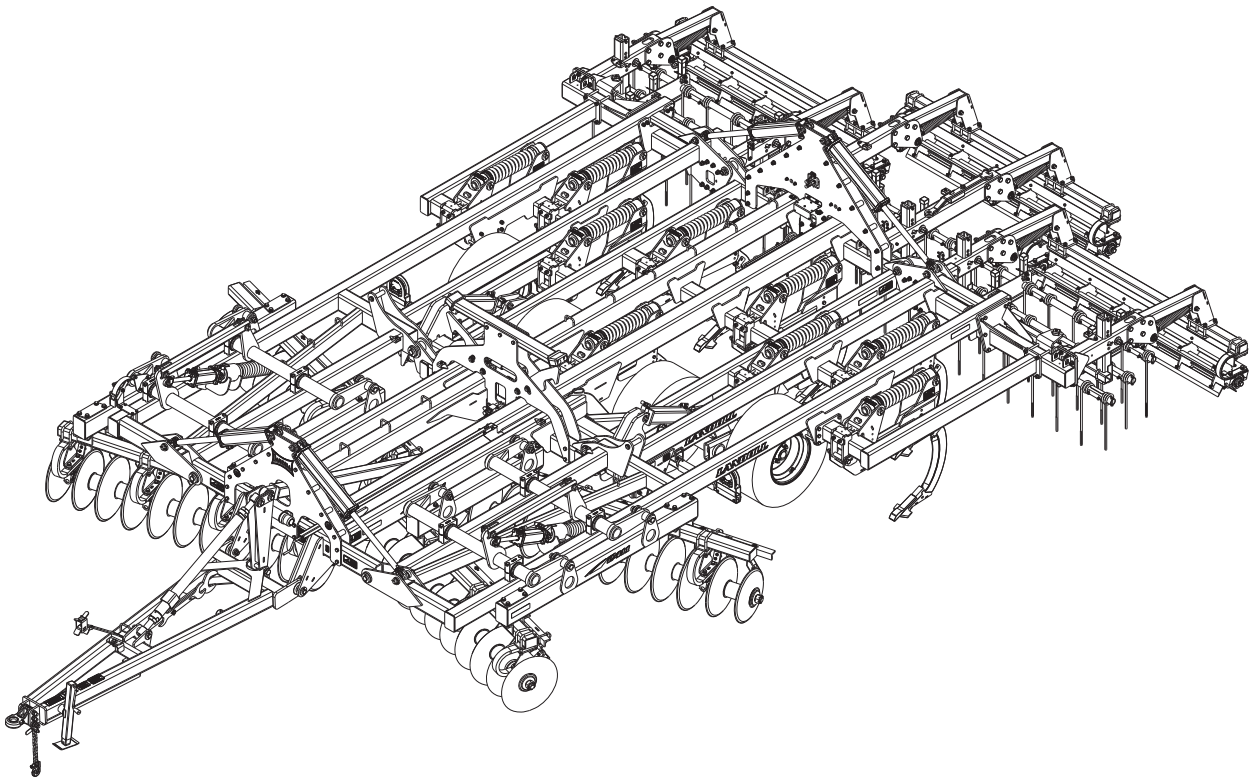
Model 2411
Weatherproofer
Operators Manual



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

Instructions for Ordering Parts

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

DEALER INSTRUCTIONS FOR ORDERING PARTS FROM LANDOLL PARTS DISTRIBUTION CENTER

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

IDENTIFICATION PLATE

The identification plate, which lists the model number and serial number, is located on the front of the frame.

SERIAL NUMBER

The serial number is located on the identification plate.
The Following information will help decode the 2411 Weatherproofer serial number

24H220000 = xxmyyssssss

QR CODE DECAL

The 2000 series QR code decal, may be scanned to link you to the most current manuals, located on the front of the frame *See Figure 1-1*

xx	= model series (i.e. 24 for Weatherproofer)
m	= month of manufacture (ex. “H” means October. The letter I is not used.)
yy	= year manutactured (ex. “22” means 2022)
SSSSS	= Sequential number used to track warranty and service information.

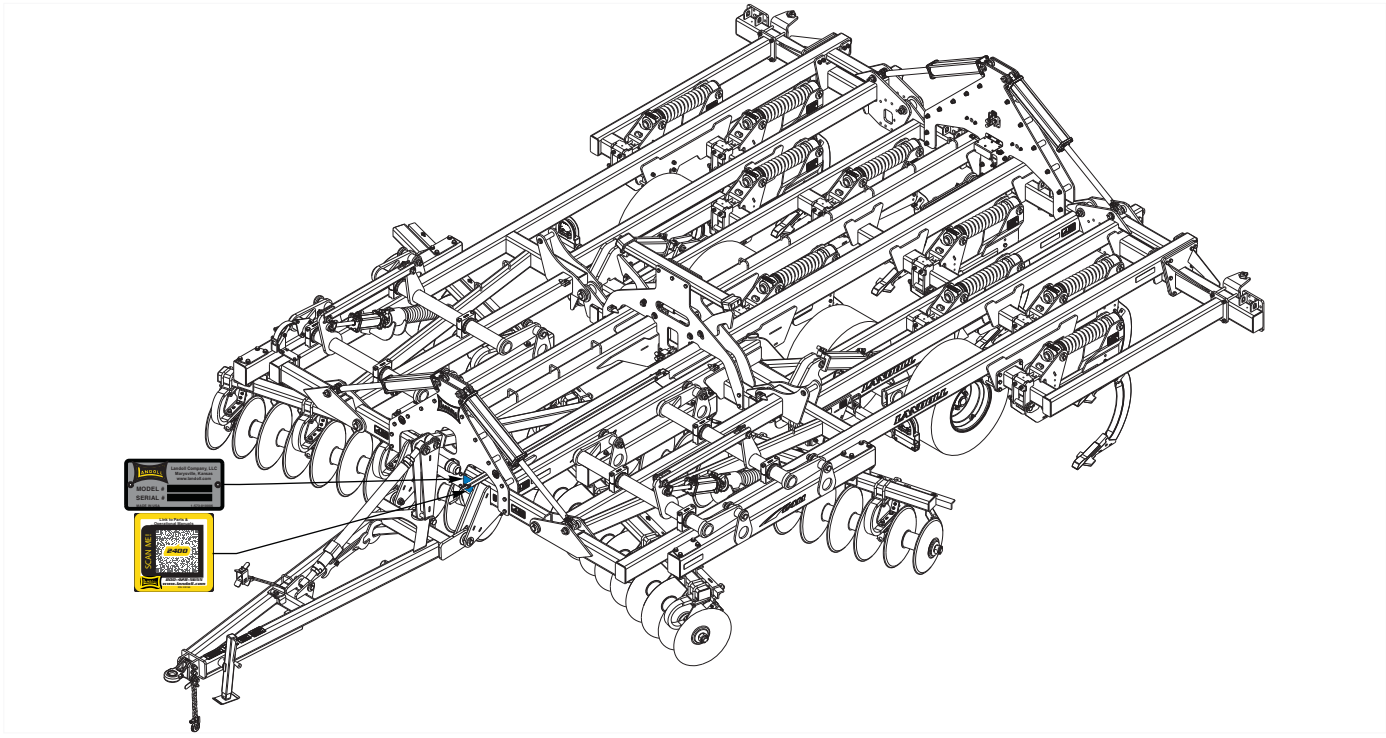


Figure 1-1: Identification Plate and QR Code Decal Location

Manuals for 2411 Weatherproofer

Manual Number	Manual Type
F-1130	Operator’s Manual
F-1131	Parts Manual

DANGER

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

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

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

Table of Contents

Chapter 1

Introduction and Safety Information

The Landoll Model 2411 Weatherproofer a quality product designed to give years of trouble free performance. By following each section of this manual, your system will perform as designed for you and your operation.

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

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

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

CHAPTER 4 Instructs how to operate your equipment before using it, and describes adjustments needed.

CHAPTER 5 Instructs how to operate your equipment before using it, and describes adjustments needed. Gives practical advice for the care and maintenance of your Landoll equipment. Drawings in this section locate adjustment points on the equipment.

IF YOU HAVE ANY QUESTIONS CONTACT:
LANDOLL COMPANY, LLC
1900 NORTH STREET
MARYSVILLE, KANSAS 66508

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

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

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

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

COMMENTS Address comments or questions regarding this publication to:

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

Understanding Safety Statements

You will find various types of safety information on the following pages and on the machine signs (decals) attached to the machine. 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 machine.

The safety statements contained in this manual relate to the operation of the Model 2411 Weatherproofer.

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.

Transporting Safety

IMPORTANT

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

1. Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of the towing vehicle.

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.**

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

Attaching, Detaching, and Storage

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

Maintenance Safety

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

High Pressure Fluid Safety

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

Protective Equipment

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

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

Chemical Safety

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

Prepare for Emergencies

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

Tire Safety

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

Safety Chain

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

Safety Decals and Reflectors

The 2411 Weatherproofer equipped with all safety signs installed for safe operation.

For you safety:

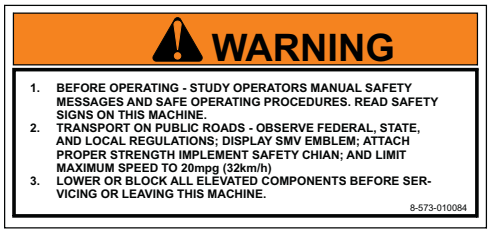
- Carefully read and follow safety sign directions.
- Keep the safety signs clean and visible.
- Replace damaged, missing, or illegible safety signs.
- Be sure any new equipment or repair parts include safety signs.

New safety signs may be ordered from your Landoll dealer. Refer to this section for parts and proper safety sign placement.

To Install new safety signs:

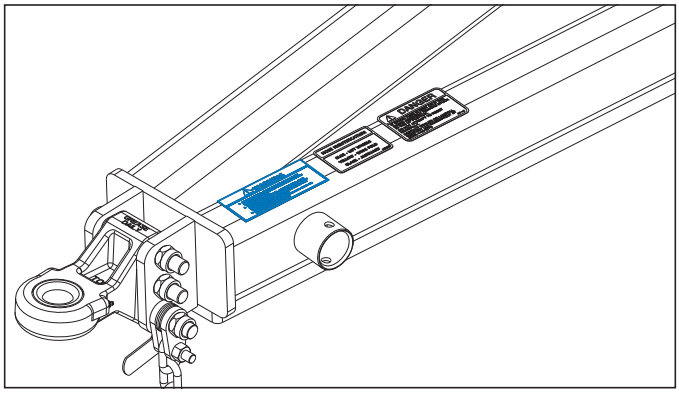
1. Remove the old damaged safety sign if still present.
2. Clean placement area to remove any dirt or grease.
3. Remove backing from new safety sign.
4. Apply the safety sign starting from one end pressing firmly and working across the safety sign being careful not to create any air bubbles.

P/N 8-573-010084 Model 2411-06
Warning: Before Operating



Front of hitch, 1st from left

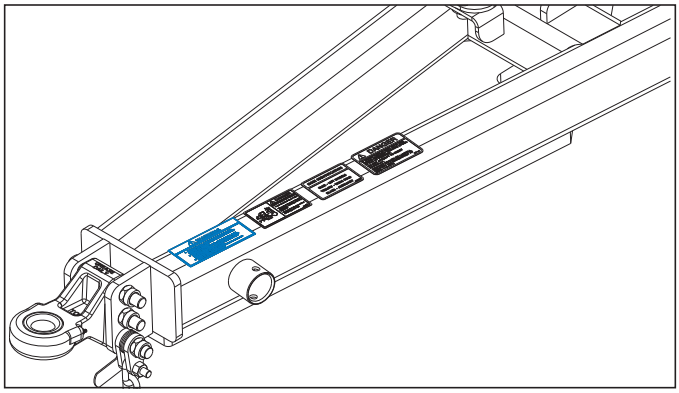
QTY. 1



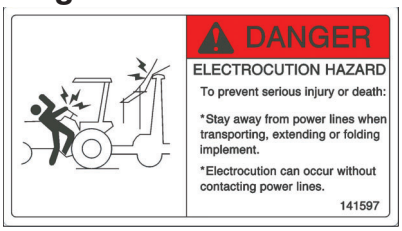
P/N 8-573-010084 Models 2411AFG-07-09
Warning: Before Operating

Front of hitch, 1st from left

QTY. 1

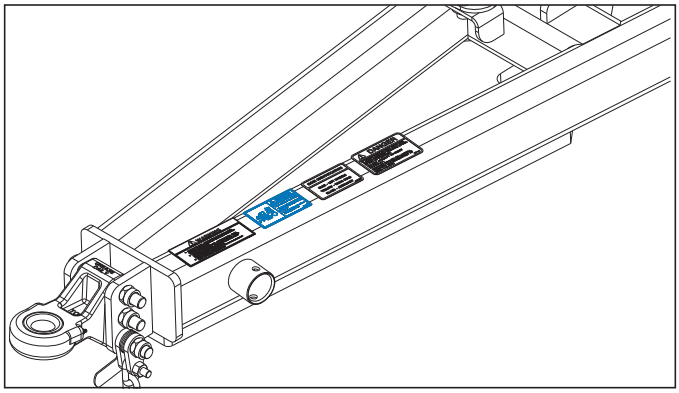


P/N 141597 Models 2411AFG-07-09
Danger: Electrocution Hazard



Front of hitch, 2nd from left

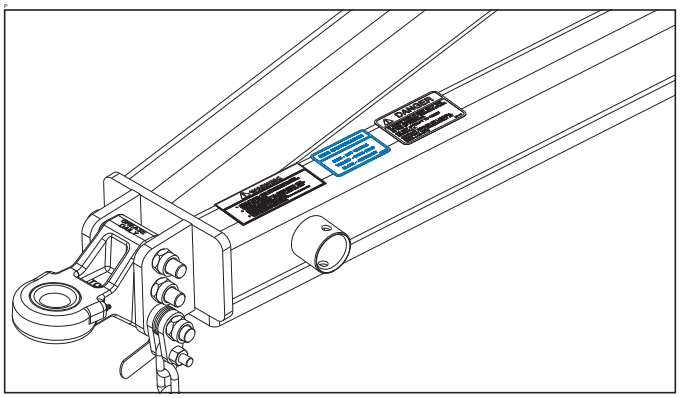
QTY. 1



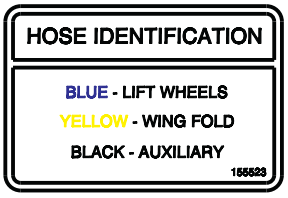
P/N 155523 Model 2411-06
Hose Identification

Front of hitch, 2nd from left

QTY. 1

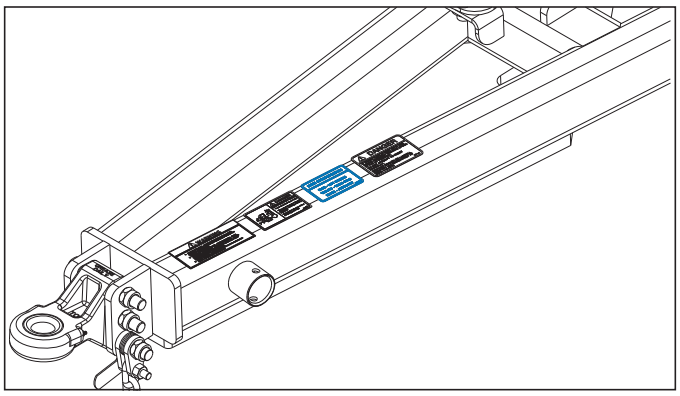


P/N 155523 Model 2411AFG-07-09
Hose Identification

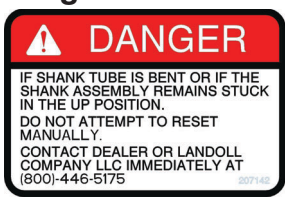


Front of hitch, 3rd from left

QTY. 1

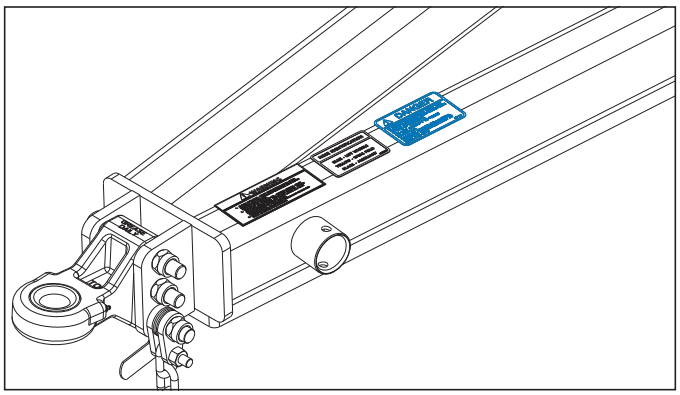


P/N 207142 Model 2411-06
Danger: Stuck Shank

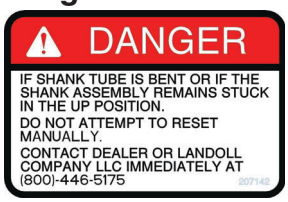


Front of hitch, 3rd from left

QTY. 1

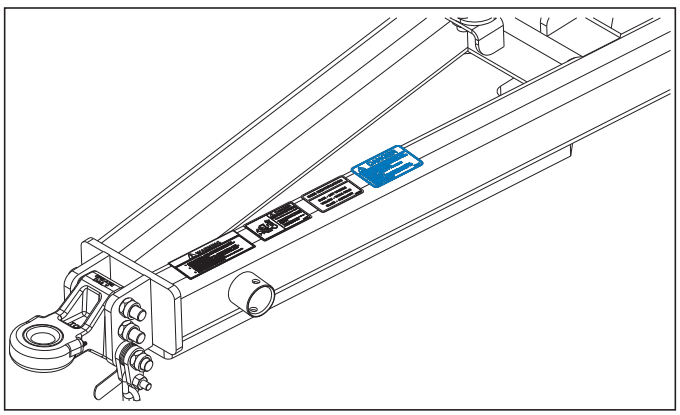


P/N 207142 Model 2411AFG-07-09
Danger: Stuck Shank



Front of hitch, 4th from left

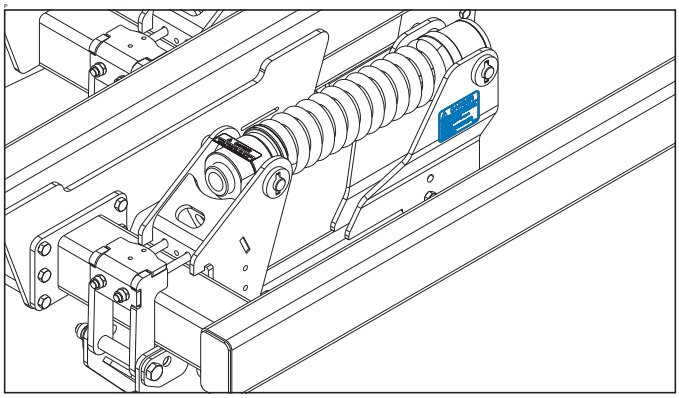
QTY. 1



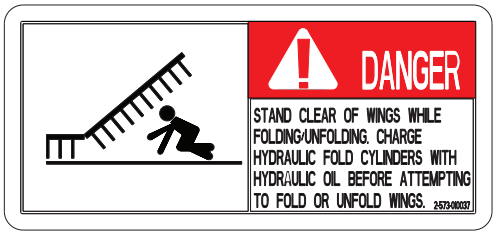
P/N 207142 Model 2411-06-07-09
Danger: Stuck Shank

Left side, spring shank weldment

QTY. 1 each

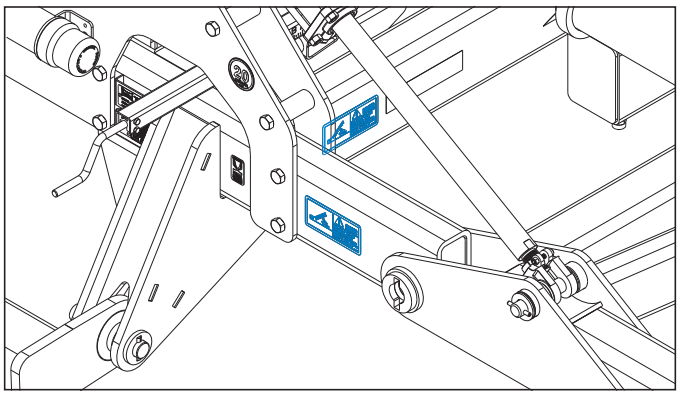


P/N 2-573-010037 Model 2411AFG-07-09
Danger: Folding wing

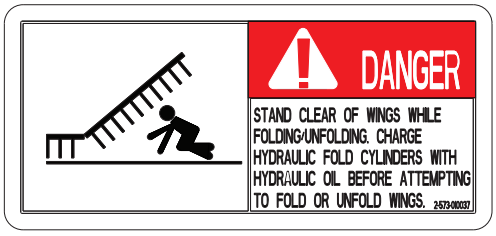


Front, side, front tube, center frame, both sides

QTY. 4

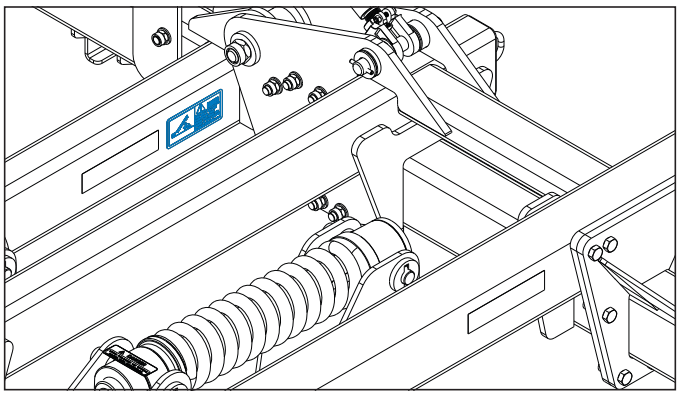


P/N 2-573-010037 Model 2411AFG-07-09
Danger: Folding wing



Rear, side, center frame, both sides

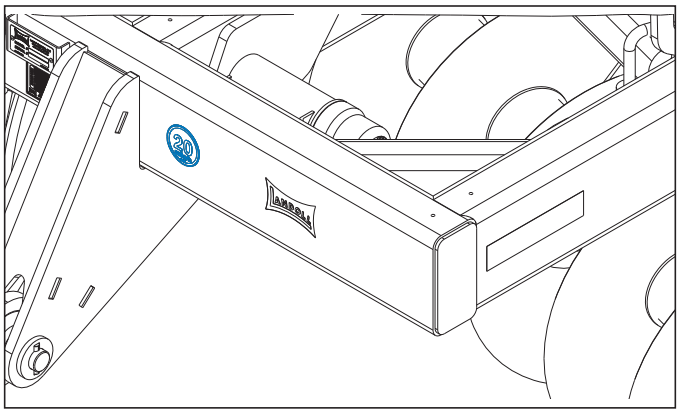
QTY. 2



P/N 144193 Model 2411-06
SIS 20MPH

Front outside, center frame, both sides

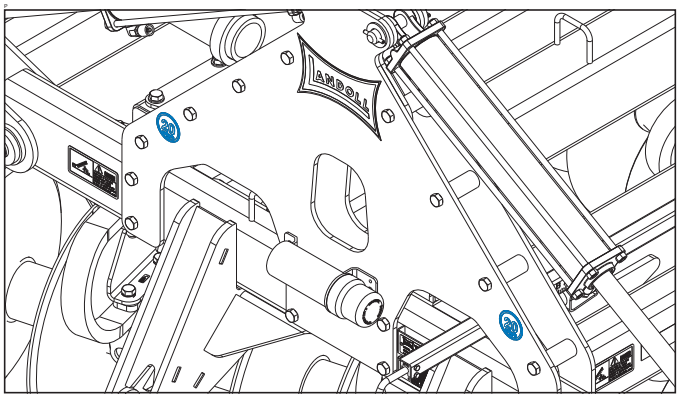
QTY. 2



P/N 144193 Model 2411AFG-07-09
SIS 20MPH

Front side, front fold plate

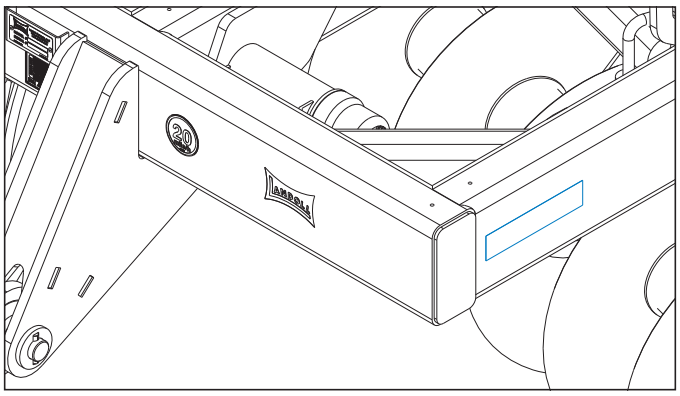
QTY. 2



P/N 528934 Model 2411-06
Yellow Reflector

Left front, center frame, both sides

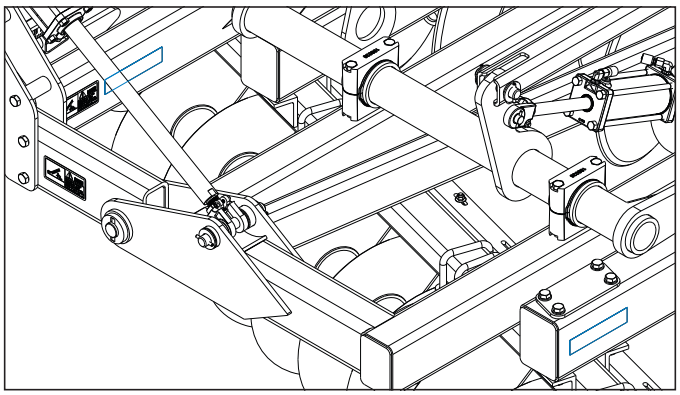
QTY. 2



P/N 528934 Model 2411AFG-07-09
Yellow Reflector

Left front, center and wing frame, both sides

QTY. 4

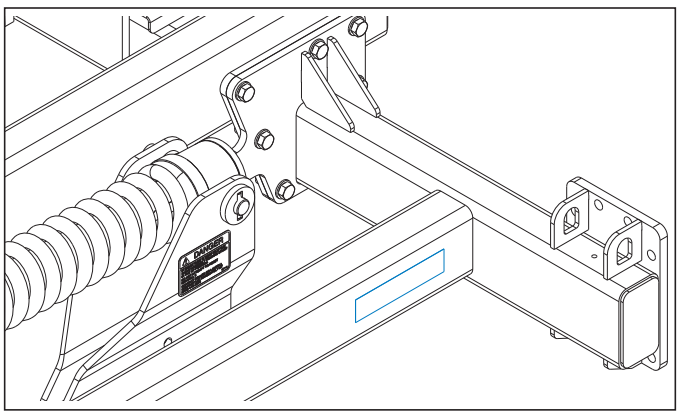


P/N 528934 Model 2411-06
Yellow Reflector

Left

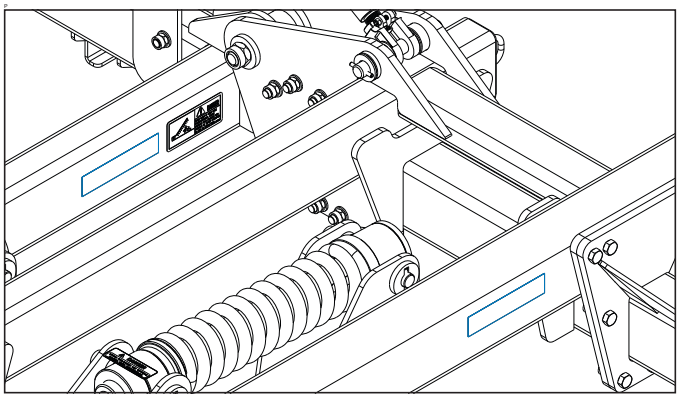
Center frame shank extension, rear, both sides

QTY. 2



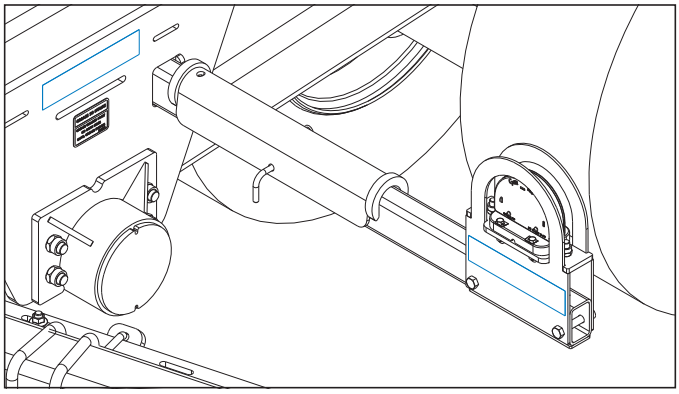
P/N 528934 Model 2411AFG-07-09
Yellow Reflector

Left rear, center and wing frame, both sides
QTY. 4



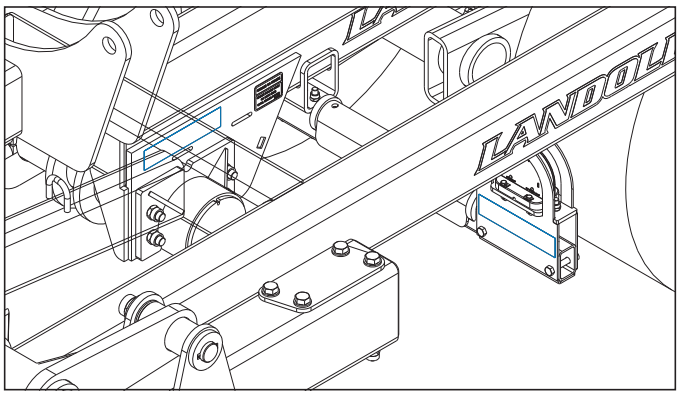
P/N 528934 Model 2411-06
Yellow Reflector

Left center frame, middle, front light bracket, both sides
QTY. 4



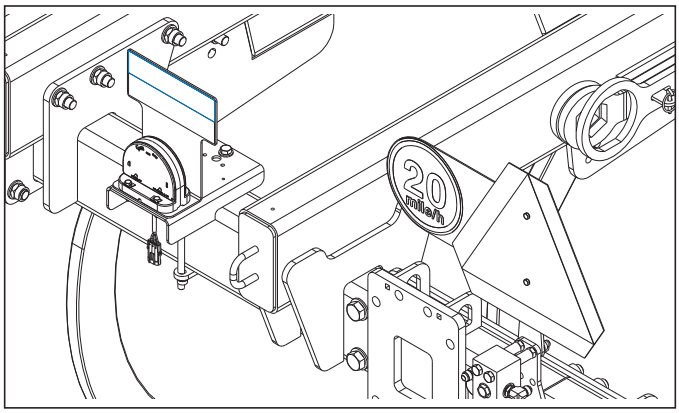
P/N 528934 Model 2411AFG-07-09
Yellow Reflector

Left middle, center frame, front, light bracket both sides
QTY. 4



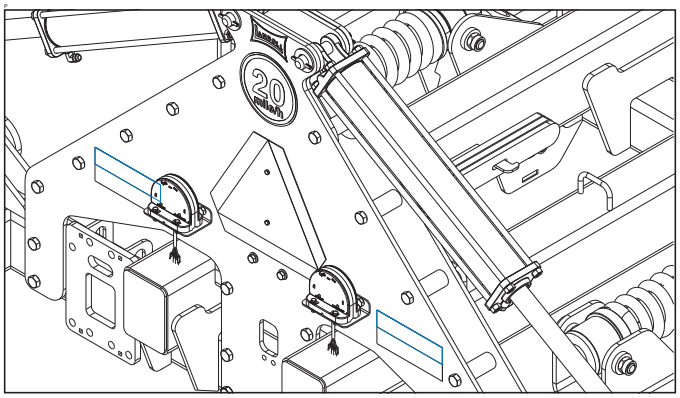
P/N 528938 Model 2411-06
Orange Reflector

Back side, reflector mount plate, top, both sides
QTY. 2



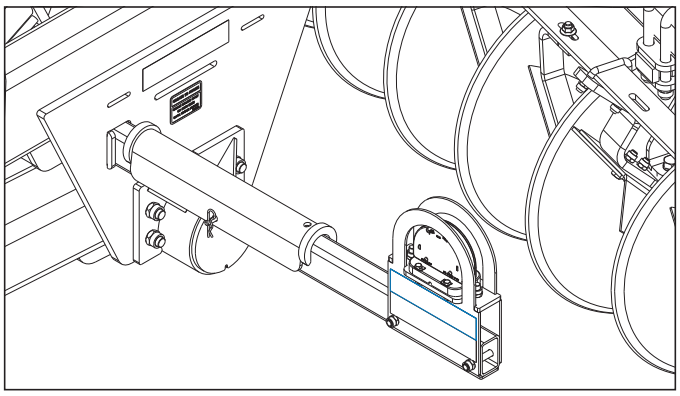
P/N 528938 Model 2411AFG-07-09
Orange Reflector

Back side, rear fold plate, top
QTY. 2



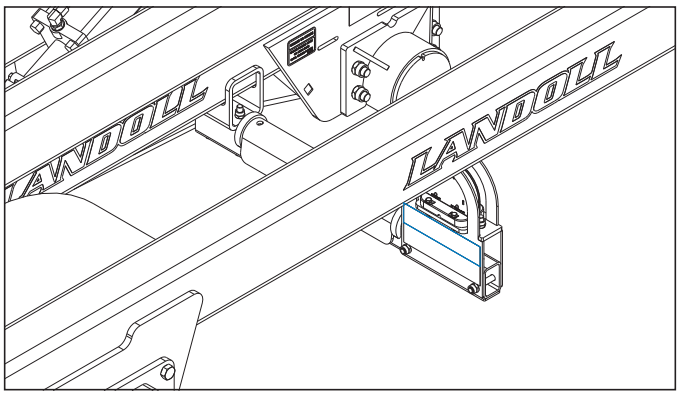
P/N 528938 Model 2411-06
Orange Reflector

Back side, front, light bracket both sides, top, both sides
QTY. 2



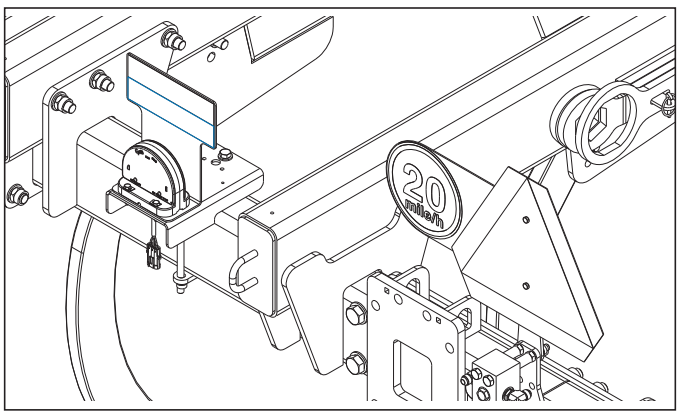
P/N 528938 Model 2411AFG-07-09
Orange Reflector

Back side, front, light bracket both sides, top, both sides
QTY. 2



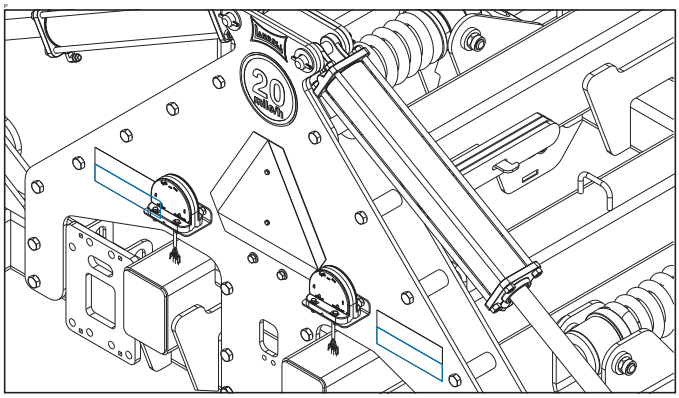
P/N 528933 Model 2411-06
Red Reflector

Back side, reflector mount plate, bottom, both sides
QTY. 2



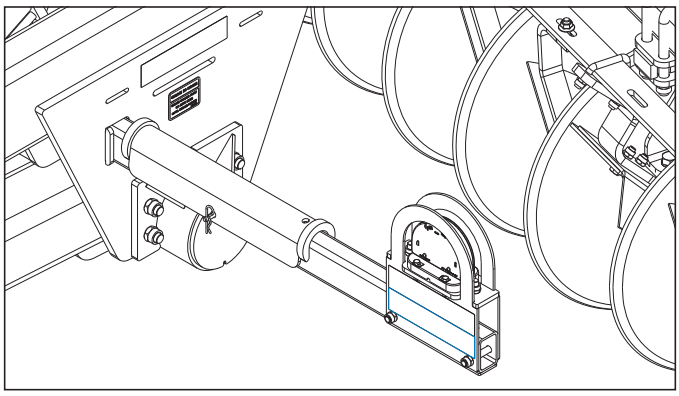
P/N 528933 Model 2411AFG-07-09
Red Reflector

