap lift cylinder hoses with blue hose wrap.

IMPORTANT

All cylinder ports are plugged. Do not forget to remove all plugs and replace with hoses or fittings before applying hydraulic pressure to cylinders.

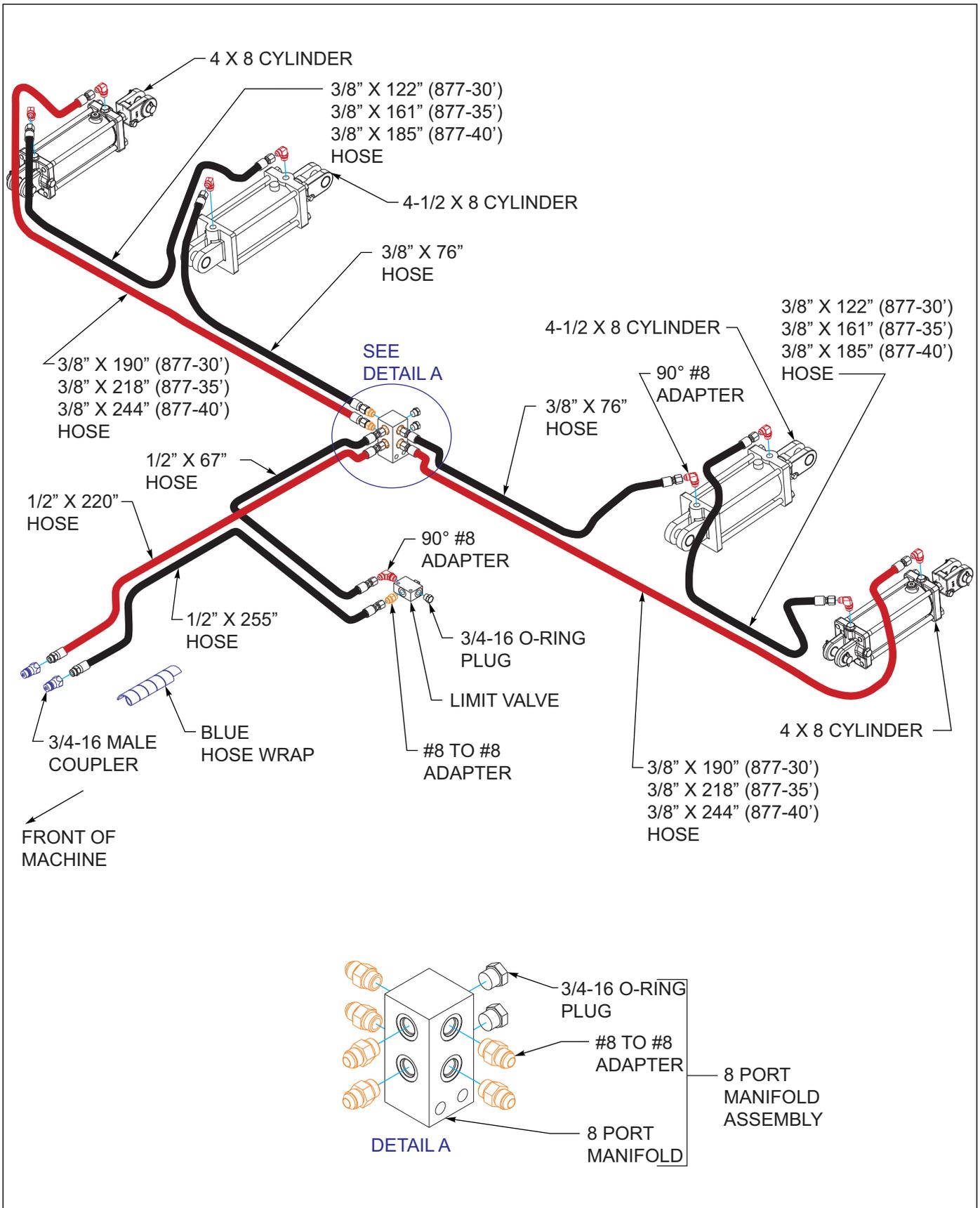


Figure 3-16: Lift Hydraulic Installation

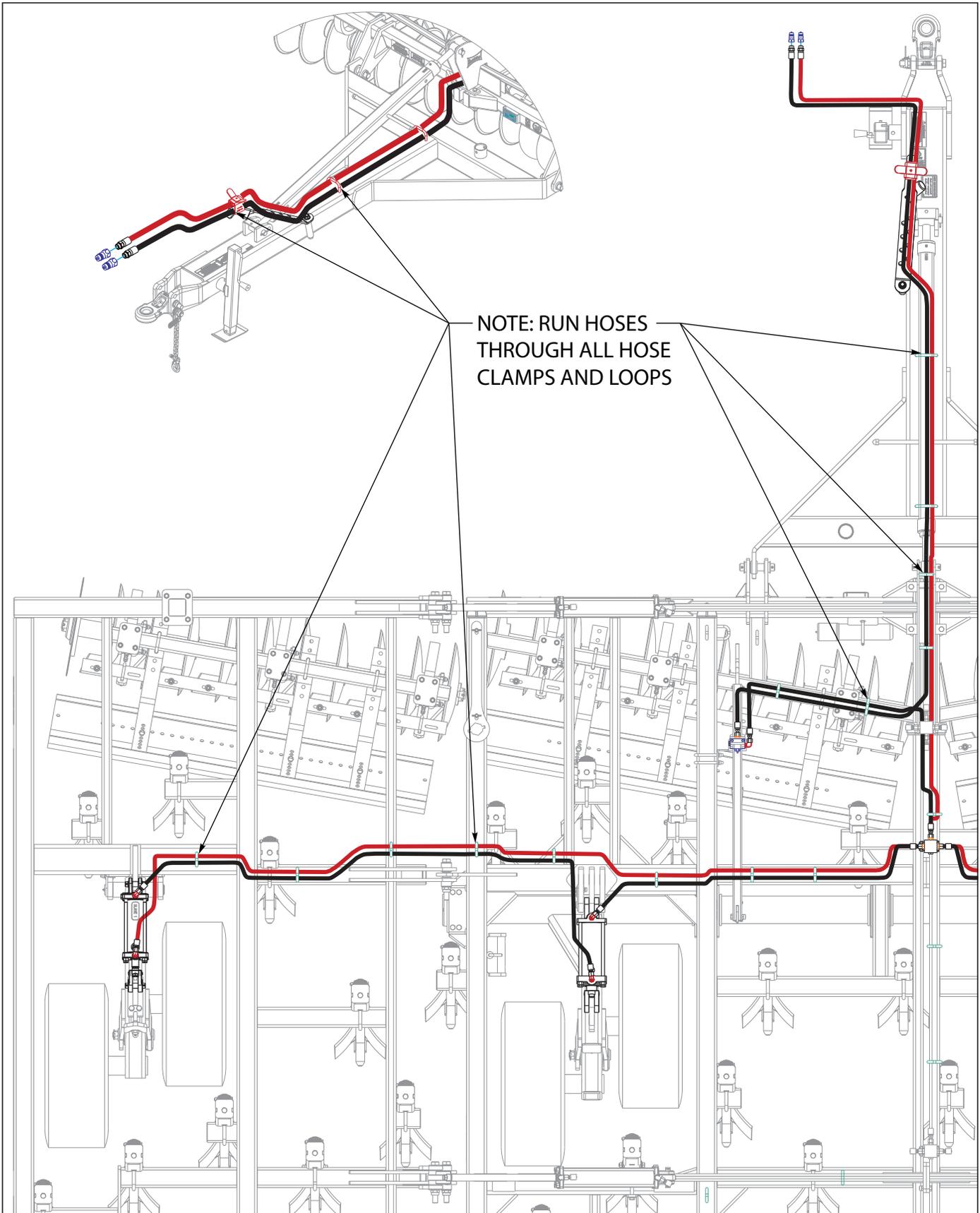


Figure 3-17: Lift Hydraulic Placement LH 877-30'

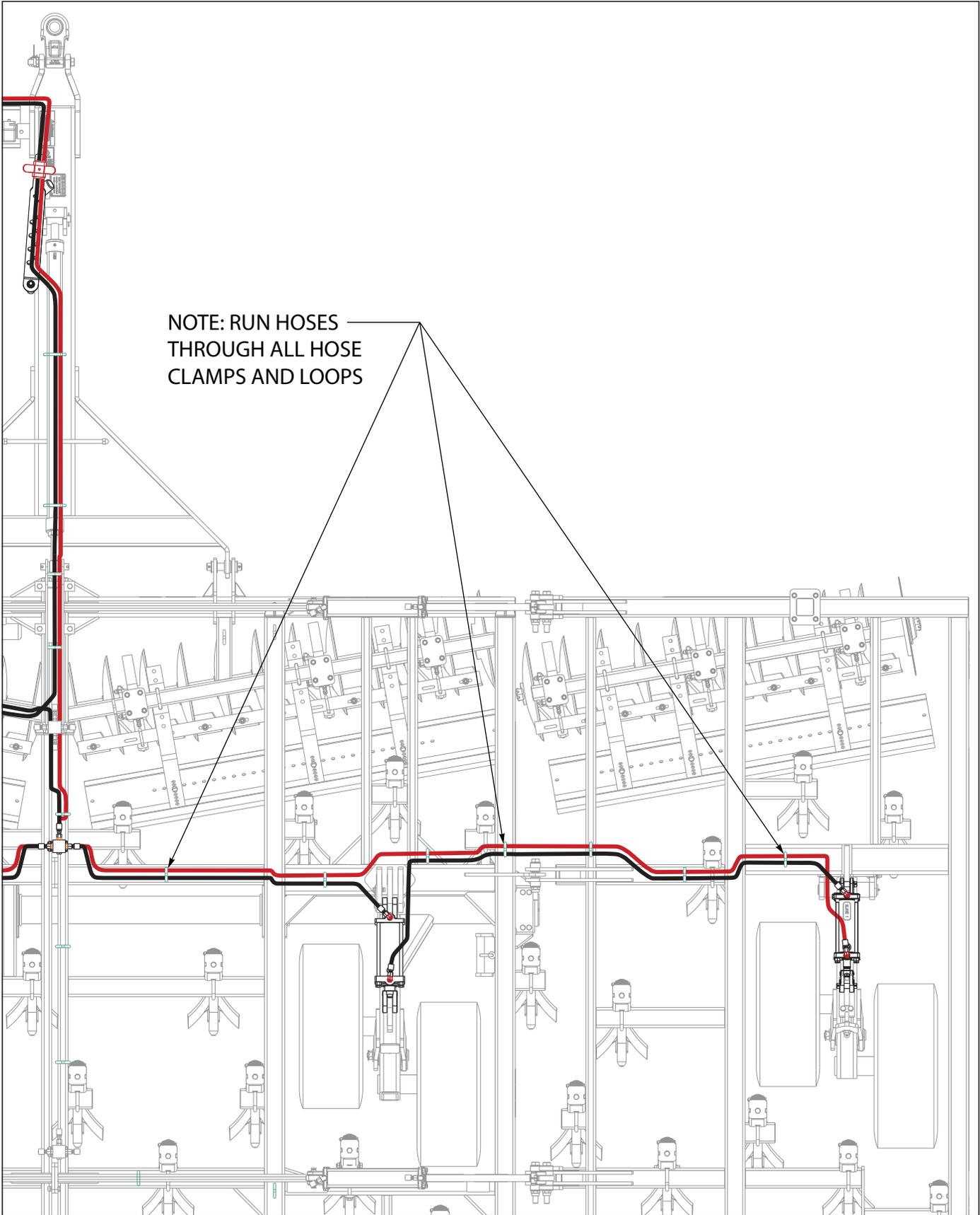


Figure 3-18: Lift Hydraulic Placement RH 877-30'

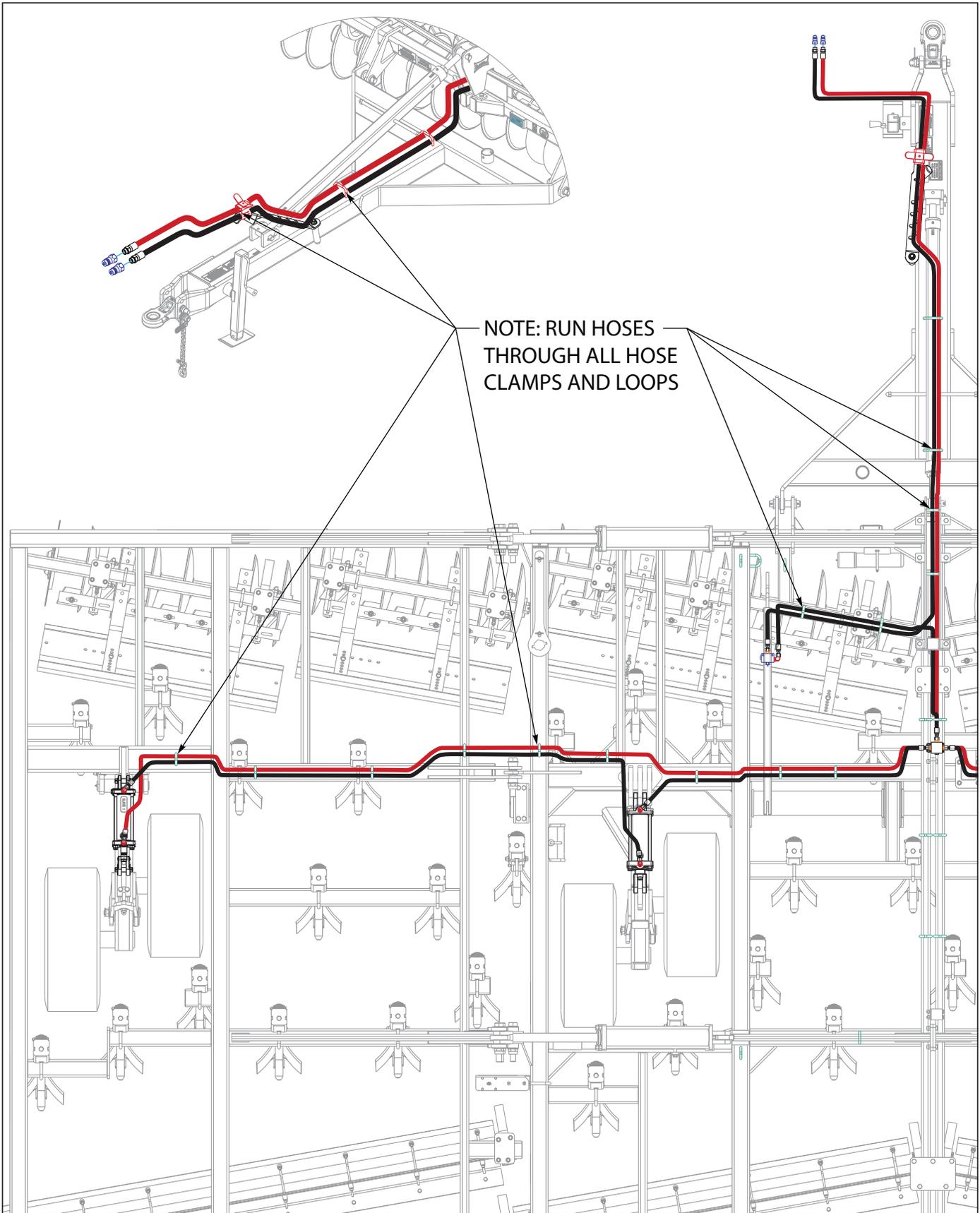


Figure 3-19: Lift Hydraulic Placement LH 877-35'