Back side, rear fold plate, bottom
QTY. 2



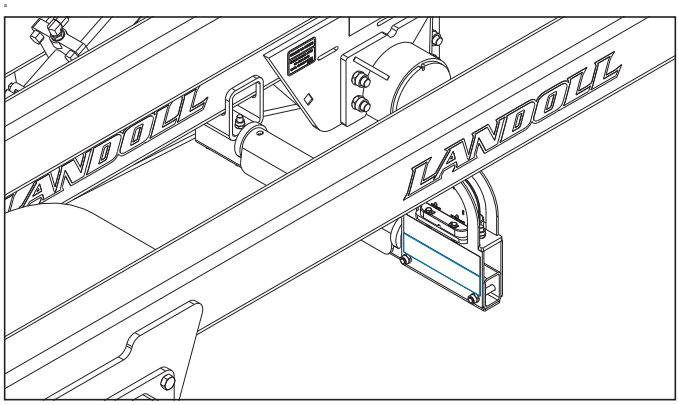
P/N 528933 Model 2411-06
Red Reflector

Back side, front, light bracket both sides, bottom, both sides

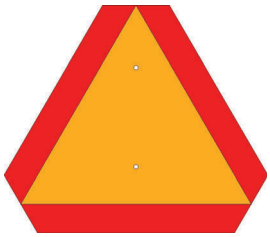


P/N 528933 Model 2411AFG-07-09
Red Reflector

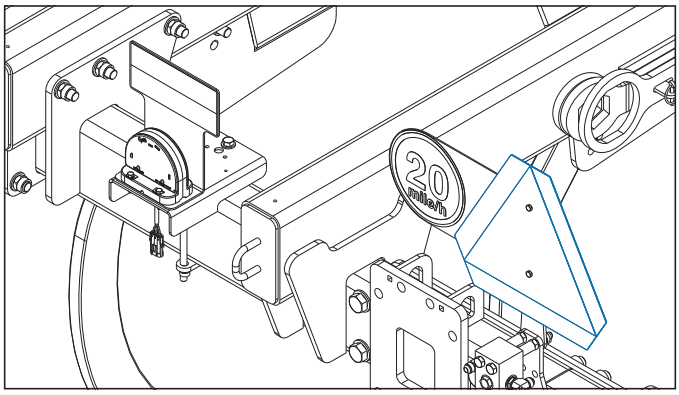
Back side, front, light bracket both sides, bottom, both sides
QTY. 2



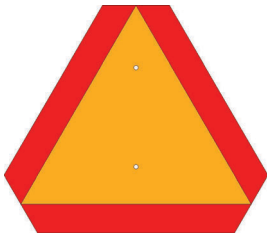
P/N 528938 Model 2411-06
SMV Emblem



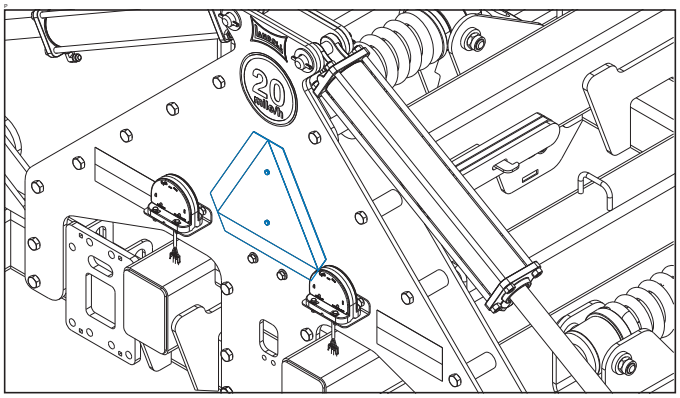
Back side, smv mount
QTY. 1



P/N 528938 Model 2411AFG-07-09
SMV Emblem

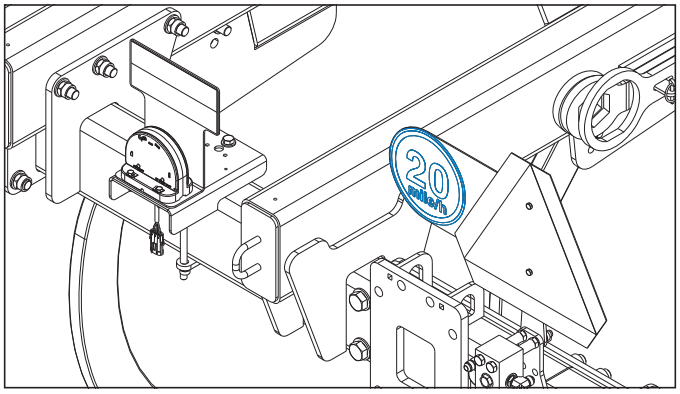


Back side, rear fold plate
QTY. 1



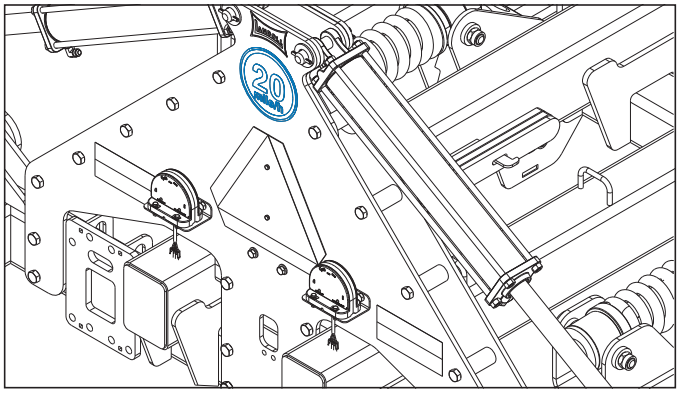
P/N 224589 Model 2411-06
SIS 20 mile/h

Back side, SIS decal mount
QTY. 2



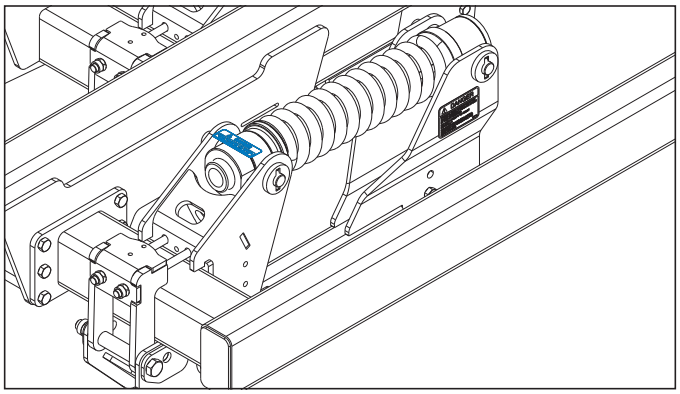
P/N 224589 Model 2411AFG-07-09
SIS 20 mile/h

Back side, rear fold plate
QTY. 2



P/N 2-573-010469 Model 2411-06-07-09
Danger: Spring Preloaded

Top side, spring shank weldment spring
QTY. 1 each



Chapter 2

Specifications

Introduction

This manual is compiled as a guide for owners and operators of the 2411 Weatherproofer. Read it carefully so as to be able to follow the suggestions made. Please take time to understand the proper maintenance schedule and SAFE operation of your equipment.

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

Owner Assistance

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

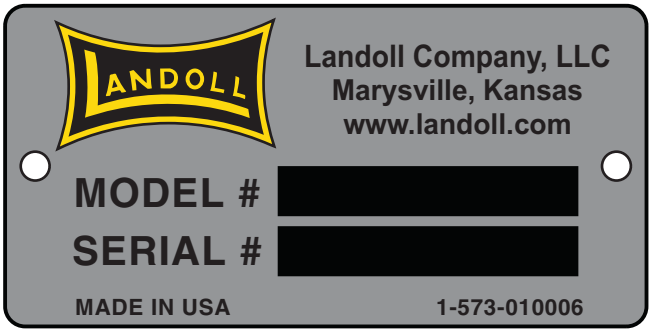


Figure 2-1: ID Plate

Warranty Registration

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

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

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

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

MODEL_____

SERIAL #_____

DATE OF PURCHASE_____

DEALER NAME_____

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

LANDOLL TILLAGE PRODUCT THREE YEAR LIMITED WARRANTY

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

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

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 nonseasonal 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 e-mail 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 returned by the purchaser to Landoll Company, LLC with transportation and freight charges prepaid within fifteen (15) days after receipt of the RMA. The examination conducted by Landoll Company, LLC of returned parts shall disclose to its satisfaction the extent the component may be detective.

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

LANDOLL TILLAGE PRODUCT THREE YEAR LIMITED WARRANTY (Continued)

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 produce 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 LANDO LL COMP ANY, LLC SHALL NOT BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND ON ACCOUNT OF ANY LANDOLL PRODUCT.

NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY, VERBALLY OR IN WRITING, OR GRANT ANY OTHER WARRANTY. LANDOLL COMPANY, LLC, WHOSE POLICY IS ONE OF CONTINUOUS IMPROVEMENT, RESERVES THE RIGHT TO MAKE CHANGES WITHOUT OBLIGATION TO MODIFY PREVIOUSLY PRODUCED EQUIPMENT.

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

LIMITATION OF LIABILITY: Landoll Company, LLC shall not be liable to purchaser for any incidental or consequential damages suffered by the purchaser, including, but not limited to, any commercially reasonable charges, expenses or commissions incurred in connection with effecting cover or any other reasonable expense incident to the delay or other breach of warranty by Landoll Company, LLC, loss of anticipated profits, transportation expenses due to repairs, non-operation or increased expense of operation costs of purchased or replaced equipment, claim of customers, cost of money, any loss of use of capital or revenue, equipment rental, service trips, or for any special damage or loss of any nature arising at any time or from any cause whatsoever.

LIMITATION OF REMEDY: In the event of Landoll Company, LLC failure to repair the product subject to the warranty contained herein, the purchaser's sole and exclusive remedy against Landoll Company, LLC shall be for the repair or replacement of any defective part or parts of the product subject to work or repair within the time period and manner set forth herein.

This exclusive remedy shall not be deemed to have failed of its essential purpose so long as Landoll Company, LLC is willing and able to repair or replace defective parts in the prescribed manner.

General Torque Specifications (rev. 4/97)

TORQUE SPECIFIED IN FOOT POUNDS

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

UNC SIZE	SAE Grade 2	SAE Grade 5	SAE Grade 8	UNF SIZE	SAE Grade 2	SAE Grade 5	SAE Grade 8
1/4-20	4 [5]	6 [7]	9 [11]	1/4-28	5 [6]	7 [9]	10 [12]
5/16-18	8 [10]	13 [13]	18 [22]	5/16-24	9 [11]	14 [17]	20 [25]
3/8-16	15 [19]	23 [29]	35 [42]	3/8-24	17 [21]	25 [31]	35 [44]
7/16-14	24 [30]	35 [43]	55 [62]	7/16-20	27 [34]	40 [50]	60 [75]
1/2-13	35 [43]	55 [62]	80 [100]	1/2-20	40 [50]	65 [81]	90 [112]
9/16-12	55 [62]	80 [100]	110 [137]	9/16-18	60 [75]	90 [112]	130 [162]
5/8-11	75 [94]	110 [137]	170 [212]	5/8-18	85 [106]	130 [162]	180 [225]
3/4-10	130 [162]	200 [250]	280 [350]	3/4-16	150 [188]	220 [275]	320 [400]
7/8-9	125 [156]	320 [400]	460 [575]	7/8-14	140 [175]	360 [450]	500 [625]
1-8	190 [237]	480 [506]	680 [850]	1-14	210 [263]	540 [675]	760 [950]
1-1/8-7	270 [337]	600 [750]	960 [1200]	1-1/8-12	300 [375]	660 [825]	1080 [1350]
1-1/4-7	380 [475]	840 [1050	1426 [1782]	1-1/4-12	420 [525]	920 [1150]	1500 [1875]
1-3/8-6	490 [612]	1010 [1375]	1780 [2225]	1-3/8-12	560 [700]	1260 [1575]	2010 [2512]
1-1/2-6	650 [812]	1460 [1825]	2360 [2950]	1-1/2-12	730 [912]	1640 [2050]	2660 [3325]
1-3/4-5	736 [920]	1651 [2063]	2678 [3347]	1-3/4-12	920 [1150]	2063 [2579]	3347 [4183]

METRIC:

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

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

Table 2-1: General Torque Specifications

Hydraulic Fitting Torque Specifications

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

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

Parker Brand Fittings

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

Gates Brand Fittings

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

Aeroquip Brand Fittings

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

Table 2-2: Hydraulic Fitting Torque Specifications

Model Specifications

2411 Weatherproofer			
Model Number	**2411-6-24**	**2411-7-24**	**2411-9-24**
Working Width	12'-0”	14'-0”	18'-0”
Transport Width	15'-4”	14'-6”	14'-6”
Transport Height	N/A	12'-4”	13'-6”
Number of Blades F/R	16/18	18/20	24/24
Number of Shanks	6	7	9
Shank Spacing	24”	24”	24”
Spindle Size	3”	4”	4”
Wheel Bolt Pattern	8 Bolt	8 Bolt	8 Bolt
Estimated Weight	17,175 lbs.	23,990 lbs.	25,560 lbs.
NOTE: Specifications Are Subject To Change Without Prior Notification			

Tire Inflation			
Tire Size	**Tire Manufacturer**	**Ply/Load Rating**	**Inflation Pressure (Psi) (Max.)**
340/60R 18	BKT	8,050 lbs. @ 30 mph	58 psi
440/55R 18	Titan	9,650 lbs. @ 30 mph	73 psi
400/60R 18	BKT	9,650 lbs. @ 30 mph	80 psi

Specific Bolt Torques	
Lug Bolts & Nuts	**Torque (FT. LBS.)**
3/4-16	250-265 Ft./Lbs.
Disc Gang Shafts	1200-1500 Ft./Lbs.

Table provided for general use.

NOTES:

Shank Placement

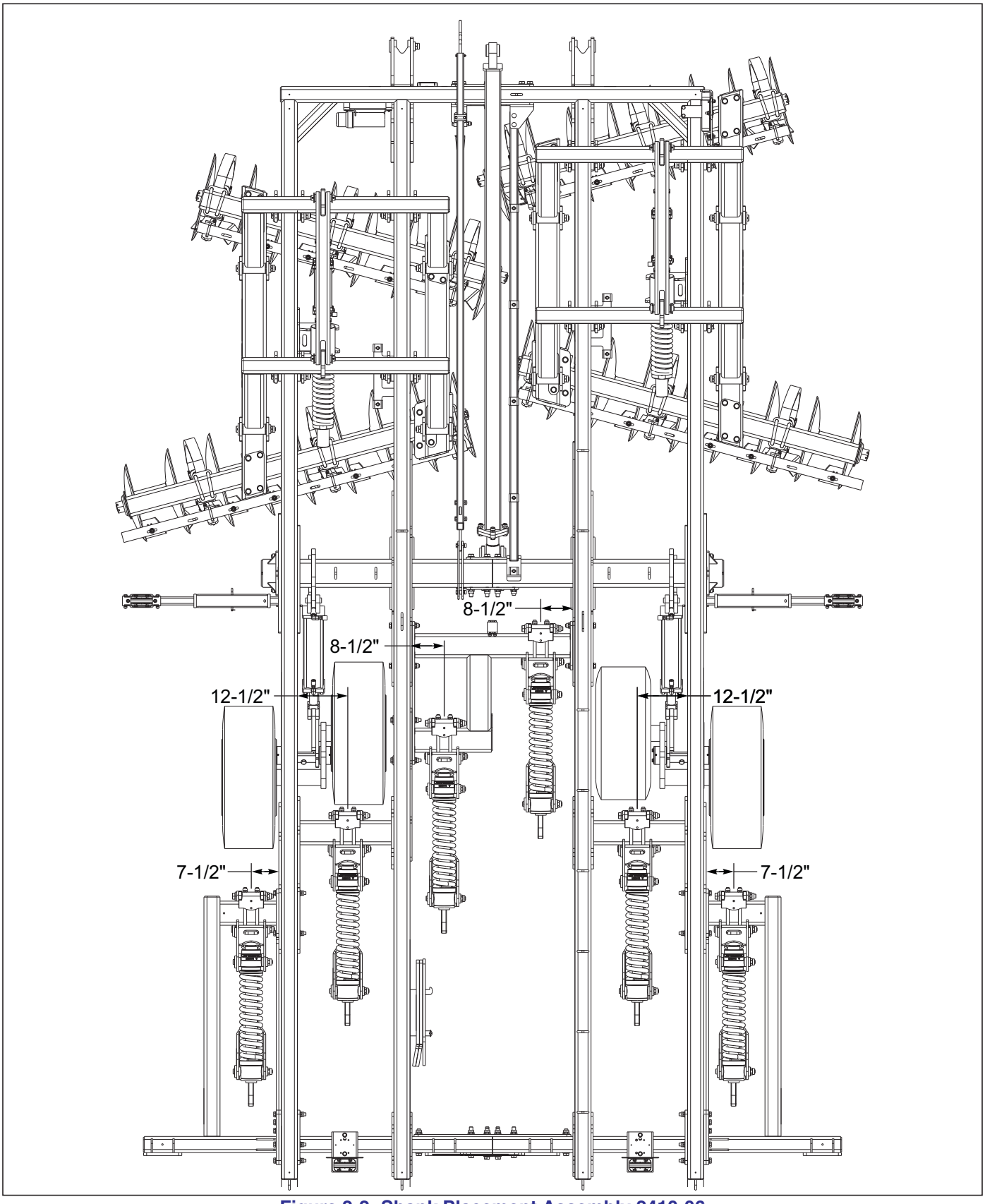


Figure 2-2: Shank Placement Assembly 2410-06

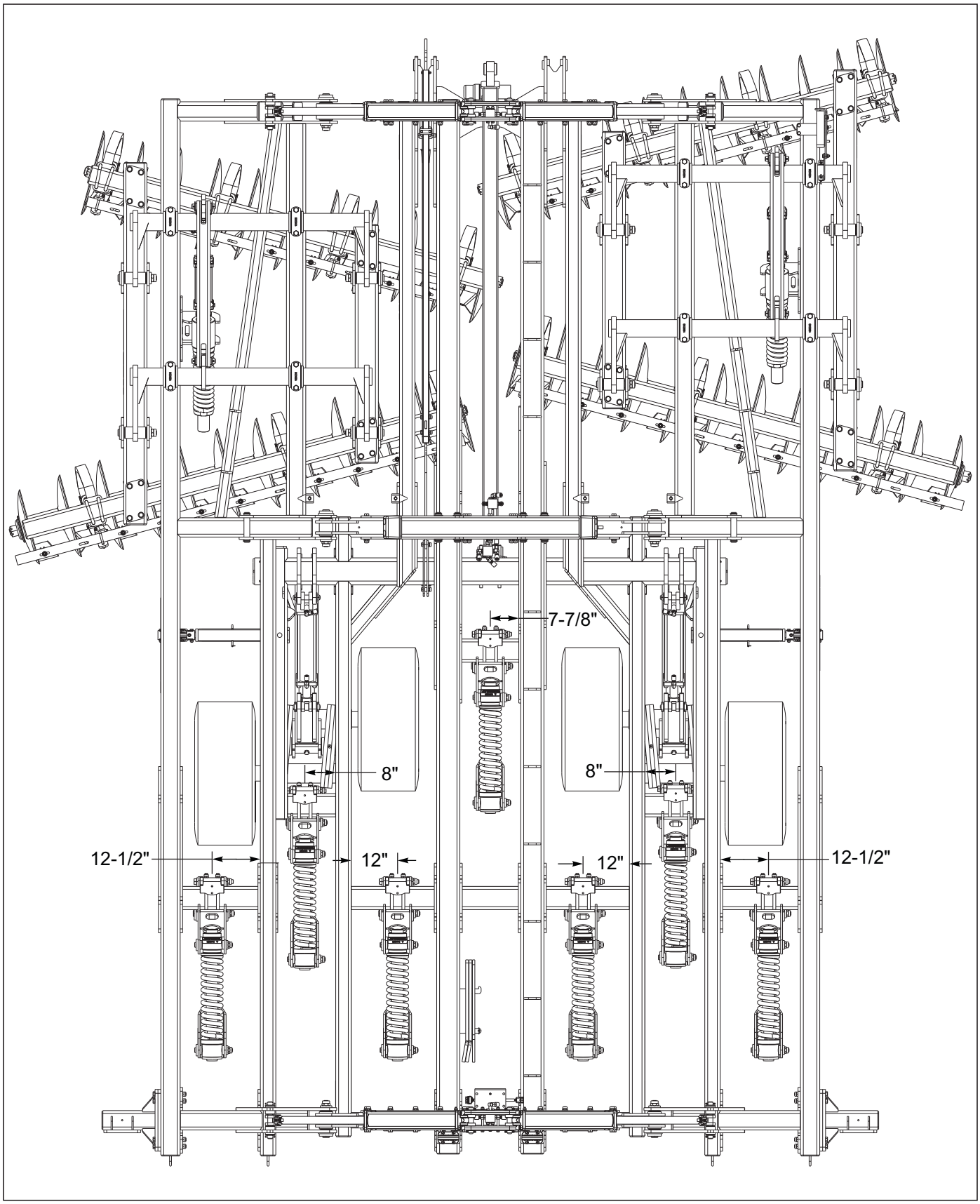


Figure 2-3: Shank Placement Assembly 2410-07

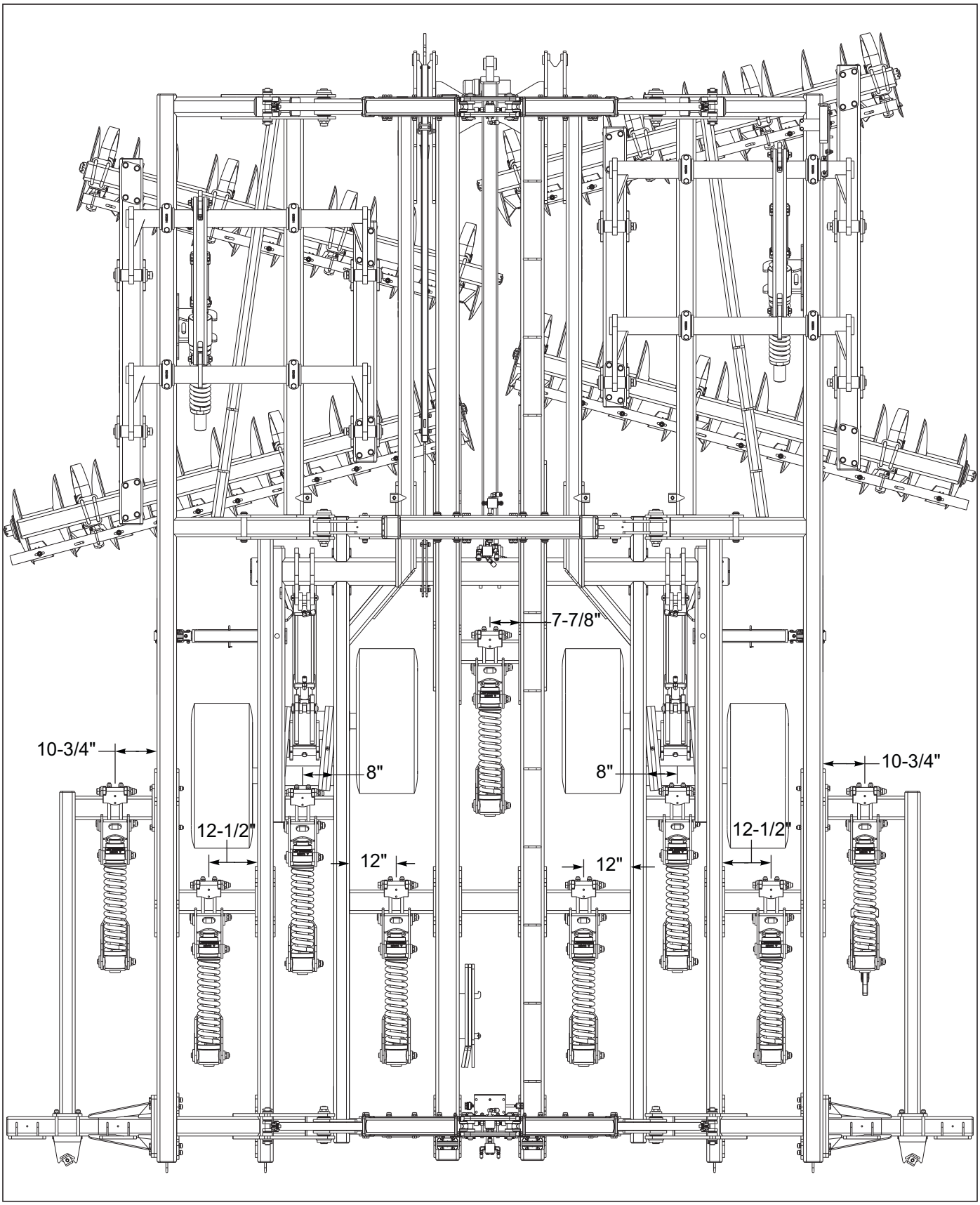


Figure 2-4: Shank Placement Assembly 2410-09

3BCT W/Hydraulic Chopper Placement

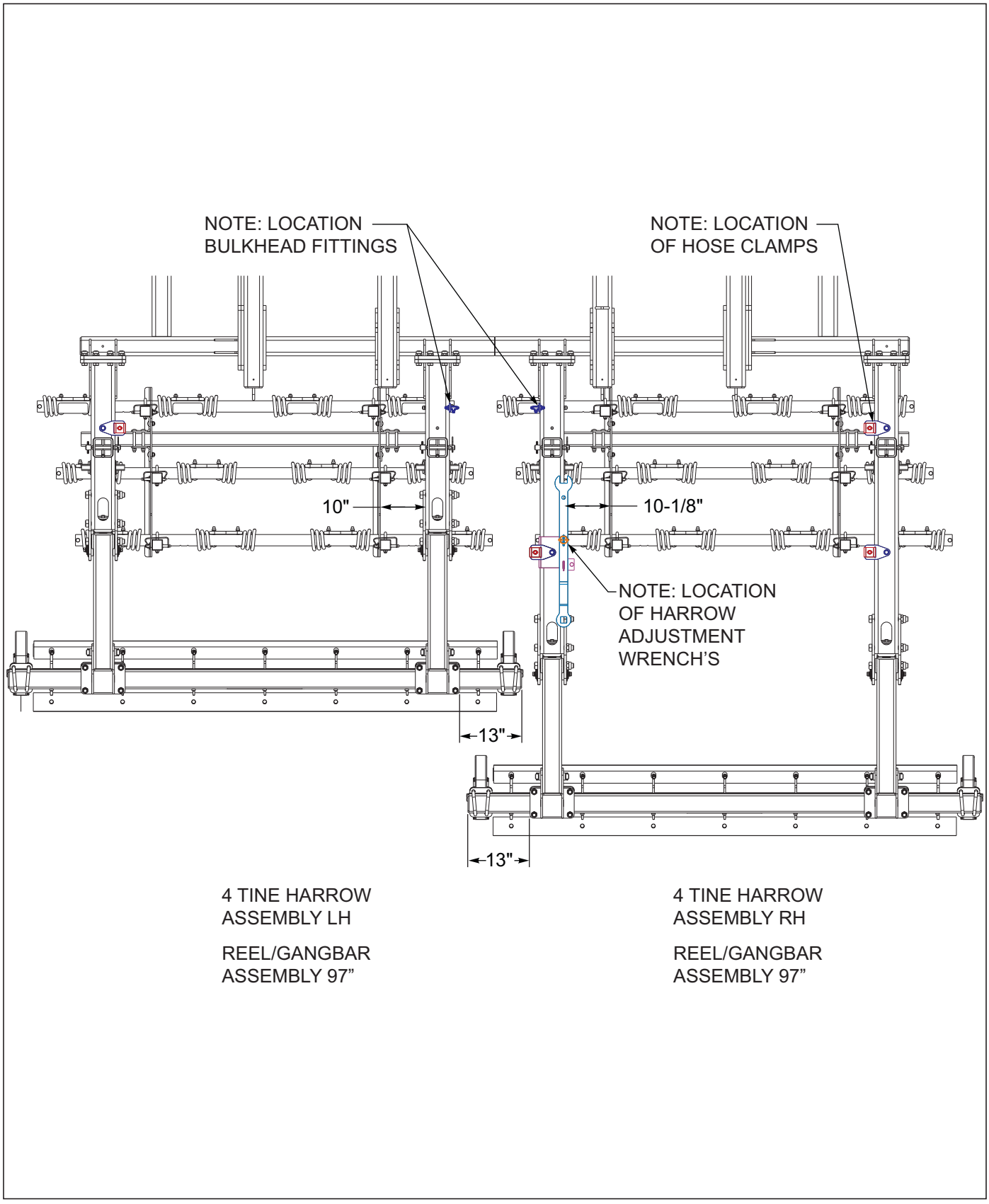
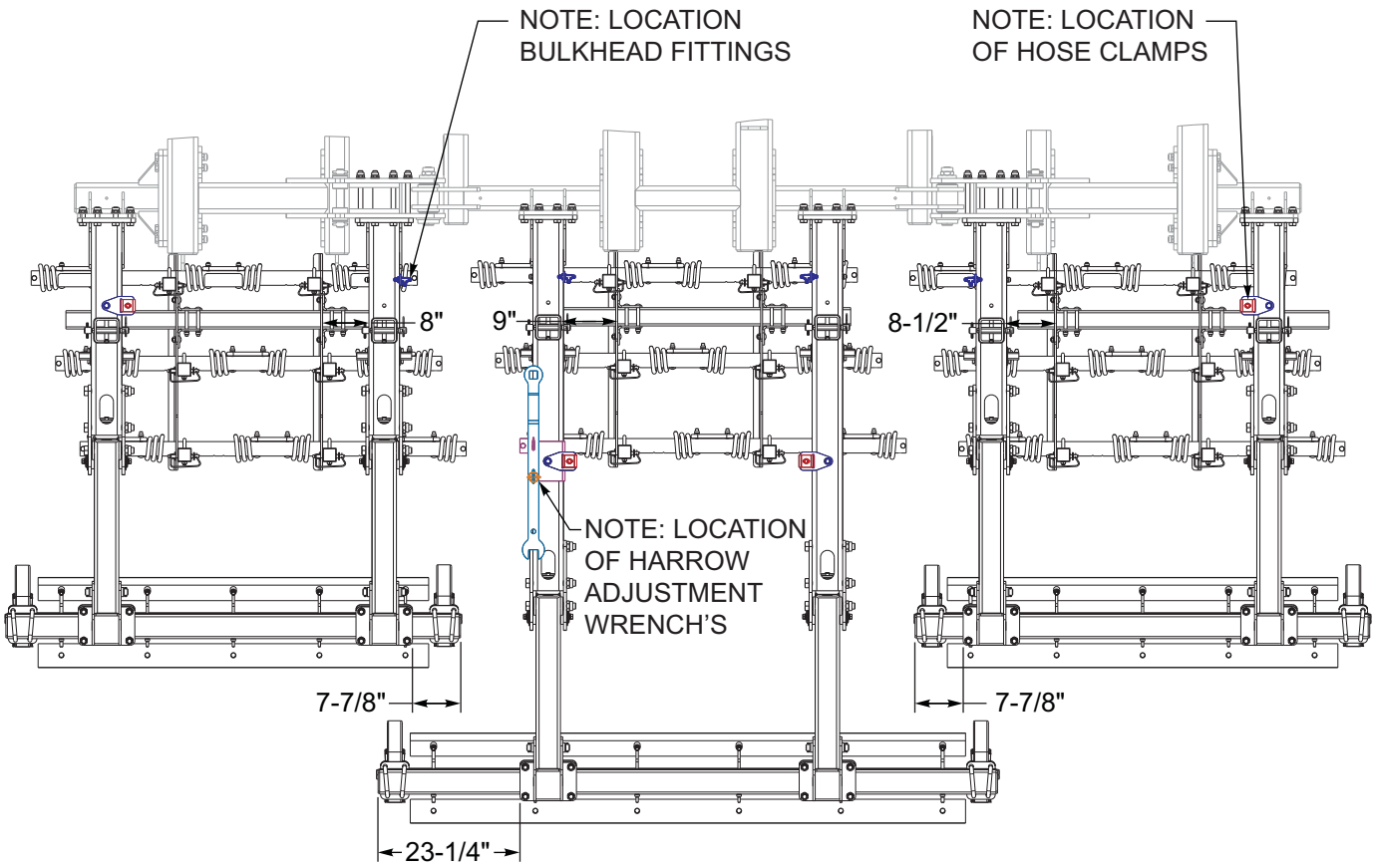
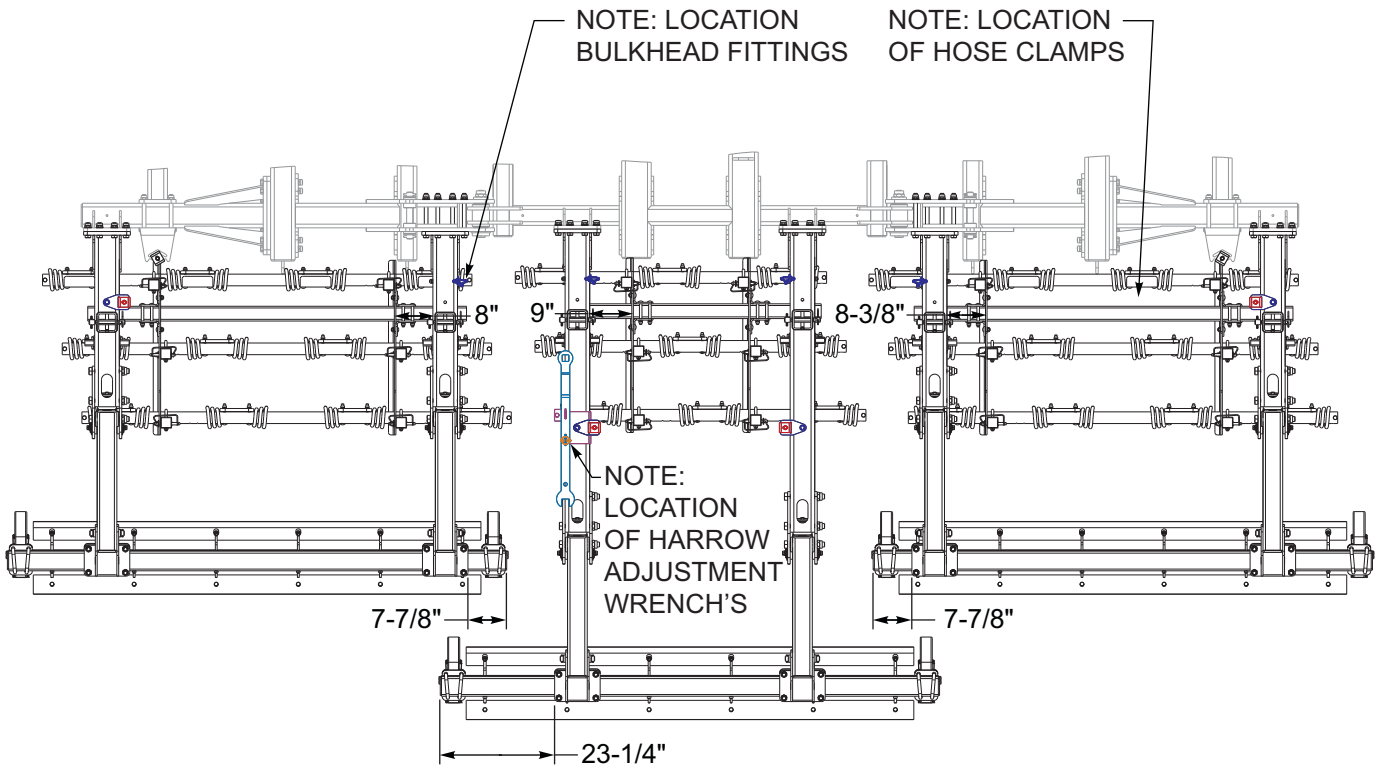