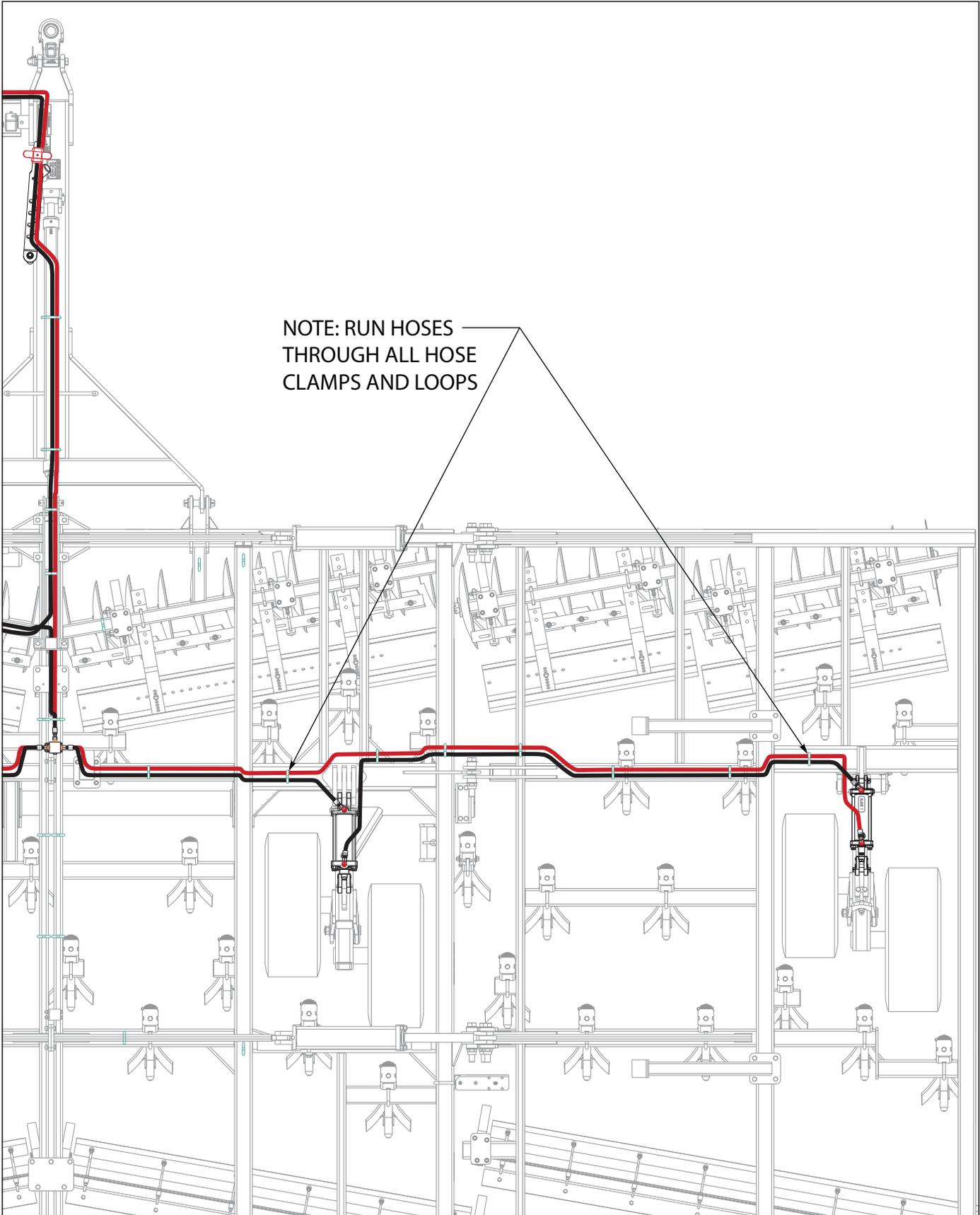


Figure 3-20: Lift Hydraulic Placement RH 877-35'

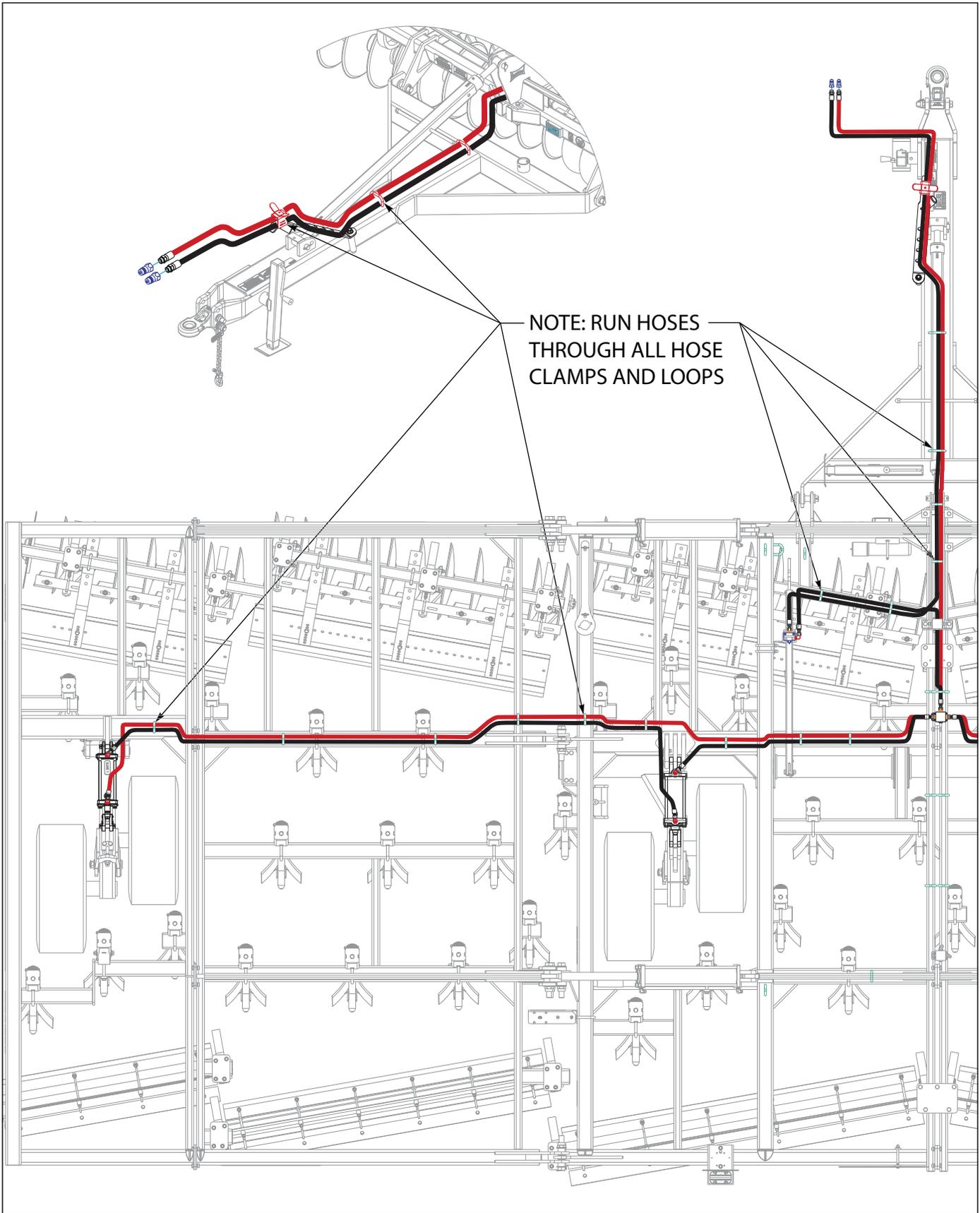


Figure 3-21: Lift Hydraulic Placement LH 877-40'

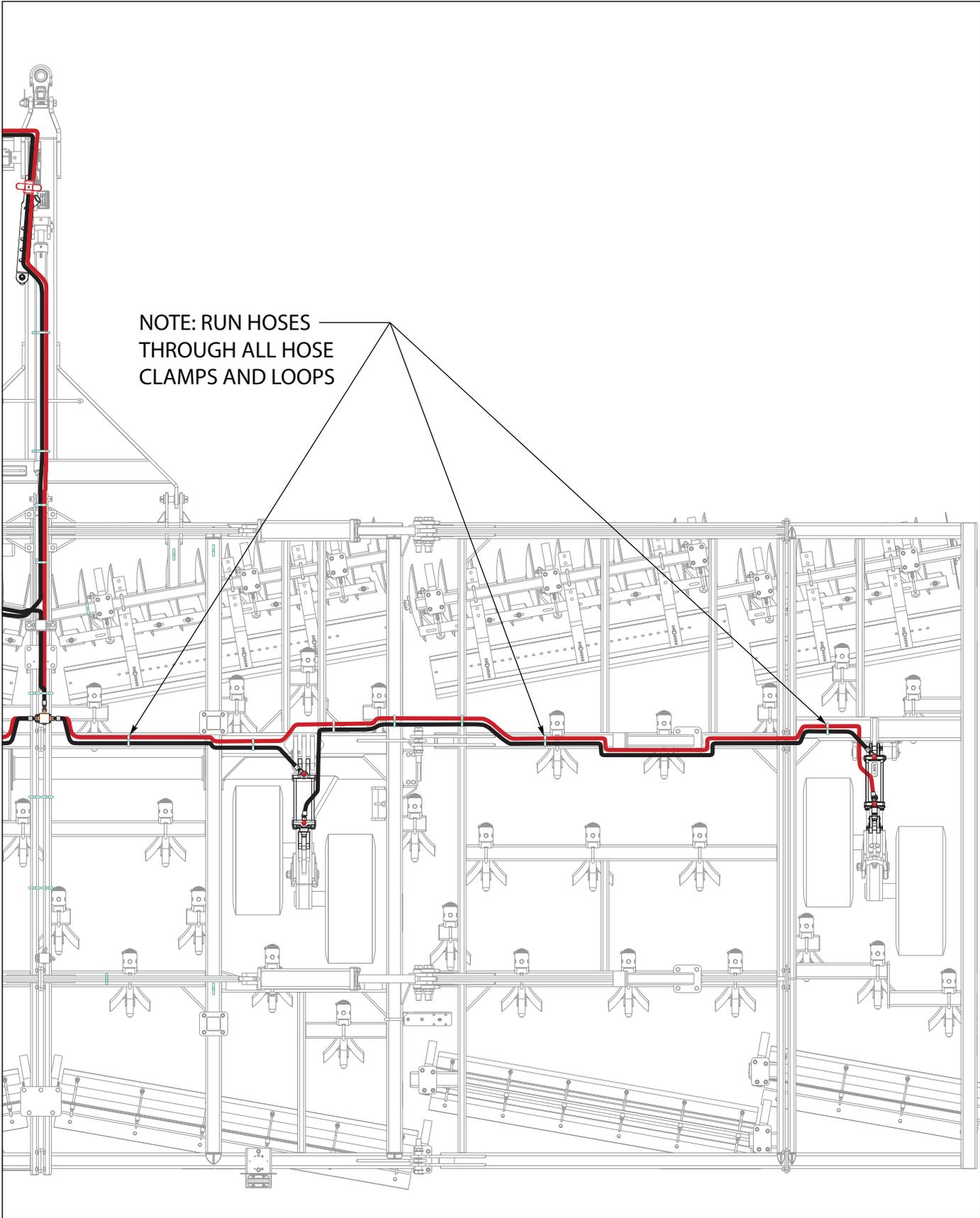


Figure 3-22: Lift Hydraulic Placement RH 877-40'

Hydraulic Fold Installation All Models

1. Install base end of fold cylinders to the main frame cylinder anchors using cylinder pins and cotter pins provided *See Figures 3-23*. Model 877-30' fold cylinders are to be installed with ports facing upward. Models 877-35'-40' cylinders are to be installed with the ports facing the rear of the machine *See Figures 3-24* and *3-25*.
2. Install 90° fitting with restrictor into the base and rod end of each cylinder (this fitting should be black in color.)

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.

3. On 30' models, *only after the fold cylinders have been charged with oil*, assemble the rod end of the fold cylinder to the wing fold plates and wing fold roller using 1 x 7-1/2 bolts, 1" flat washers and locknuts. Use flat washers on both outside and inside of each wing fold plate *See Figures 3-23*.

4. On 35' and 40' models, *only after the fold cylinders have been charged with oil*, assemble the rod end of the fold cylinder to the wing fold plates and wing fold roller using 1-1/4 x 8 bolts, 1-1/4 flat washers and locknuts. Use flat washers on both outside and inside of each wing fold plate *See Figures 3-23*.
5. Tighten all hardware that runs through the wing fold plates, but do not overtighten, The linkage and roller must be snug, but still move freely.
6. Install fold cylinder hoses and couplers *See Figures 3-24* and *3-25*. Model 877-30' wrap fold cylinder hoses with yellow hose wrap. Models 877-35'-40' wrap RH fold cylinder hoses with yellow hose wrap and LH fold cylinder hoses with black hose wrap.
7. *See Figures 3-26* through *3-27* for proper hose routing.

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.