Figure 2-5: 3BCT W/Hydraulic Chopper Placement 2411-06



3 TINE HARROW ASSEMBLY LH	3 TINE HARROW ASSEMBLY	3 TINE HARROW ASSEMBLY RH
REEL/GANGBAR ASSEMBLY 64"	REEL/GANGBAR ASSEMBLY 91"	REEL/GANGBAR ASSEMBLY 64"

Figure 2-6: 3BCT W/Hydraulic Chopper Placement 2411-07



4 TINE HARROW ASSEMBLY LH	3 TINE HARROW ASSEMBLY	4 TINE HARROW ASSEMBLY RH
REEL/GANGBAR ASSEMBLY 91"	REEL/GANGBAR ASSEMBLY 91"	REEL/GANGBAR ASSEMBLY 91"

Figure 2-7: 3BCT W/Hydraulic Chopper Placement 2411-09

Disc Lev/Hyd Flat RL Placement

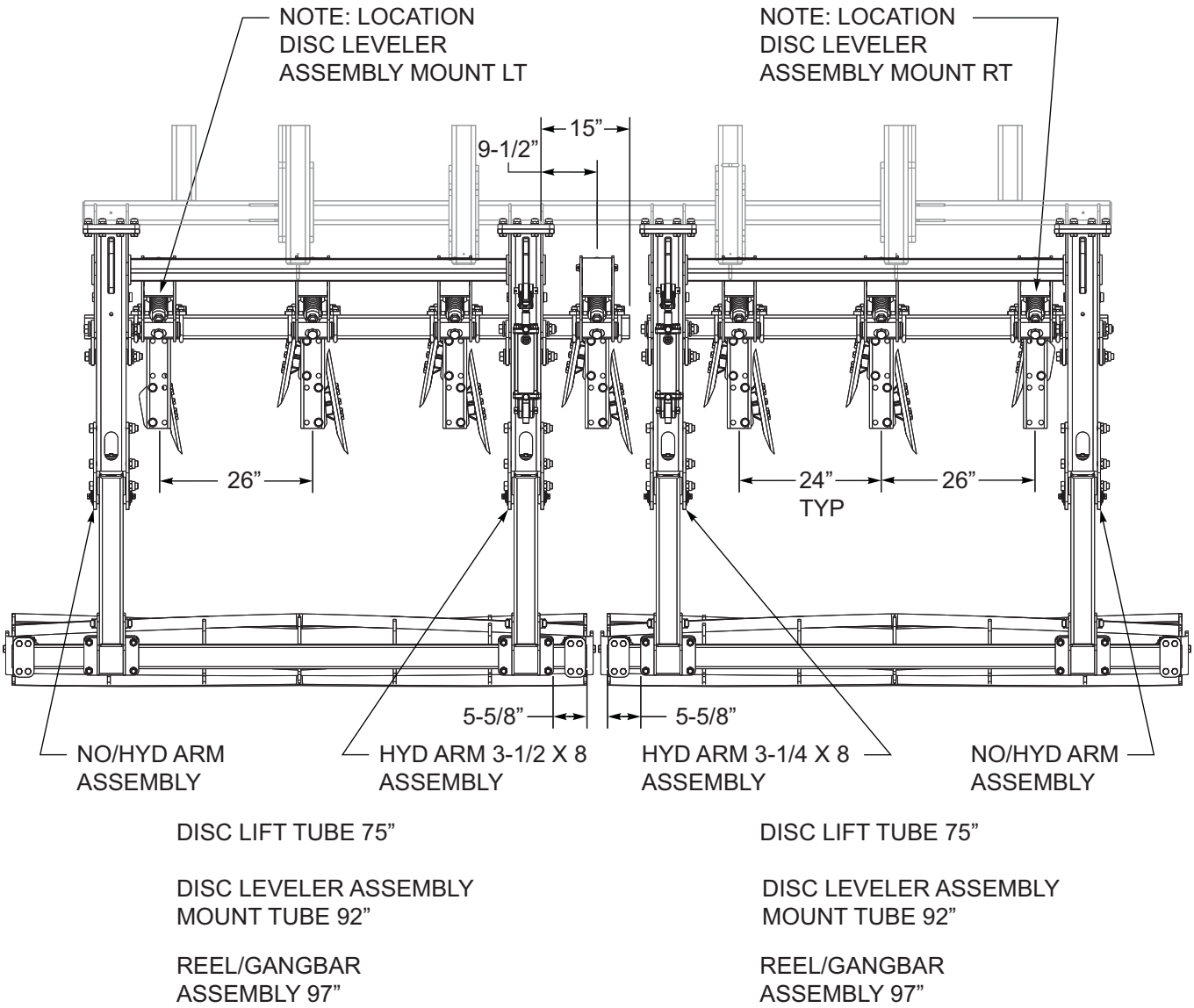


Figure 2-8: Disc Lev/Hyd RL Layout Placement 2411-06

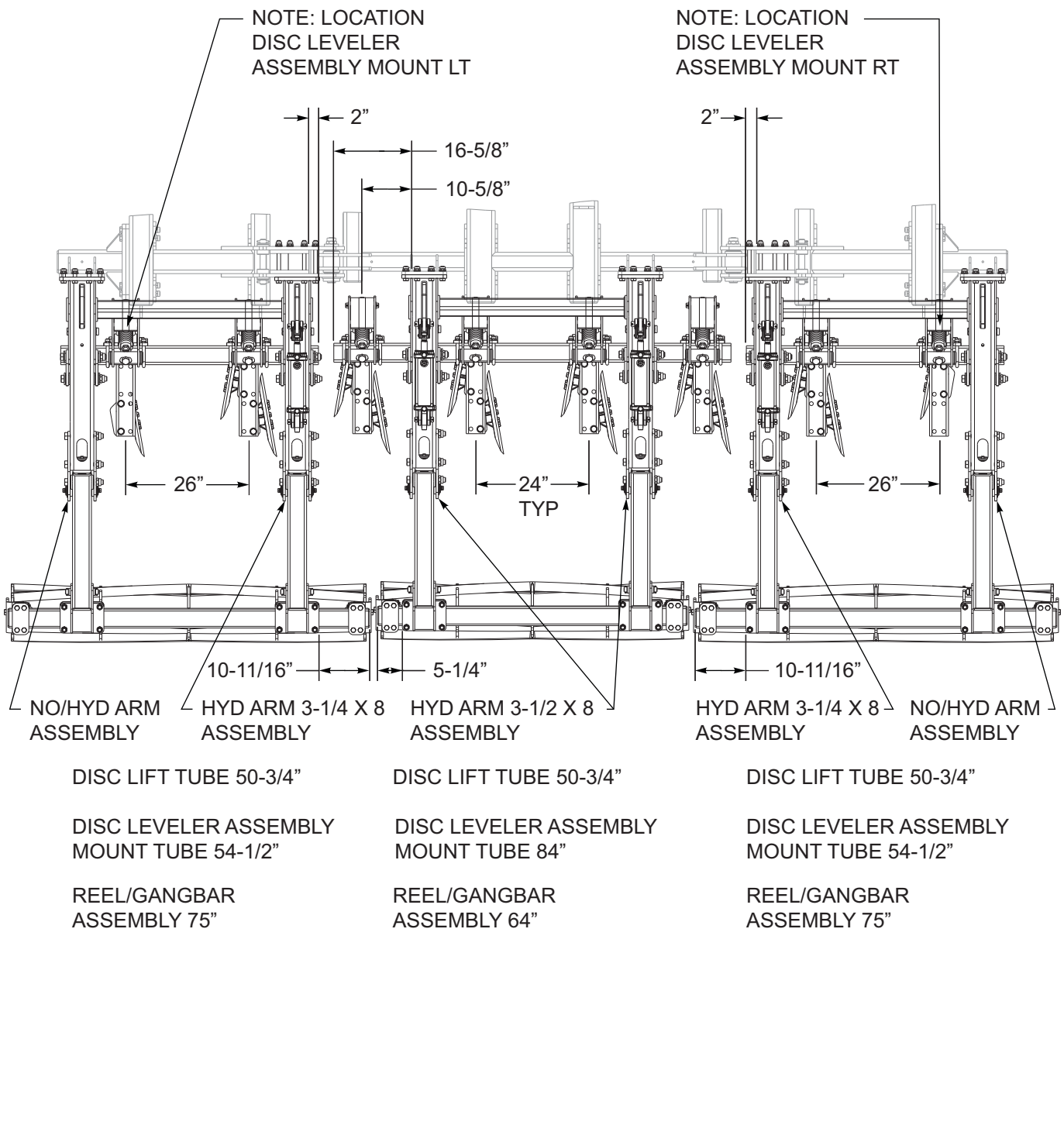
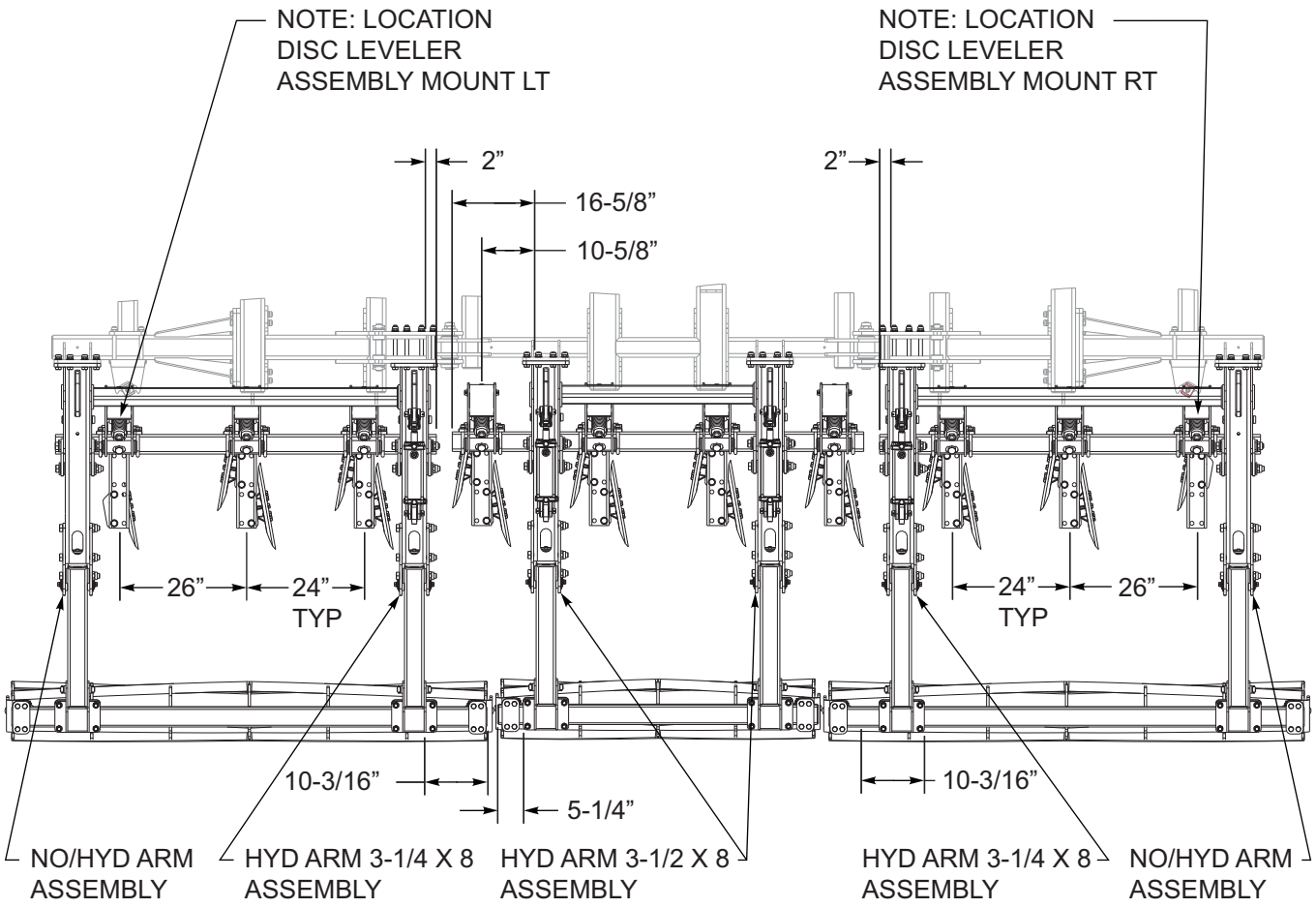


Figure 2-9: Disc Lev/Hyd RL Layout Placement 2411-07



DISC LIFT TUBE 72-3/4”	DISC LIFT TUBE 50-3/4”	DISC LIFT TUBE 72-3/4”
DISC LEVELER ASSEMBLY MOUNT TUBE 77-3/4”	DISC LEVELER ASSEMBLY MOUNT TUBE 84”	DISC LEVELER ASSEMBLY MOUNT TUBE 77-3/4”
REEL/GANGBAR ASSEMBLY 97”	REEL/GANGBAR ASSEMBLY 64”	REEL/GANGBAR ASSEMBLY 97”

Figure 2-10: Disc Lev/Hyd RL Layout Placement 2411-09

Chapter 3

Assembly Instructions

It is very important that your new 2411 Weatherproofer be properly assembled, adjusted and lubricated before use. Illustrations to assist with the assembly process are provided in *"Standard Specifications" on page 2-1*. They show proper shank and light mounting bracket spacing. Illustrations in this section show proper assembly procedures. Remove paint from grease fittings. Replace any grease fittings that are damaged or missing. Be sure to return screws, clips, etc., to their original locations.

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

After completion of final assembly, tighten all nuts evenly to prevent misalignment, distortion or binding. Tighten all screws and nuts to the recommended torques shown in *See Table on page 2-2*.

DANGER

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

WARNING

Do not attempt to lift heavy parts (such as the frame, disc gangs, wheel lift, 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.
3. 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 improper machine operation.

Center Frame and Lift Assembly 2411-06

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, disc gangs, wheel lift, and pull hitch) manually. Use a hoist or a forklift to move these parts into position.

1. Place center frame weldment RT/LT assemblies on stands approximately 36” high. The assembly area should be a large level area of sufficient size to accommodate the Weatherproofer when fully assembled ***See Figure 3-1.*** RT and LT is determined from standing at the back looking forward.

NOTE

The spring/clamp shank assemblies are installed at the factory on center frames, center shank mount and shank extension RT/LT. mount assembly.

2. Attach the center frame mount assembly between center frame weldment RT/LT assemblies, secure with 3/4 x 7, 3/4 x 2-1/2 bolts, 3/4 flat washers and 3/4 lock nuts. The LT rear upper 2 bolts have a 1/4” thick flat washer on bolt head side.
3. Attachfront bolt plates, DCV/Hose mount plate with 7/8 x 7 GR8 bolts, 7/8 flat washers and 7/8 lock nuts.
4. Attach center bolt plates, hose tube support plate using 7/8 x 10 GR8 bolts, 7/8 flat washers and 7/8 lock nuts.
5. Attach center bolt plate, rear bolt plate using 7/8 x 7 GR8 bolts, 7/8 x 6 GR8 bolts, 7/8 flat washers and 7/8 lock nuts.
6. Attach the shank ext mount assemblies on outside of center frame weldment RT/LT assemblies, secure with 3/4 x 7-1/2, 3/4 x 2-1/2 bolts, 3/4 flat washers and 3/4 lock nuts.
7. Attach the RT/LT light bracket assemblies with yellow reflectors to front of machine on outside of center frame weldment RT/LT assemblies, secure with 1/2 x 3-1/2 bolts, 1/2 flat washers and 1/2 lock nuts.
8. Install the transport locks to the light brackets with the l-pin and hairpin clip.
9. Slide the rear of the hose support tube into the hose tube support plate, secure the front of tube to the top of the DCV/hose mount plate using 1/2 x 3 square bolts and 1/2 lock nuts. Attach the hose clamps to the top of tube using 3/8 x 5 bolts, 3/8 flat washers and 3/8 lock nuts.
10. Remove any shank assemblies that have been turned around or mounted inside the frame for shipping, and reposition, ***See Figures 2-2*** **through** ***See Figures 2-4*** for shank placement.

NOTE

All lifts and hubs/spindle come already assembled from the factory.

11. Install a UHMW bearing between all 4 inner bearing locators around the center lift assembly ***See Figure 3-2***.
12. Insert a UHMW bearing into each bearing cap and install the cap and bearing over the end of center lift assembly.
13. Raise the center lift assembly into the center frame and attach each end bearing cap to the center frame with 3/4 x 2-1/2 bolts and 3/4 lock nuts
14. Install 2 inner lift bearing mounts with 3/4 x 2 bolts and 3/4 lock nuts.

NOTE

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

NOTE

Be sure the 4, 1-5/8 x 1-1/4 x 1 bushings are installed in the lift plate mounts and center lift assembly mount plates See Figures 3-2.

15. The base end of 4-1/2 x 16 cylinders attach to plate on center frames, rod end attach to the plate on center lift assembly.
16. Attach the depth control plates to back of center lift with 1/2 x 2 bolts and 1/2 lock nuts. Install a 1 x .640 x 5/8 bushing in the depth stop assembly plate align hole of plate with front top hole of depth control plates, install a 1 x .640 x 5/8 bushing between top rear of plates secure with 5/8 x 2 bolts and 5/8 lock nuts.
17. Attach the front of the depth stop assembly to front of center frame assembly bracket with slide plate between bracket and depth stop assembly, depth stop guide on top, limit valve on bottom of bracket with plunger to rear of machine, secure with 5/16 x 5-1/2 bolts and 5/16 lock nuts.
18. Install the tire/wheel assemblies to all hub/spindle assemblies.

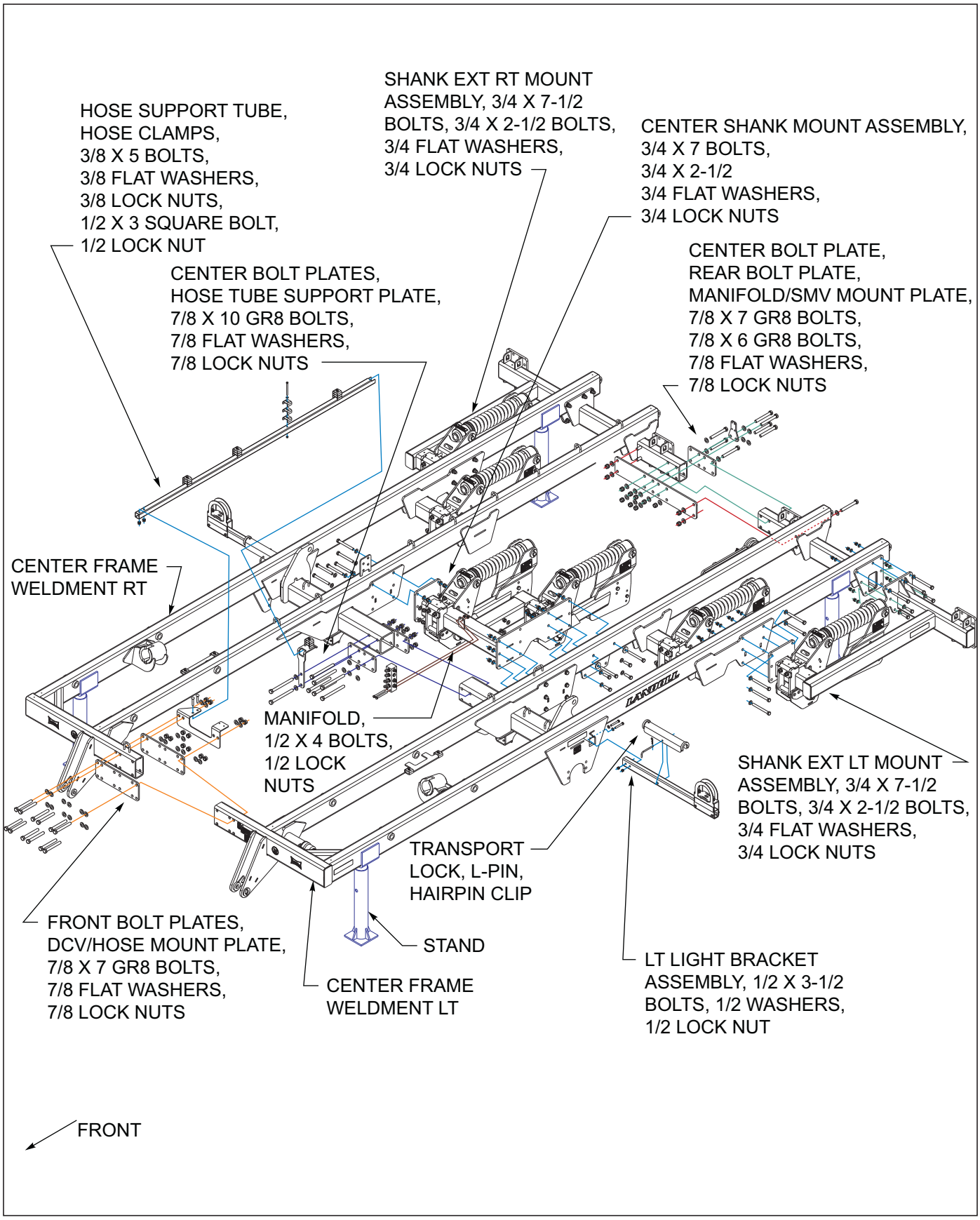


Figure 3-1: Center Frame Assembly 2411-06

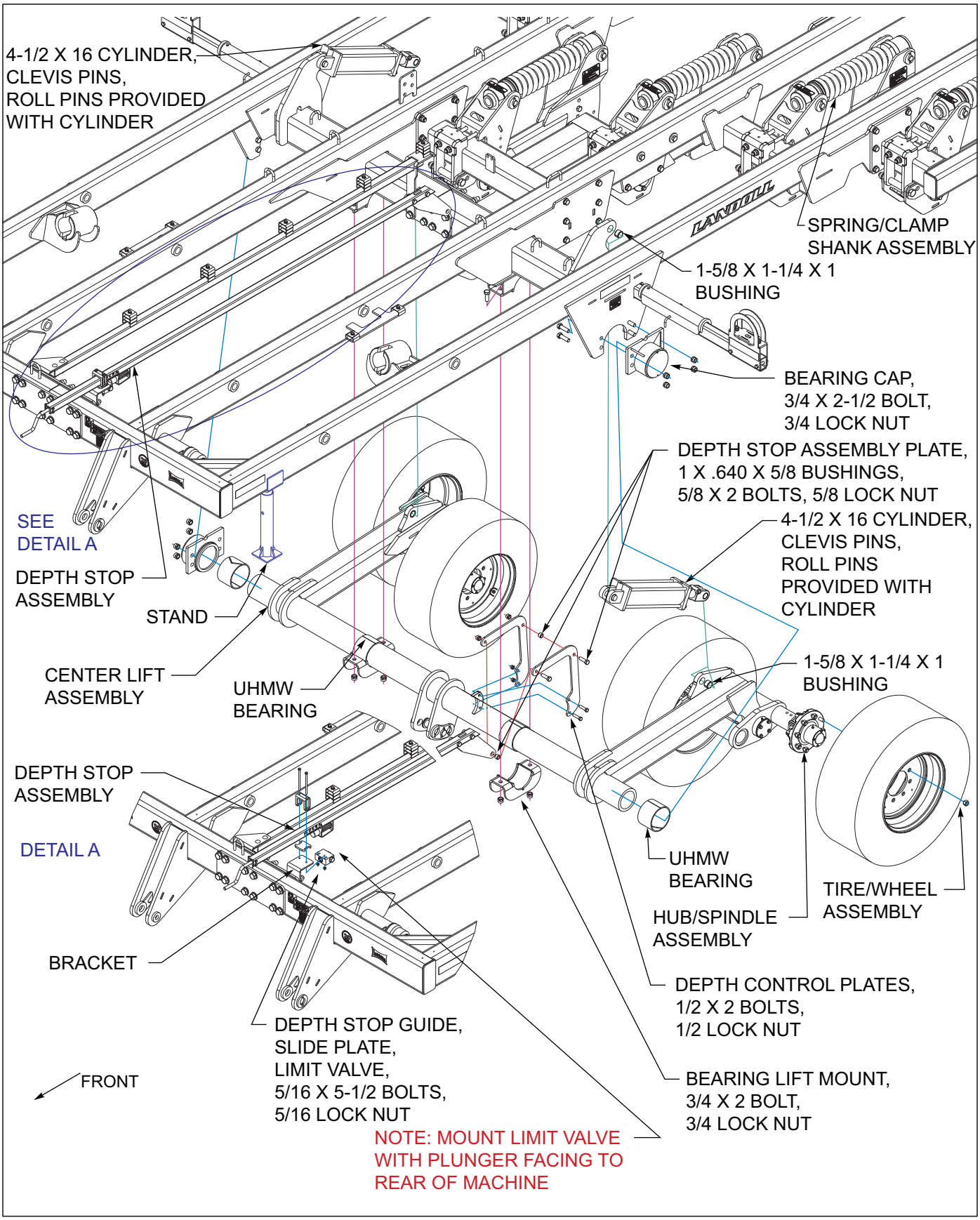


Figure 3-2: Center Frame Lift Assembly 2411-06

Table provided for general use.

NOTES:

Center Frame and Lift Assembly 2411AFG-07-09

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, disc gangs, wheel lift, and pull hitch) manually. Use a hoist or a forklift to move these parts into position.

1. Place frame assembly on stands approximately 36" high. The assembly area should be a large level area of sufficient size to accommodate the Weatherproofer when fully assembled ***See Figure 3-3***. RT and LT is determined from standing at the back looking forward.

NOTE

The front and rear tower plate assemblies, wing stop mount assembly, and spring/clamp shank assemblies are installed at the factory.

2. Remove any shank assemblies that have been turned around or mounted inside the frame for shipping, and reposition, ***See Figures 2-2*** **through** ***See Figures 2-4*** for shank placement.

NOTE

All lifts and hubs/spindle come already assembled from the factory.

3. Install a UHMW bearing between all 4 inner bearing locators around the center lift assembly.
4. Insert a UHMW bearing into each bearing cap and install the cap and bearing over the end of center lift assembly.
5. Raise the center lift assembly into the center frame and attach each end bearing cap to the center frame with 3/4 x 2-1/2 bolts and 3/4 lock nuts
6. Install all 4 inner lift bearing mounts with 3/4 x 2 bolts and 3/4 lock nuts.

NOTE

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

NOTE

Be sure the 4, 1-5/8 x 1-1/4 x 1 bushings are installed in the lift plate mounts and center lift assembly mount plates See Figures 3-3.

7. Install a 1-1/4 x 1 spacer in rod and base end cylinder clevis. Attach both ends of the cylinder with 1-1/4 x 7 pins, 1-1/4 washers and 5/16 x 2-1/2 spring pins as shown ***See Figures 3-3***.
8. Attach the depth control plates to back of depth with 1/2 x 2 bolts and 1/2 lock nuts. Install a 1 x .640 x 5/8 bushing in the depth stop assembly plate align hole of plate with front top hole of depth control plates, install a 1 x .640 x 5/8 bushing between top rear of plates secure with 5/8 x 2 bolts and 5/8 lock nuts.
9. Attach the front of the depth stop assembly to front of center frame assembly bracket with slide plate between bracket and depth stop tube assembly, depth stop guide on top, limit valve on bottom of bracket with plunger to rear of machine, secure with 5/16 x 5-1/2 bolts and 5/16 lock nuts.
10. Install the tire/wheel assemblies to all hub/spindle assemblies using 3/4 flange wheel nuts.
11. Attach the RT/LT light bracket assemblies with yellow reflectors to front of machine with 1/2 x 4-1/2 bolts, 1/2 washers and 1/2 lock nuts. Install the transport locks in the storage locations on top of light bracket assemblies with L-pins and hairpin clips.

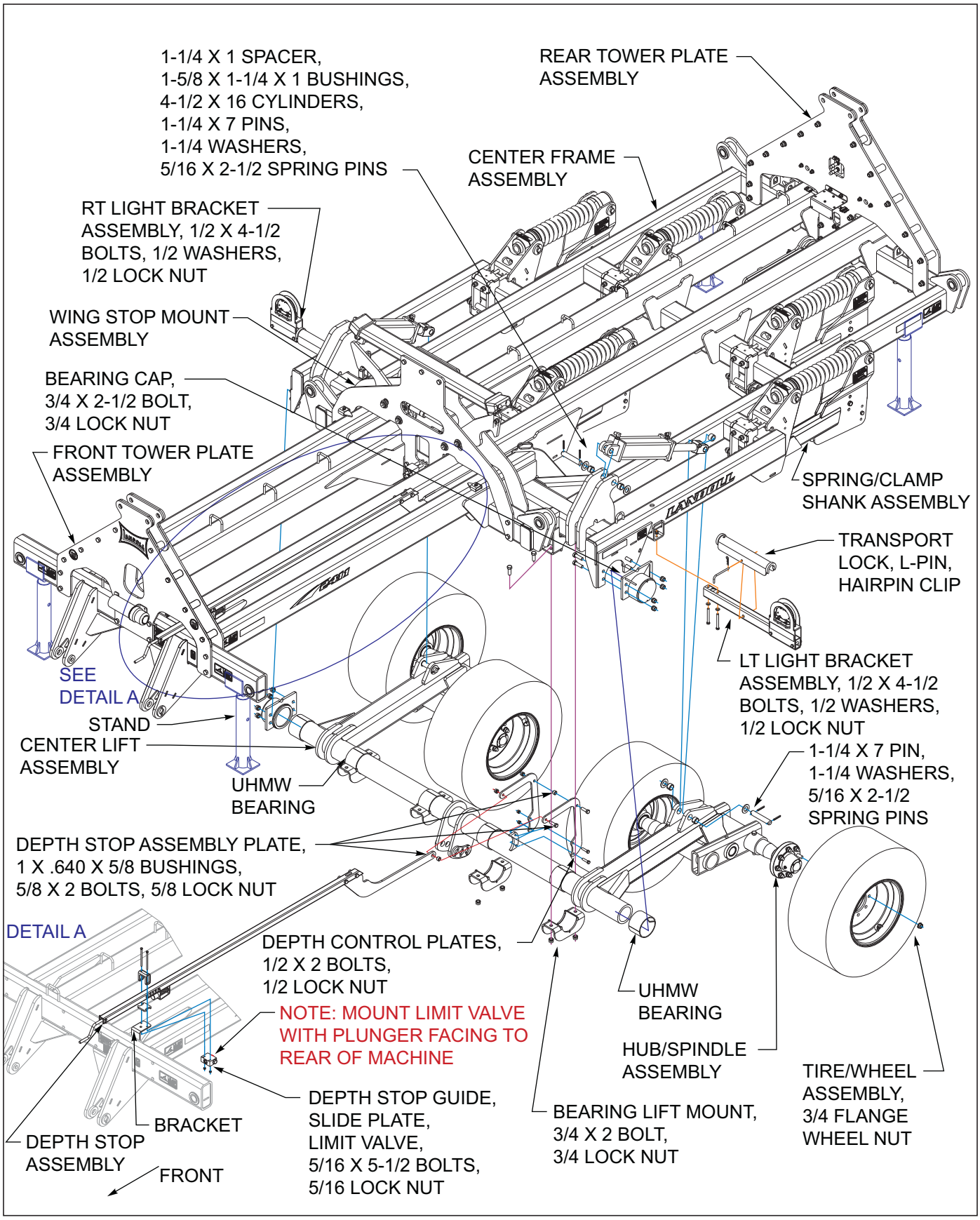


Figure 3-3: Center Frame and Lift Assembly 2411AFG-07-09

Center Frame and Lift Assembly 2411AFG-07-09 After 08/01/2022

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, disc gangs, wheel lift, and pull hitch) manually. Use a hoist or a forklift to move these parts into position.

1. Place center frame weldment RT/LT assemblies on stands approximately 36” high. The assembly area should be a large level area of sufficient size to accommodate the Weatherproofer when fully assembled ***See Figure 3-4***. RT and LT is determined from standing at the back looking forward.

NOTE

The spring/clamp shank assemblies are installed at the factory on center frames, center shank mount assembly and shank tube mount assembly.

2. Attach the center shank mount assembly between center frame weldment RT/LT assemblies, secure with 3/4 x 9 bolts, 3/4 flat washers and 3/4 lock nuts.

NOTE

Remove the 3/4 lock nuts from the factory installed 3/4 x 9 bolts and shank mount plates.

3. Attach the shank tube mount assembly between center frame weldment RT/LT assemblies, secure with 3/4 x 9 bolts that are installed from factory and re-install the 3/4 lock nuts.
4. Install a shank tube plate between top of shank tube mount assembly and under both inner tube of center frame assemblies secure with frame support plate on top. Install 7/8 x 11 GR8 bolts down through both plates and 7/8 flat washers top and bottom and 7/8 lock nuts.
5. Attach the brace plate to front of center frame assemblies with 7/8 x 3 GR8 bolts, 7/8 flat washers and 7/8 lock nuts.
6. Install the frame connector plates to center tubes of center frame assemblies using 7/8 x 10 GR8 bolts, 7/8 flat washers and 7/8 lock nuts.
7. Attach the RT/LT light bracket assemblies with yellow reflectors to front of machine on outside of center frame weldment RT/LT assemblies, secure with 1/2 x 4-1/2 bolts, 1/2 flat washers and 1/2 lock nuts.
8. Install the transport locks to the light brackets with the l-pin and hairpin clip.
9. Install hose clamp to center frame weldment LT assembly with 3/8 x 1-1/2 bolt, 3/8 flat washer and 3/8 lock nut.
10. Remove any shank assemblies that have been turned around or mounted inside the frame for shipping, and reposition, ***See Figures 2-2*** **through** ***See Figures 2-4*** for shank placement.

NOTE

The front middle and rear tower assemblies may be shipped out pre-assembled at factory. The pre-assembled tower assemblies will just need bolted through bottom holes to the center frame as shown, See Figure 3-5.

NOTE

All lifts and hubs/spindle come already assembled from the factory.

11. Install a UHMW bearing between all 4 inner bearing locators around the center lift assembly ***See Figure 3-6***.
12. Insert a UHMW bearing into each bearing cap and install the cap and bearing over the end of center lift assembly.
13. Raise the center lift assembly into the center frame and attach each end bearing cap to the center frame with 3/4 x 2-1/2 bolts and 3/4 lock nuts
14. Install 2 inner lift bearing mounts with 3/4 x 2 bolts and 3/4 lock nuts.

NOTE

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

NOTE

Be sure the 4, 1-5/8 x 1-1/4 x 1 bushings are installed in the lift plate mounts and center lift assembly mount plates See Figures 3-6.

15. Assemble a 1” long spacer between both base and rod clevis. The base end of 4-1/2 x 16 cylinders attach to plate on center frames, rod end attach to the plate on center lift assembly.
16. Attach the depth control plates to back of center lift with 1/2 x 2 bolts and 1/2 lock nuts. Install a 1 x .640 x 5/8 bushing in the depth stop assembly plate align hole of plate with front top hole of depth control plates, install a 1 x .640 x 5/8 bushing between top rear of plates secure with 5/8 x 2 bolts and 5/8 lock nuts.

17. Attach the front of the depth stop assembly to front of center frame assembly bracket with slide plate between bracket and depth stop assembly, depth stop guide on top, limit valve on bottom of bracket with plunger to rear of machine, secure with 5/16 x 5-1/2 bolts and 5/16 lock nuts.
18. Install the tire/wheel assemblies to all hub/spindle assemblies using 3/4 flange wheel nuts.

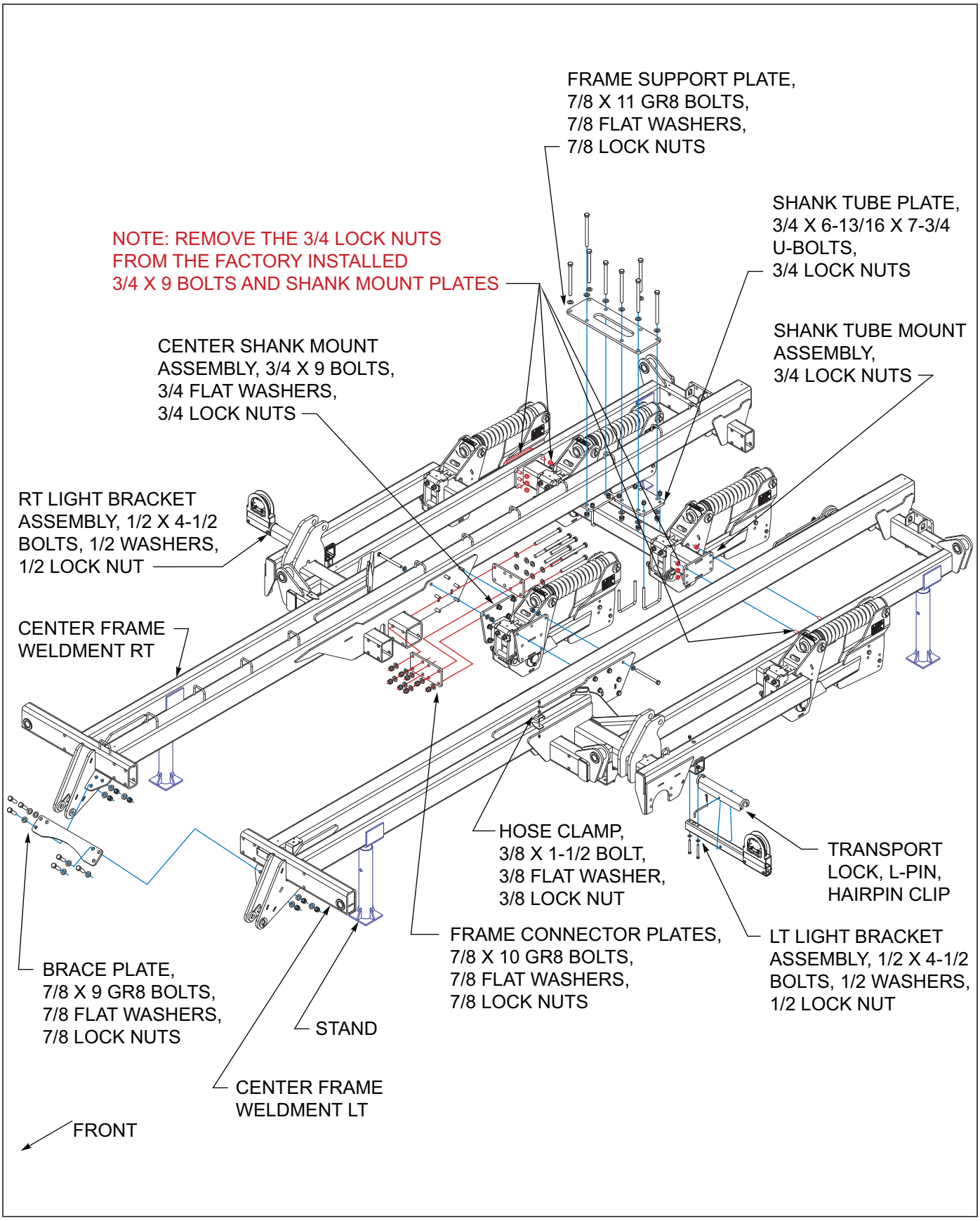


Figure 3-4: Center Frame Assembly 2411AFG-07-09 After 08/01/2022

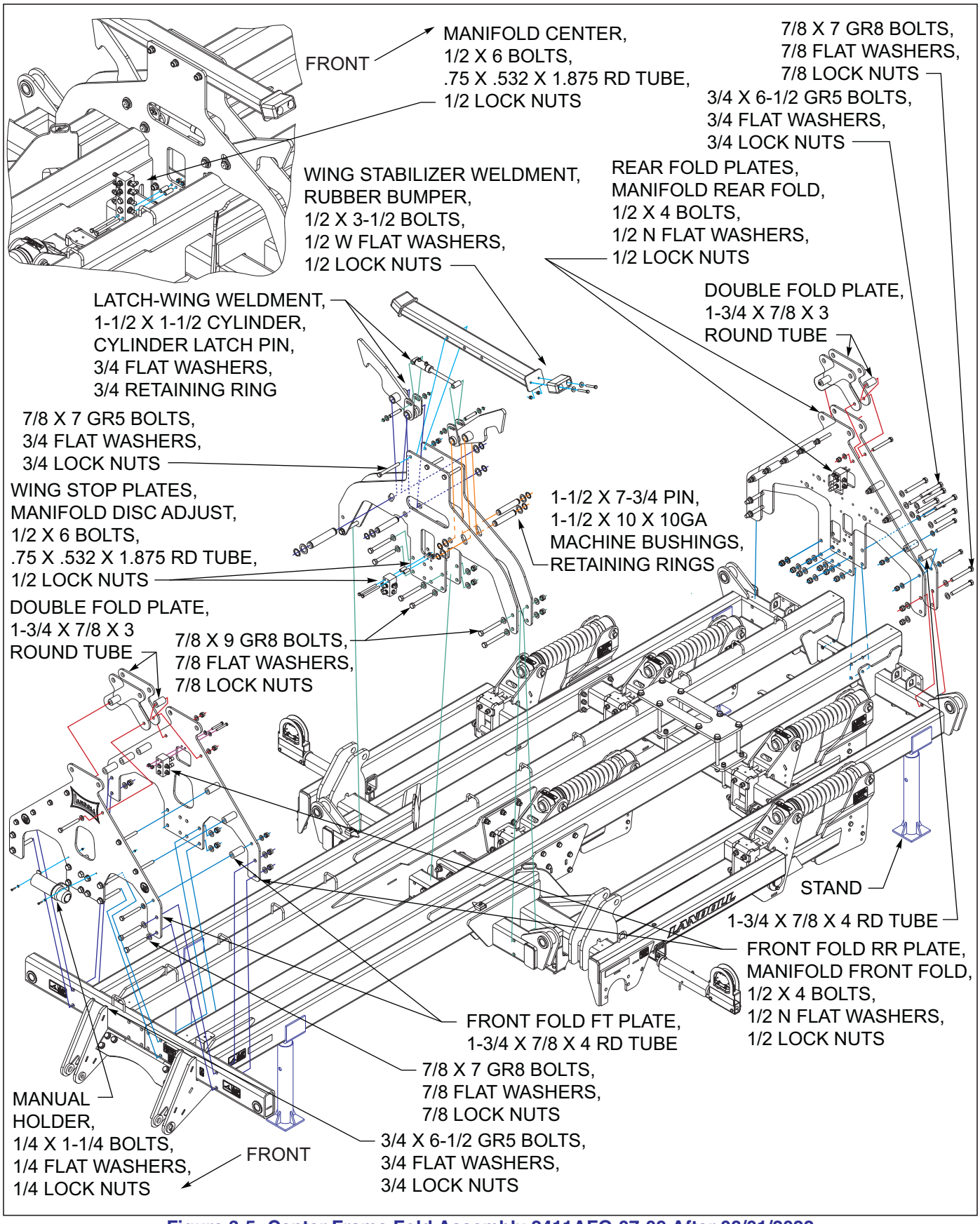


Figure 3-5: Center Frame Fold Assembly 2411AFG-07-09 After 08/01/2022

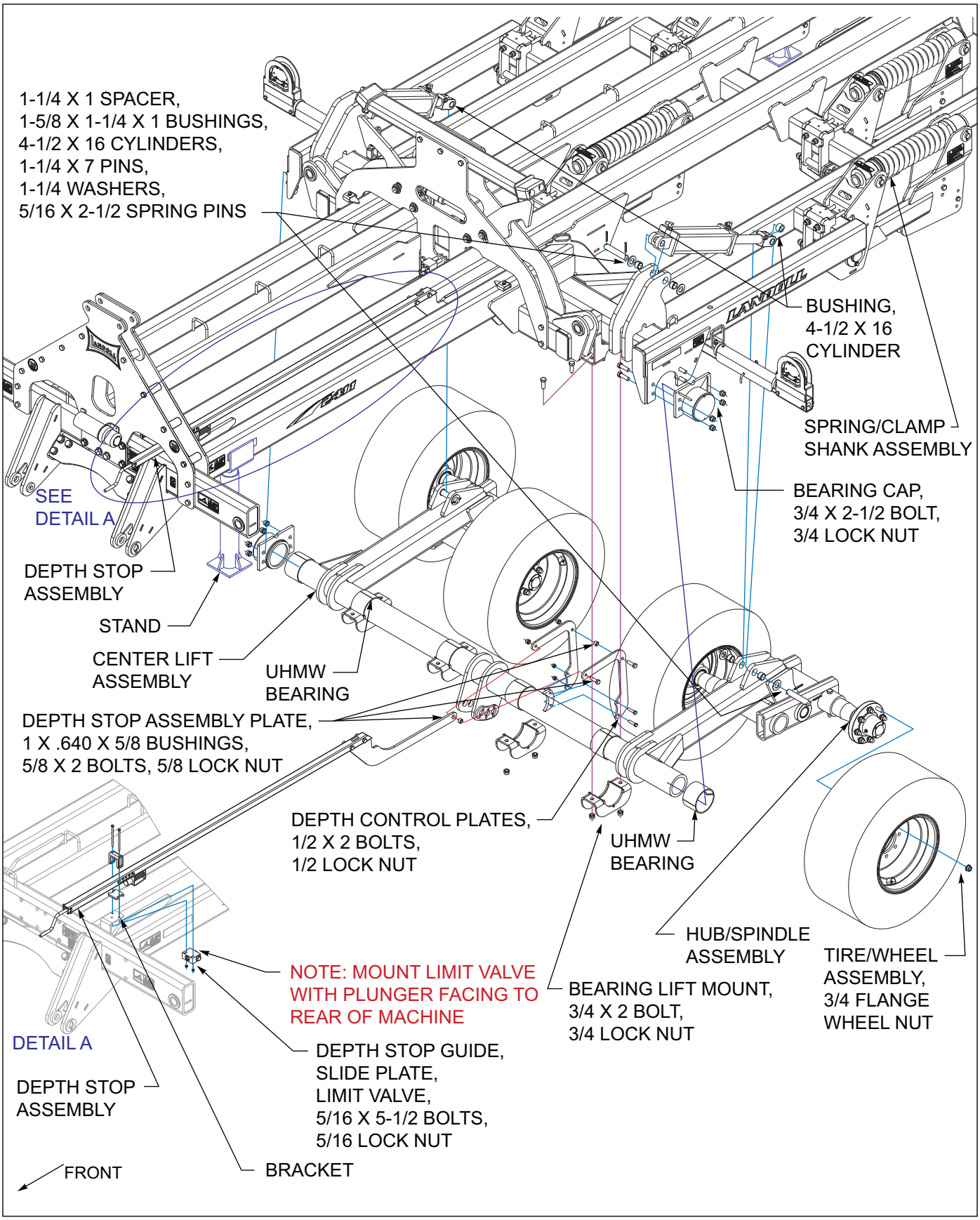


Figure 3-6: Center Frame Lift Assembly 2411AFG-07-09 After 08/01/2022

Table provided for general use.

NOTES:

Wing Frame Assembly 2411AFG-07-09

NOTE

Be sure a 1-3/4 bearing flange are installed in both sides of all center frame hinge points and the 1-5/8 x 1-1/4 x 1 bushings in both sides of the front & rear wing frame hinge plates See Figures 3-7.

1. Attach LH/RH wing frame assemblies to center frame using hinge pin, 5/8 pin, 1-3/4 thrust washers and 1-1/4 lock nut.
2. Support the outer ends of the LH & RH wing frames with stands approximately 36” tall.
3. Model 2411-07, attach the LH & RH reel lift extensions, 3/4 x 8 GR8 bolts, 3/4 x 2-1/2 bolts and 3/4 lock nuts.
4. Model 2411-09, attach the LH & RH reel lift extensions to outside rear plate of LH & RH wing extensions, with 3/4 x 8 GR8 bolts, 3/4 x 2-1/2 bolts and 3/4 lock nuts. Install the shank mount extension to the LH & RH wing frame assembly, bolt on extension with 3/4 x 8 GR8 bolts and 3/4 lock nuts. Attach the hose clamp to the top of bolt on extension using 3/8 x 1-1/2 bolt, 3/8 flat washer and 3-8 lock, used for optional hydraulic attachment.
5. Attach the spring/clamp shank assemblies to wing frames and extensions with 3/4 x 10 GR8 bolts, 3/4 lock nuts, 1 x 9-1/2 GR8 bolt and 1 lock nut.
6. Attach base end of 4 x 24 cylinders to front/rear wing fold assemblies with 1-1/4 x 9-1/2 long pins, 1-1/4 washers and 5/16 x 2-1/2 spring pins.
7. Attach rod end of each 4 x 24 hydraulic cylinders to the wing frames using 1-1/4 x 9-1/2” fold pin, 5/16 x 2-1/2 spring pins, 1-1/4 washers.
8. Attach the hose clamp to the middle wing hinge using 3/8 x 1-1/2 bolt, 3/8 flat washer and 3-8 lock, both sides.
9. Attach the 1-1/2 x 7-3/4 pin and 1.5 retaining rings to top holes of middle wing hinge plates, both sides.
10. After the wings are installed, they will need to be leveled to the center frame. The ends of the fold cylinders have wrench flats for any small adjustments needed. Picking up on the outer frame tube to relieve any pressure will make adjusting them easier. Adjust both front and rear cylinders evenly.

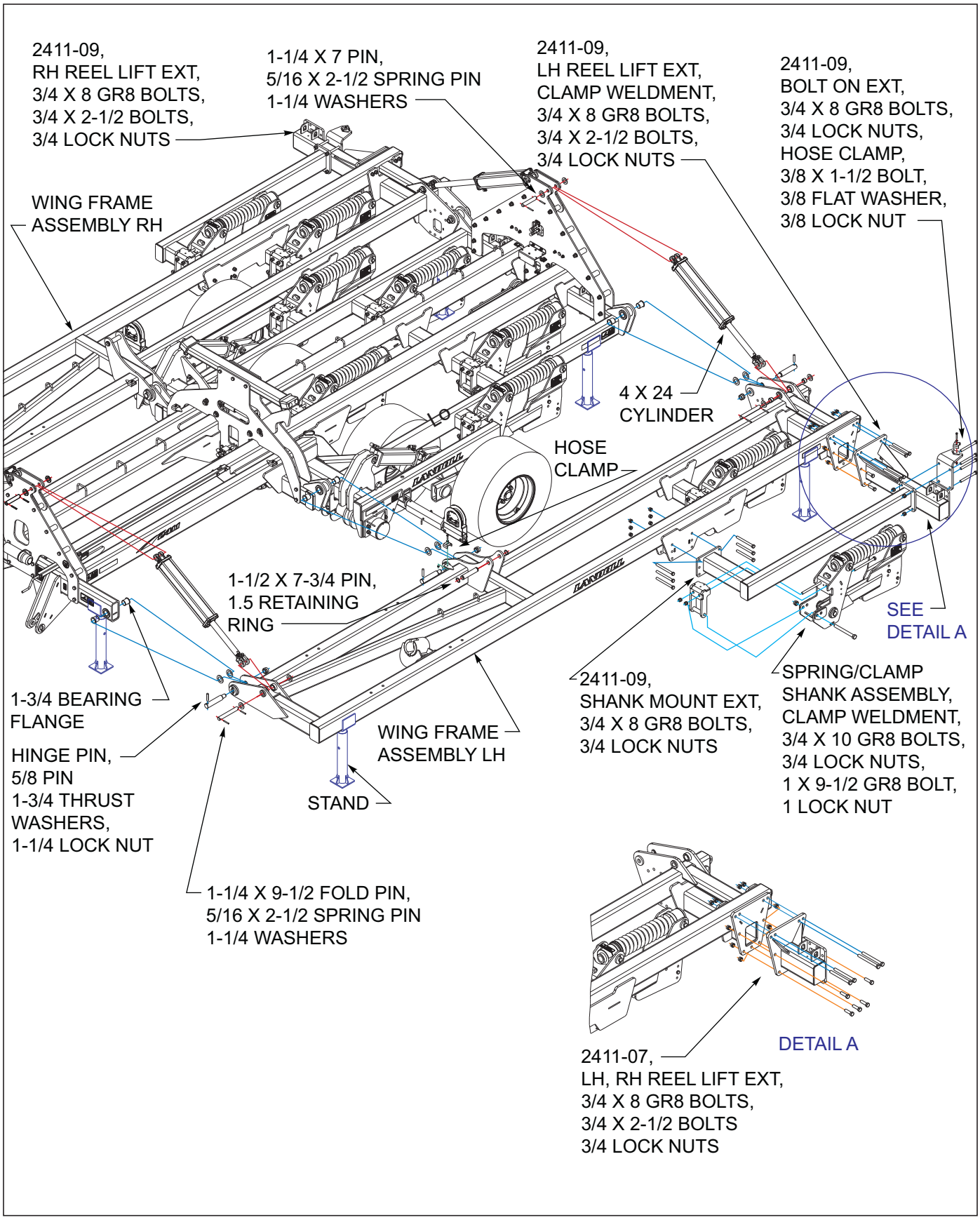


Figure 3-7: Wing Frame Assembly 2411AFG-07-09

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, disc gangs, wheel lift, and pull hitch) manually. Use a hoist or a forklift to move these parts into position.

1. Attach hitch assembly to front of center frame assembly with hitch pins, 1/2 x 2-1/4 pin and 1 lock nut ***See Figure 3-8*** for 2411-06 or ***See Figure 3-9*** for 2411AFG-07-09.
2. Attach jack to front of hitch in parking position to support front of hitch.
3. Attach 30” tower assembly in **TOP HOLE** of rear hitch assembly with 1-1/4 x 9-1/2 GR8 bolt, 1-1/4 lock washer and 1-1/4 lock nut.
4. Connect front of radius assembly to plates on middle of hitch assembly with hitch pins, 1/2 x 2-1/4 pin and 1 lock nut. Attach back of radius assembly to front holes of 30” tower assembly with hitch pins, 1/2 x 2-1/4 pin and 1 lock nut.
5. Run front of lever assembly through square hole of the front wing fold assembly. Attach front of leveler assembly to rear holes of 30” tower assembly with hitch pins, 1/2 x 2-1/4 pin and 1 lock nut. Attach rear of leveler assembly to center holes in the lift assembly with hitch pins, 1/2 x 2-1/4 pin, 1-1/2 x 10GA bushings and 1 lock nut.

NOTE

One bushing used on each side of leveler assembly as shown in Detail A view See Figure 3-8 for 2411-06***. Two bushing used on each side of leveler assembly as shown in Detail A view See Figure 3-9*** for 2411-06***. Attach rear of leveler to center holes of lift assembly as shown in Detail A view See Figure 3-8*** for 2411-06 or ***See Figure 3-9*** for 2411AFG-07-09.

6. Attach hose clamps to top side of wrench holder plate with 3/8 x 3-1/2 bolt, 3/8 flat washer and 3/8 lock nut.
7. Attach hose holder bracket to top of plate on middle of hitch with 3/4 x 2 bolt, 3/4 flat washer and 3/4 lock nut.
8. Attach stor-a-way to bottom side of hose holder bracket with 1/4 x 1 bolts and 1/4 lock nuts.
9. Attach hose holder clamp to top side of hose holder bracket with 3/8 x 5 all thread bolt, 3/8 nut and wing nut.

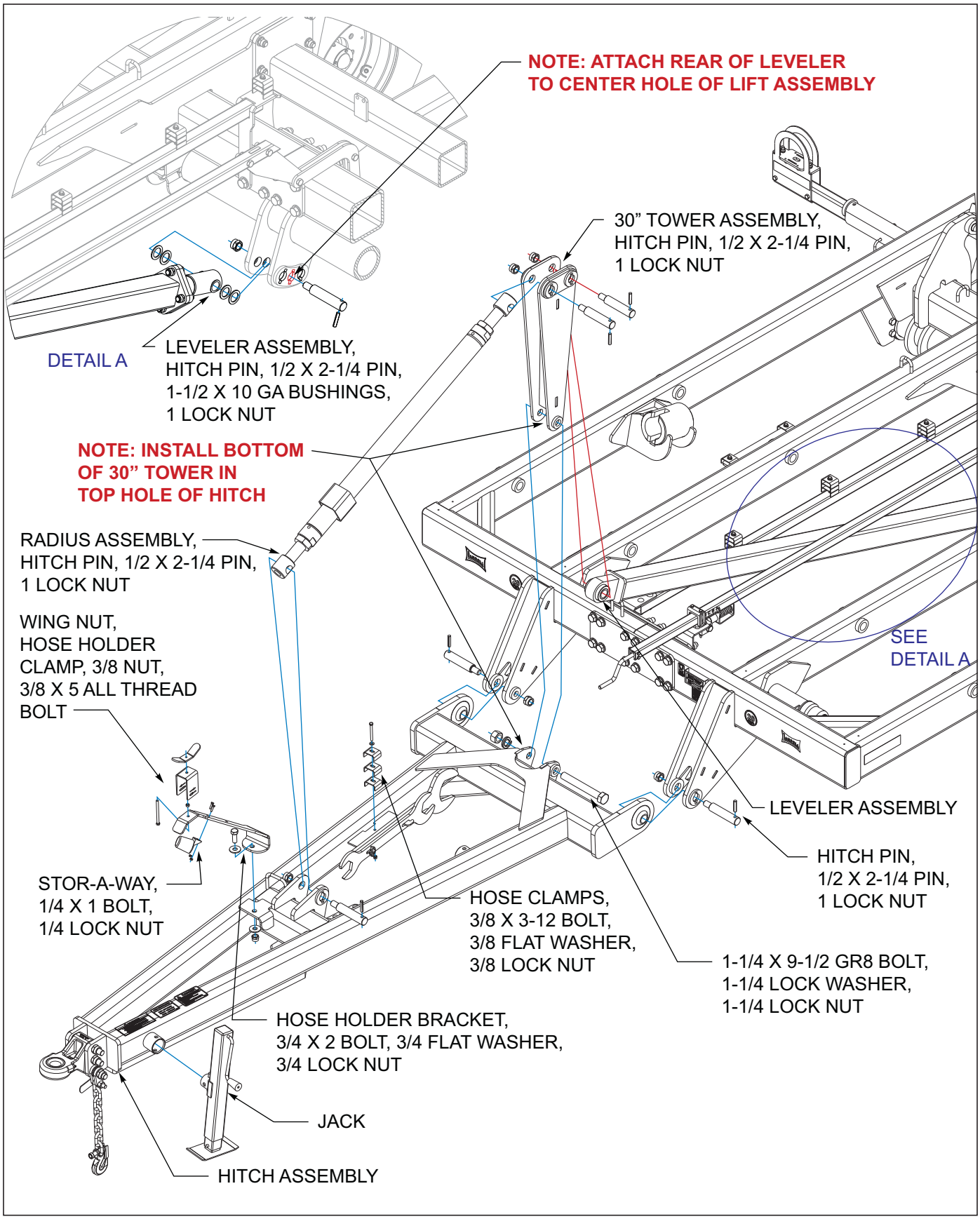


Figure 3-8: Hitch Assembly 2411-06

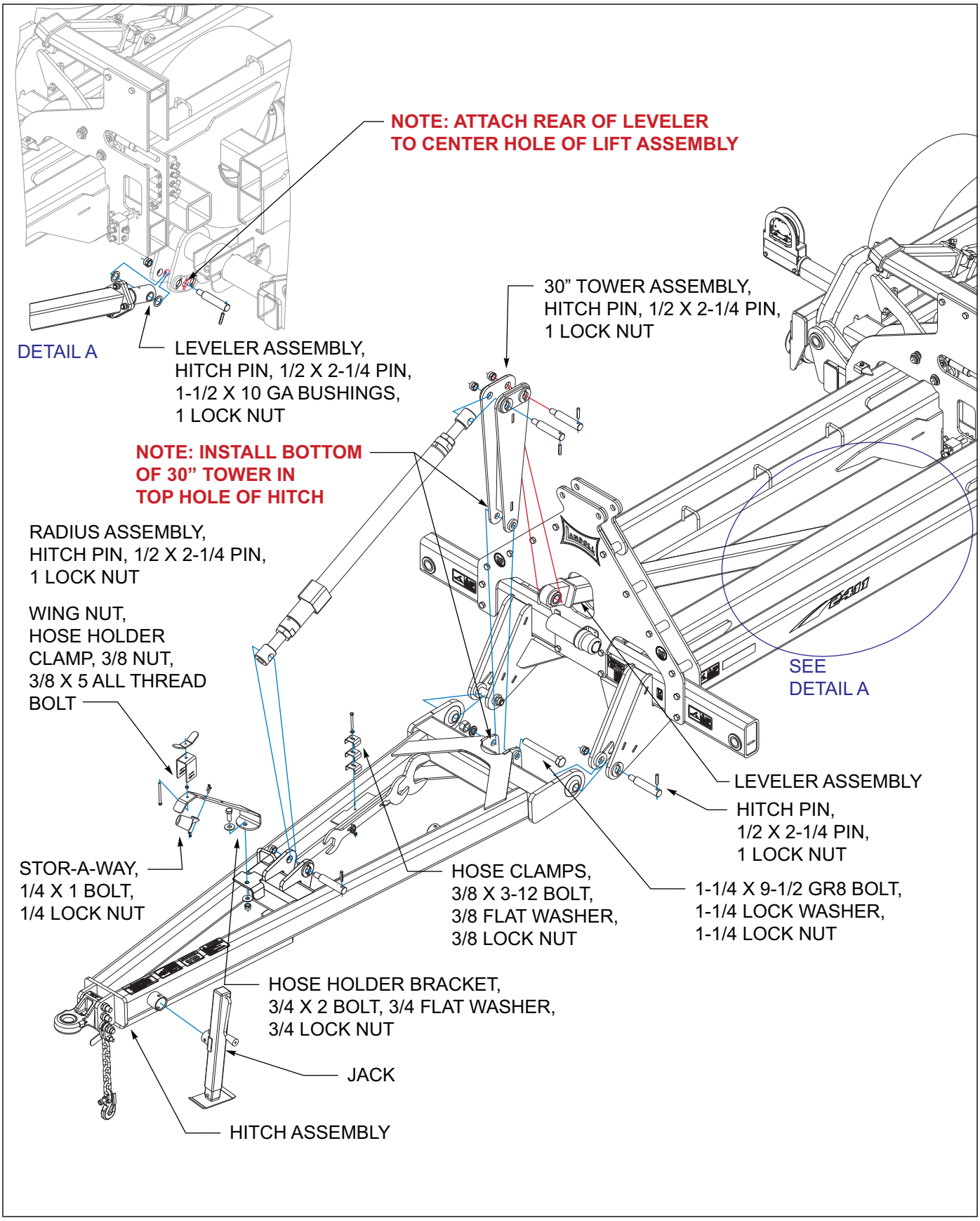


Figure 3-9: Hitch Assembly 2411AFG-07-09

Table provided for general use.

NOTES:

Disc Gang to Wing Frame Assembly

NOTE

The disc gangs will be shipped fully assembled and will be installed to the wing frames. They will be marked to what location they go onto wing frames. The gang lift plates, 3/4 x 10 bolts, 3/4 flat washes and 3/4 lock nuts will be attached to wing frames.

DANGER

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

1. Remove the 3/4 lock nuts from bottom of wing frame, the 3/4 x 10 bolts, flat washers and gang lift plates may be left on top side of frames, Model 2411-06 ***See Figures 3-13***, Models 2411AFG-07-09 ***See Figures 3-13***.
2. Carefully position the assembled disc gangs under machine in proper location.
3. Carefully raise the disc gangs up to frame with hoist and align holes in plates to 3/4 x 10 bolts and secure with the 3/4 lock nuts.
4. Model 2411-06, attach the disc gang gauge to the right front of center frame, ***See Figures 3-10***.
5. Models 2411AFG-07-09, attach the disc gang gauge to the right front of wing frame, ***See Figures 3-14***. Detail A.

NOTE

To initially set gauge, Model 2411-06 See Figures 3-11 or Model 2411AFG-07-09 See Figures 3-12.