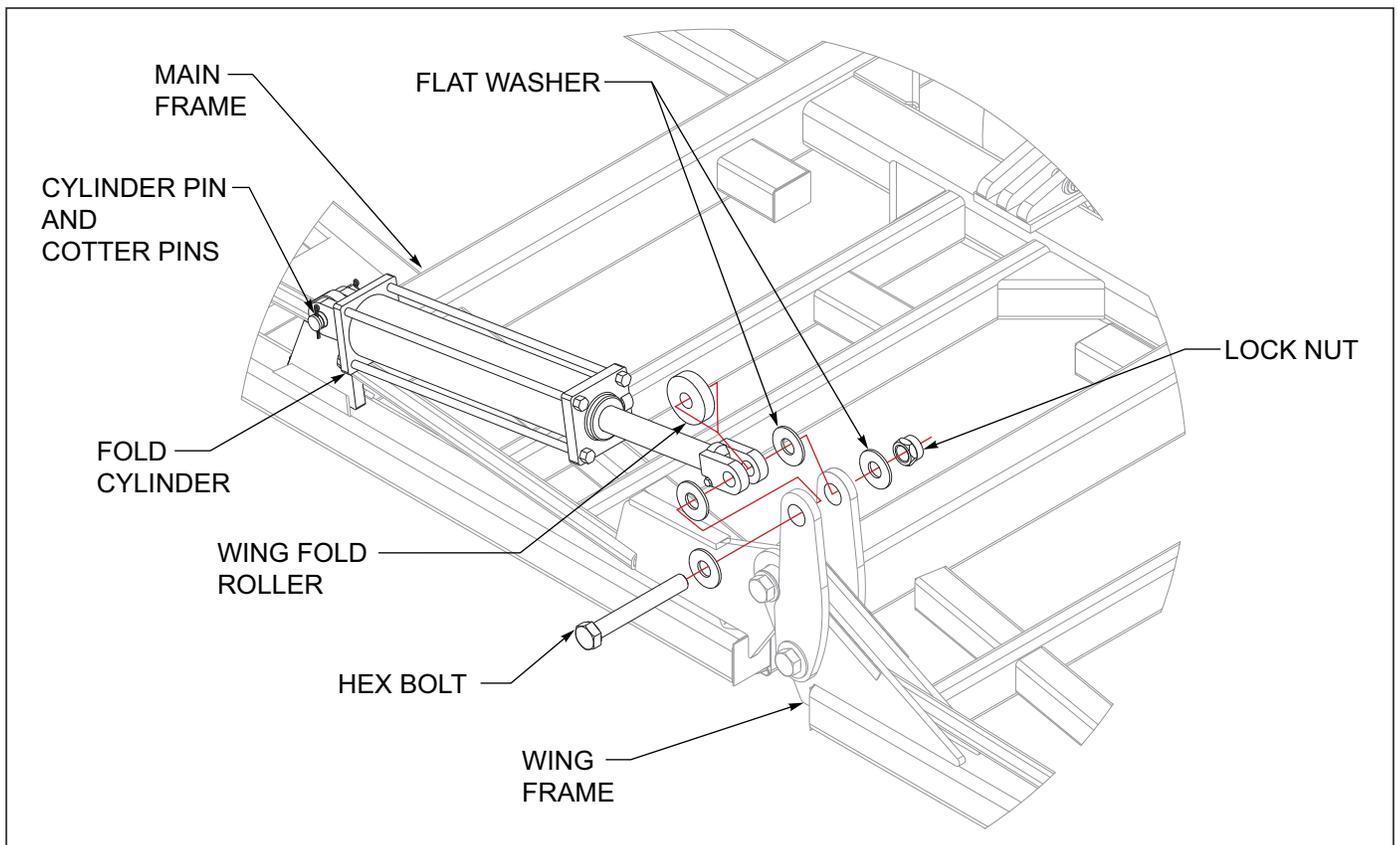


Figure 3-23: Hydraulic Fold Installation

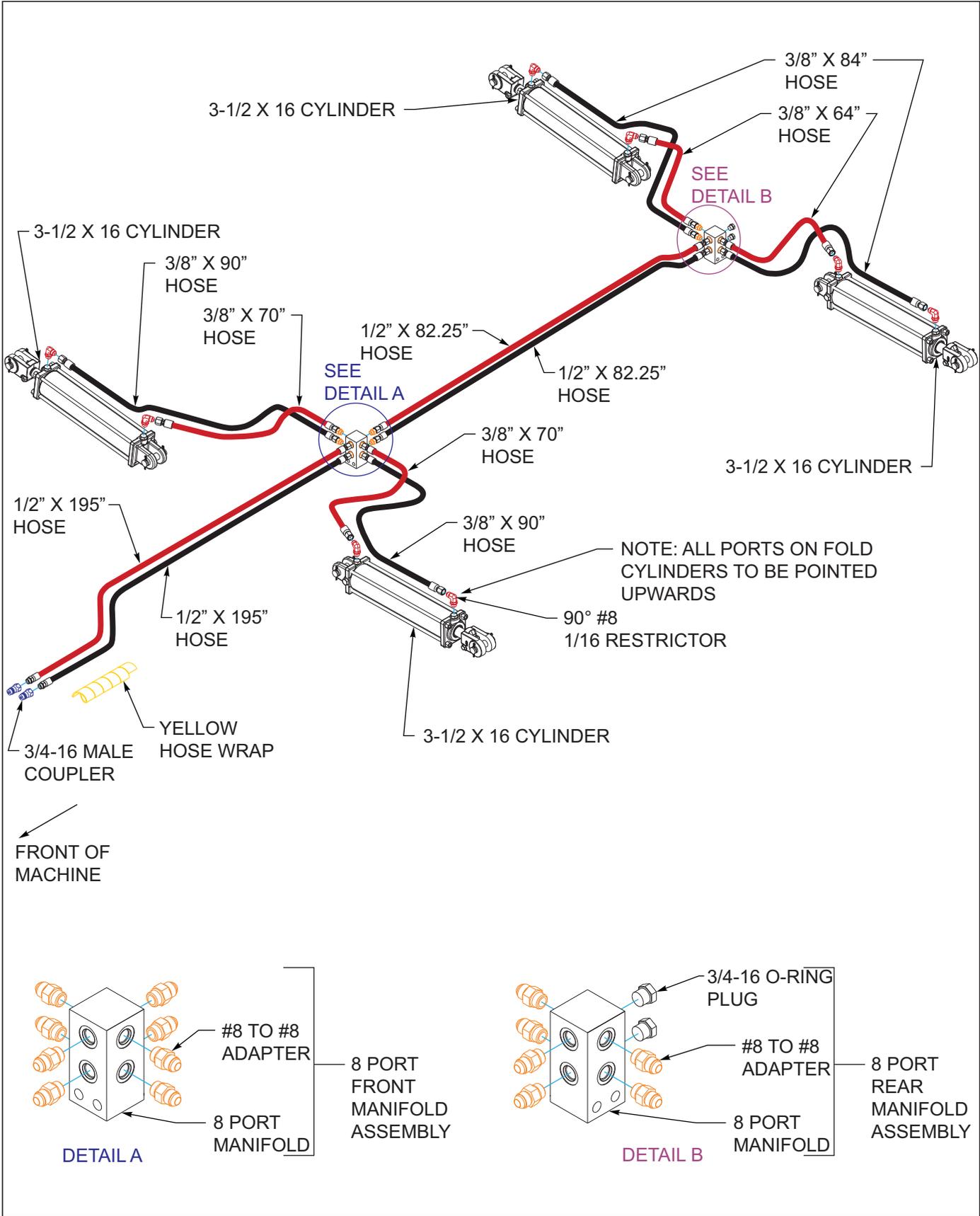


Figure 3-24: Hydraulic Fold Installation 877-30'

ASSEMBLY INSTRUCTIONS

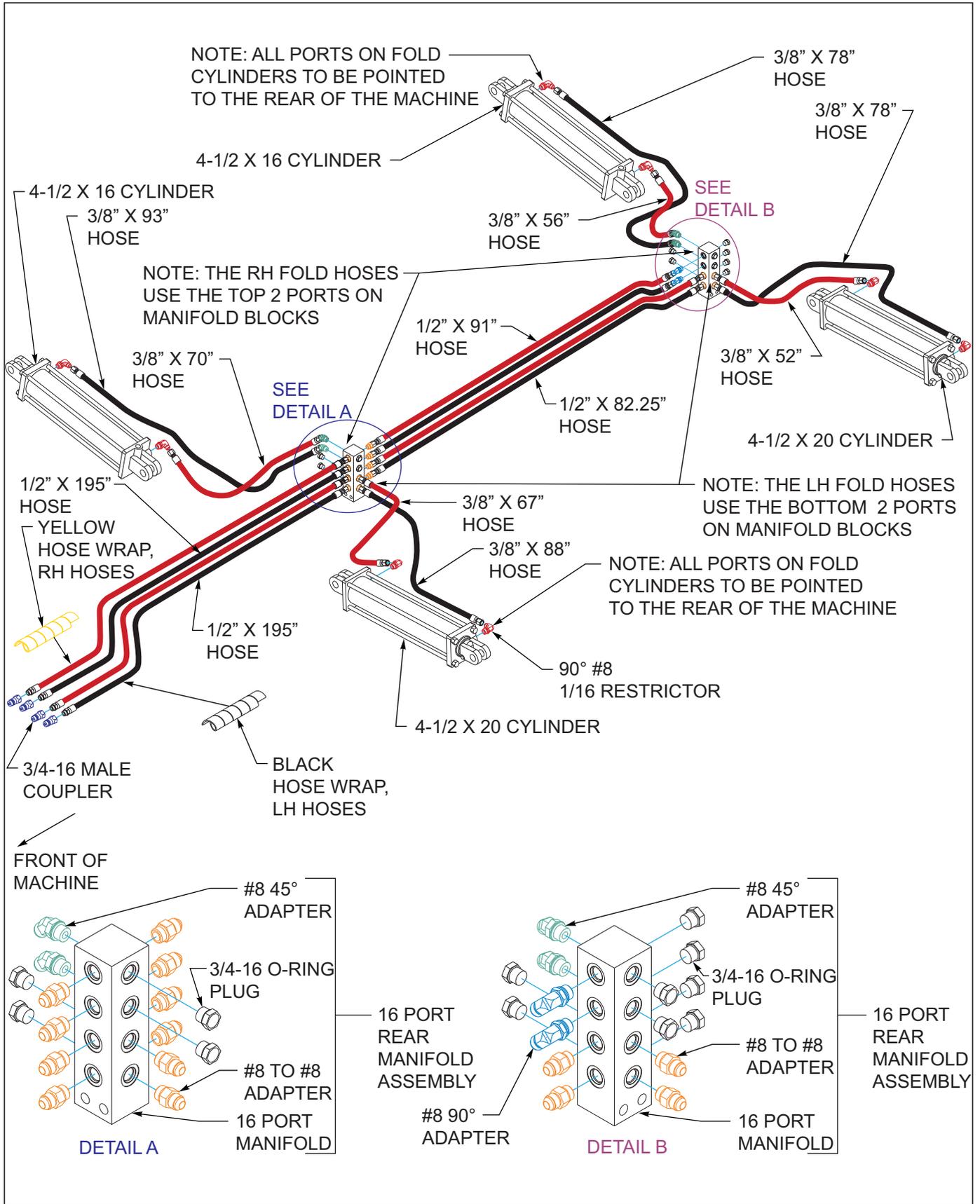


Figure 3-25: Hydraulic Fold Installation 877-35' - 40'

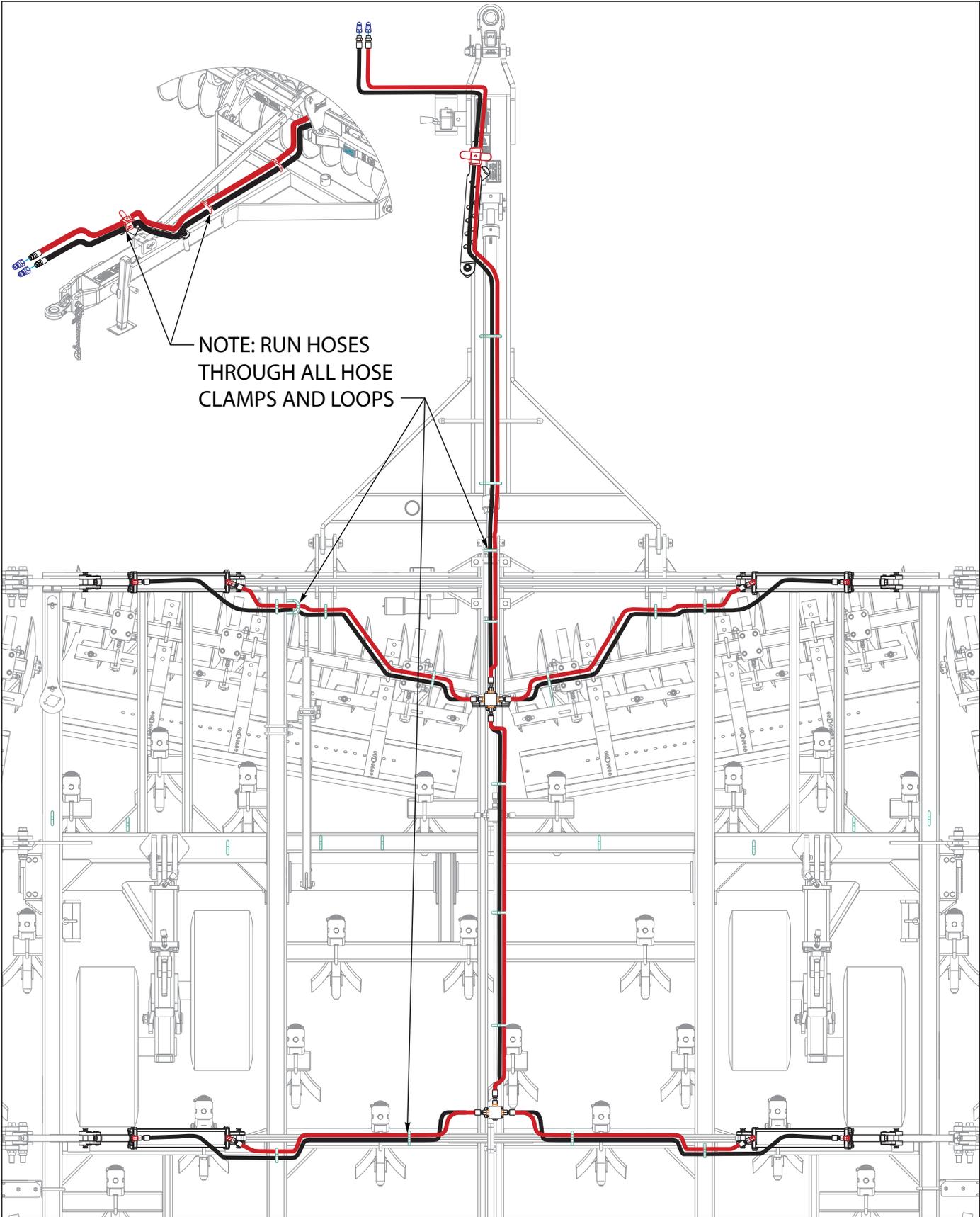


Figure 3-26: Hydraulic Fold Placement 877-30'