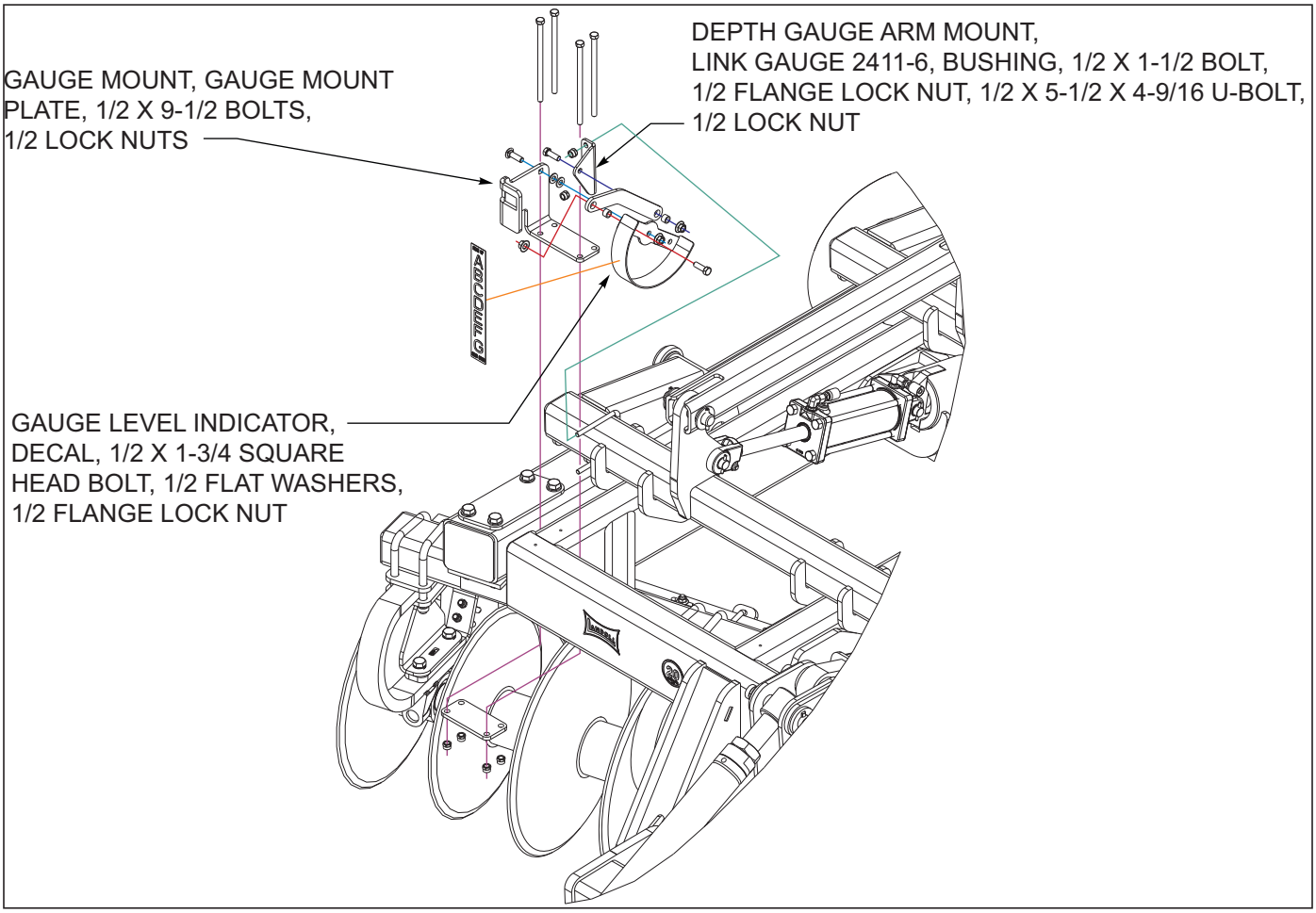


Figure 3-10: Disc Gang Gauge Installation 2411-06

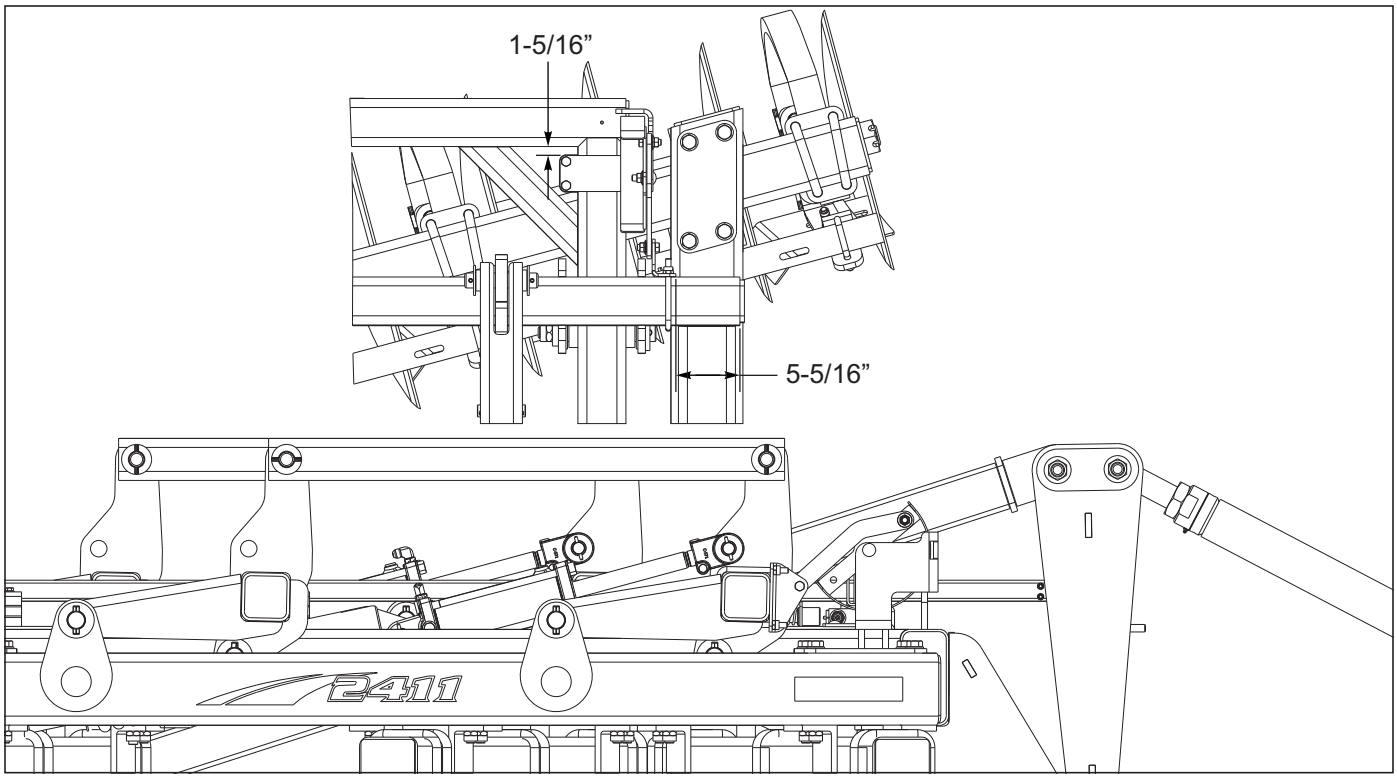


Figure 3-11: Disc Gang Gauge Adjustment 2411-06

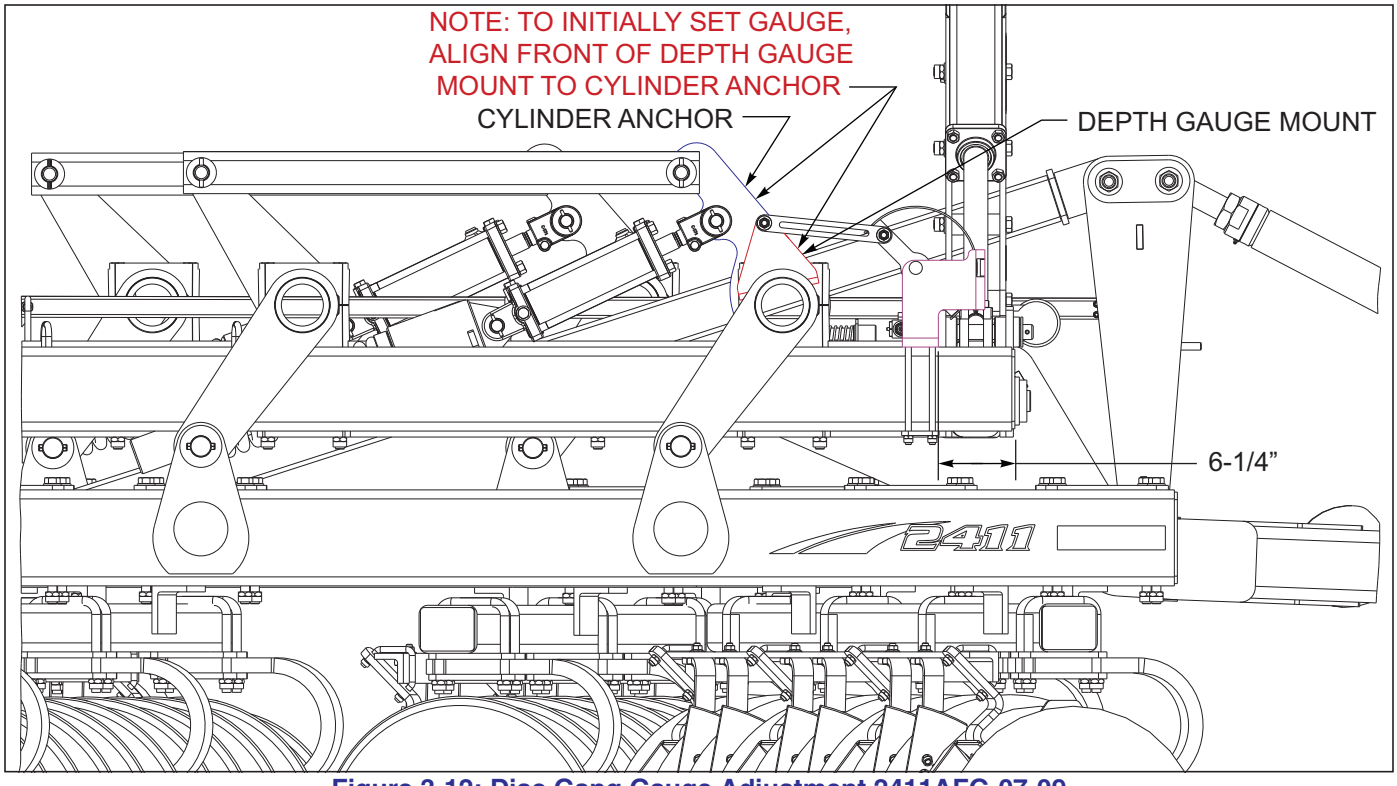


Figure 3-12: Disc Gang Gauge Adjustment 2411AFG-07-09

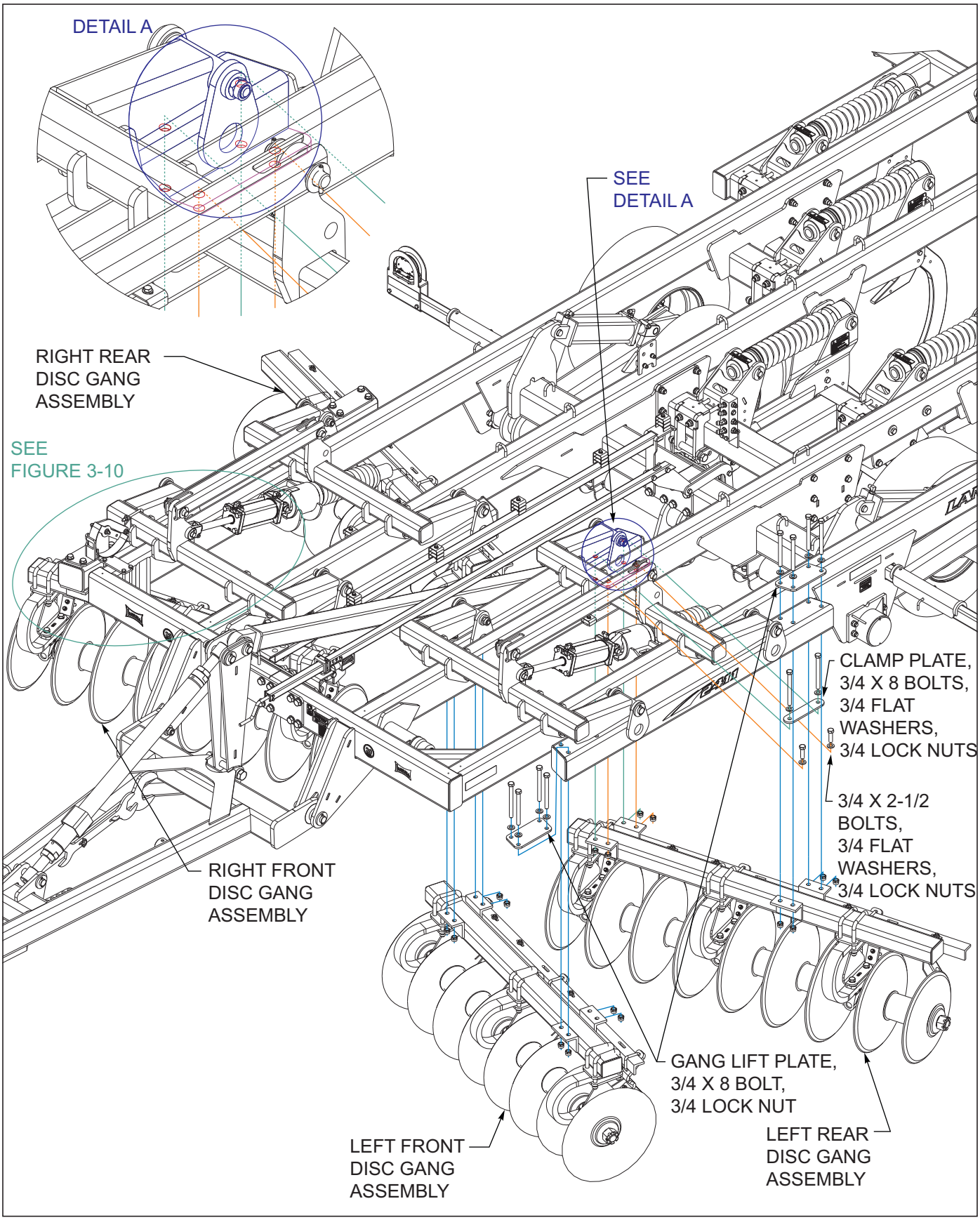


Figure 3-13: Disc Gang & Gauge to Frame Installation 2411-06

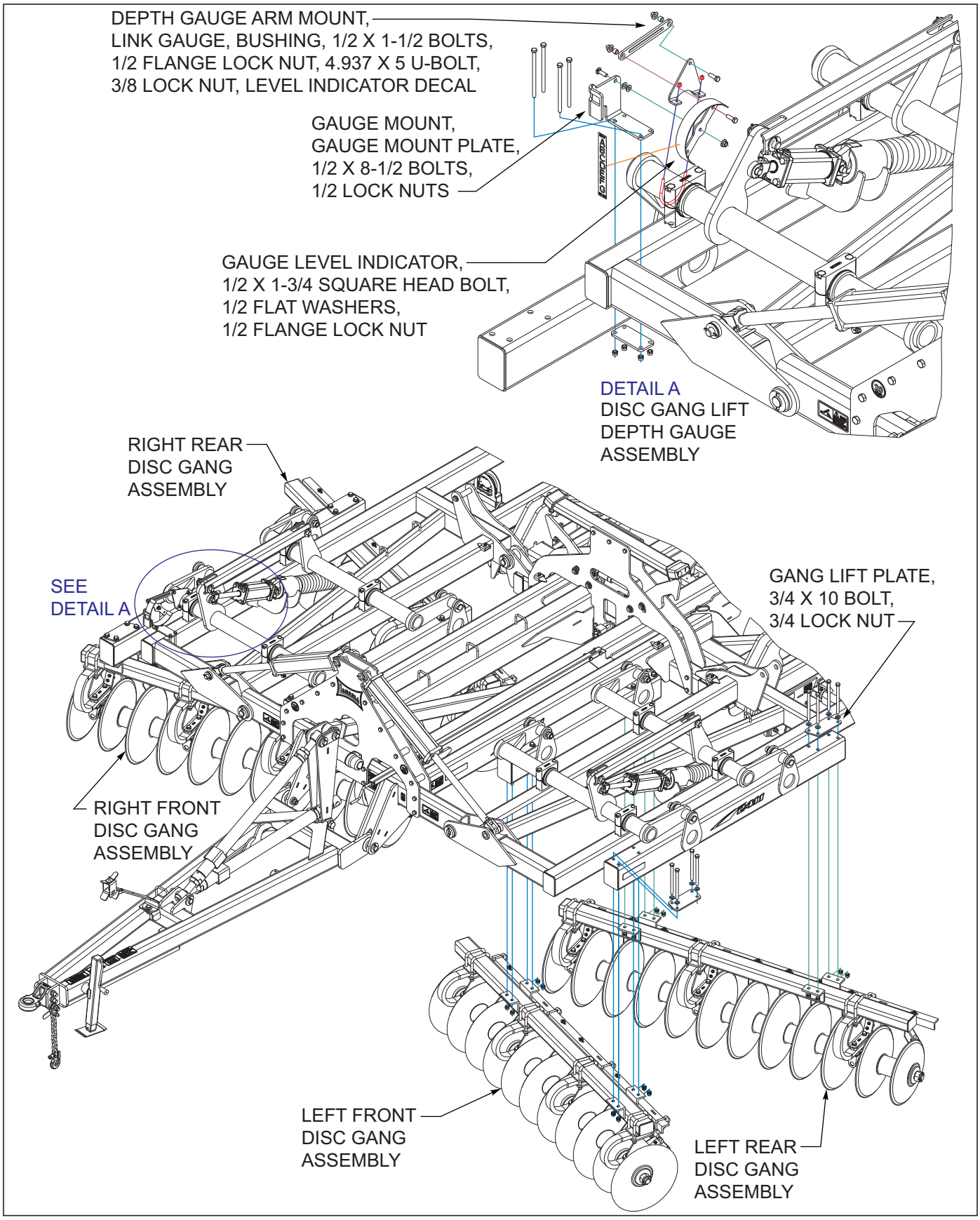


Figure 3-14: Disc Gang & Gauge to Frame Installation 2411AFG-07-09

Shank and Point Installation

NOTE

The clamp-shank assembly will shipped installed to frame assemblies. See pages 2-8 through 2-10 for proper shank placement in "Specification Section" to be sure clamp-shank assemblies did not get shifted in shipment.

1. To attach the shanks to the clamp-shank assemblies that are already on the frame ***See Figure 3-15.***, insert a 3/4 OD x 5/8 ID hardened bushing into the second hole from the upper end of the shank, this should be installed loosely on the 5/8" diameter bolt in the shank mount. Attach the shank to the front set of mounting holes in the clamp using 3/4 x 4 bolt and 3/4 locknut. Attach lower hole of shank to rear set of mounting holes in the assembly using 5/8 x 3-1/2 GR8 bolt and 5/8 locknut. Shank mounting bolts must be tightened to 200 FT-LBS (3/4 X 4) and 170-FT-LBS (5/8 x 3-1/2). Failure to do so may result in shank mount damage.

NOTE

The shanks can be positioned in any of the three holes offered. For a maximum depth of 14" the bottom hole is needed. There is approximately 2" difference between the holes. It is recommended to start in the middle set of holes which allows approximately 12" of depth and plenty of disc gang travel either up or down.

2. Attach the desired point to each shank using 1/2 x 2 and 5/16 x 2 spring slotted pins. Place pins with open ends oriented opposite of each other when driving in the 5/16 x 2 pin.
3. Place Wear guard on the shank leg with the lower Wear guard tab in the pocket the shank point provides.
4. Secure the Wear guard to the shank leg using the Wear guard keeper with two 1/2 x 2-3/4 bolts,1/2 lock nuts and 1/2 flat washers on rear bolt.

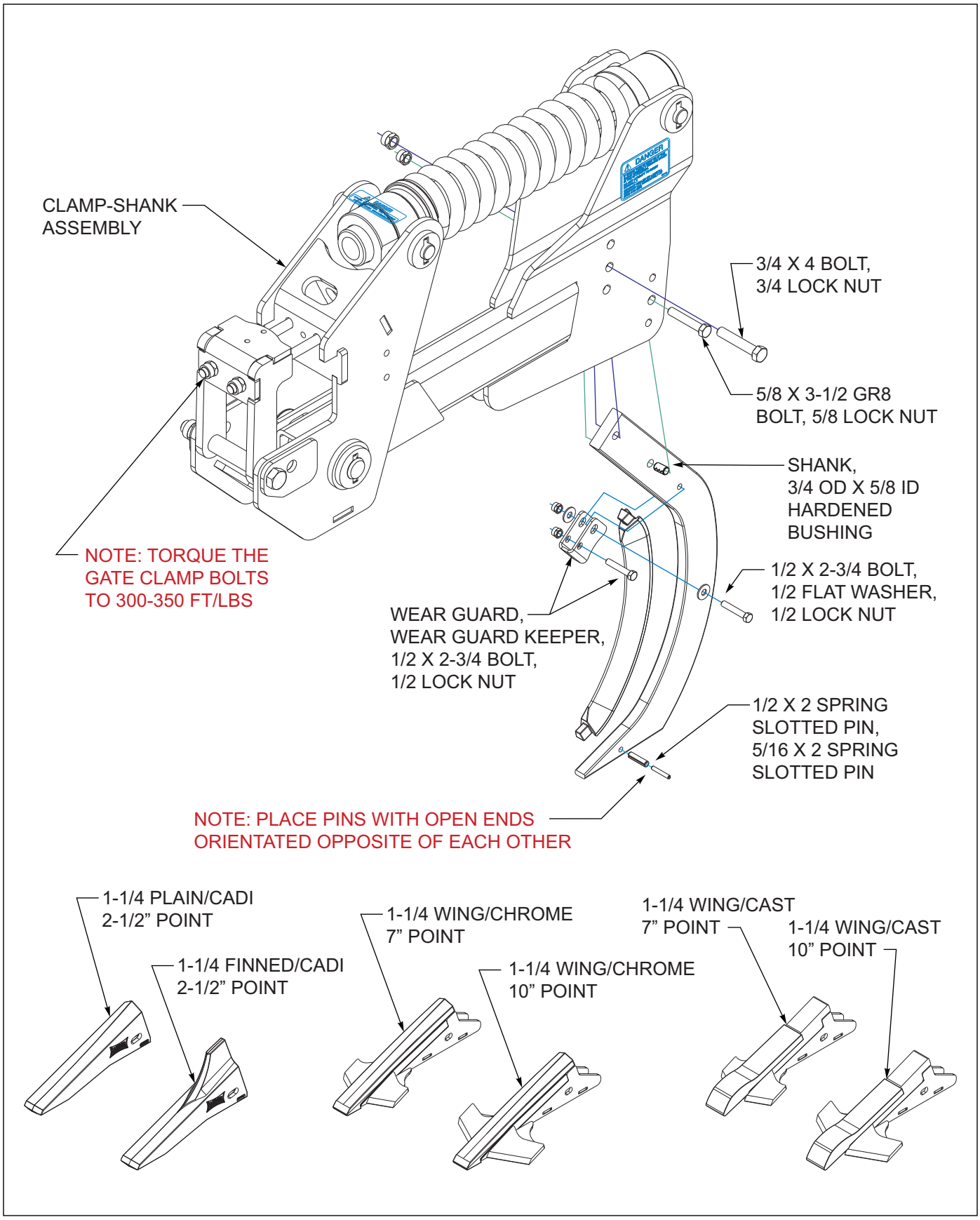


Figure 3-15: Auto Reset Shank and Point Installation

Hydraulic Installation

NOTE

See Figure 3-23 for hydraulic lift assembly Model 2411-06.

See Figure 3-23 for hydraulic lift assembly Model 2411AFG-07-09.

See Figure 3-25 for hydraulic fold assembly Model 2411AFG-07-09.

See Figure 3-27 for hydraulic disc gang lift assembly Model 2411-06.

See Figure 3-27 for hydraulic disc gang lift assembly Model 2411AFG-07-09.

1. **Model 2411-06** install the lift/gang 16 port manifold to the center shank mount plate using 1/2 x 3-1/2 bolts and 1/2 lock nuts ***See Figures 3-16***.

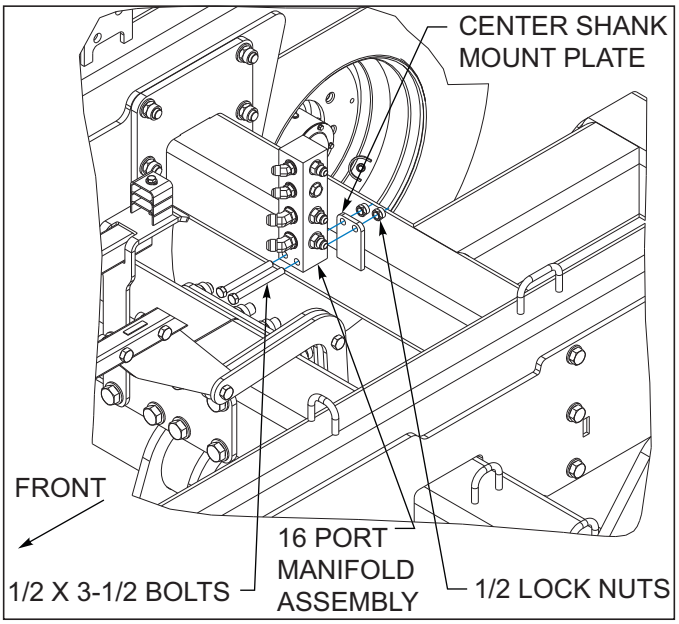


Figure 3-16: 16 Port Manifold Installation 2411-06

2. **Models 2411AFG-07-09** install the 16 port manifold to the rear side of the wing stop plate on the center frame using 1/2 x 6 bolts, .75 x .532 x 1.875 round tube and 1/2 lock nuts ***See Figures 3-17***.T

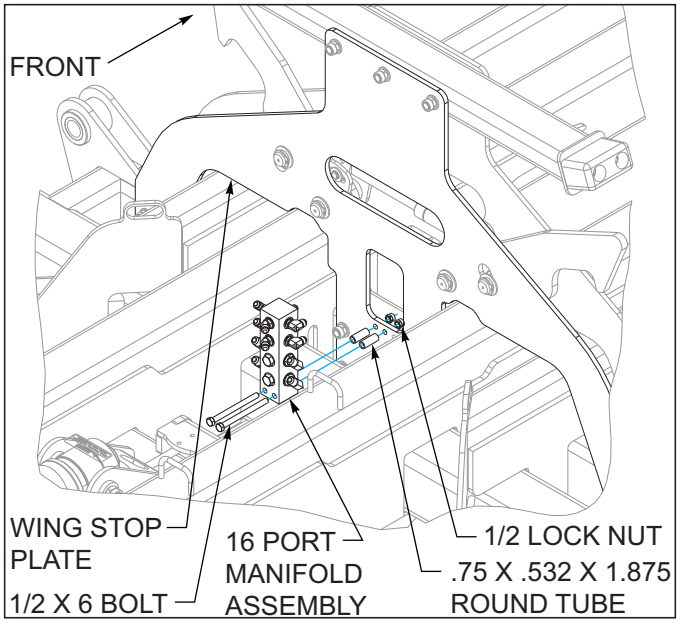


Figure 3-17: 16 Port Manifold Installation Middle

3. **Models 2411AFG-07-09** install the 8 port manifold on the front side of the front rear plate of the front fold tower using1/2 x 6 bolts, .75 x .532 x 1.875 round tube and 1/2 lock nuts ***See Figures 3-18***.

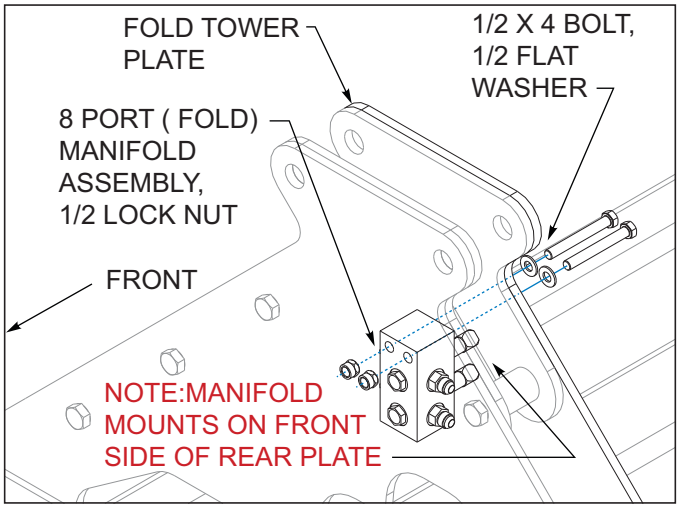


Figure 3-18: 8 Port Manifold Installation Front

4. **Models 2411AFG-07-09** install the 8 port manifold to the front side of the wing stop plate on the center frame using 1/2 x 4 bolts, and 1/2 lock nuts ***See Figures 3-19***.

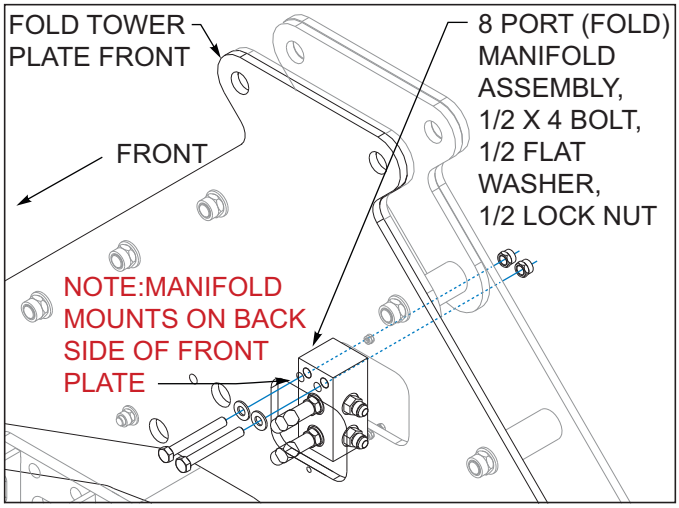


Figure 3-19: 8 Port Manifold Installation Rear

5. **Models 2411AFG-07-09** install the 8 port manifold to the front side of the wing stop plate on the center frame using 1/2 x 6 bolts, .75 x .532 x 1.875 round tube and 1/2 lock nuts ***See Figures 3-20***.

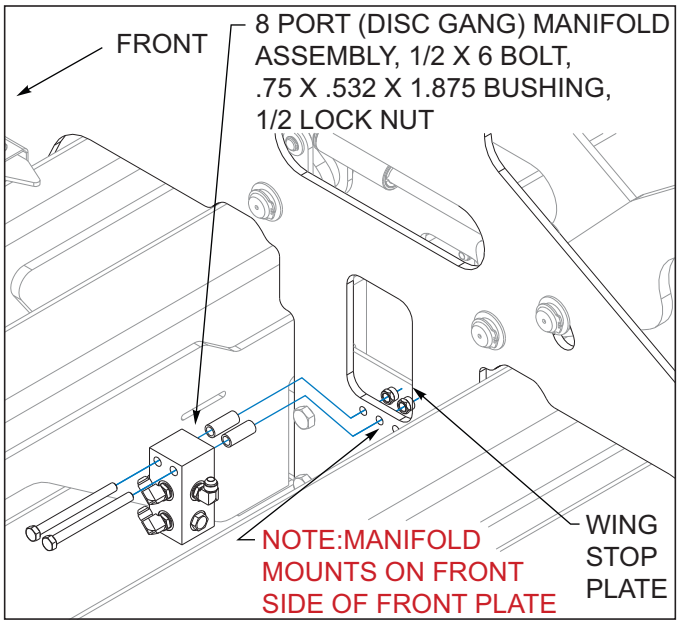


Figure 3-20: 8 Port Manifold Installation Middle

6. Install hose fittings in manifolds and cylinders as shown ***See Figures 3-23, 3-25 and 3-27.***

NOTE

See Figure 3-23 for hydraulic lift layout.

See Figure 3-25 for hydraulic fold layout.

See Figure 3-27 for hydraulic disc gang lift layout.

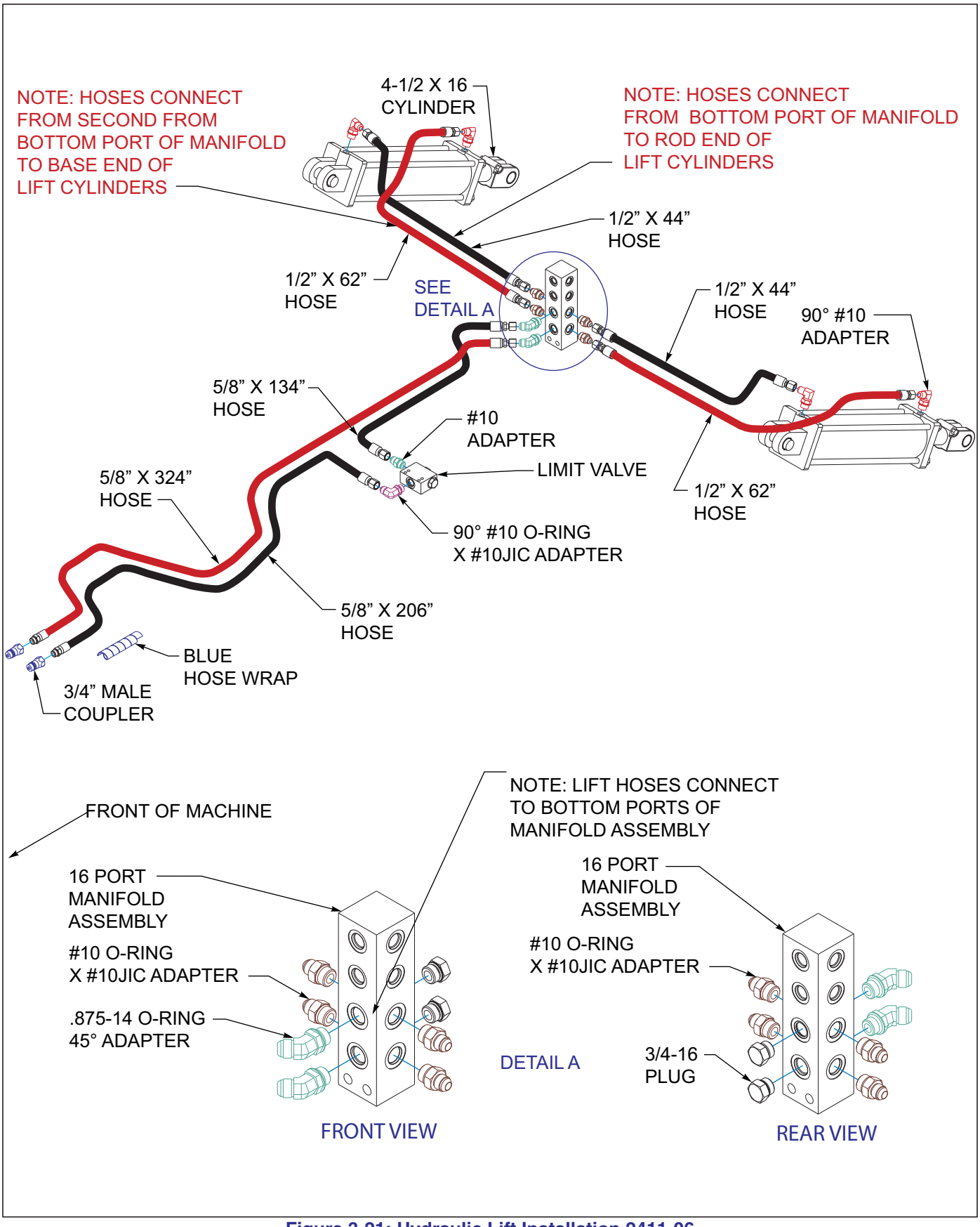


Figure 3-21: Hydraulic Lift Installation 2411-06

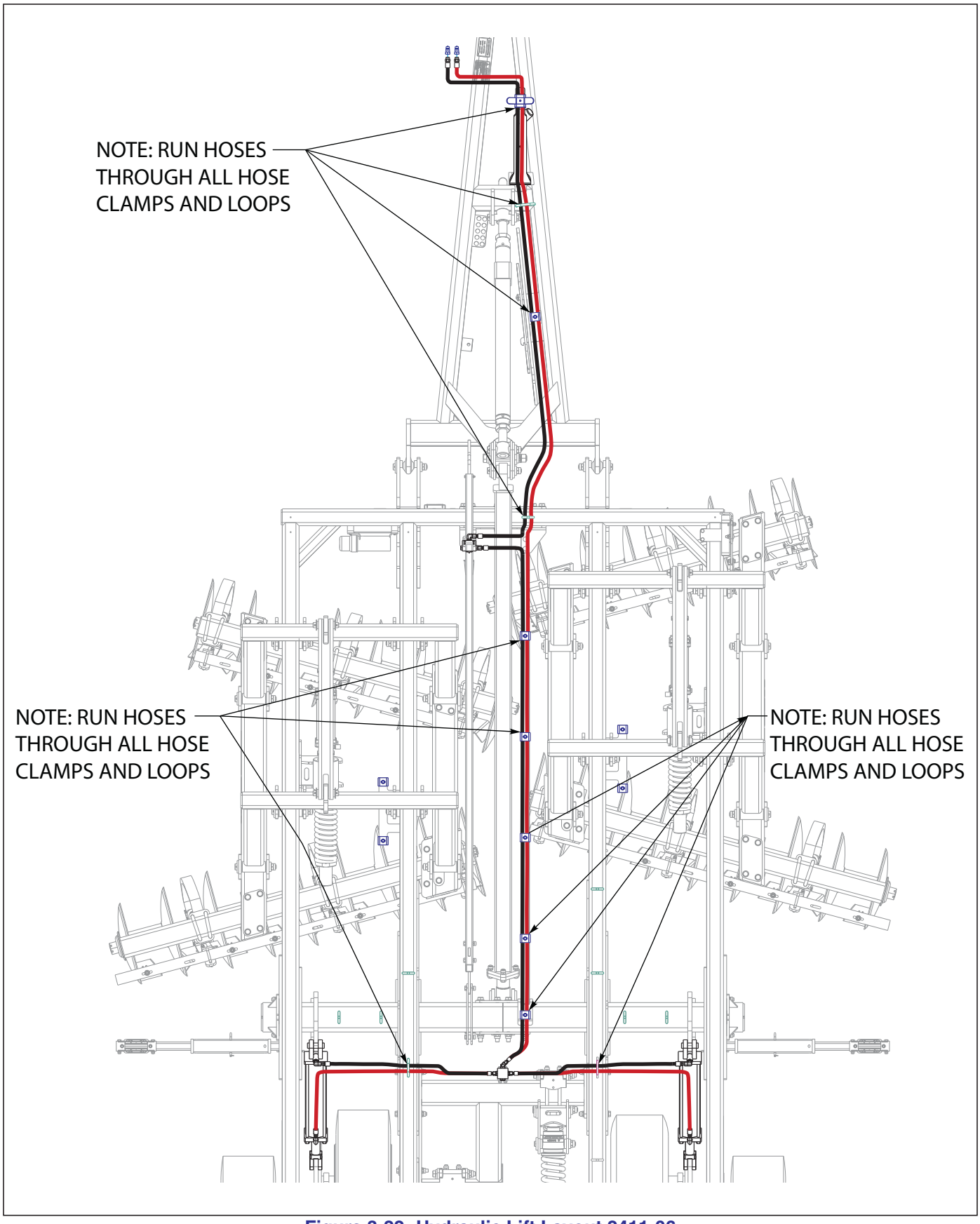


Figure 3-22: Hydraulic Lift Layout 2411-06

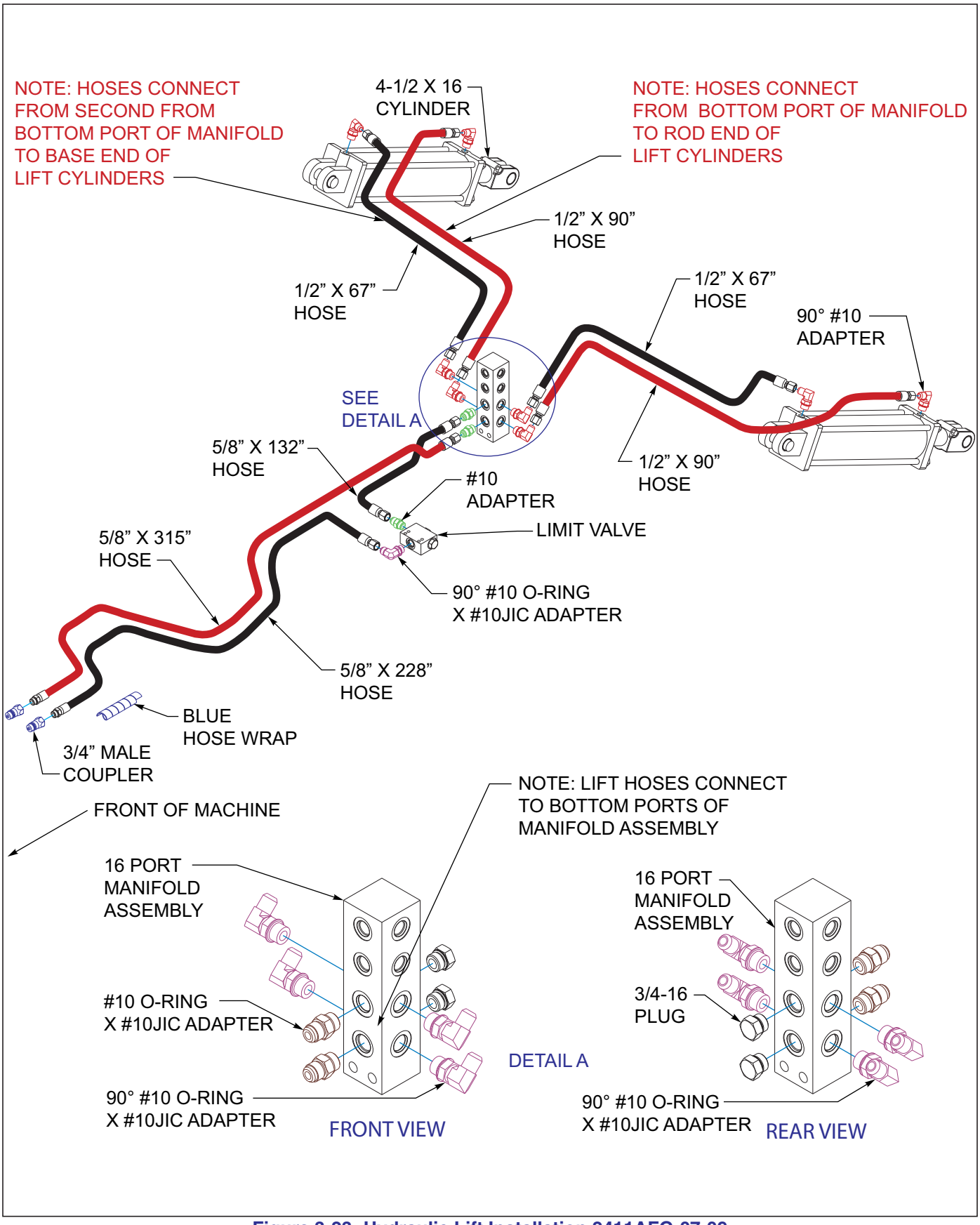


Figure 3-23: Hydraulic Lift Installation 2411AFG-07-09

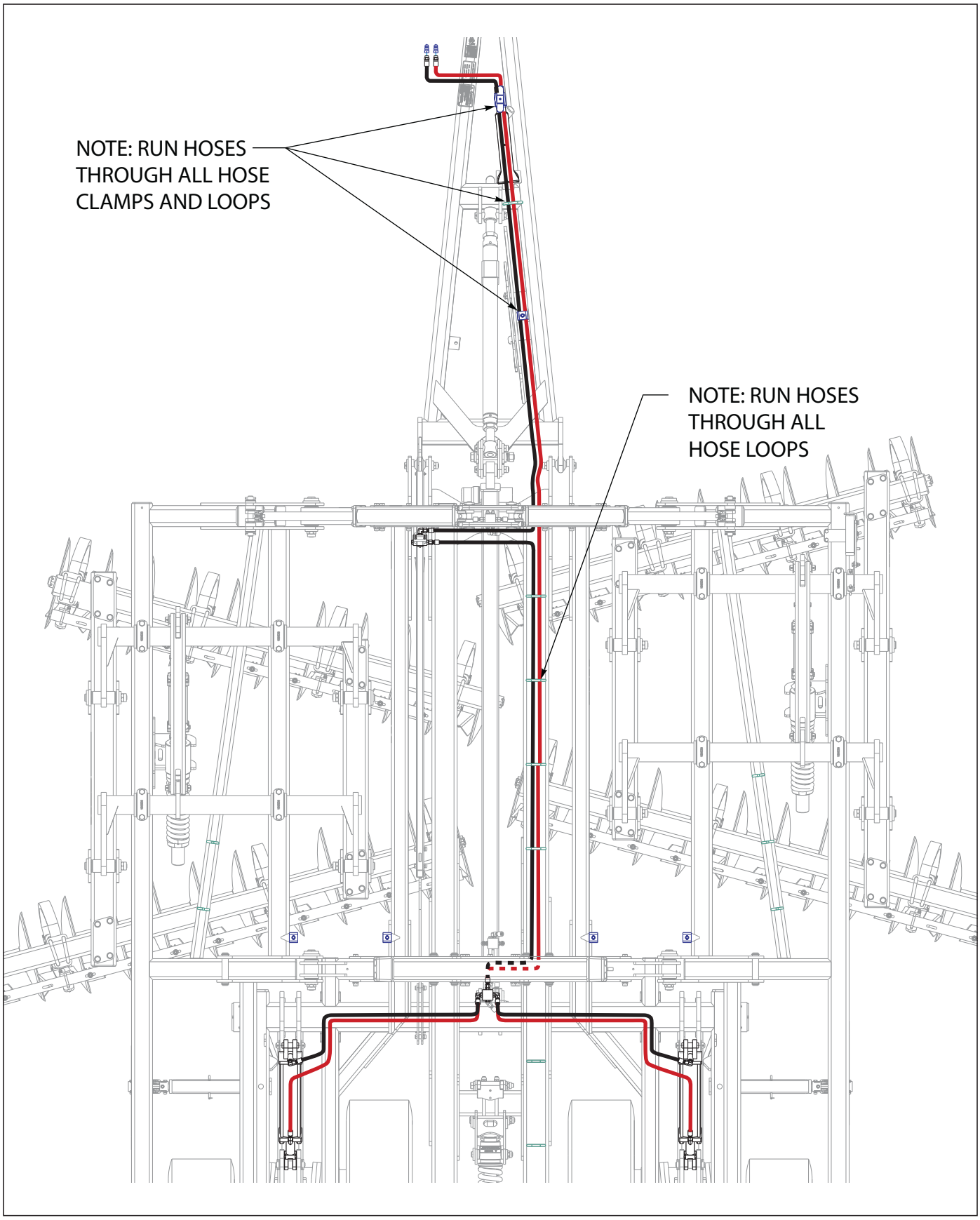


Figure 3-24: Hydraulic Lift Layout 2411AFG-07-09

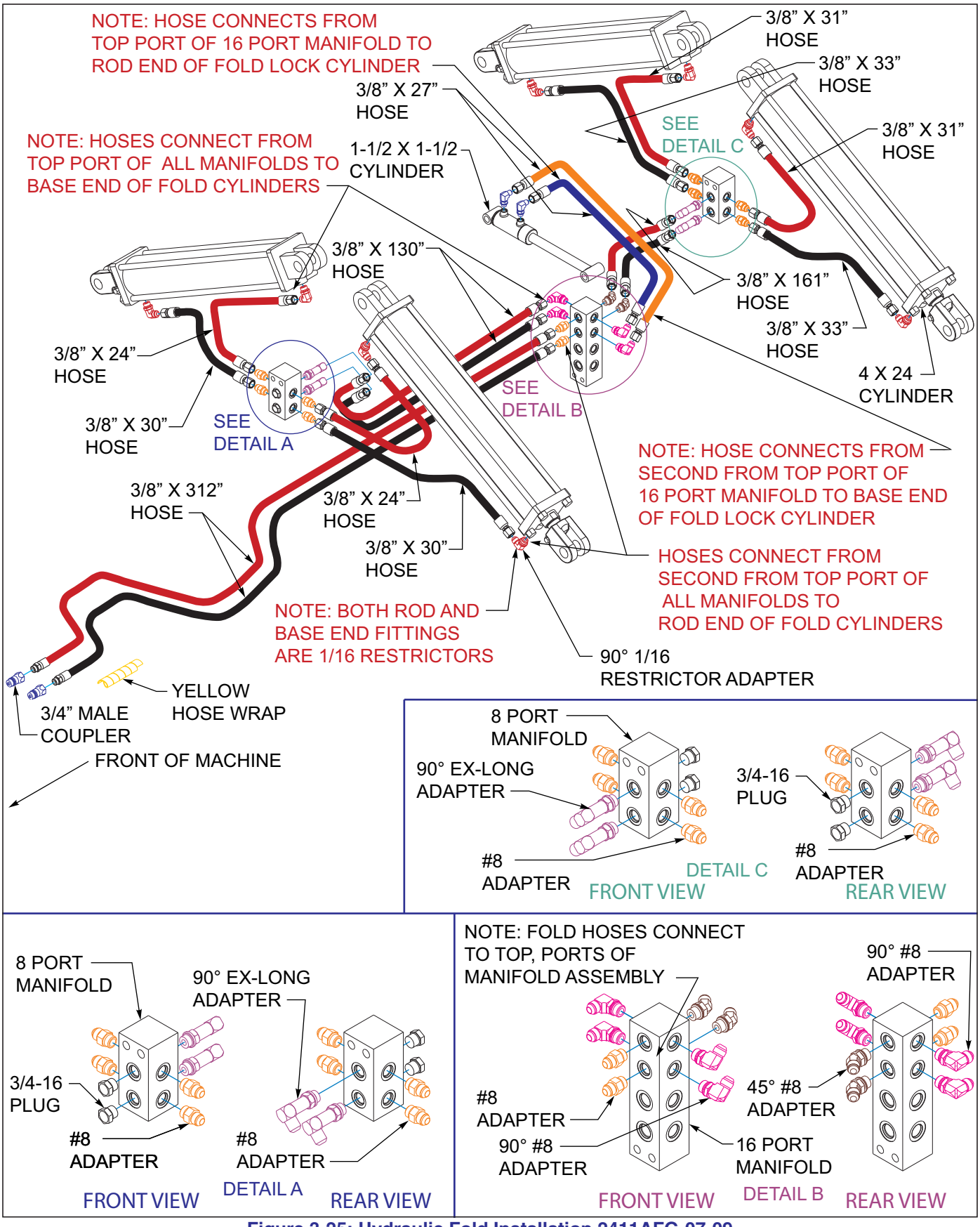


Figure 3-25: Hydraulic Fold Installation 2411AFG-07-09

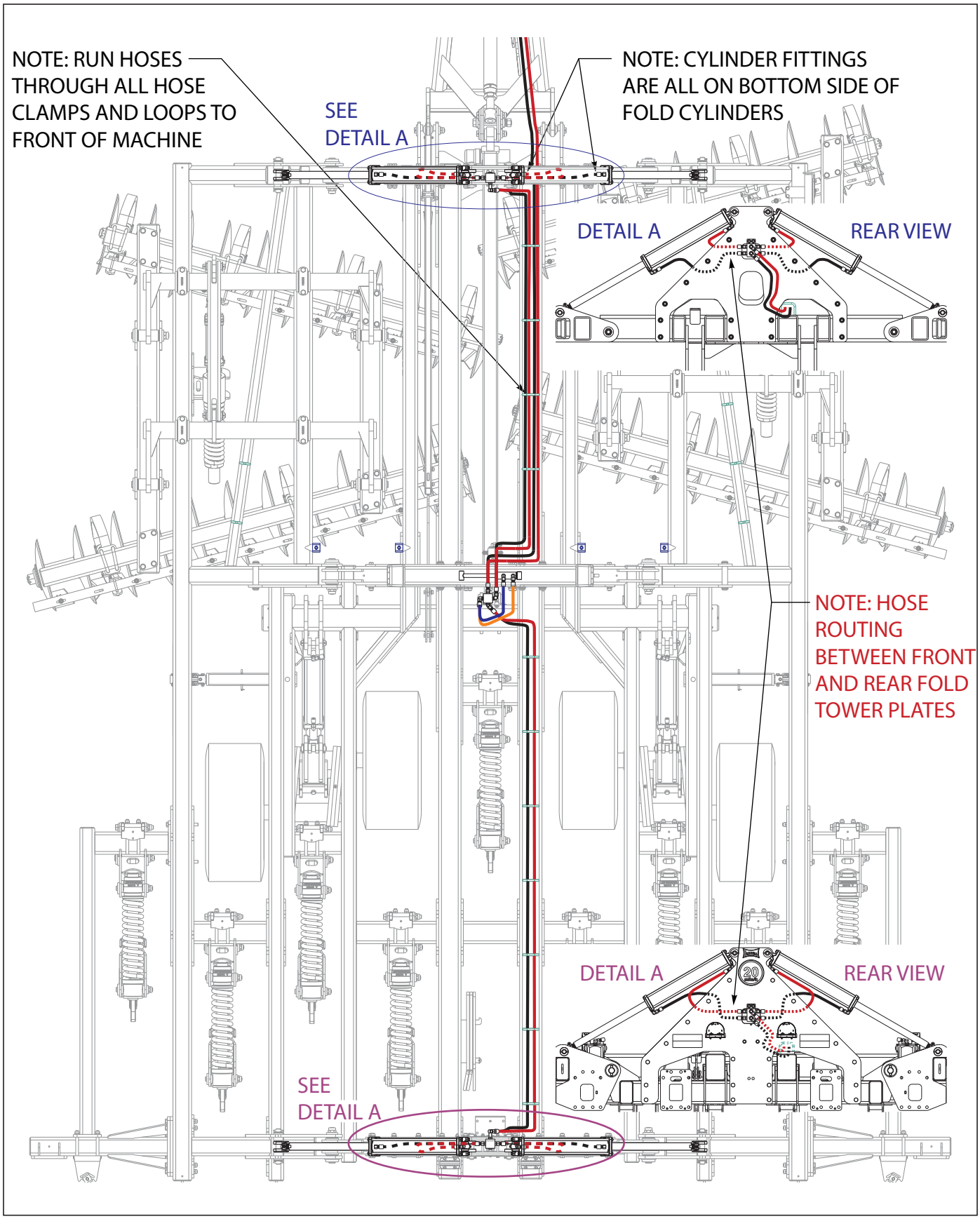


Figure 3-26: Hydraulic Fold Layout 2411AFG-07-09

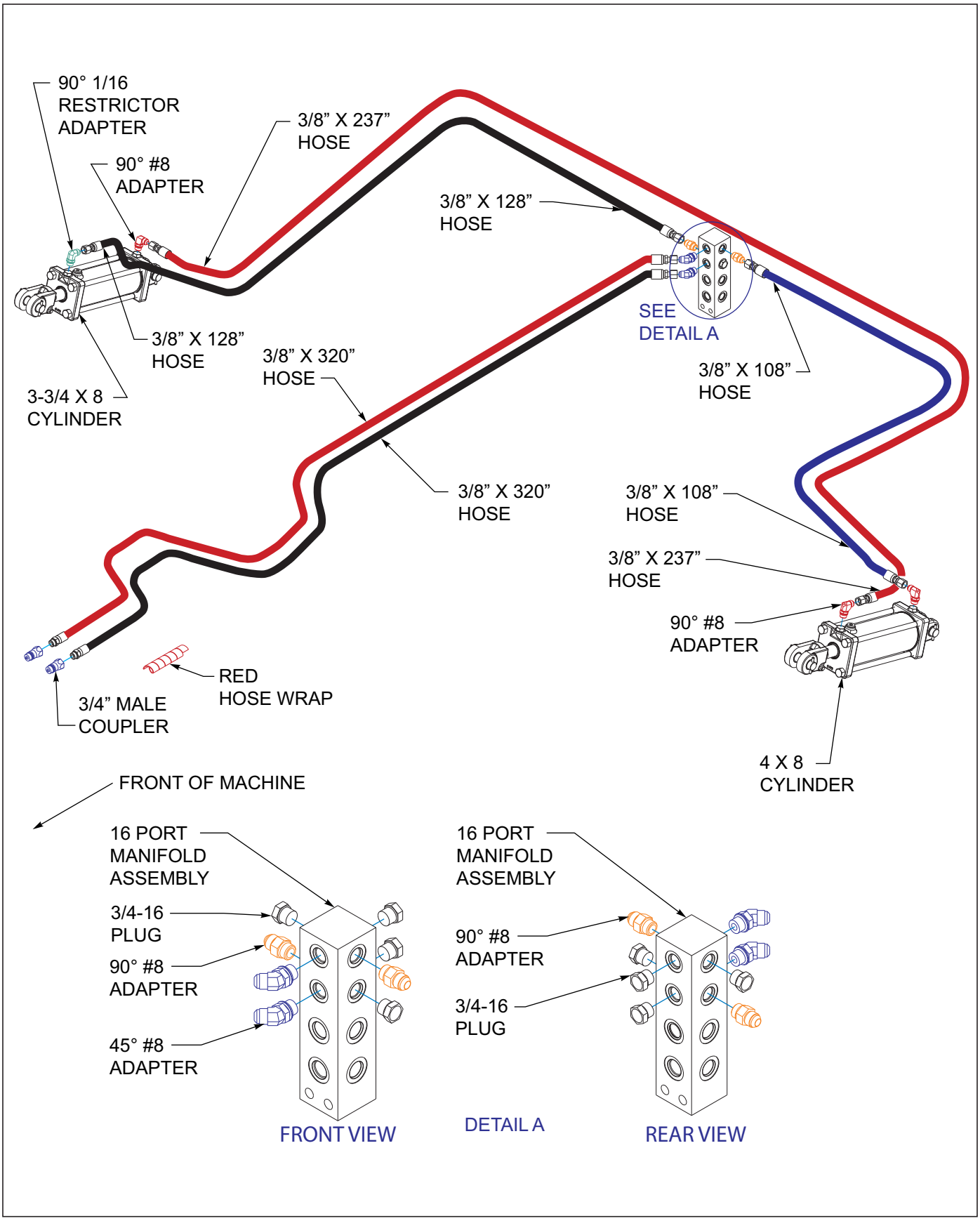


Figure 3-27: Hydraulic Gang Lift Installation 2411-06

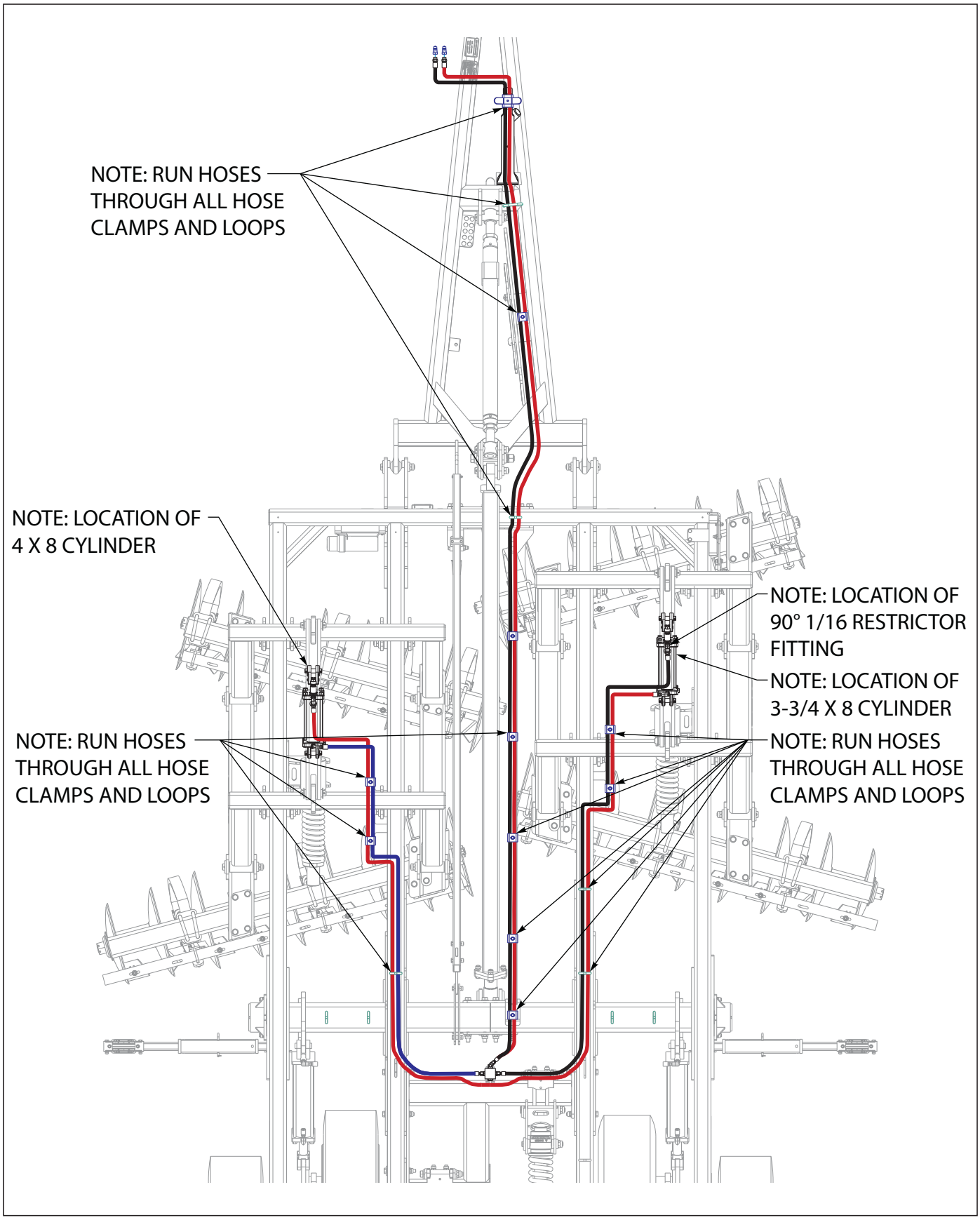


Figure 3-28: Hydraulic Gang Lift Layout 2411-06

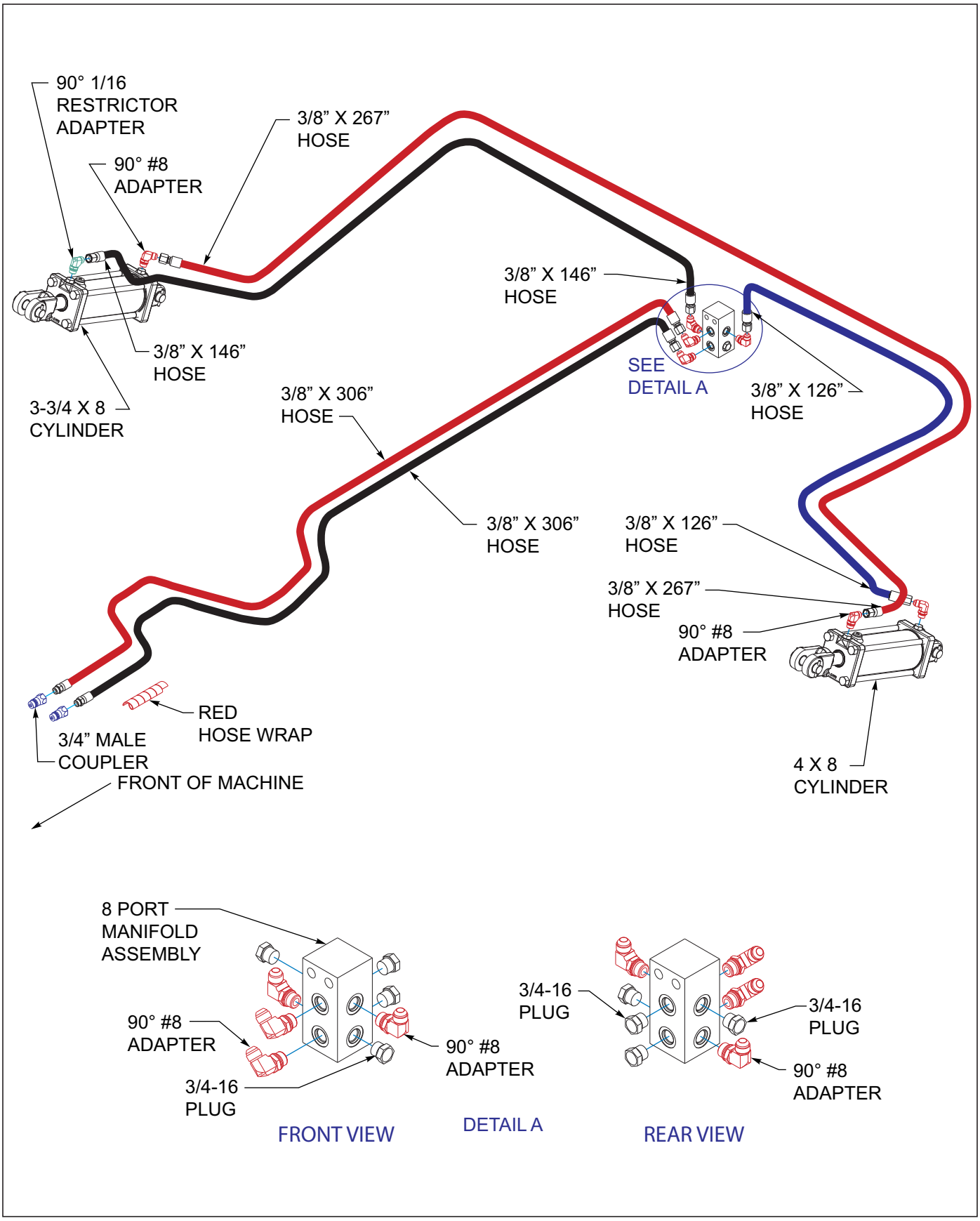


Figure 3-29: Hydraulic Gang Lift Installation 2411AFG-07-09

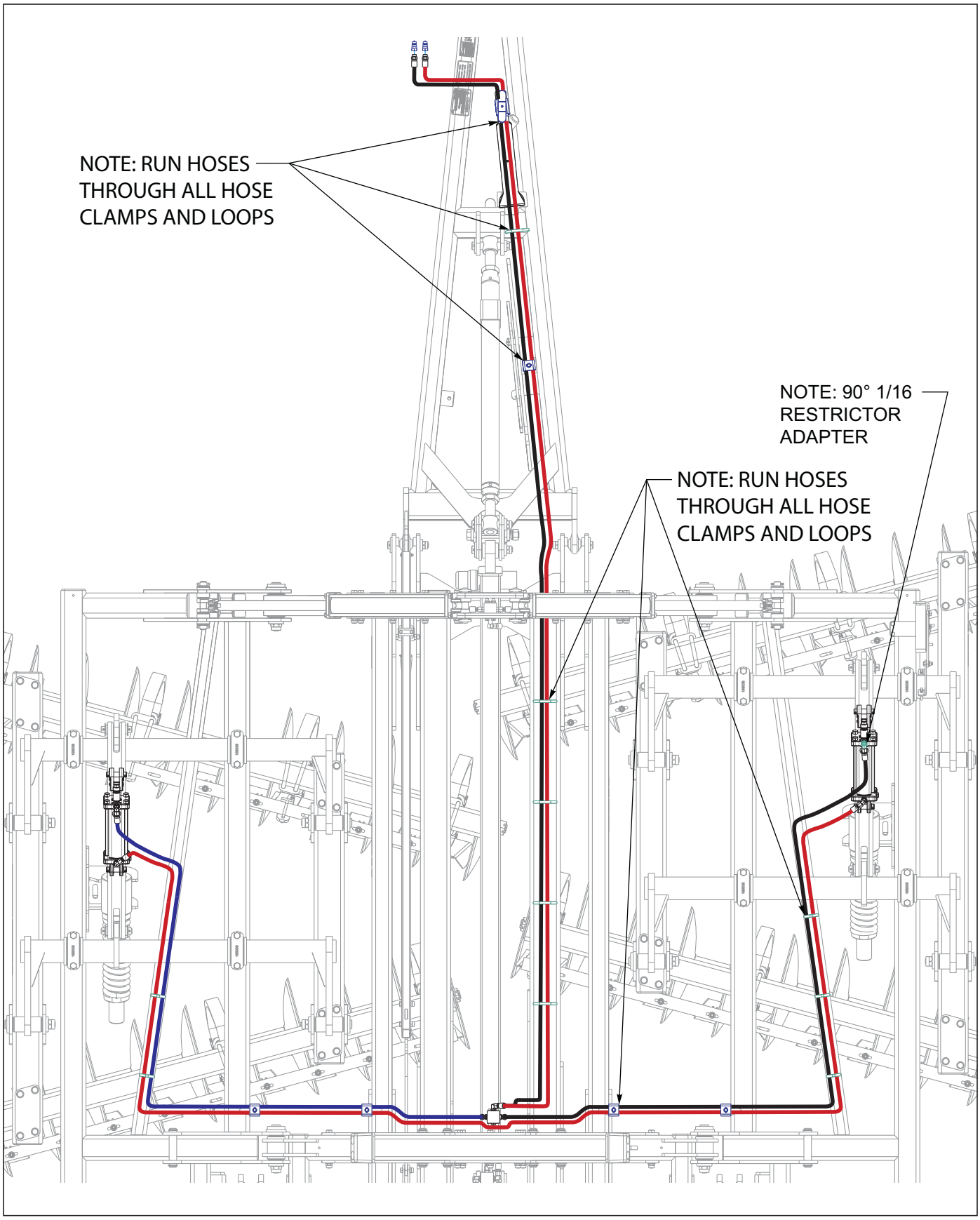


Figure 3-30: Hydraulic Gang Lift Layout 2411AFG-07-09

Table provided for general use.

NOTES:

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

MAIN WARNING LIGHT HARNESS - WIRING CHART

	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 3-31: 7 Electrical Assembly W/LED Lights Wiring Chart

LED Light Installation

1. Model 2411-06 attach LT and RT light bracket assemblies to center frame using 1/2 x 3-1/2 bolts, 1/2 washers and 1/2 lock nuts ***See Figure 3-1*.**
2. Model 2411AFG-07-09 attach LT and RT light bracket assemblies to center frame using 1/2 x 4-1/2 bolts, 1/2 washers and 1/2 lock nuts ***See Figure 3-3*** or ***See Figure 3-4*** after 08-01-2022.
3. Model 2411-06 attach the ag flasher control module to bottom of tail light mount with 1/4 x 1-1/2 bolts, 1/4 lock nuts ***See Figure 3-32***. Attach the reflector mount to top side of the tail light mount, red ag lamp with 1/4 x 1-1/2 bolts 1/4 lock nuts. Attach the orange reflector to top back side of tail light mount and red reflector to bottom back side of tail light mount. Install the tail light mount assembly to the top, back side of center frame with 1/2 x 10 bolts, 1/2 N flat washers, light mount bracket bottom side and 1/2 lock nuts. Remove the 2, 7/8 x 7 GR8 top middle bolts from rear of center frame. Attach the manifold/smv mount to the rear of center frame, re-install the 7/8 x 7 GR8 bolts, 7/8 flat washers and 7/8 lock nuts. Install the smv mount, smv emblem, sis decal mount to manifold/smv mount with 1/4 x 1 bolts and 1/4 lock nuts. Attach the sis decal to the rear of the sis decal mount.

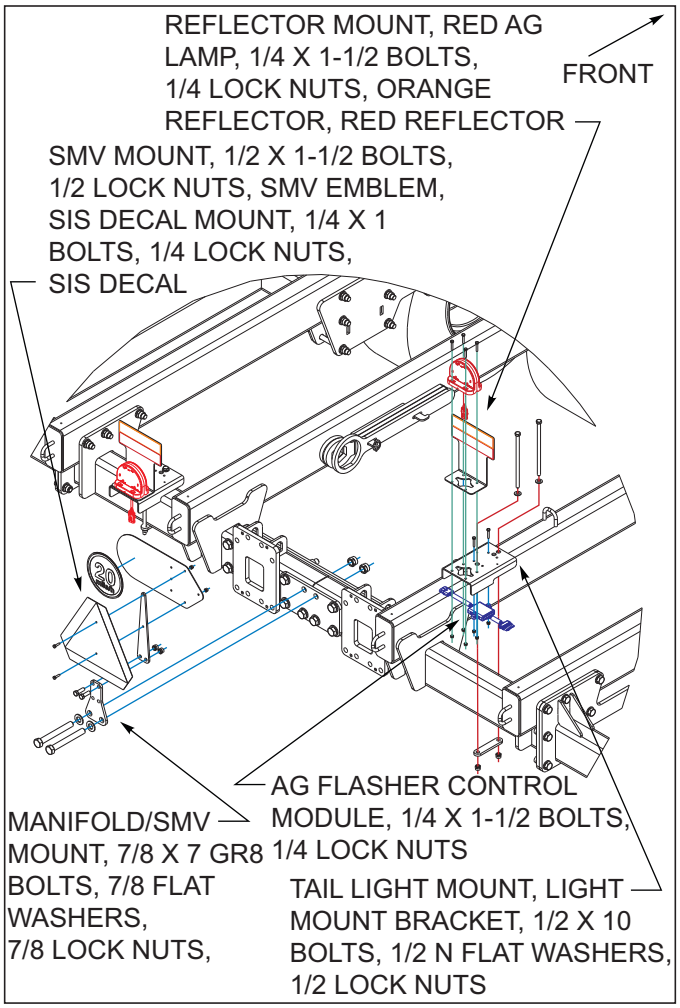


Figure 3-32: Red AG Lamp & SMV Mount Installation 2411-06

4. Models 2411AFG-07-09 install ag module mount to front side of rear tower plate assembly with 1/2 x 6 bolts, 1/2 flat washers and 1/2 lock nuts ***See Figure 3-33***. Attach ag flasher control module to bottom of ag module mount with 1/4 x 1-1/2 bolts, 1/4 lock nuts.

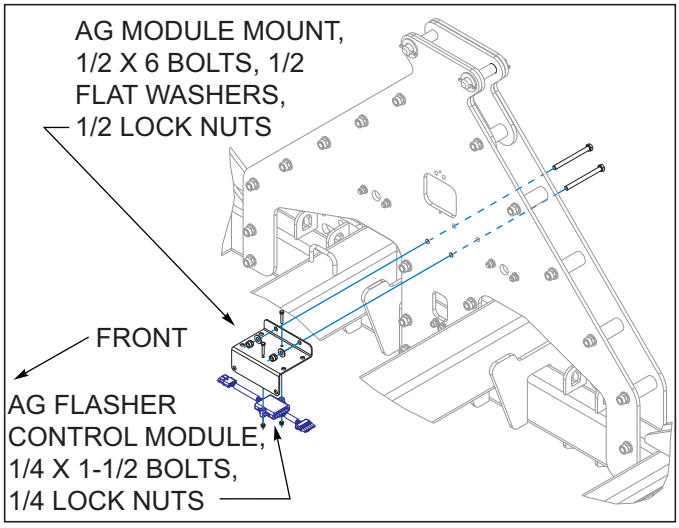


Figure 3-33: AG Flasher Module Installation 2411AFG-07-09

5. Models 2411AFG-07-09 attach tail light mounts to back side of rear tower plate assembly using 1/2 x 6 bolts, 1/2 flat washers, 1/2 lock nuts ***See Figure 3-34***. Attach the red ag lamps to tail light mounts using 1/4 x 1-1/2 bolts, 1/4 lock nuts.

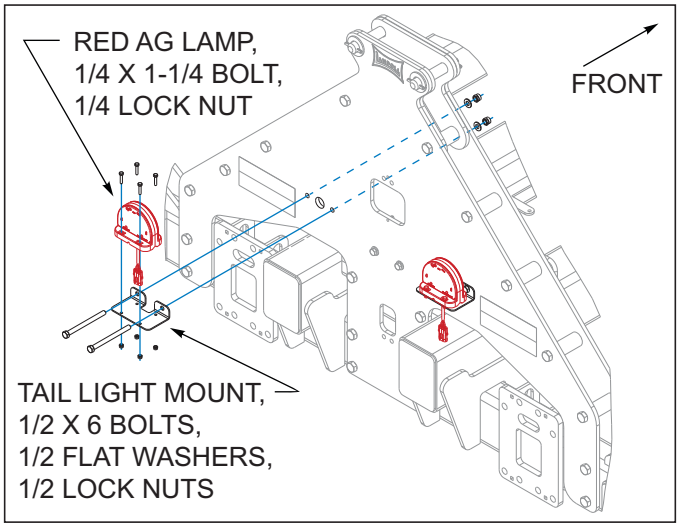


Figure 3-34: Red AG Lamp Installation

6. Attach the amber ag lamps to the light bracket assembly, LT and RT using 1/4 x 1-1/2 bolts, 1/4 lock nuts ***See Figure 3-35***.

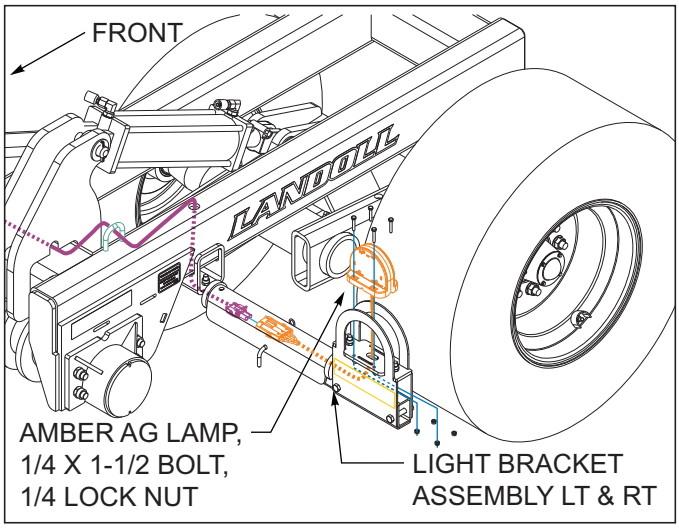


Figure 3-35: Amber AG Lamp Installation

7. Connect the 3 pin ends of the rear harness to the red warning lights. Connect 6 pin to the ag flasher control module ***See Figure 3-36 and 3-37***. ***See Figure 3-31 for LED harness wire designations.*** Route both 2 pin ends, of the rear harness through the hose loops of center frame as shown ***See Figure 3-37*** Model 2411-06 or ***See Figure 3-39*** Models 2411AFG-07-09.
8. Attach one end of the 132" harness to the 2 pin end of the rear harness through hose loops of center frame to LT light bracket assembly, down through hole of light bracket and through tube, connect to 2 pin amber ag lamp.
9. Connect the 4 pin end of main harness. Route main harness through hose loops of center frame, through hose clamps of hitch to front of machine.
10. Two 34" harnesses are provided if needed for main harness to reach from ag flasher control module to the tractor ***See Figure 3-36*** Model 2411-06 or ***See Figure 3-9*** Models 2411AFG-07-09, for location.
11. Insure that the harnesses are clear of any moving parts and secure the harnesses with tie wraps provided.
12. Install the stor-away holder to hose holder on hitch with 1/4-20 x 3/4 hex head cap screws and hex lock nuts ***See Figure 3-8*** Model 2411-06 or ***See Figure 3-9*** Models 2411AFG-07-09.
13. Models 2411AFG-07-09 install the manual holder to the front of the front fold tower plate using 1/4 x 1-1/4 bolts, 1/4 flat washers and 1/4 lock nuts ***See Figure 3-38***.