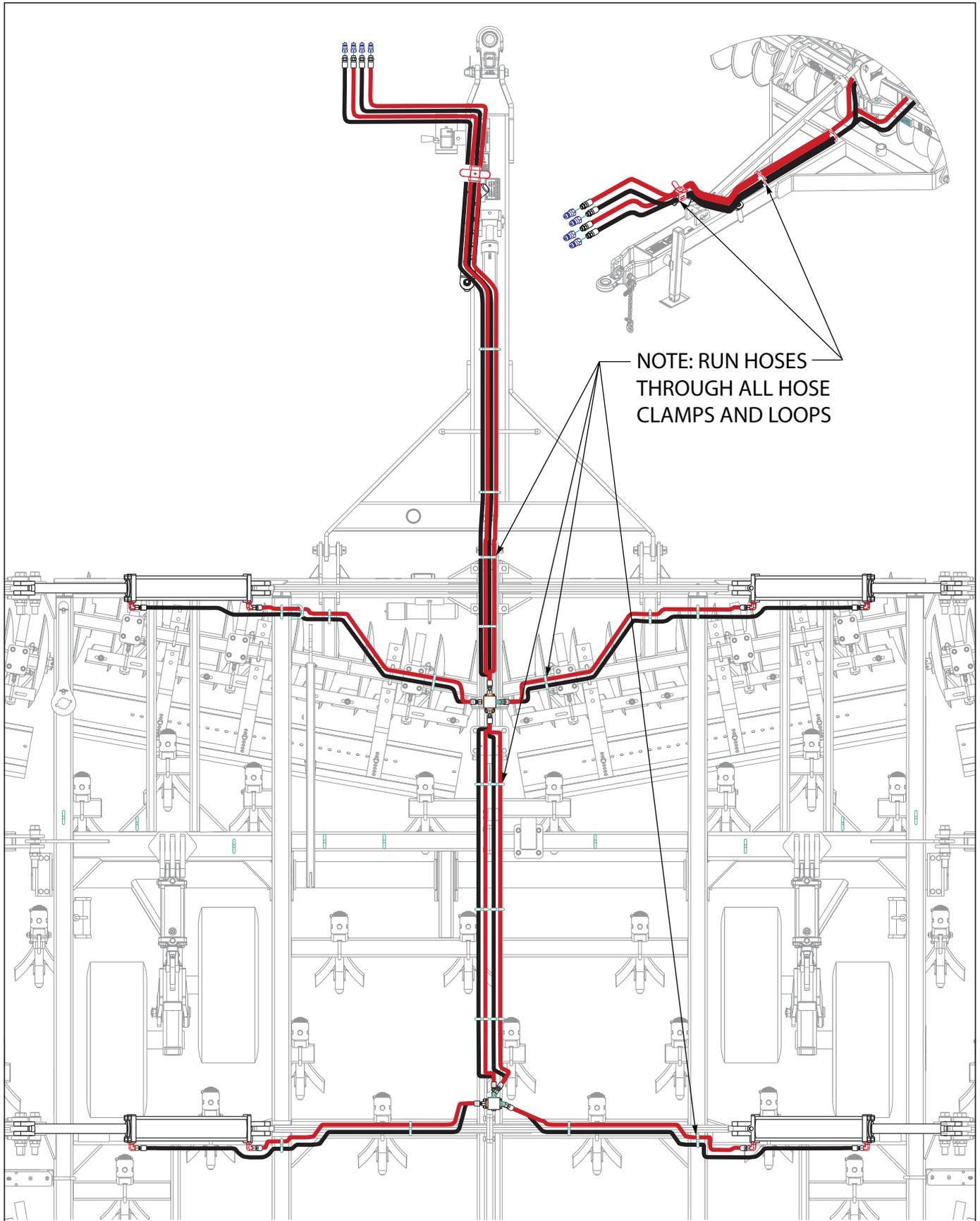


Figure 3-27: Hydraulic Fold Placement 877-35'-40'

Reel Assembly Installation

IMPORTANT

1. Read all safety precautions at the front of the section before attempting any of the following procedures.
 2. See Figures 2-13 through 2-18 for location on frame.
1. For center reel shank assembly:
 - a. Set inner bottom bracket on top of outer bottom reel bracket and loosely attach to each flange of center reel bracket weldment using 5/8 x 3-1/4 round head square neck screw, round tube spacer, and hex lock nut.

NOTE

All fold models will require a bottom reel assembly attached to each flange of the center reel bracket weldment.

- b. The inner reel bracket (with square hole) must be placed toward the reel blades See Figures 3-28.



WARNING

The inner reel bracket (with square hole) must be placed toward the reel blades. If not installed properly, damage to the machine may occur.

- c. Attach reel bracket spacer weldment to top of center reel bracket weldment using 5/8 x 2-1/2 bolts and hex lock nuts.
- d. Bolt together reel guard inner and outer brackets, tapered spring shank, and hanger bearing lodgments using 5/8 x 2-3/4 bolts and 5/8 lock nuts.
- e. Tighten all screws in reel guard assembly.
- f. Install bearing assembly and bearing hangers on reel shaft so that the grease zerk is at the rear of the machine and all lock collars face the center of the machine.
- g. Attach reel assembly to shanks using 5/8 x 2 hex head cap screws and hex 15/8 ock nuts.
- h. Carefully lift reel assembly and loosely bolt top reel bracket plate to frame as shown in See Figure 3-28 using 5/8 x 8 bolts and 5/8 lock nuts See Figures 2-13 through 2-18 for location on frame.



CAUTION

When working with the reels use care because they rotate freely and can catch an arm, hand, or foot and can cause severe injury.

2. For outer reel shank assembly:
 - a. Set inner bottom reel bracket on top of outer bottom reel bracket and loosely attach to top reel guard bracket using 5/8 x 3-1/4 round head square neck screw, round tube spacer, and hex lock nut. The inner reel bracket (with square hole) must be placed toward the reel blades See Figure 3-28.



WARNING

The inner reel bracket (with square hole) must be placed toward the reel blades. If not installed properly, damage to the machine may occur.

- b. Bolt together reel guard inner and outer brackets, tapered spring shank, and hanger bearing lodgments using 5/8 x 2-3/4 bolts and 5/8 lock nuts.
 - c. Tighten all bolts in reel guard assembly.
 - d. Install bearing assembly and bearing hangers on reel shaft so that the grease zerk is at the rear of the machine.
 - e. Attach reel assembly to shanks using 5/8 x 2 bolts and 5/8 ock nuts.
 - f. Carefully lift reel assembly and loosely bolt outer reel shank mount plates, tapered spring shank, and top reel guard bracket to main frame and wings in position shown in 3-28 using u-bolt, 5/8-11 x 6-1/2 hex head cap screw, 5/8 x 8 bolts and 5/8hex lock nuts See Figures 2-13 through 2-18 for location on frame.
3. Once center and outer reel assemblies are attached to the frame, adjust as necessary to center on frame and to prevent binding.

IMPORTANT

Distance between reel blade and c-flex should be 1 inch.

4. Once all adjustments have been made, tighten all hardware.

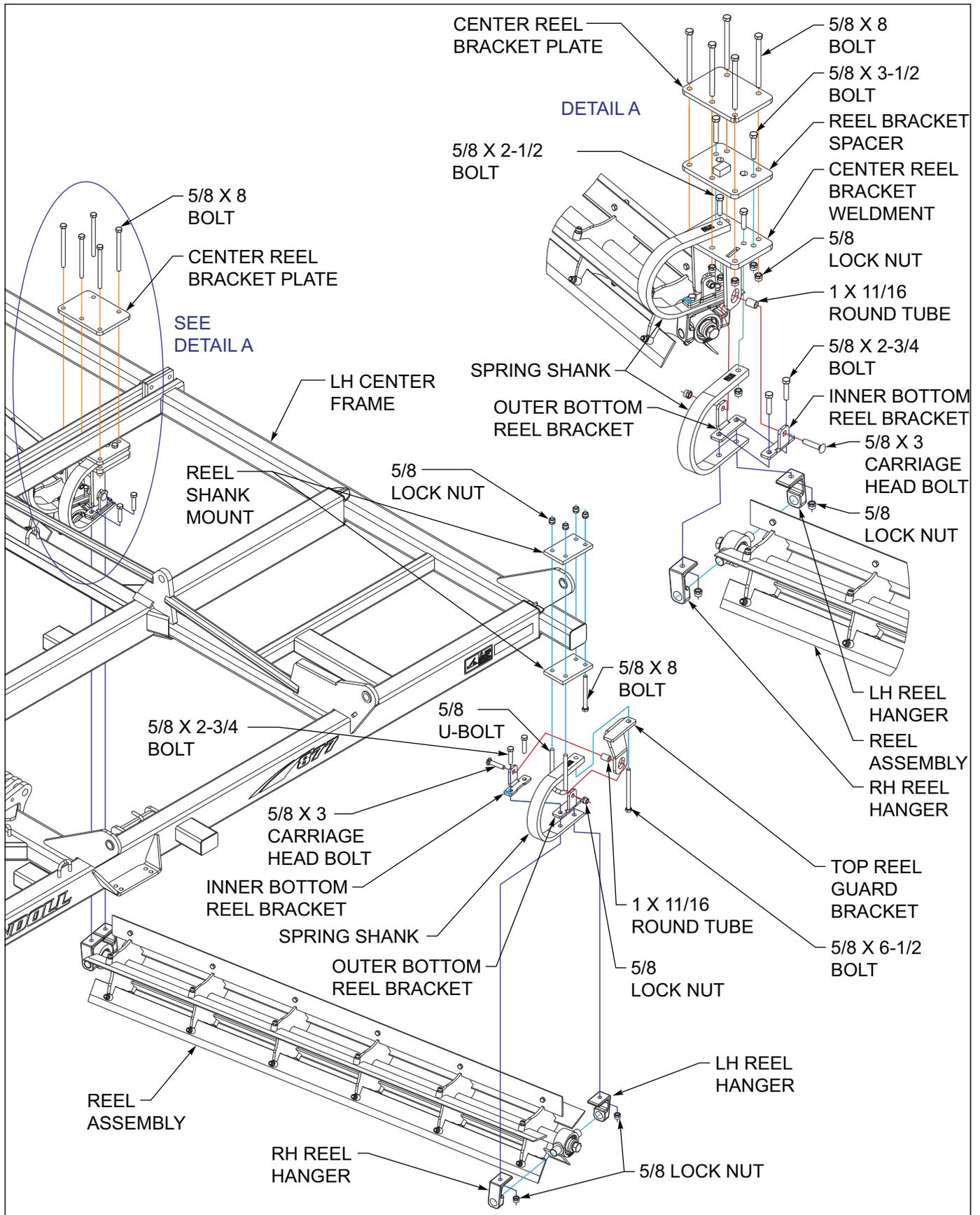


Figure 3-28: Reel Assembly

Harrow Assembly Installation

IMPORTANT

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

1. Install harrow hanger arms to rear of frame using u-bolts and 5/8 lock nuts [See Figures 3-29 and See Figures 2-18 through 2-23 for location on frame.](#)
2. Attach harrow arms to harrow hanger arms by placing 1/2 x 4 bolt through the 4th hole in both harrow arms. Secure with 1/2 lock nut.

IMPORTANT

Allow enough slack in screw so harrow arms may pivot freely.

3. Connect harrow arms together through bottom hole using 1/2x 2-1/2 bolt, spacer bushing, and 1/2 lock nut.

4. Install harrow springs and chains as shown in [See Figure 3-29](#) using 1/2 x 4 bolts and hex 1/2 lock nuts. The top spring is anchored in the 1st hole from the top. Front lower *spring and rear lower* spring are anchored in the 7th hole from the top of the harrow arm. Upper chain is anchored through the enlarged link with a 1/2x 2-1/2 bolt and 1/2 lock nut and hooked on the spring in the 8th link from the bolt. Lower chains are anchored in the second from bottom harrow arm hole and hooked on the spring in the 4th link from the screw.
5. Attach harrow adjustment bracket between harrow arms using 1/2 x 2 clevis pin and 5/32 x 1-1/4 cotter pin.
5. Attach harrow adjustment brackets to harrow sections with 1/2 x 1-1/2 bolts and 1/2 lock nuts [See Figures 2-18 through 2-23 for location on frame.](#)

IMPORTANT

Refer to operating instructions for angle adjustment [See Figure 4-12.](#)

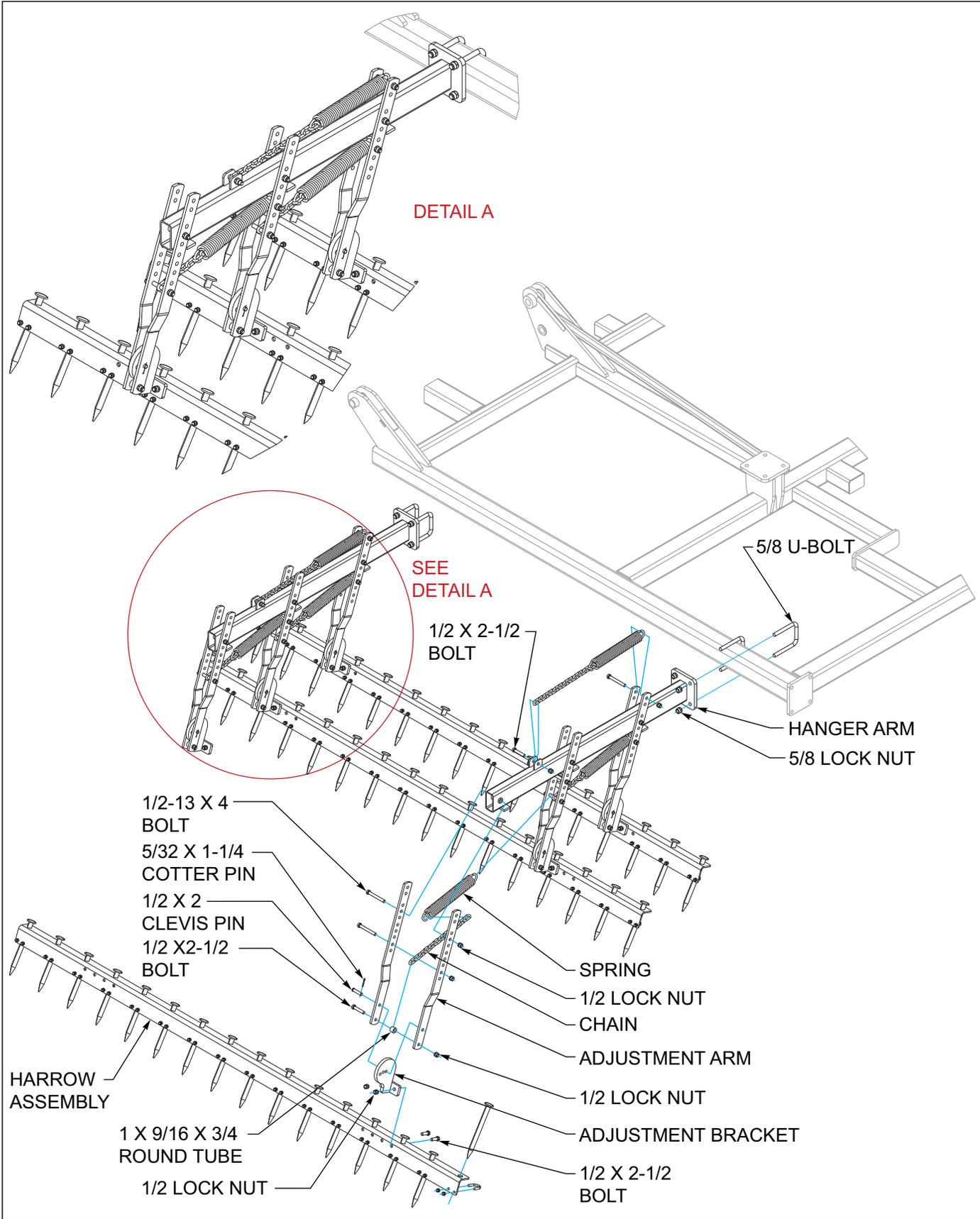


Figure 3-29: Harrow Assembly Installation

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 Nor 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 3-30: LED Light Harness Wire Designations