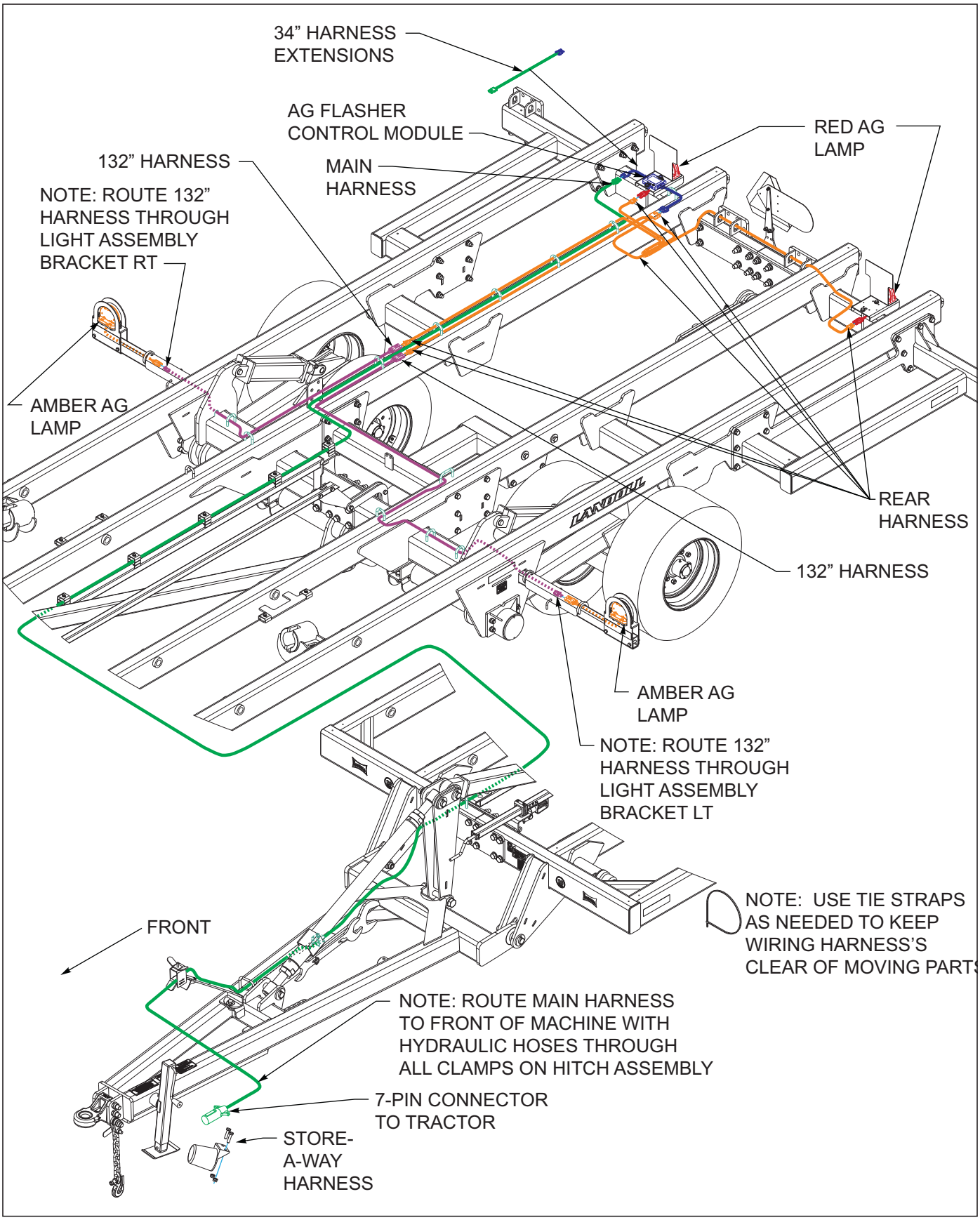


Figure 3-36: Electrical Assembly W/LED Lights 2411-06

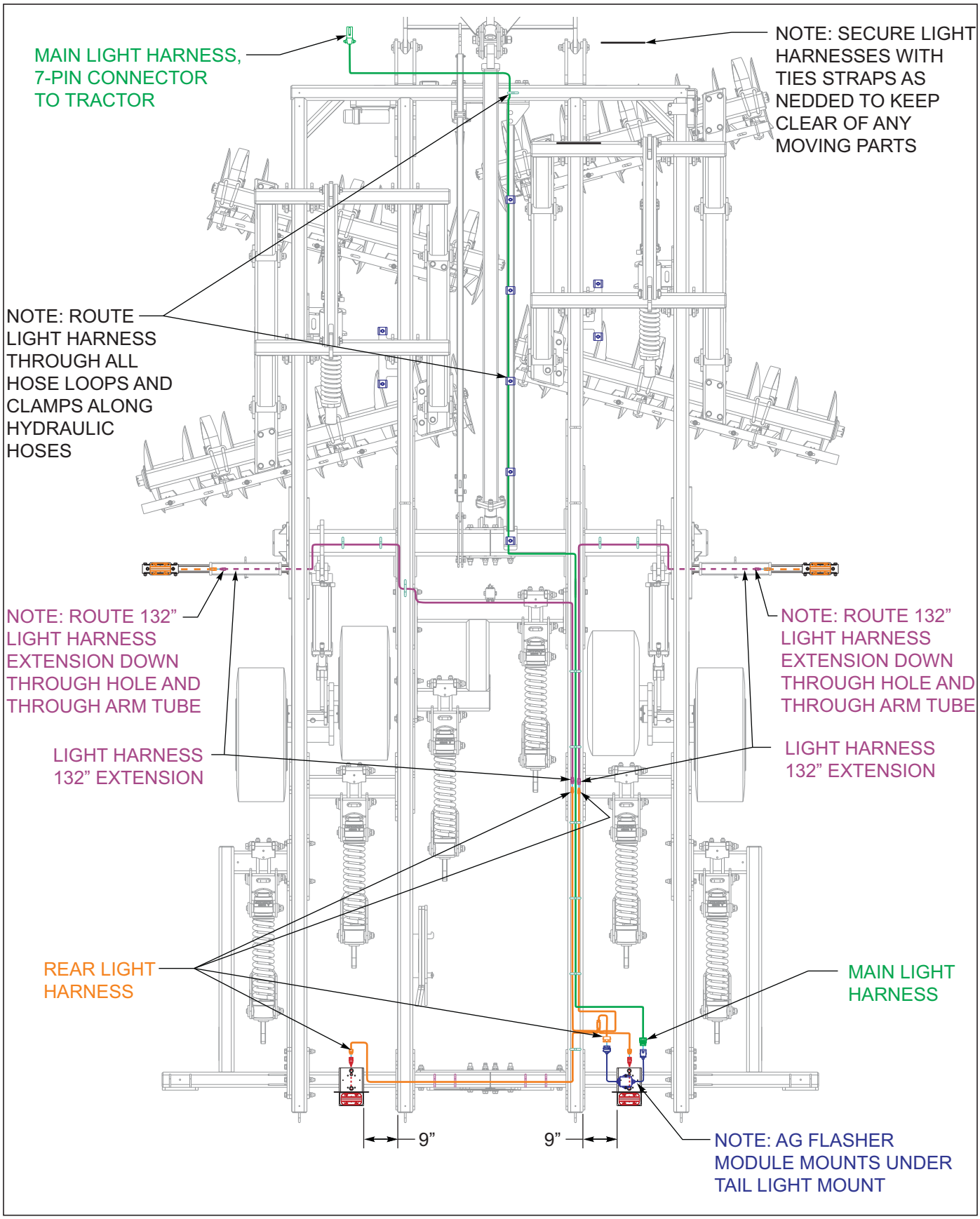


Figure 3-37: Electrical Layout W/LED Lights 2411-06

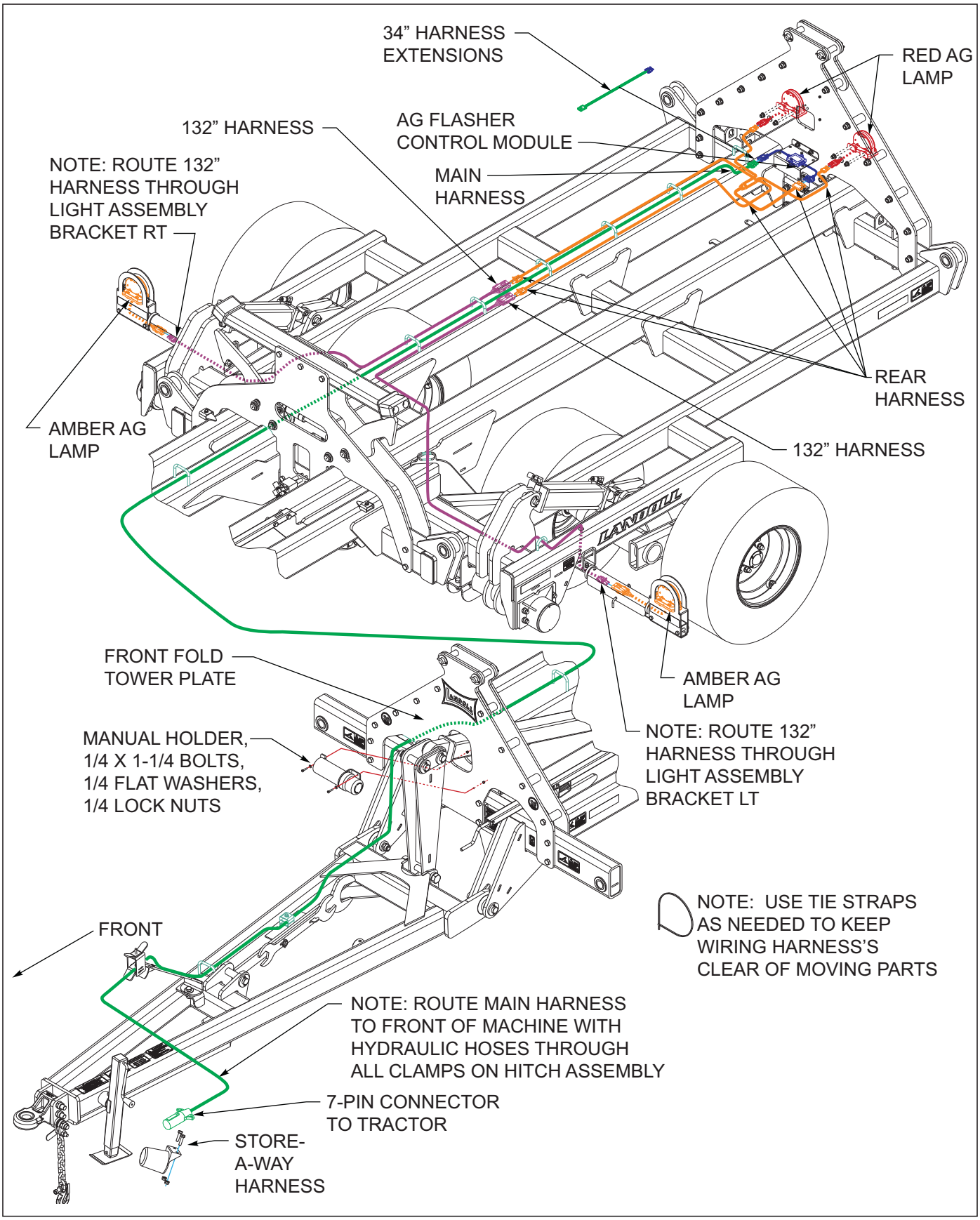


Figure 3-38: Electrical Assembly W/LED Lights 2411AFG-07-09

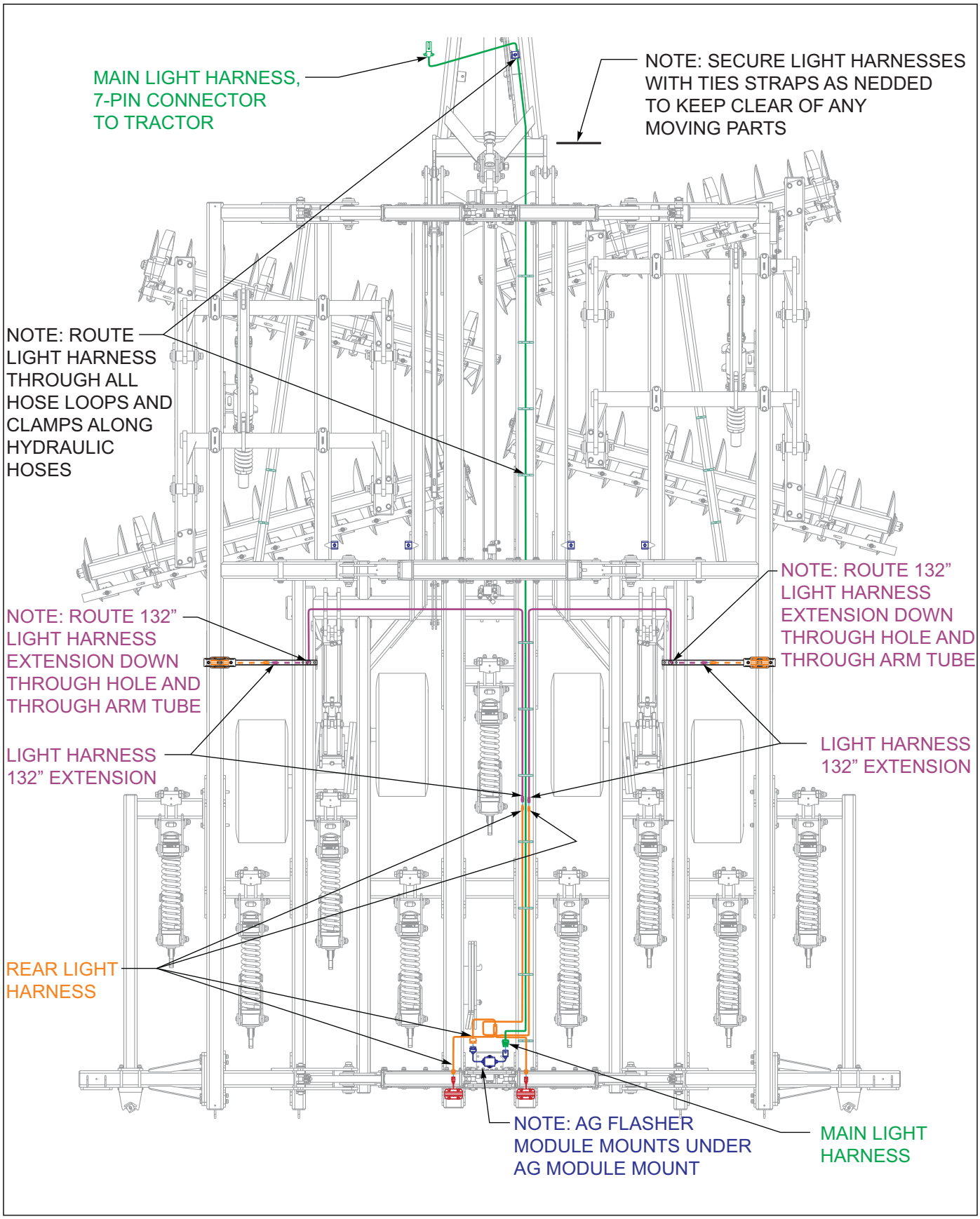


Figure 3-39: Electrical Layout W/LED Lights 2411AFG-07-09

3BCT/Chopper Reel Installation (Option)

Refer to See Figures 2-6 through See Figures 2-7 for Hydraulic 3BCT/Chopper Reel Placement.

1. Attach the combo harrow mount arm long assemblies on rear of center frame with 3/4 x 2-1/2 bolts, 3/4 flat washers, 3/4 lock nuts ***See Figures 3-44***.
2. Attach the combo harrow mount arm short assemblies to plates on rear of wing frames. Secure outer ams with 3/4 x 2-1/2 bolts, 3/4 flat washers, 3/4 lock nuts, inner arms with 3/4 x 8-1/2 bolts, 3/4 flat washers, 3/4 lock nuts.
3. Remove the 5/8 x 3-11/16 x 6-3/8 u-bolts, 5/8 flange lock nuts, harrow stiffner plates from harrow adjustment tubes.
4. Attach the harrow tine assemblies, secure with the u-bolts, harrow stiffner plates, nuts that were just removed as shown ***See Figures 3-44***.

NOTE

The 3 x 3 square tube may need adjusted from side to side to fit the harrow mounting arms.

5. Remove the 3/4 x 5-1/2bolts, 3/4 lock nuts, gangbar mount plates from harrow mount arms.
6. Attach the reel assemblies, secure with the gangbar mount plates, 3/4 x 5-1/2bolts, 3/4 lock nuts, that were just removed as shown ***See Figures 3-44***.
7. Attach the wrench mount with 1/2 x 8-1/2 bolt, 1/2 flat washer, 1/2 lock nut to the left center frame arm assembly only.
8. Install the hose mount plate with the 1/2 x 8-1/2 bolt, 1/2 flat washer, 1/2 lock nut, the hose clamp attaches with 3/8 x 1-1/2 bolt, 3/8 flat washer, 3/8 lock nut.
9. Models 2411-06 install the 8 port manifold to rear of manifold/smv mount assembly with 1/2 x 5-1/2 bolts, 1/2 lock nuts as shown ***See Figures 3-40***. Install bulkhead mount plate with 1/2 x 6 bolt, 1/2 N washer and 1/2 lock nut. Install #6 bulkhead tee's to bulkhead mount plate with nut provided with tee.

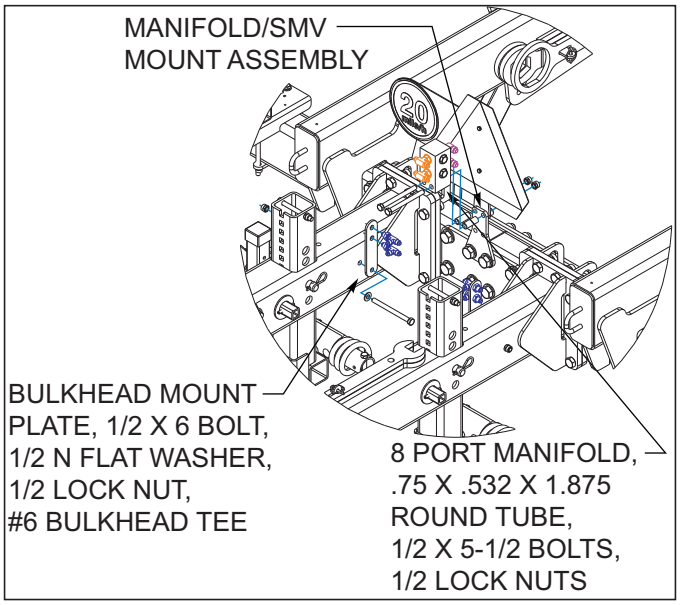


Figure 3-40: 8 Port Manifold Installation 2411-06

10. Models 2411-06 install the#8 bulkhead 90° adapter to center frame plate as shown ***See Figures 3-40***.

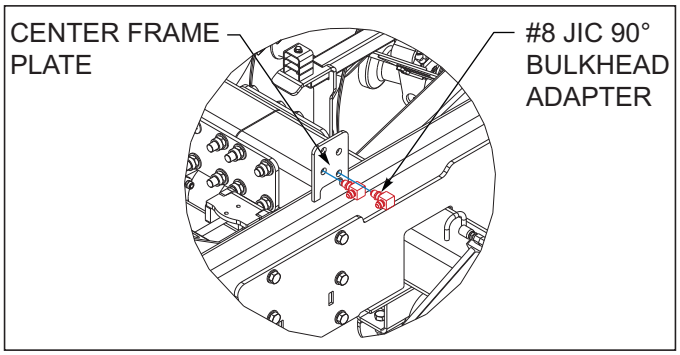


Figure 3-41: #8JIC Bulkhead 90° Adapter Installation 2411-06

11. Models 2411AFG-07-09 install the 8 port manifold to rear fold tower assembly with 1/2 x 10 bolts, 1/2 lock nuts as shown ***See Figures 3-42***.

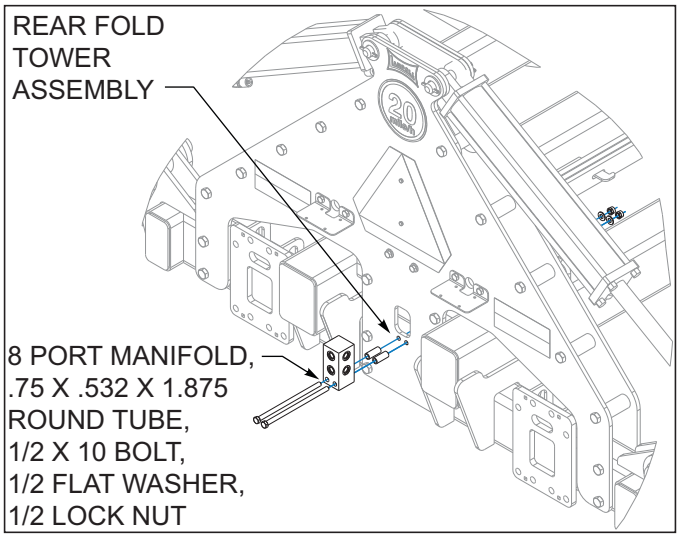


Figure 3-42: 8 Port Manifold Installation 2411AFG-07-09

12. Install the hose mount plate to both inner combo harrow mount arm with the 1/2 x 8-1/2 bolt, 1/2 flat washer, 1/2 lock nut, the hose clamp attaches with 3/8 x 1-1/2 bolt, 3/8 flat washer, 3/8 lock nut ***See Figures 3-44***.
13. Install the mount plate to both inner combo harrow mount arm with 1/2 x 6 bolt, 1/2 flat washer and 1/2 lock nut ***See Figures 3-44***. Attach the bulkhead tees w/nut to mount plate.
14. Attach hoses down through the slotted holes of combo harrow mount arm to cylinders as shown ***See Figures 3-43***. The reel base end of cylinder hooks to top set of holes of 8 port manifold, rod end to bottom holes of manifold.

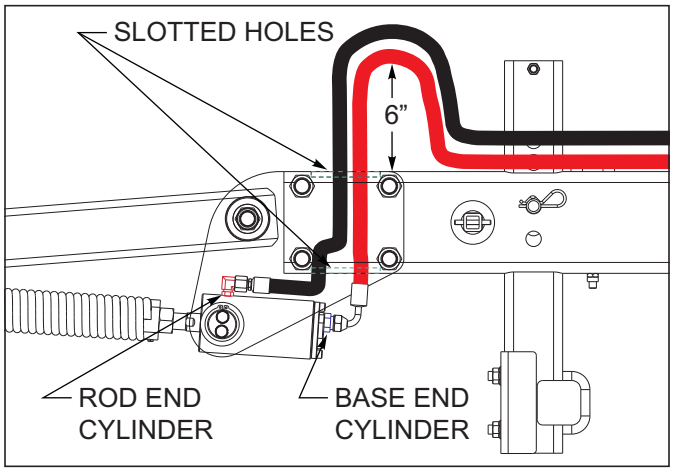


Figure 3-43: Hose to Cylinder Installation

15. ***See Figures 3-45*** for proper hydraulic installation.

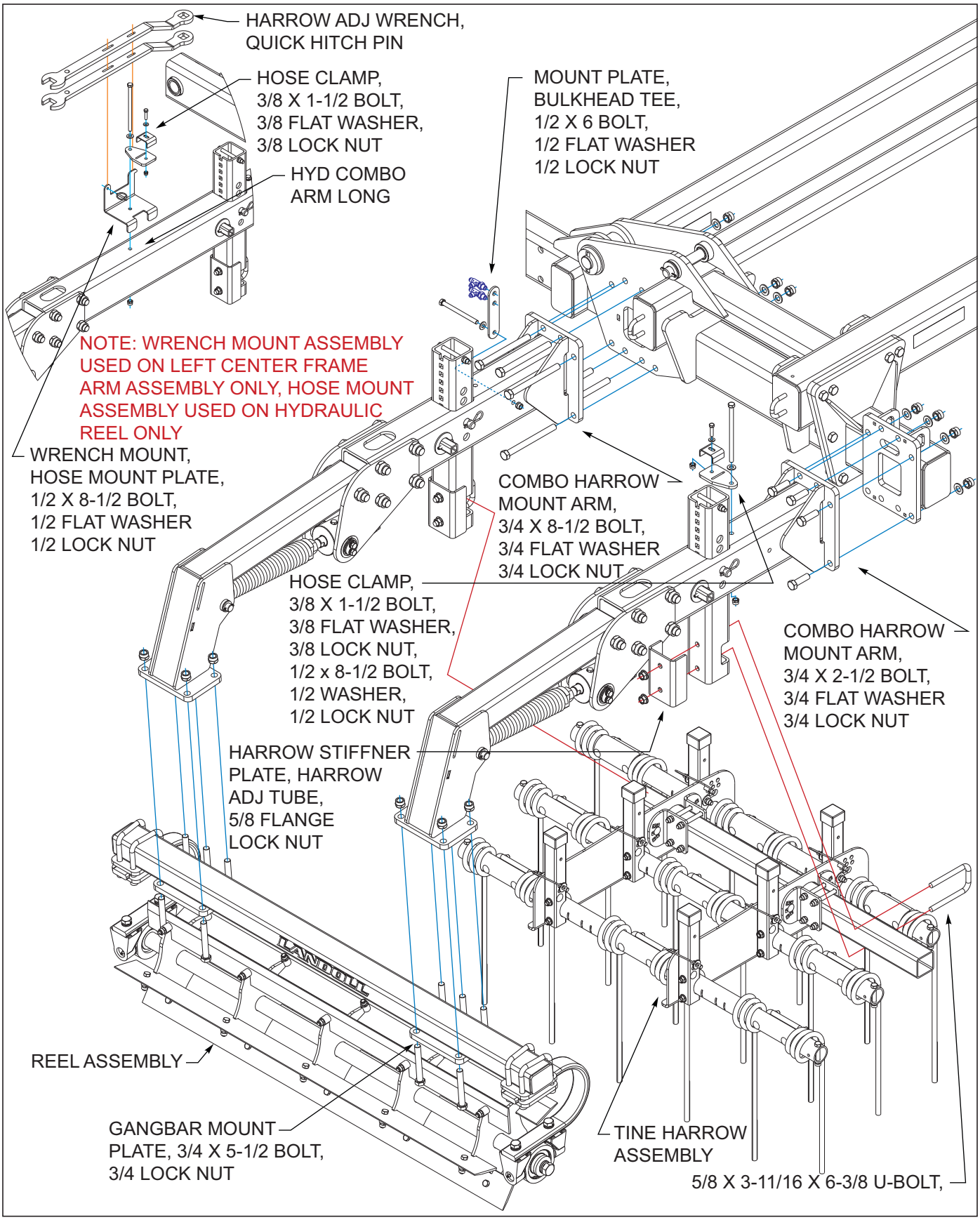


Figure 3-44: Hydraulic 3BCT/Chopper Installation (Option)

Table provided for general use.

NOTES:

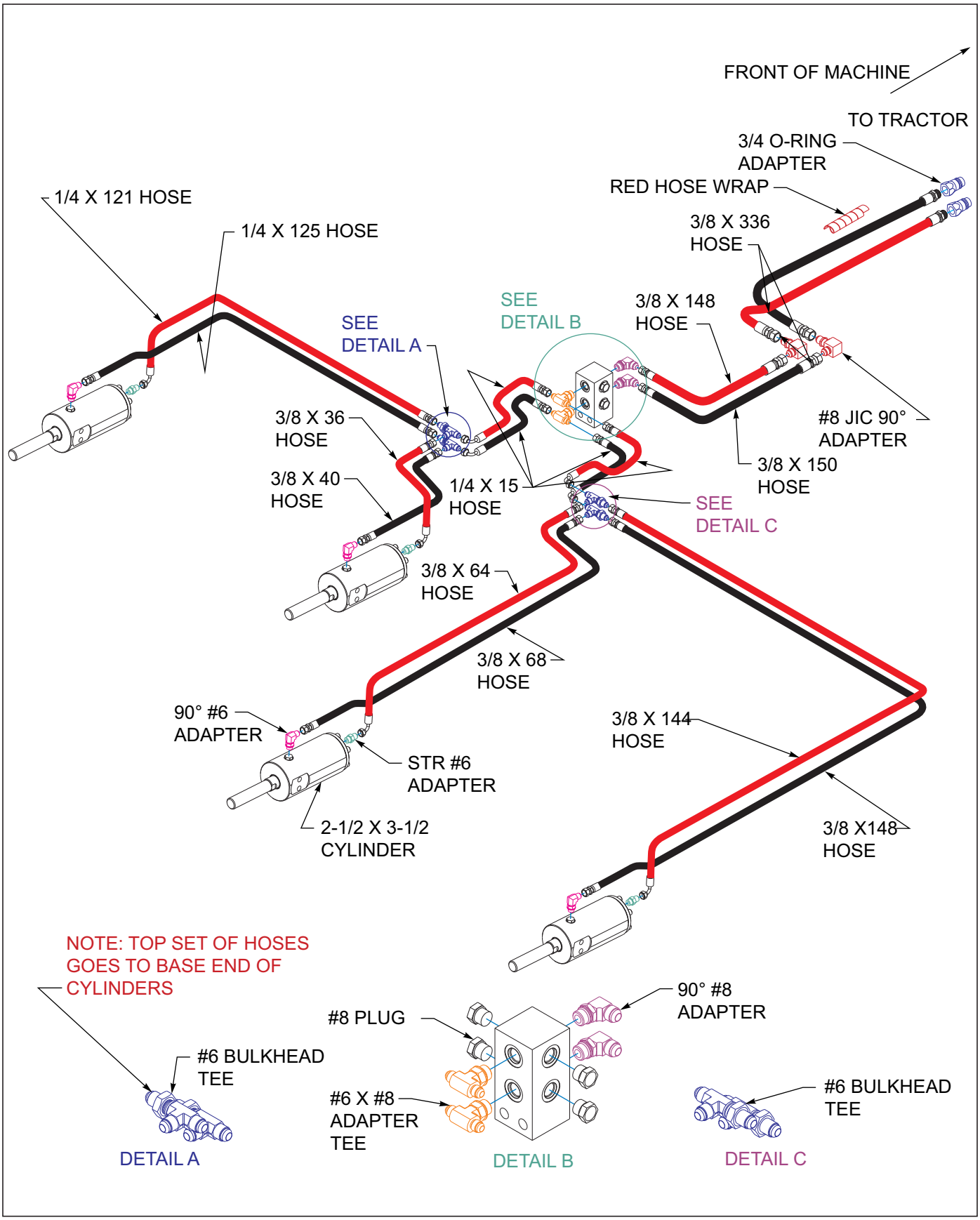


Figure 3-45: 3BCT/Chopper Hydraulic Installation 2411-06

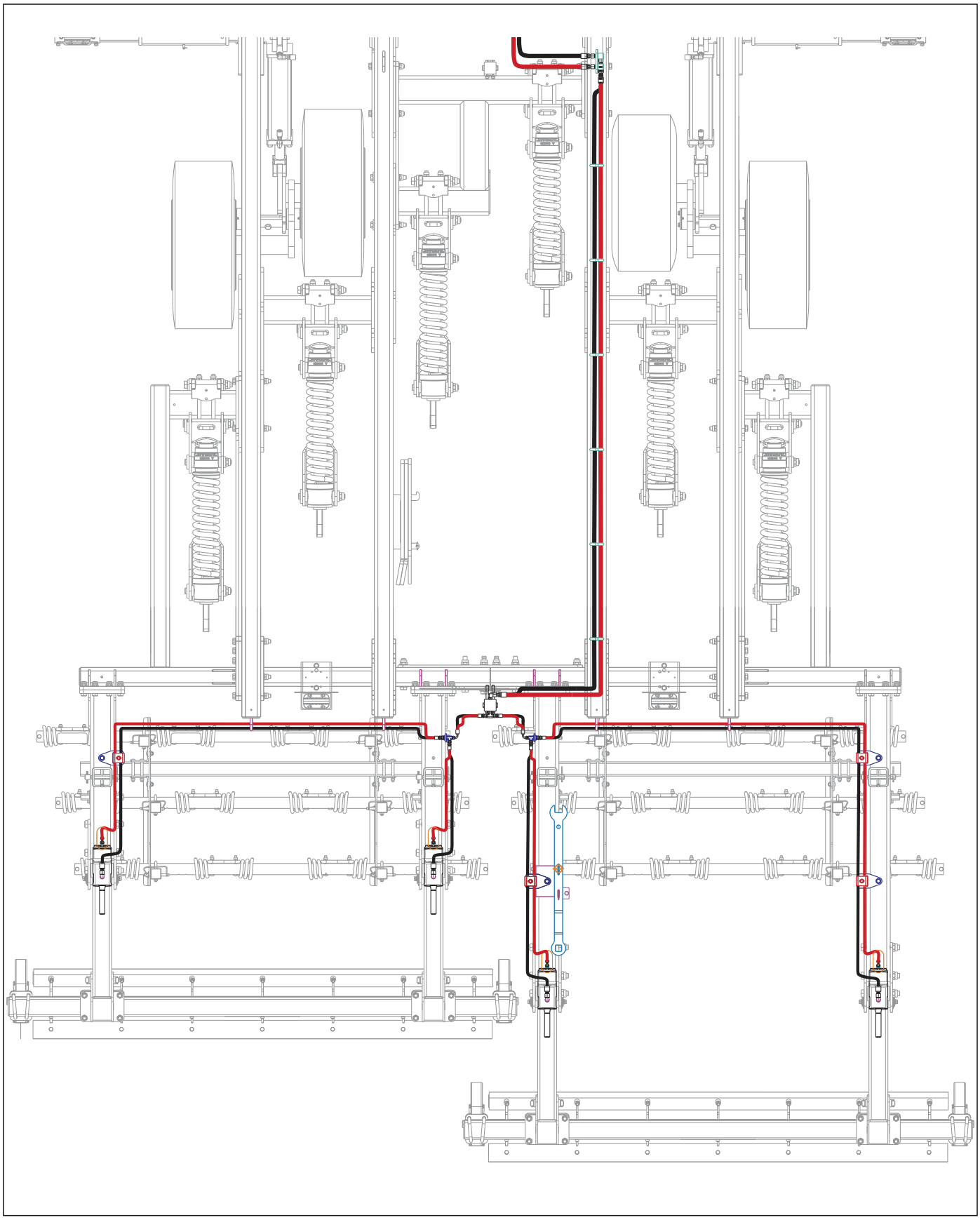


Figure 3-1: 3BCT/Chopper Hydraulic Layout 2411-06

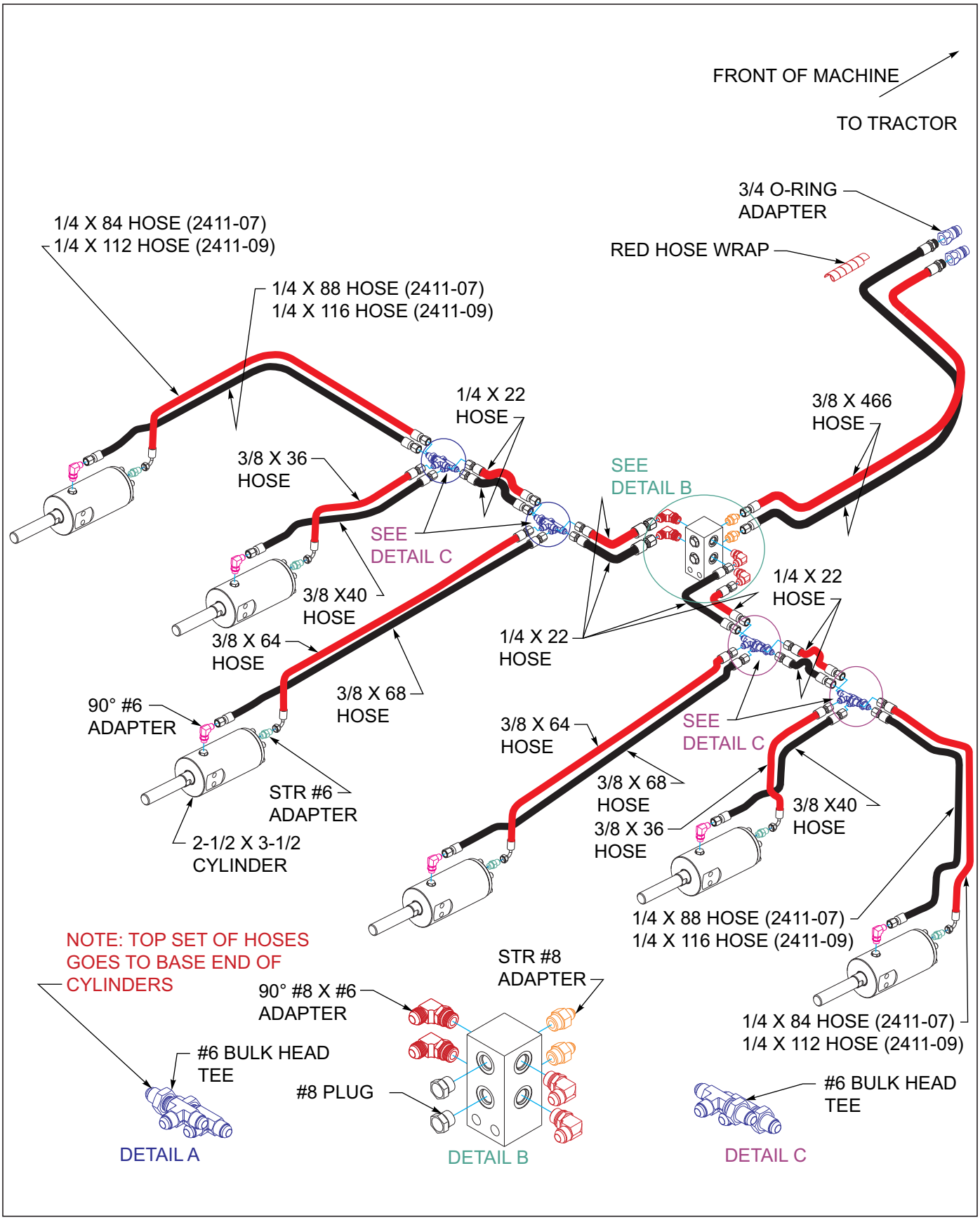


Figure 3-46: 3BCT/Chopper Hydraulic Installation 2411AFG-07-09

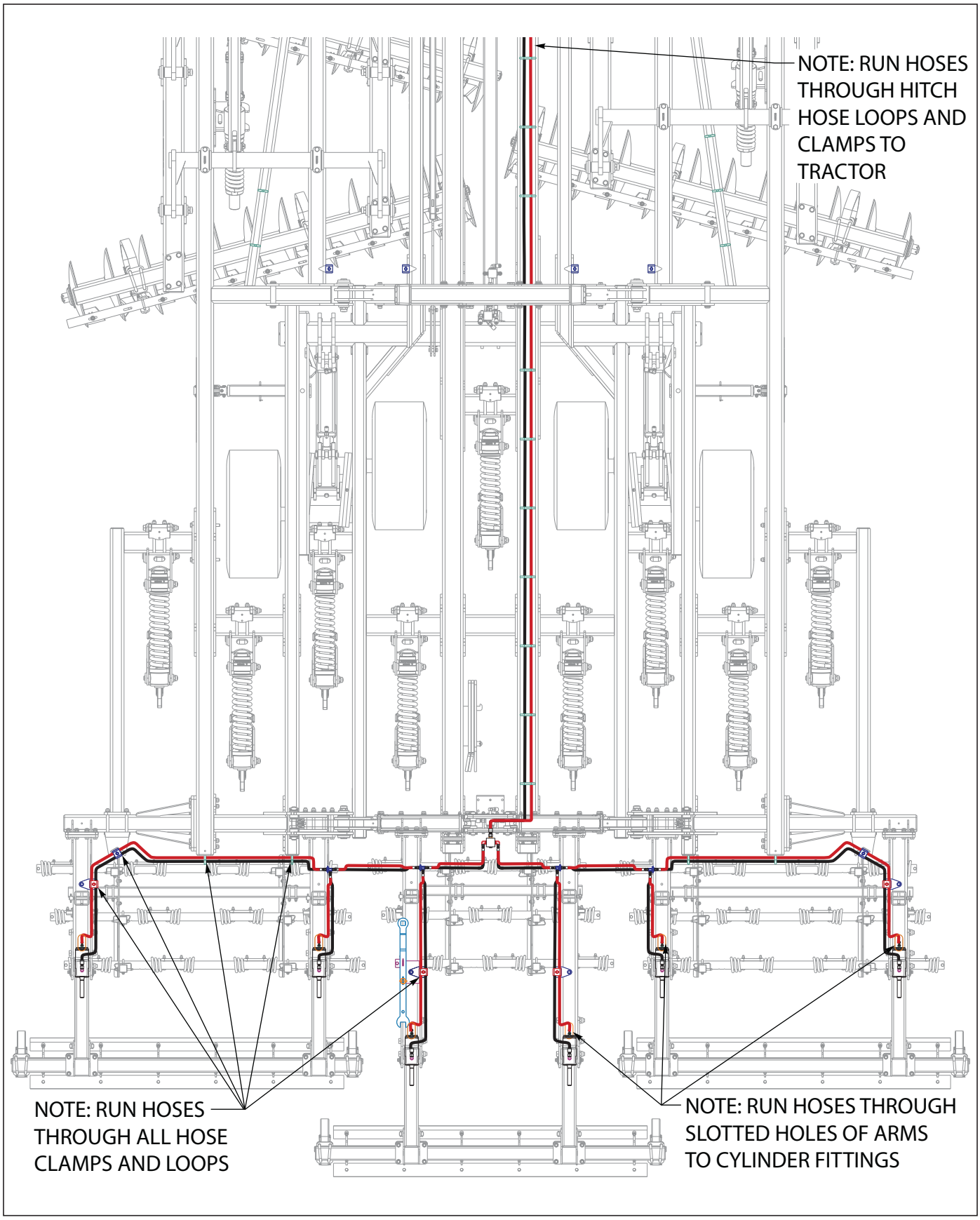


Figure 3-2: 3BCT/Chopper Hydraulic Layout 2411AFG-07-09

Disc Lev/Hyd Flat RL Installation (Option)

Refer to See Figures 2-8 through See Figures 2-10 for disc lev/hyd flat rl placement.