LED Light Installation

1. Attach LH and RH light bracket assemblies to center frame using 5/8 x 6-11/16 x 5-1/2 u-bolt and 5/8 lock nuts **See Figures 3-31**.
2. Attach ag flasher control module to bottom of right tail light mount with 1/4 x 1-1/2 bolts and 1/4 lock nuts.
3. Attach right tail light mount and ag flasher control module to frame assembly with 5/8 x 4 x 6-1/2 u-bolts and 5/8 flange lock nuts.
4. Attach the ag red single LED lamps to tail light mounts using 1/4 x 1-1/2 bolts and 1/4 lock nuts.
5. **See Figures 3-32** for light bracket placements.
6. Install the rear warning light harness to the frame. Connect 2 pin and 3 pin ends to each of the warning lights. Connect 6 pin to the ag flasher control module. **See Figures 3-30** for harness wire designations.
7. Attach front warning harness to frame. Connect 4 pin end to the ag flasher control module.
8. Insure that the harnesses are clear of any moving parts and secure the harnesses with tie wraps provided.
9. Install the stor-away holder to hose holder on hitch with 1/4 x 1 bolts and 1/4 lock nuts (**See “Center Frame Assembly” on page 3-2.**)
10. Install smv mount and mount bar to rear tube of LH center frame with 1/2-13 hex screws and 1/2 lock nuts. Attach smv emblem and SIS decal mount to smv mount with 1/4x 1 bolts, and 1/4 lock nuts
11. **See Figures 3-32** for smv placement, wiring harness routing and connector locations.

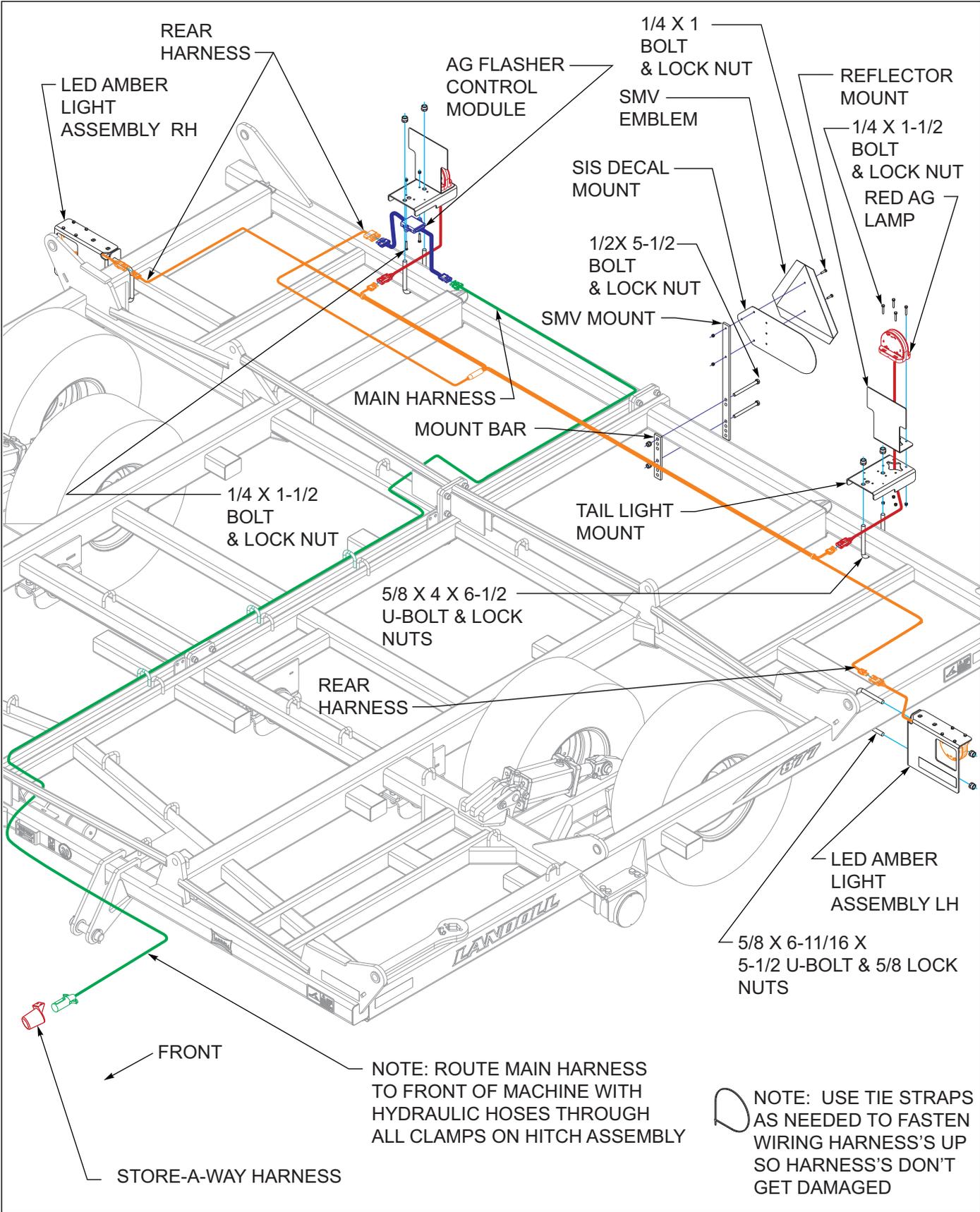


Figure 3-31: LED Light Installation

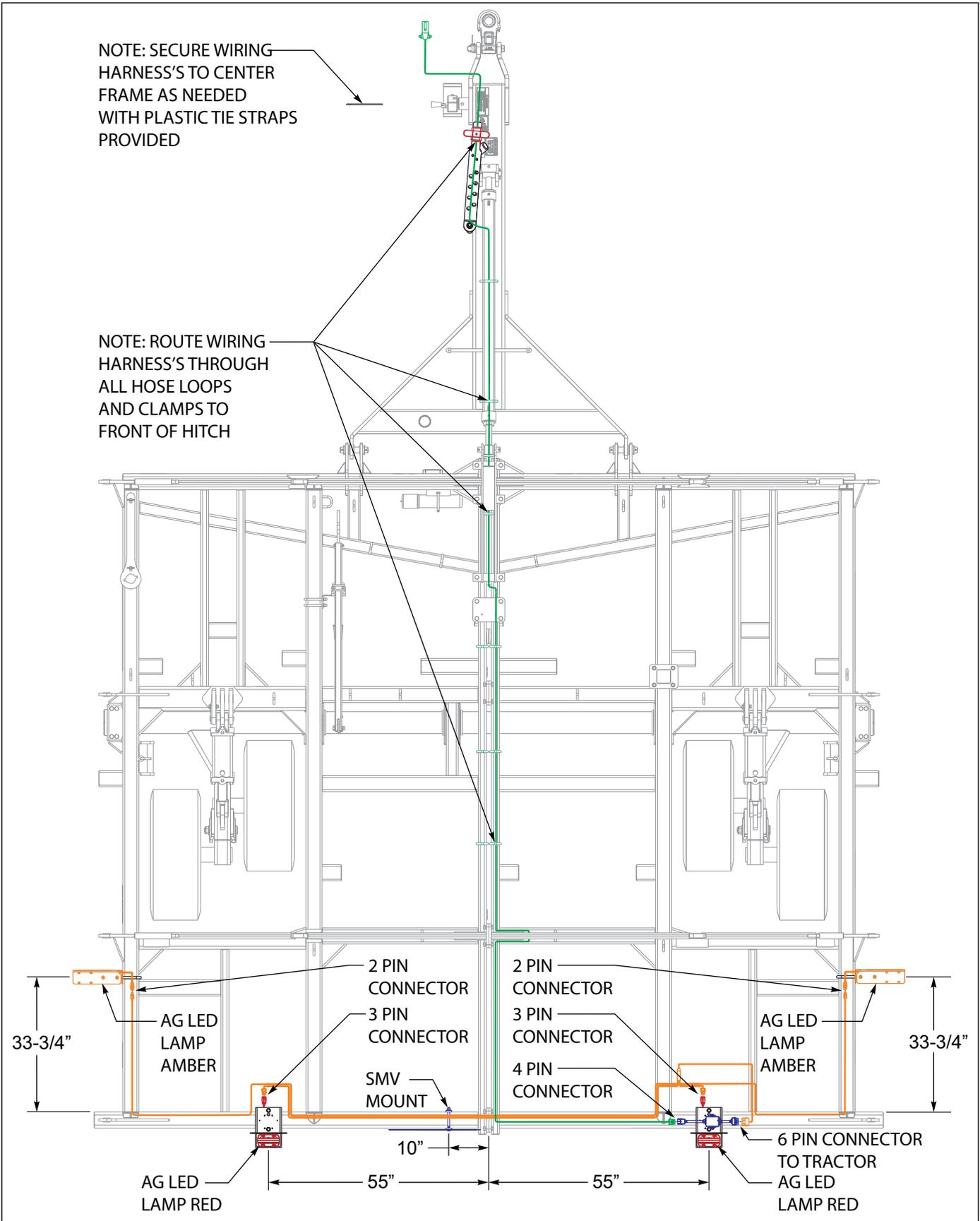


Figure 3-32: Light Brackets & SMV Placement

Operation and Maintenance



DANGER

Never allow anyone to ride on the 877 Tilloll at any time. Allowing a person to ride on the machine can inflict serious personal injury or death to that person.



DANGER

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



DANGER

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



DANGER

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



WARNING

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



CAUTION

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

Tractor Preparation

The Landoll 877 Tilloll 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. If your Tilloll is equipped with the clevis option, this should be removed. The clevis option is only for transport use. Before attaching the Tilloll, 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.
3. Install front end weights as needed on the tractor to maintain stability.

Tilloll Preparation

1. Prior to operating the 877 Tilloll, 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](#). The scraper should be 1/8" from disc blade. To adjust the reversible scraper loosen the 1/2 flange nut and slide scraper arm until the 1/8" clearance is obtained. Repeat same procedure for the LH or RH dual scraper by loosening the 1/2 lock nut. Re-tighten all nuts. The scraper blades are reversible to allow extended use before replacement is required.
6. Lubricate the machine as shown in ["Lubrication Maintenance" on page 4-14](#) and ["Lubrication Schedule" on page 4-14](#).

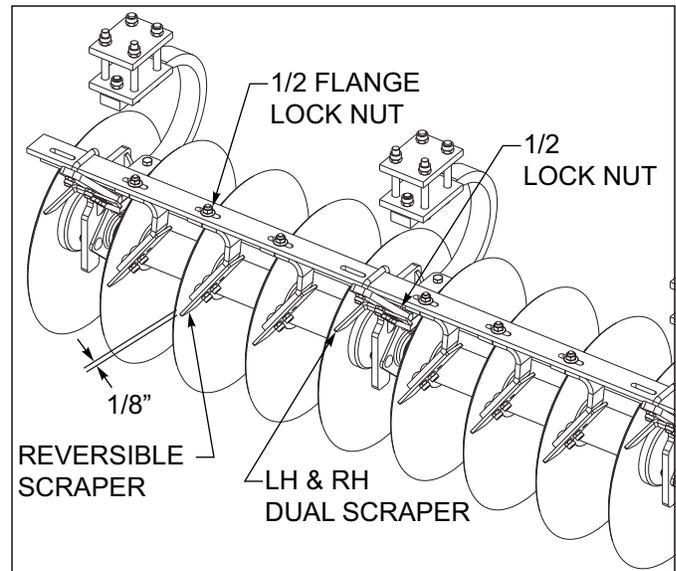


Figure 4-1: Disc Scraper Adjustment to Disc Blade

Attaching to the Tractor

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

NOTE

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

Hydraulic Lift System

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

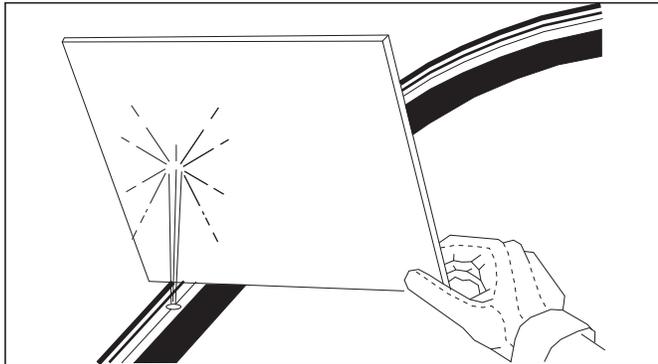


Figure 4-2: Hydraulic Leak Detection



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 Tilloll to the tractor and connect the hydraulic lift hoses. Check to make sure the tractor hydraulic reservoir is full of the manufacturer's recommended oil. Slowly raise the machine, and continue to hold the hydraulic lever until all lift cylinders are fully extended. Lower and raise the unit to verify that all cylinders are working simultaneously throughout the stroke. If the cylinders are not working evenly or together, fully extend the lift cylinders and continue to hold the lever to purge any remaining air. Do not loosen any hoses or fittings. Recheck tractor reservoir to make sure it is within operating limits. With all cylinders fully extended, install the 2 X 8 transport lockouts See Figure 4-3. Storage location for lockouts See Figure 4-4.

3. Always fully extend the cylinders and hold the lever to ensure the cylinders are rephased before starting any field operation. This will keep all cylinders in time and frame sections level when operating.

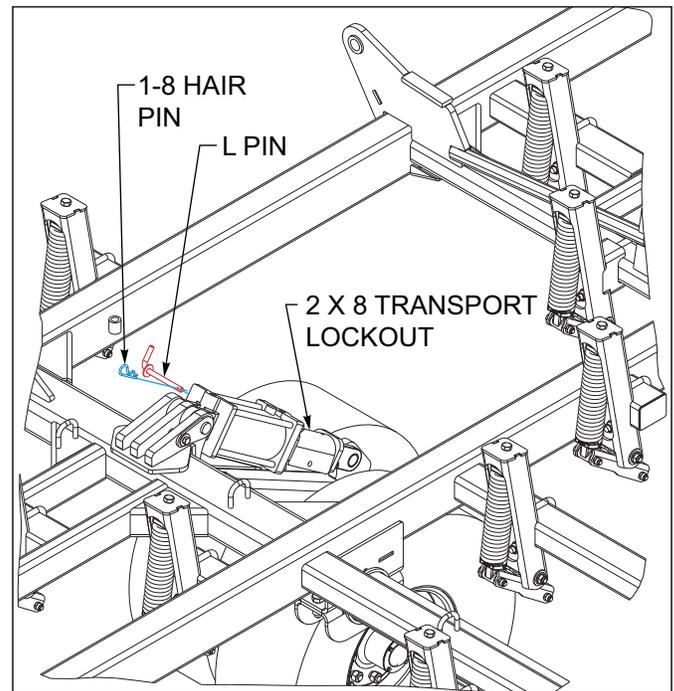


Figure 4-3: Installed Transport Locks

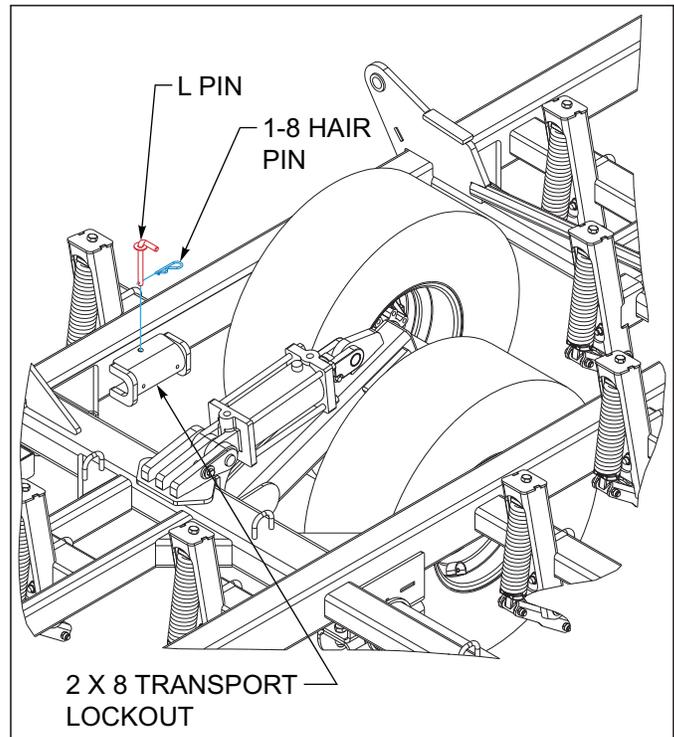


Figure 4-4: Stored Transport Locks

Hydraulic Fold System

1. The Tilloll 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.

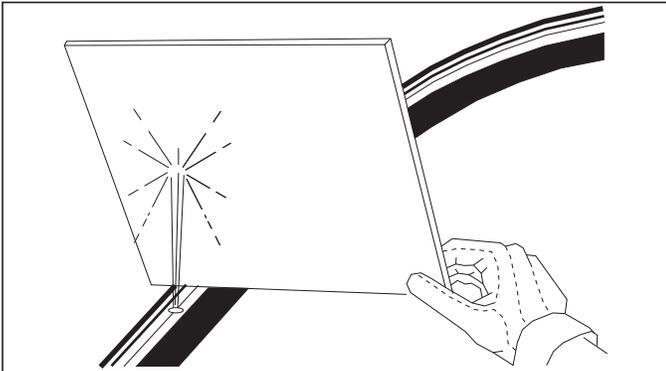


Figure 4-5: Hydraulic Leak Detection

3. To charge the system, carefully hitch the Tilloll 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 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 4-5*. Keep all components (cylinders, hoses, fittings, etc.) in good repair.

5. To fold/unfold the Tilloll, find a level area large enough to accommodate the Tilloll when it is fully unfolded. The tractor should be stopped and not moving with the unit fully raised.
6. For 35' & 40' models, the fold system is split into two different hydraulic circuits. One operating the LH wing fold and the other operating the RH wing fold. These wings must be folded and unfolded in the correct sequence, failure to do so can cause damage to unit. During the **folding** procedure, completely fold the LH wing first and then fold the RH wing. During the **unfolding** procedure, completely unfold the RH wing first and then unfold the LH wing.

IMPORTANT

Be sure other people and pets are a safe distance away.

7. Slowly engage the tractor lever and fold/unfold the wing frames. When the wings are unfolded, continue holding the tractor lever to fully extend all fold cylinders. This will allow the wings to fully flex in the field.

LED Light Operation

1. Attach the seven-pin plug to the socket at the rear of the tractor. The socket must be in good working order, and free of dirt, grease, and corrosion. The connection must be clean with good contact for the LED light to function properly. Fully insert the plug into the connector and make sure the latch securely hooks the plug.
2. Allow enough cable above the hitch to allow for turning. Secure or tie up any excess cable to prevent it from catching on the hitch or stalks.
3. Verify proper light function before transporting. Replace or repair any component that is damaged or not functioning. Make sure all lighting is clean and clearly visible. Follow local regulations regarding lighting & marking.

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. Set the unit working depth (1 - 5 inches) by adjusting the stroke control on the master cylinder. For stability, it is important that the lift wheels always apply slight pressure against the soil.
3. Operating speed is typically 5-8 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. Always lift the Tilloll completely out of the ground before turning or backing. This prevents shank, disc, or harrow damage or damage to their respective mounting brackets.
6. It is important to keep all bolts tight at all times, especially during the first few hours of operation. Be sure to check the shank U-bolts and pivot bolts. Tighten wheel lug bolts to 90 ft-lbs of torque. After break-in period, check them periodically. Loose bolts can result in lost, broken, or prematurely worn parts and unnecessary down time. Refer to torque specifications in *“General Torque Specifications” on page 2-2* and *“Hydraulic Fitting Torque Specifications” on page 2-3* when re-tightening loose bolts.
7. Reduce speed at field ends, and lift the Tilloll completely out of the ground before turning.
8. When operating in the field, run the implement with a minimum overlap of one foot to insure an even mixing and leveling of the soil.

Field Operation

1. Raise the unit to take the weight off of the transport locks. Remove the transport locks from the lift cylinders (on the main frame only) *“Installed Transport Locks” on page 4-3*. Install the transport locks in the storage position *“Stored Transport Locks” on page 4-3*.
2. Unfold the wings and extend the fold cylinders completely.

3. Check the front to rear leveling of the frame. Adjust radius rod until frame is level at working depth and all sections of the machine are cutting at the same depth *“Leveling (Front-to-Rear)” on page 4-6*.

Depth Stop Adjustment

1. The operating depth of the Tilloll is controlled by a single-point depth stop. The stop is located at the center front of the machine *See Figure 4-6*.
2. Adjust the depth stop by turning the handle out (counter-clockwise) to increase operating depth. Turn the handle in (clockwise) to decrease operating depth. One turn will equal approximately 3/16” adjustment in depth. 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.

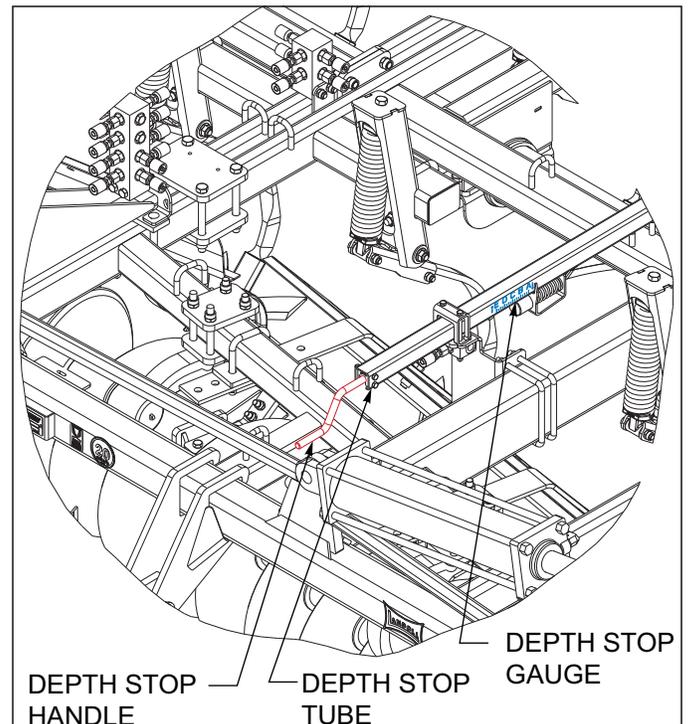


Figure 4-6: Depth Stop Adjustment

4. After adjusting working depth, check the front to rear levelness while at that working depth. This will need checked after any adjustments to the working depth *“Leveling (Front-to-Rear)” on page 4-6*.

Leveling (Side to Side)

1. The mainframe and wings must always be level side to side during operation. To level the wings with the mainframe adjustable lift wheels are provided on the wings. To level the wings:
 - a. Unfold and park the machine on level concrete.
 - b. Verify that all of the tires are properly inflated.
 - c. Raise the machine to fully extend the lift cylinders and continue holding the tractor lever 30-60 seconds to ensure the cylinders are fully extended and the rephasing lift system has been purged of air.
 - d. Lower the machine until the main frame disc blades are on the ground.
 - e. Loosen the four 5/8 hex head cap screws that hold on the adjustable cylinder anchor weldment **See Figures 4-7**. Loosen the hex jam nut on the end of the gauge wheel arm weldment and adjust the 3/4 adjusting hex head cap screw so the tires on the mainframe and the wings are just touching the ground or are the same distance off the ground.
 - f. Raise the machine again to fully extend the lift cylinders and continue holding the tractor lever 30-60 seconds to ensure the cylinders are fully extended and the rephasing lift system has been purged of air.
 - g. The mainframe should now be level with the wings. If not repeat **steps d** thru **f**. If they are level, lower the machine to the ground, retighten and torque the (4) 5/8-11 x 1-3/4 hex head cap screws on each wing lift and retighten the 3/4-10 hex jam nut on the adjusting screw.
 - h. Once operating in the field check again to insure the machine is running level side to side at the proper working depth. Readjust as necessary.

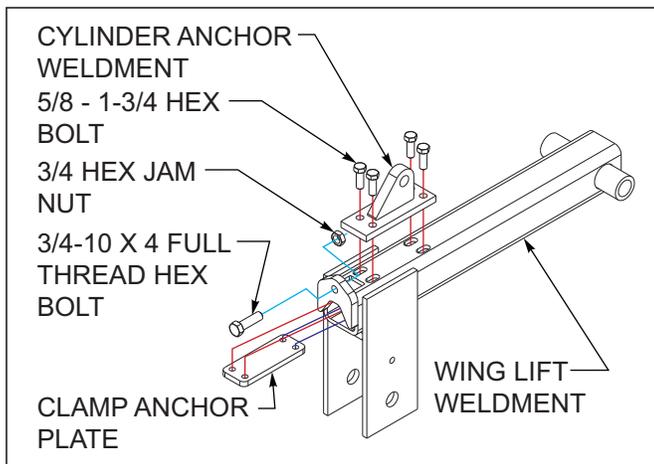


Figure 4-7: Wing Lift Adjustment

Leveling (Front-to-Rear)

1. The leveling feature on the Tilloll is used to keep the machine level in the working position only. As you raise the machine to transport position it will become un-level. The leveling of the machine should be done at the current working depth to ensure a level discing operation in the field.
2. To adjust the leveling feature, loosen the jam nut on the top of the adjustable radius rod **See Figure 4-8**. Extend or retract the radius rod to obtain the desired length using the handle in the middle of the radius rod. Retighten the jam nut.
3. The front-to-rear levelness will need to be checked after any adjustments to the working depth of the machine.

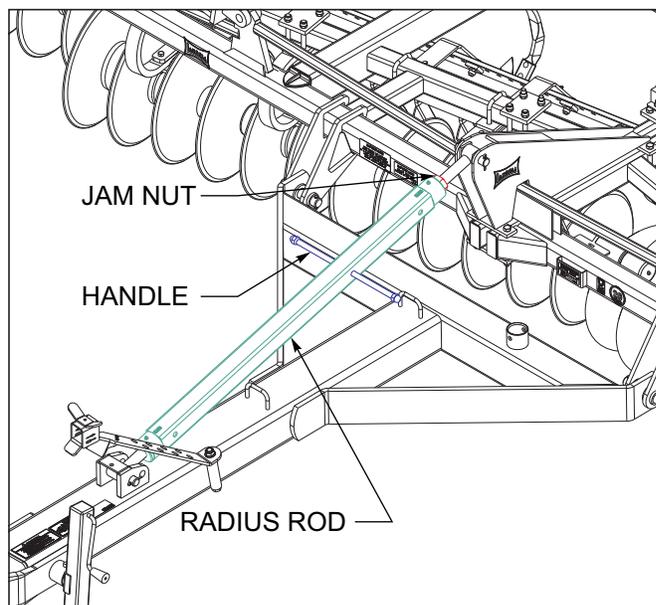


Figure 4-8: Radius Rod Adjustment

Disc Blades

1. The Tillage is equipped with full concavity disc blades. These blades measure 20" in diameter and have 2" of concavity. The very outside blade on both sides of machine is a 20" diameter coulter blade.
2. The use of other concavity blades can give unpredictable results and is not recommended.

Disc Gang Assembly

1. The disc gangs are assembled using 1-1/2" 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 1200 ft-lbs [See Figure 4-9](#).



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.

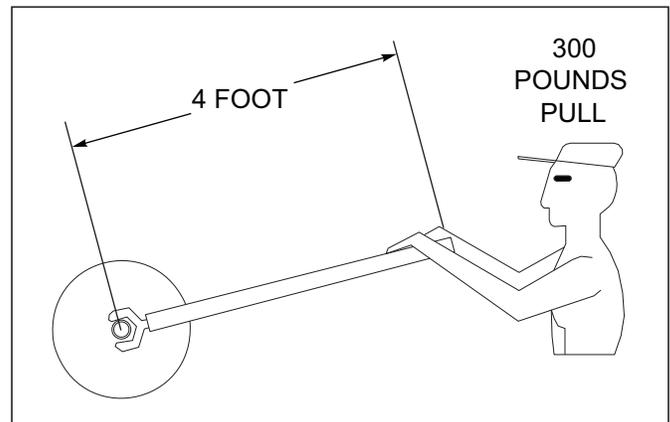


Figure 4-9: 1,250 Foot-Pounds of Torque

Scraper Adjustment

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

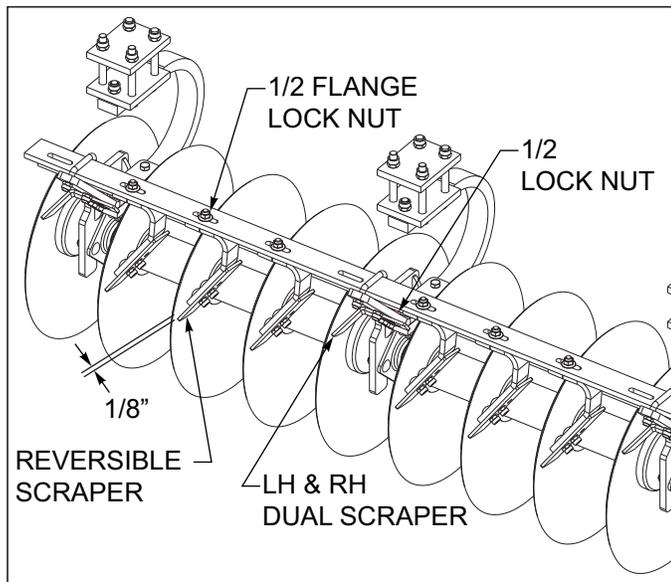


Figure 4-10: Scraper Adjustment

1. Rigid scrapers should be set initially as close to the disc blade as possible without rubbing (approximately 1/8") See Figure 4-10. A slotted hole at the top of each scraper is provided for individual adjustment. Loosen 1/2 flange lock nut for reversible scraper or 1/2 lock nuts for dual scrapers to slide scrapers to get the 1/8" spacing from disc blade. Scraper arms are made of spring steel. In wet conditions, the scraper may be set against the disc blade and can function as a spring-loaded scraper.
2. Scraper blades have two positions and are reversible. The blades are initially set in the forward position to position scraper closer to the disc spool. This position will perform better in wet and heavier residue conditions. The blade may be moved rearward for more scraper action at the outer edge of the disc if desired.
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.

Spring Shank

1. The Tilloll is equipped with spring shanks on a 9" shank spacing. The spring shanks feature a 170 lb. point load and a 9" trip height to clear field obstructions. Shanks are 9/16 x 1-3/4 heat treated steel.

2. There is no regular maintenance required on the shanks. The main pivot point of the spring shank has replaceable hardened wear bushings that pivot on a heat treated clamp bushing.

NOTE

Main pivot bolt should be tightened securely to prevent rotation. Torque main pivot bolt to 140 ft.-lbs.

3. When adjusting/assembling the spring assembly, tighten the upper spring bolt, but leave approximately 1/4" gap above the spring jam nut See Figure 4-11. This will leave the proper clearance for the spring to pivot. Lock the jam nut against the top of the spring, not the top of the mount. Likewise do not over tighten the lower spring cross bolt. Remove any slack in the bolt, but still allow the lower spring to pivot freely.

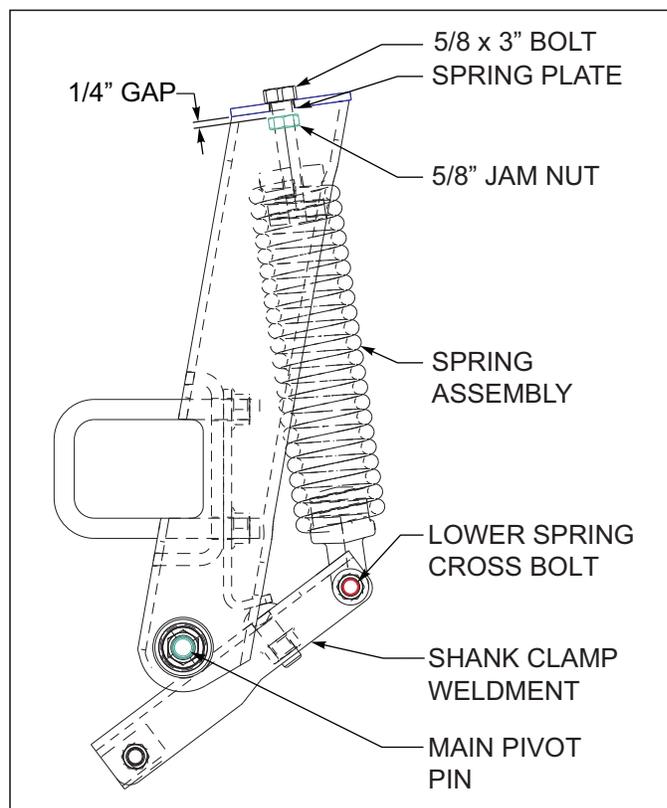


Figure 4-11: Spring Adjustment

Sweeps

The spring shanks will accept a wide variety of sweeps and points. Recommended sweeps for the Tilloll are standard 47° sweeps in 10 inch widths using 7/16 diameter mounting hardware.

Check clearances when using larger sweeps to avoid interference with tires.

Spray Shield Adjustment

1. The spray shields directly behind the disc gang have two uses and can be adjusted accordingly.
 - a. The spray shield controls the flow of soil so an even spray pattern for herbicide can be maintained directly behind the spray shield.
 - b. The spray shield controls the movement of soil by the discs. The discs are used primarily to cut residue and level the ground for good spray application.
2. The spray shields should be run at ground level to level the soil.
3. The shields should also be set at an angle to carry some soil back to the center of the machine as it levels the soil. Set the spray shield up if the machine is to operate deeper or there is excessive trash.
4. Set the spray shield down if the machine is to operate at a shallower depth, or when there is a minimum amount of trash.
5. Adjust spray shields outward on machine if too much dirt is moving around the outer edge and leaving a ridge. This will move dirt toward center and level the soil.

Spray Boom Location

The spray boom for herbicide incorporation should be set directly behind the spray shield when working in ridged field conditions. It can also be set in front of the machine in level field conditions.

Reel Adjustment

1. The reel is preset at the factory at the correct angle. This angle is set to move worked soil back to the center of the implement. The angle also determines the incorporation ability of the reel



CAUTION

When working with the reels, use care because they rotate freely and can catch an arm, hand, or foot and can cause severe injury.

Harrow Adjustment

1. The harrow on the rear of the machine can be set for a variety of field conditions *See Figure 4-12*. The harrow that is set up according to the assembly instructions for a working depth of 3 - 5 inches.
 - a. For deeper working depths, the harrow can be adjusted up.
 - b. For running the implement at shallower depths, the harrow can be lowered.
 - c. Spring tension can be increased by lowering the rear mounting point of the two lower springs and raising the front mounting point of the upper spring an equal number of holes.
 - d. For more aggressive action by the harrow, the angle of the harrow can be changed. By removing the cotter pin and clevis pin, the harrow teeth can be set at 45, 30, or 15 degrees. The larger the angle, the more leveling and mixing of the soil will occur. With the smaller angle, there is less mixing of the soil, but the harrow has a greater ability to allow trash to flow through evenly.

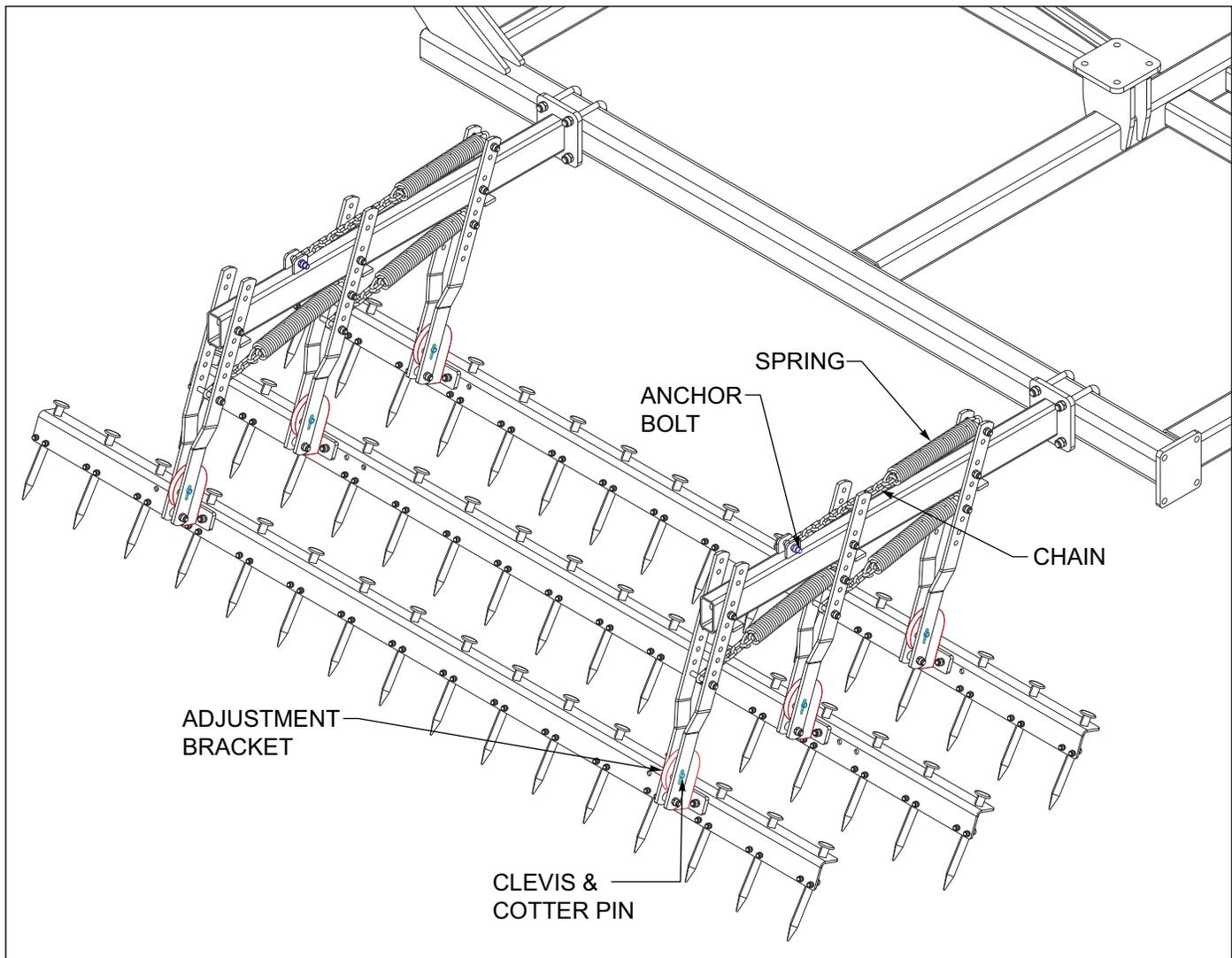


Figure 4-12: Harrow Adjustment

Wheel Bearing Maintenance – Non Triple-Lip

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 will also allow grease to pass when lubricating the hub.

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

1. Place the frame on blocks or stands sufficiently to lift the tire clear of the ground.
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 the grease seal. Use a driver to install the seal, to avoid damaging the outer edge of the seal. Drive the seal square 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, until the hub rotates freely without end play.
10. Install the cotter pin, dust cap and gasket [See Figure 4-13](#).

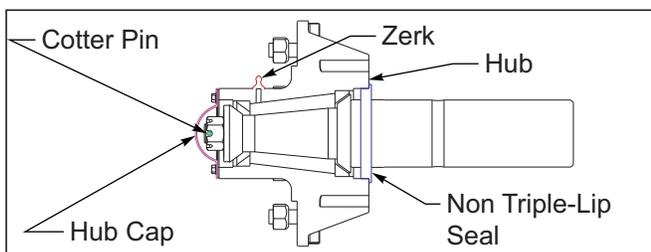


Figure 4-13: Non-Triple Lip Seal

Wheel Bearing Maintenance -- Triple-Lip

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

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

NOTE

The triple-lip seals should point away from the hub to keep contaminants out and allow grease to pass [See Figure 4-14](#).

11. Install a new cotter pin and replace the hub cap. [See Figure 4-14](#).

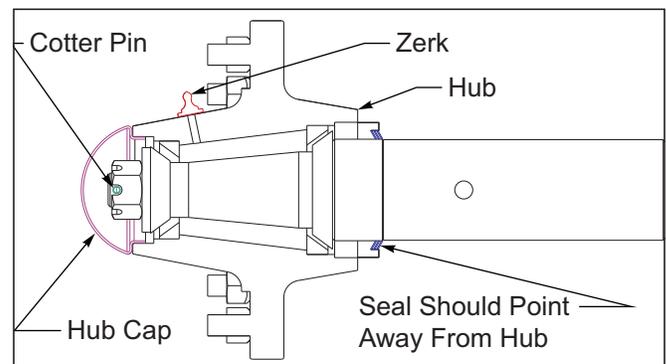


Figure 4-14: Triple Lip Seal

Hydraulic Maintenance

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

IMPORTANT

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

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

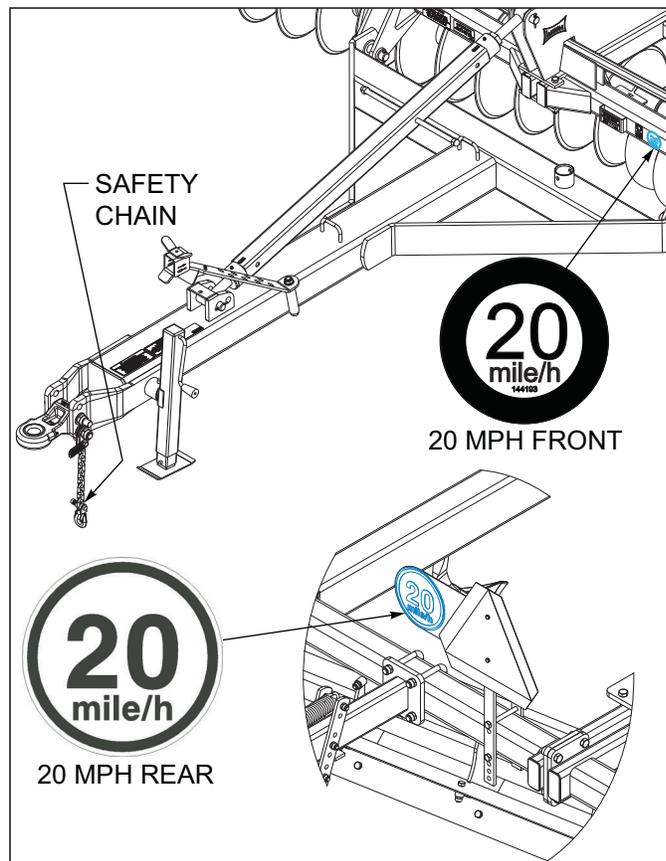


Figure 4-15: Hitch, Speed Identification Symbol, and Safety Chain

Transport

1. Check and follow all federal, state, and local requirements before transporting the Tilloll.
2. The 877 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 877 is 20 mph for the implement and is designated on the speed identification symbol located on the front and rear of the implement *See Figures 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.
 - c. When unhitching from the tractor attach the hook end of the chain to a free link close to the hitch clevis for storage. This will keep the hook off the ground, reducing corrosion and keep the hook functioning properly.
 - d. Regularly inspect the safety chain for worn, stretched, or broken links and ends. Replace the safety chain if it is damaged or deformed in any way.
7. Check that tires are of proper size, load rating, and inflated to manufacture specifications before transporting. Check wheel lug bolts to insure tightness.
8. Know the transport heights and widths of the unit before transporting. Attachments such as leveling harrows can increase the transport dimensions of the implement. Use caution when transporting near bridges and power lines.

WARNING

Electrocution can occur without direct contact.

9. Raise the unit to full transport height.
10. Install transport locks on both lift systems. Do not depend solely on implement hydraulics for transport **See Figure 4-3.**

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.

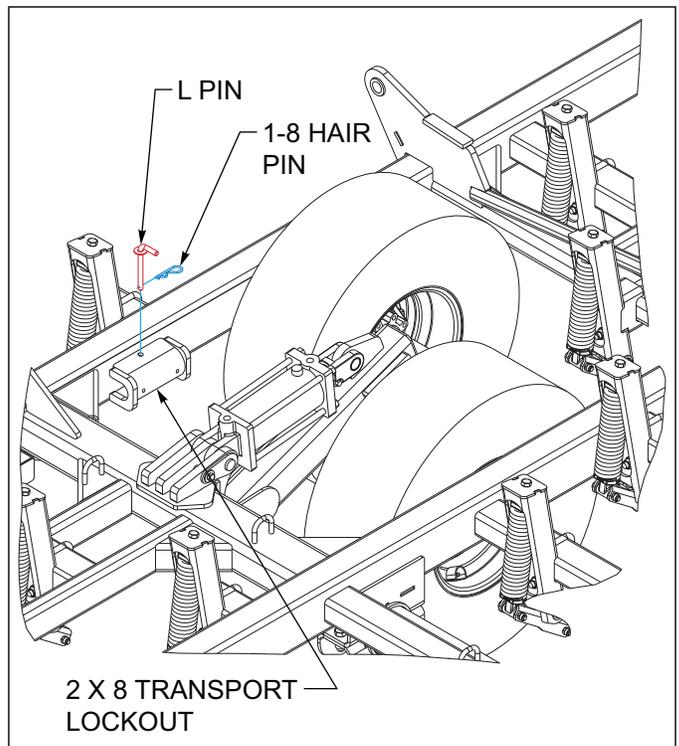


Figure 4-16: Installed Transport Locks

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 877 Tilloll *See Table 4-1 and See Figures 4-17.*
2. When lubricating the Tilloll, SAE multi-purpose EP grease, or EP grease with 3-5% molybdenum sulfide is recommended. Wipe soil from fittings before greasing. Replace any lost or broken fittings immediately.
3. Disc gang and conditioner reel bearings are equipped with seals that will let grease pass and not harm the seal. Regular lubrication will maintain a full grease cavity and help purge any contaminants. Grease the bearings before long periods of storage to prevent moisture buildup within the bearing cavity.
4. Wheel seals, when properly installed, will allow grease to pass without harm to seals. Regular lubrication will extend service life, particularly in severe operating conditions.

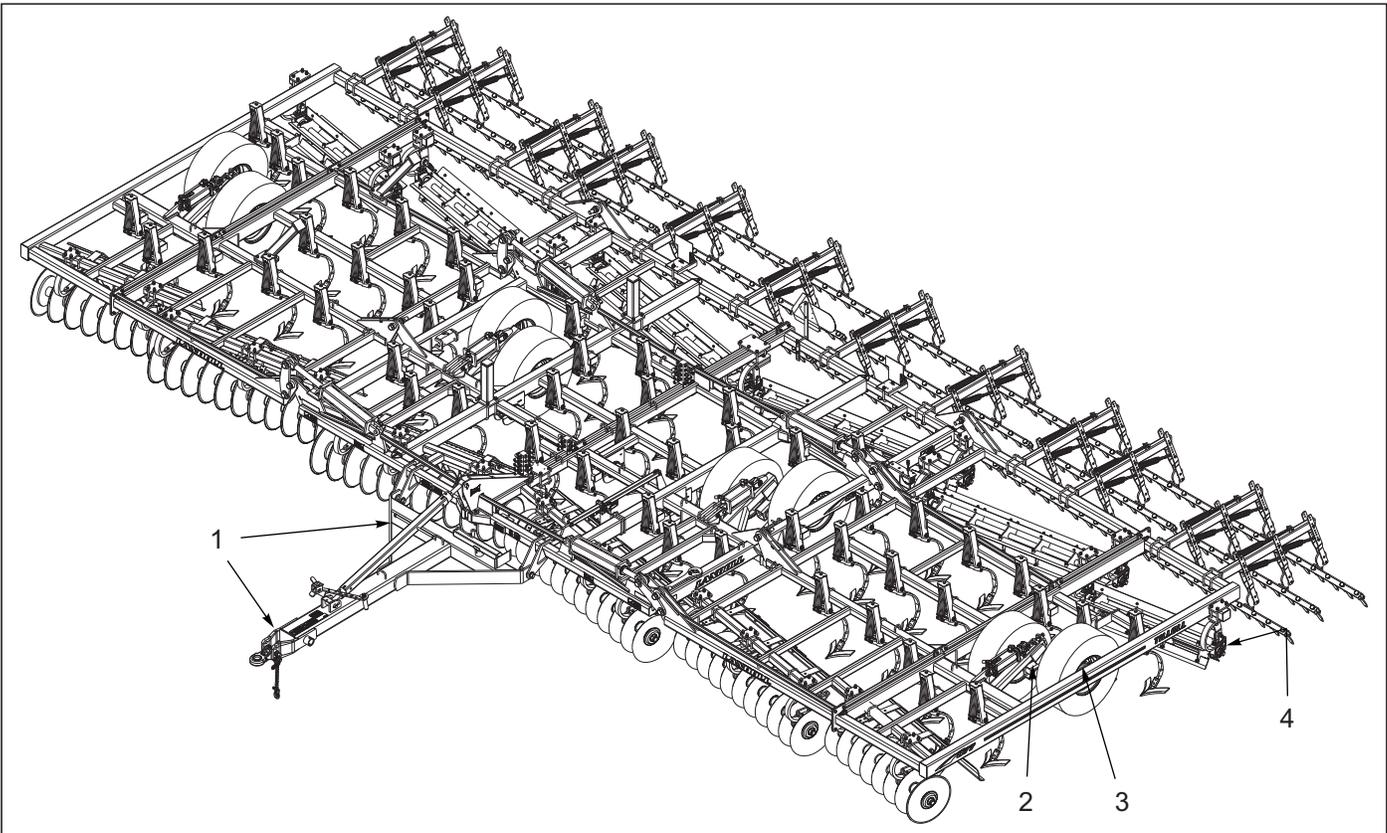


Figure 4-17: Lubrication Schedule

LUBRICATION TABLE			
ITEM	DESCRIPTION	NO. OF LUBE POINTS	INTERVAL (Hours Unless Stated)
1	Radius Rod	2	50
2	Walking Tandem Pivots	1 each - 4 total	50
3	Wheel Hubs	1 each - 8 total	50
4	Chopper Reel Bearings	1 each	10

Table 4-1: Lubrication Table

Storage

1. The service life of the Tilloll 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 [See Figures 4-17](#).
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 Tilloll 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.

Troubleshooting Guide

The Troubleshooting Guide, shown below, is included to help you quickly locate problems that can happen using your 877 Tilloll. Follow all safety precautions stated in the previous sections when making any adjustments to your machine.

PROBLEM	PROBABLE CAUSE	SOLUTION
DISC GANG THROWING RIDGE TO OUTSIDE	Unit is not level	Turn radius rod to raise front of machine, machine must be level, front to rear, while running at desirable depth.
	Disc gang bearing mounts on wrong side of c-spring	Remount disc gang on top of C-spring
	Reel angle incorrect	Check and set according to specifications.
	Dirt not flowing under shield properly	Adjust shield.
	Excessive loose dirt	Minimize field trips - 2 to 3 trips may leave powder and cause ridging.
	Moving too slowly	Machine needs to be pulled at least 5.5 mph. Set harrow according to operating instructions " Harrow Adjustment " on page 4-10.
DISC GANG PLUGGING	Disc gang mounted too deep	Check disc gang as above, may be too deep.
	Unit not level	Check to see that machine is level while machine is running
	Disc blade wear	Replace disc blades.
	Dirt not flowing under shield properly	Adjust shield.
DISC GANG NOT TURNING IN LIGHT SOIL	Scrapers adjusted too tight against blade	Readjust scrapers
DISC SCRAPER BENDING	Improper pressure against disc blade	Disc scraper must be set tight against disc blades and be in contact for full length of scraper edge. May need to loosen two bolts and rotate scraper blade forward or backward to accomplish this.
PLUGGING BETWEEN DISC AND SPRAY SHIELD	Dirt not flowing under shield	Readjust spray shield (usually up and/or to the rear). Machine running too deep. Raise to proper operating depth by adjusting stroke control depth stop on master cylinder.
	Conditions too wet	Wait until conditions are proper for tillage.
10" SWEEPS WILL NOT PENETRATE	Machine not set deep enough	Check for correct pitch on sweeps (The correct pitch is 47°).
SHANKS NOT STRAIGHT UP AND DOWN ON FRAME OR HAVE EXCESSIVE WEAR	Excessive wear at pivot bolt	Replace bolt-on shank holder, if needed.
		Replace bushing, if needed.

TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	SOLUTION
SHANK SPRINGS BREAKING	Spring pivot bolt too tight	Spring pivot bolt must be loose enough to allow spring plug to pivot so spring is not forced to bend.
SCREW IN TOP OF SPRING BREAKING	Lock nut should be tightened against shank bracket instead of spring plug	Verify that there are three threads between lock nut and spring plug.
PLUGGING IN SHANK AREA	Shank placement not according to specifications	Check shank placement against See Figure 2-7 through 2-12.
	Ground too wet	Wait until ground conditions are proper for tillage.
REEL VIBRATING	Rear of machine too deep	Level machine by turning radius rod.
	Running machine too slow	Machine needs to be pulled at least 5.5 mph.
REEL COMING LOOSE IN FIELD	Reel bearing lock collars mounted on wrong side of reel	Mount lock collars on side of reel toward center of machine. Lock collars tightened in wrong direction. Lock in direction of reel rotation.
REEL NOT MOVING SOIL ADEQUATELY	Reel mounted backwards	Mount again per assembly instructions (See "Reel Assembly" on page 3-31.)
	Running machine too slow	Machine needs to be pulled at least 5.5 mph.
	Machine not level	Adjust radius rod to level machine.

PROBLEM	PROBABLE CAUSE	SOLUTION
ROCKS JAMMING IN END OF REEL AND LOCKING UP REEL	Reel blade too long	Cut 1-1/2" off the end of reel blade.
	Reel angle wrong for terrain	Cut blade off at angle toward rear of blade to provide a relief area for rocks.
HARROW PLUGGING	Improperly set harrow	Set according to operating instructions <i>(See "Harrow Adjustment" on page 4-10.)</i>
WINGS FOLDING TOO FAST	Restrictor elbows not installed	Check to make sure restrictors are installed per assembly instructions. Idle tractor when folding. Turn tractor hydraulic flow down. Engage hydraulic valve. Hold fully engaged until folded.
MACHINE RUNNING DEEP TO ONE SIDE	Distance from frame to axle of gauge wheels differ	<ol style="list-style-type: none"> Set all depth stops the same. Raise machine until all cylinders are fully extended. Measure cylinders from pin to pin. Verify that all cylinders are same length. If measurements are not the same, <i>See "Hydraulic Lift Installation" on page 3-16</i> to readjust cylinder length. <p>Wing cylinders may need to vary in length from main cylinders, per soil conditions.</p> <p>Check that tires are same size and pressure is correct.</p> <p>Check for hydraulic leakage and repair.</p>
CYLINDERS BROKEN IN TRANSPORT	Machine not properly secured during transport	Use transport locks and let machine down on locks during transport <i>(See "Transport" on page 4-12.)</i>

Document Control Revision Log:

Date	Form #	Improvement(s): Description and Comments
12/12/2019	F-1072	Initial Release.
03/20/2020	F-1072-0320	New Manual.
01/28/2021	F-1072-0121	Updated new center frame/lift, wings, spring shank assembly, hydraulics.
01/21/2021	F-1072-2501	Prince cylinder update.



intertek

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

Model 877 Tilloll Operator's Manual

Serial Number: 01B2002332 to Present

Re-Order Part Number F-1072

LANDOLL COMPANY, LLC

1900 North Street

Marysville, Kansas 66508

(785) 562-5381

800-428-5655 ~ WWW.LANDOLL.COM



Copyright 2020. Landoll Company, LLC

“All rights reserved, including the right to reproduce this material or portions thereof in any form.”

Scan to go to www.landoll.com