NOTE

The arm assemblies will be pre-assembled from factory and need attached to rear of frames. The leveler mount assemblies will be pre-assembled from factory without disc blades attached.

1. Starting at the rear of the center frame, attach one of the hydraulic arm assemblies with a 3-1/2 x 8 cylinder using 3/4 x 2-1/2 bolts, 3/4 flat washers, and 3/4 lock nuts. ***See Figures 3-50*** and ***See Figures 2-8 through See Figures 2-10*** for arm placement.
2. Install the center disc lift tube, aligning the square tube with the square hole in the cylinder anchor to the hydraulic arm assembly that is mounted.
3. Attach the opposite side center frame hydraulic arm assembly with 3-1/2 x 8 cylinder, aligning the disc lift tube to the square hole in the cylinder anchor using ¾ x 2-1/2 bolts, 3/4 flat washers, and 3/4 lock nuts.
4. Attach both left and right inner wing hydraulic arm assemblies with a 3-1/4 x 8 cylinder using 3/4 x 8-1/2 bolts, 3/4 flat washers, and 3/4 nuts.
5. Install the wing disc lift tubes, aligning the square tube with the square hole in the cylinder anchor to the hydraulic arm assembly.
6. Attach both left and right outer wing hydraulic arm assemblies without cylinders using 3/4 x 2-1/2 bolts, 3/4 flat washers, and 3/4 lock nuts

NOTE

The following steps to install the hose mounts and bulkhead plates require removing the pin from the cylinder clevis to rotate the cylinder up to install the mounting bolts.

7. Install the bulkhead mount plate with 1/2 x 8-1/2 bolt, 1/2 flat washer, 1/2 lock nut.
8. Install the hose mount plate with 1/2 x 8-1/2 bolt, 1/2 flat washer, 1/2 lock nut. Attach the bulkhead tee's to the holes in the hose mount plate.
9. Install the hose mount plate with the 1/2 x 8-1/2 bolt, 1/2 flat washer, 1/2 lock nut, the hose clamp attaches with 3/8 x 1-1/2 bolt, 3/8 flat washer, 3/8 lock nut.
10. Models 2411AFG-07-09 Install hose mount plate, bulkhead mount plate to both 3-1/2 x 8 disc level hyd arm assemblies, with 1/2 x 8-1/2 bolt, 1/2 N washer and 1/2 lock nut. Install #6 bulkhead tee's to bulkhead mount plate with nut provided with tee. as shown ***See Figures 3-47***.

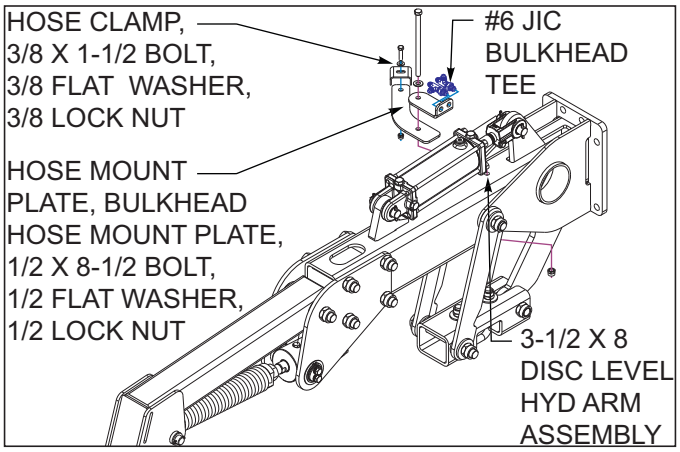


Figure 3-47: 8 Port Manifold Installation 2411AFG-07-09

11. Attach the leveler mount tubes to arm assemblies using 3/4 x 4-13-16 x 5-3/4 u-bolts, 3/4 flat washers and 3/4 lock nuts.
12. Attach the RT/LT and leveler mount assemblies to front of the leveler mount tubes with 5/8 x 3-13-16 x 5-1/2 u-bolts and 5/8 lock nuts.
13. Attach the o-ring, disc blade, to the leveler mount assemblies using 5/8 x 1-1/4 bolts and 5/8 lock washers.
14. Attach the reel/gangbar assemblies to rear of arm assemblies with mount plate, 3/4 x 5-1/2 GR8 bolts and 3/4 lock nuts.
15. Models 2411AFG-07-09 install the 16 port manifold to rear fold plate assembly with 4, .75 x .532 x 1.875 round tubes 1/2 x 12 bolts, 1/2 flat washers 1/2 lock nuts as shown ***See Figures 3-48***.

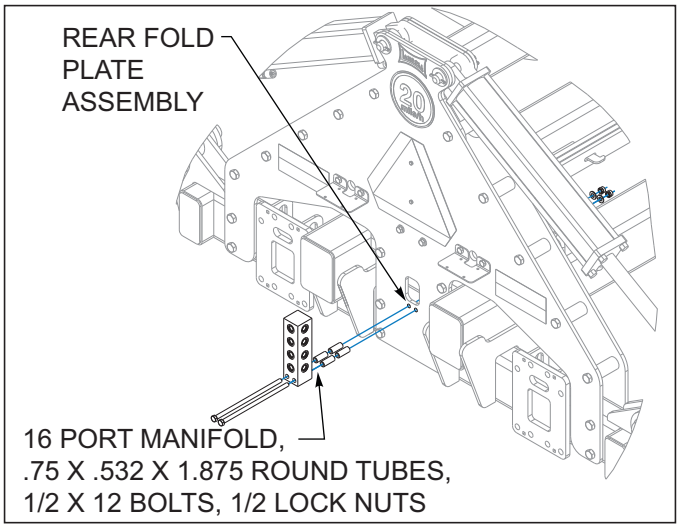


Figure 3-48: 16 Port Manifold Installation 2411AFG-07-09

16. Install the hose mount plate to both outer no/hyd arm with 1/2 x 8-1/2 bolt, 1/2 flat washer, 1/2 lock nut. Attach hose clamp with the 3/8 x 1-1/2 bolt, the hose clamp with 3/8 x 1-1/2 bolt, 3/8 flat washer, 3/8 lock nut ***See Figures 3-50***.
17. Attach hoses down through the slotted holes of combo harrow mount arm to cylinders as shown ***See Figures 3-49***. The reel base end of cylinder hooks to top set of holes of 8 port manifold, rod end to bottom holes of manifold.

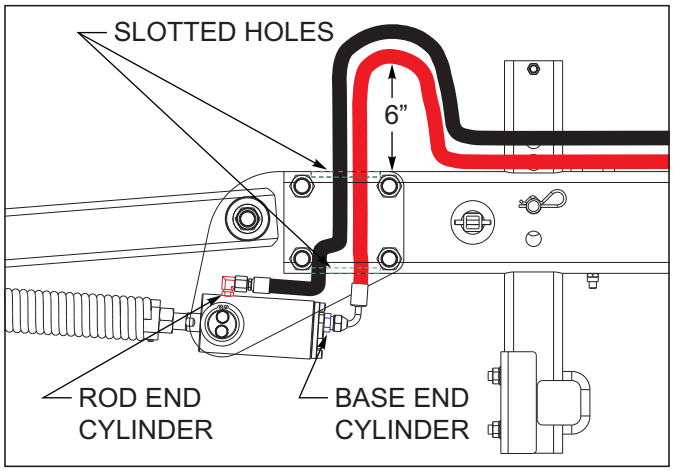


Figure 3-49: Hose to Cylinder Installation

NOTE

Note locations of hose clamps, hose mount plates and bulkhead mount plates and bulkhead tees See Figure 3-52 and See Figure 3-53.

18. ***See Figures 3-51*** through ***See Figures 3-53*** for proper hydraulic installation.

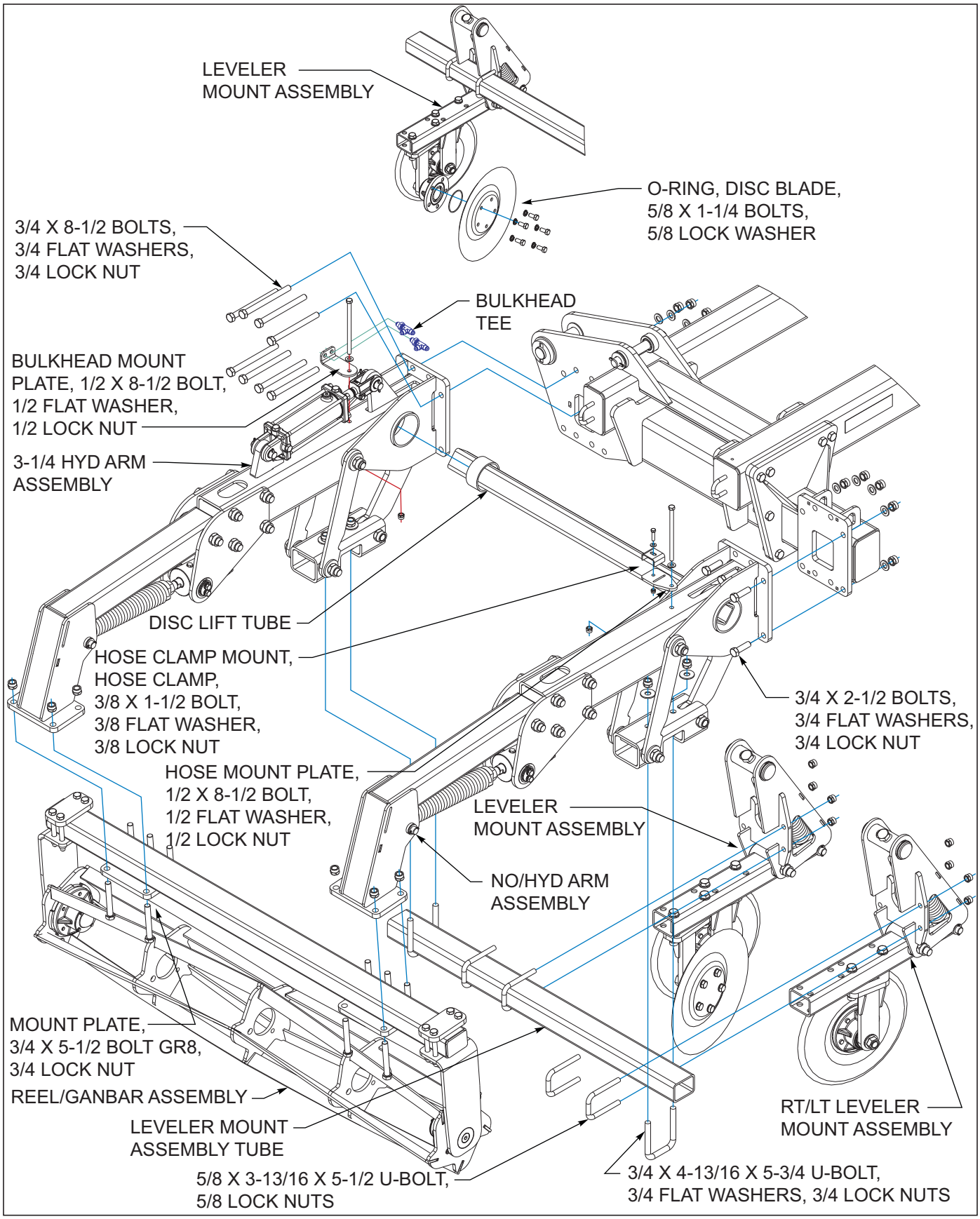


Figure 3-50: Disc Lev/Hyd RL Installation (Option)

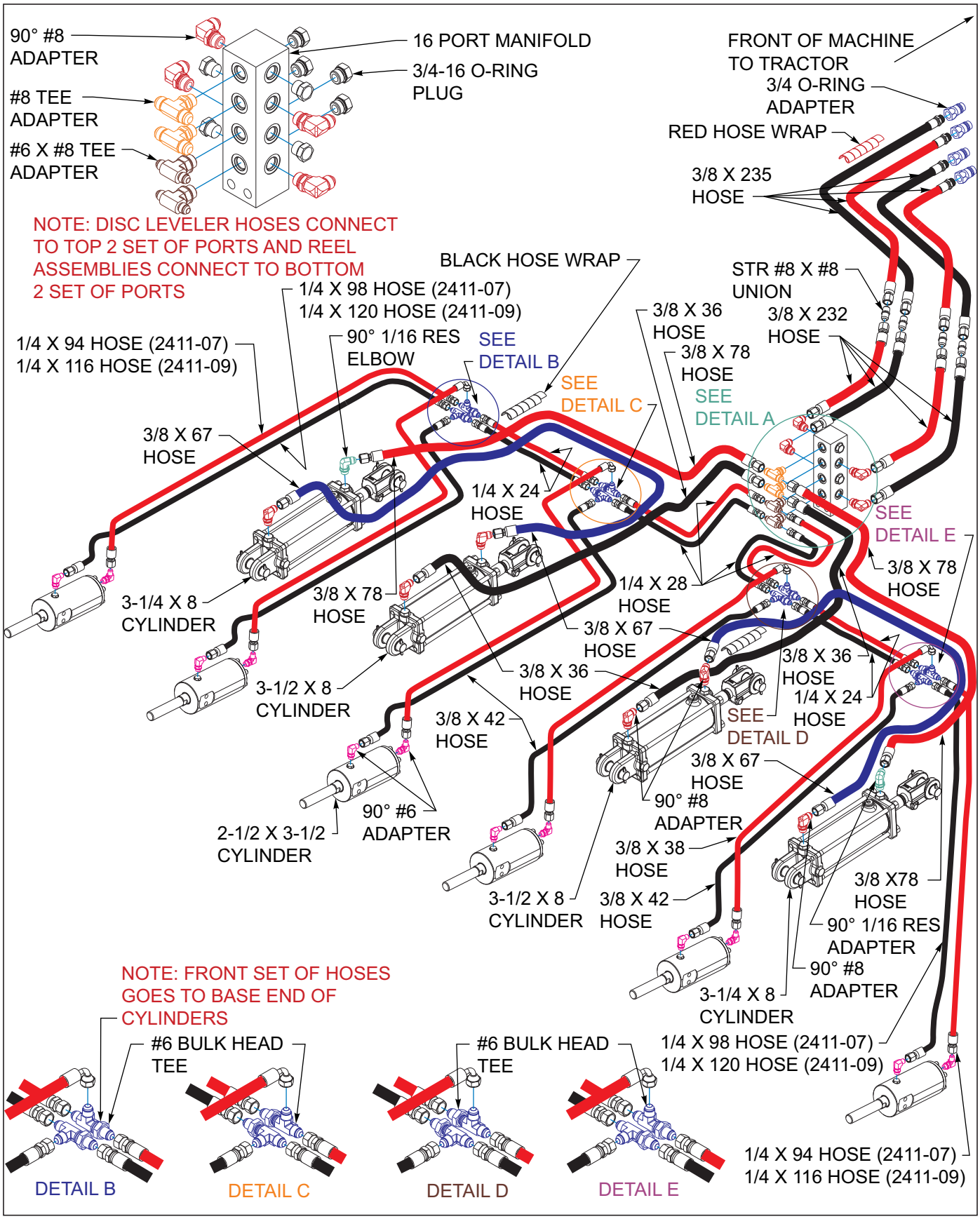


Figure 3-51: Disc Lev/Hyd RL Installation 2411AFG-07-09

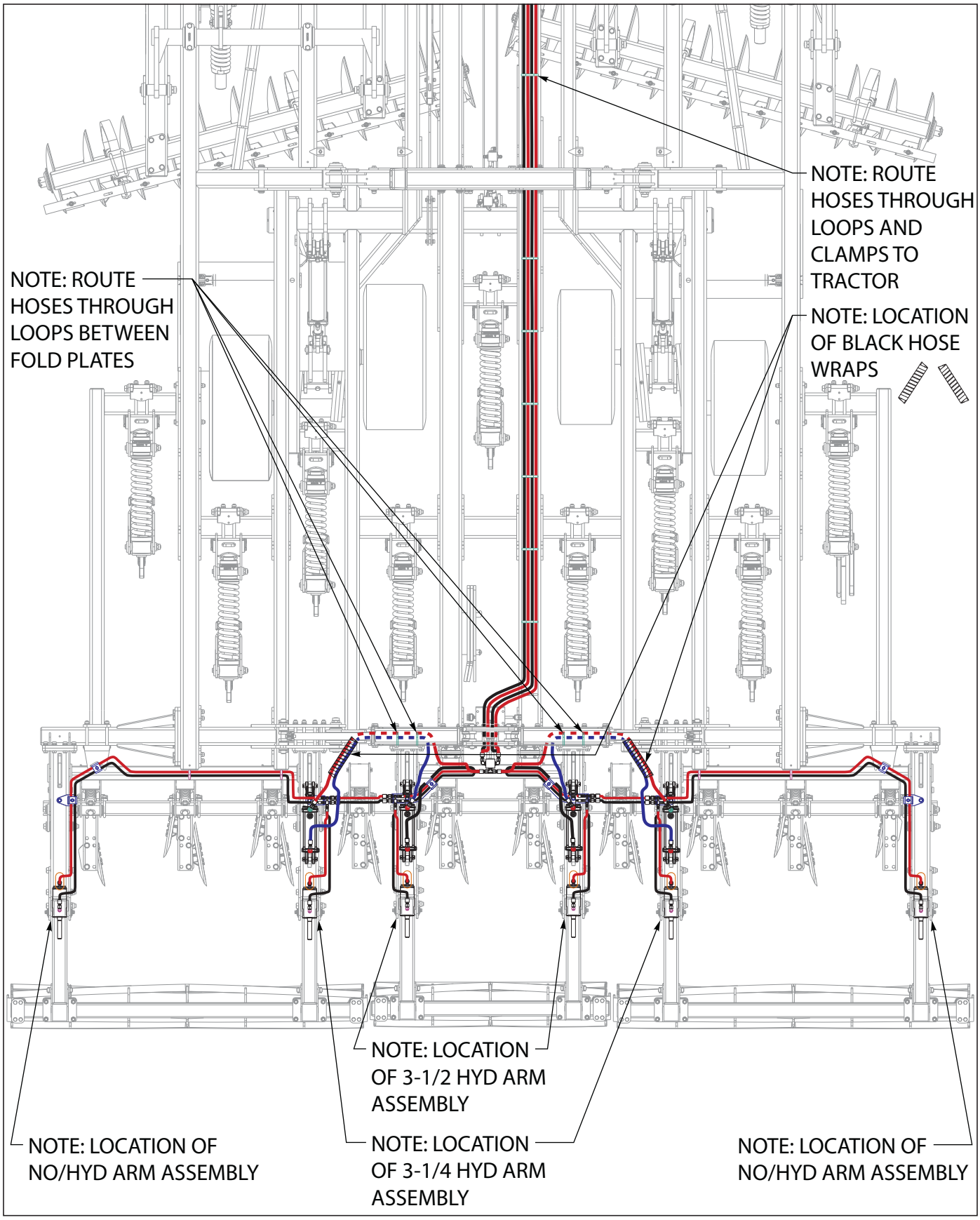


Figure 3-52: Disc Lev/Hyd RL Layout 1 2411AFG-07-09

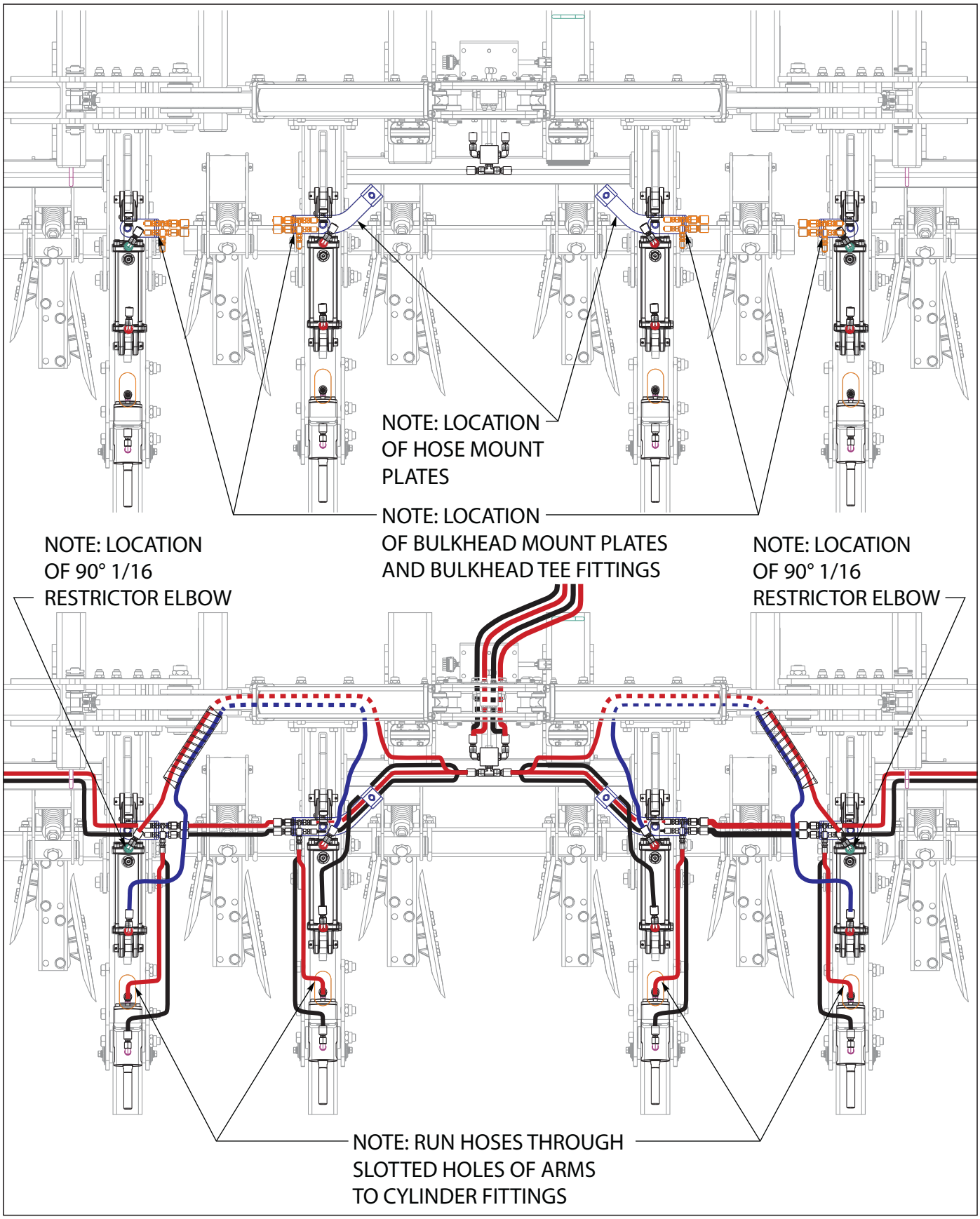


Figure 3-53: Disc Lev/Hyd RL Layout 2 2411AFG-07-09

Final Assembly

1. Attach a tractor to the implement and charge the lift system hydraulics as described in ***"Hydraulic Lift System" on page 4-3*****.**
2. Install the 2 x 16 transport lockouts on both 4-1/2 x 16 cylinders on the center frame.
3. The fold systems must be purged of air and filled with oil **BEFORE** attempting to fold the implement. Air in the system will allow the wings to fall uncontrollably and may result in implement damage. Follow instructions for charging the hydraulic fold system as described in ***"Hydraulic Fold System 2411AFG-2411-07-09" on page 4-4*****.**
4. Connect lights to the tractor and verify operation.
5. Check tires for proper inflation
6. Level the Weatherproofer from front to rear as described in ***"Leveling (Front-to-Rear)" on page 4-6*****.**
7. Inspect the final implement assembly, and verify that all bolts have been tightened, cotter pins spread, and that there are no leaking hydraulic connections.

⚠ CAUTION

Tighten all 1-3/4" nuts to 1,250 foot-pounds of torque *See Figure 3-54*

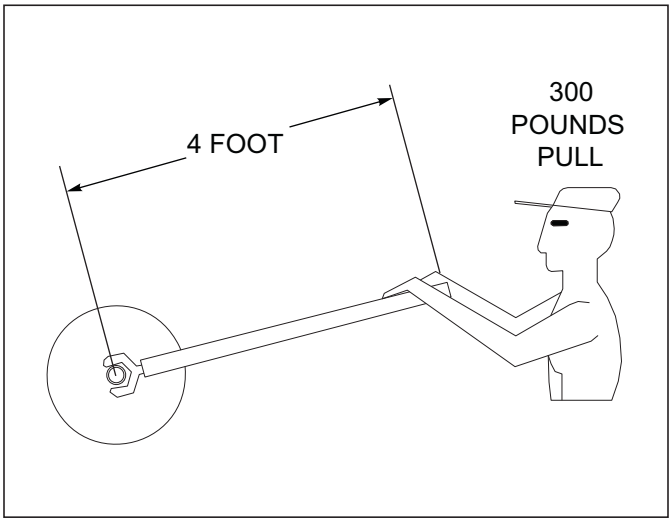


Figure 3-54: 1,200 Foot-Pounds of Torque

8. Rotate each disc gang to verify that each gang rotates freely. Adjust any scrapers that may have shifted during shipment or assembly.
9. Lubricate the Weatherproofer at all locations as described in ***"Lubrication Maintenance" on page 5-2*****.**
10. Touch up with paint any areas that may have been scratched during moving, handling, or assembly.
11. Thoroughly read and understand the operating section before using the Weatherproofer.

Chapter 4

Operation

DANGER

Never allow anyone to ride on the 2411 Weatherproofer at any time. Allowing a person to ride on the machine can inflict serious personal injury or death to that person.

DANGER

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

WARNING

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

DANGER

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

CAUTION

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

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.

Tractor Preparation

The Landoll 2411 Weatherproofer 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 Weatherproofer equipped with the clevis option, this should be removed. The clevis option is only for transport use. Before attaching the Weatherproofer, 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.

Weatherproofer Preparation

1. Prior to operating the 2411 Weatherproofer, 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 gauge 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***
   a. Loosen U-bolts. Slide scraper assembly to adjust clearance to 1/8" to 1/4".

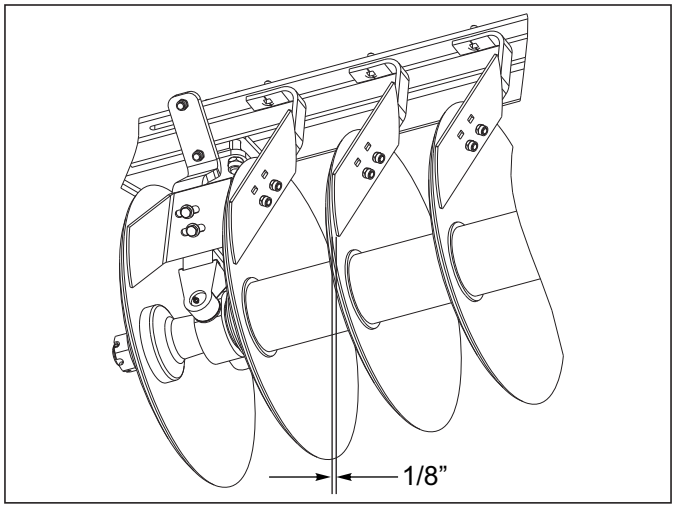


Figure 4-1: Disc Scraper Clearance to Disc Blade

IMPORTANT

Under certain conditions, it may be beneficial to set scrapers as much as 1" away from the discs.

6. Lubricate the machine as shown in ***“Lubrication Maintenance” on page 5-2 and See Figure 5-3.***

Attaching To The Tractor

1. Align the tractor drawbar with the machine. Raise or lower the disc ring hitch, as needed, using the swivel jack. Attach the unit with proper size hitch pin.
2. Always place the swivel jack on the interior mount before setting the machine in motion.
3. Clean all hydraulic couplings and attach to the tractor.
4. Fully extend the hydraulic lift wheel cylinders, and place the cylinder lockouts in the transport lock position over the cylinder rods. Secure the lockouts with the lockout pins.
5. Attach safety chain to tractor allowing plenty of movement for turning both directions. The safety chain should latch securely to prevent it coming loose.
6. Plug in the 7-pin connector for the lights.

   a.The tractor should have a good clean receptacle, free of dirt and corrosion.

   b.Make sure the 7-pin connector is inserted all the way in, and allows the cover to latch over the keyway to secure it in place.

NOTE

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

Hydraulic Lift System

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

⚠ 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.

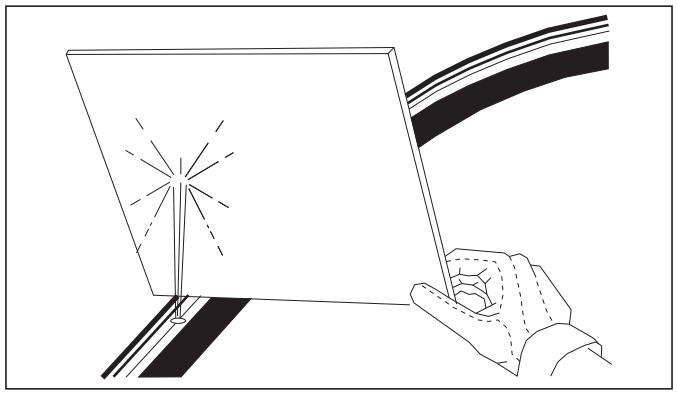


Figure 4-2: Hydraulic Leak Detection

1. The hydraulic lift system contains cylinders plumbed together. It is important that the cylinders be connected in the proper series for the lift system to operate correctly.
2. The hydraulic system is not filled with oil and should be purged of air before transporting and field operations. Carefully hitch the Weatherproofer 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. With all cylinders fully extended remove the transport lockouts ***See Figure 4-3*** Store transport lockouts on light bracket assemblies**.** Lower and raise the unit to verify that cylinders are working simultaneously throughout the stroke. Do not loosen any hoses or fittings. Recheck tractor reservoir to make sure it is within operating limits.

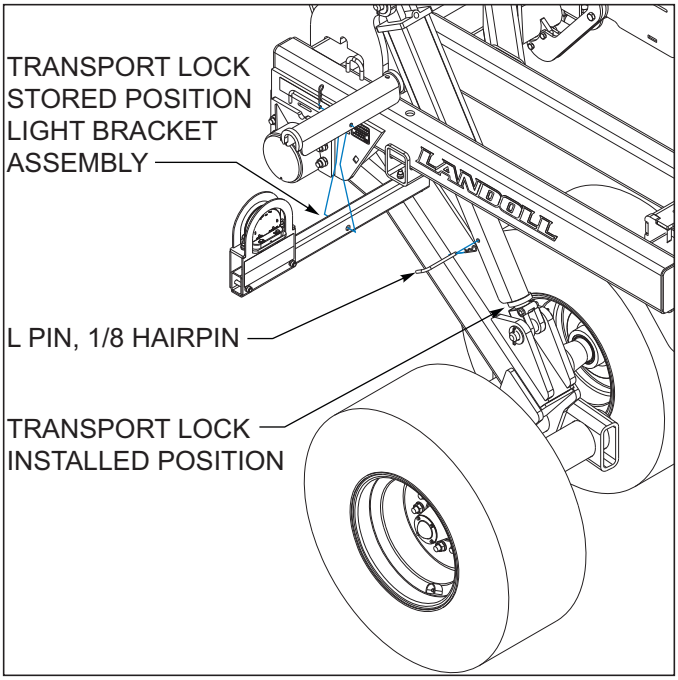


Figure 4-3: Transport Locks

Hydraulic Fold System 2411AFG-2411-07-09

1. Models 2411AFG-07-09 Weatherproofer 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.
3. To charge the system, carefully hitch the Weatherproofer to the tractor. Unpin the end(s) of the fold cylinders, and position them so they can extend and retract without contacting any frames or other parts. Check the tractor hydraulic fluid level to make sure it is full of the manufacturer's recommended hydraulic fluid. Connect the cylinder hoses to the tractor and fully extend and retract the cylinders several times. The cylinder rod travel should be smooth and positive when all air has been purged from the system. Due to large amounts of hydraulic oil required, recheck the tractor fluid level to make sure it is within proper operating limits.
4. The hydraulic fold system is equipped with restrictors in the **ROD** and **BASE** ends of the fold cylinders to prevent uncontrolled falling of wing frames when unfolding. Removal or improper assembly of these restrictors can cause the machine to fold/unfold improperly and result in serious machine damage.

⚠ 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.

5. The hydraulic fold system has an automatic wing lock cylinder in the system ***See Figure 4-4***. This small cylinder is in the center of the machine and will work opposite of the wing fold cylinders. Verify that when the wing fold cylinders are retracting that this 1-1/2" bore x 1-1/2" stroke cylinder is extending.
6. To fold/unfold the Weatherproofer, find a level area large enough to accommodate the machine when it is fully unfolded. The tractor should be stopped and not moving with the unit fully raised. The disc gangs should also be fully raised to allow more clearance in the center allowing the blades to stay above the ground when folding.
7. Slowly engage the tractor lever and fold the wing frames. The wings should fold fairly evenly and the wing transport lock hooks in the center will be rotated to the bottom of the slots, and will allow the wing to raise them up as it comes over center to hook on the wing transport lock pin.
8. To unfold, slowly engage the tractor lever and the wing transport lock hooks should immediately rise up off of the wing transport lock pins on both left and right side wings. Continue to hold the lever to allow the wings to unfold and the wing fold cylinders to fully extend. The transport lock hooks will remain up until the unit is folded back up. The wing fold cylinders will remain fully extended to keep the wings level to the center frame. If the wings do not appear flat to the center frame, the wing fold cylinders have wrench flats on the end of the rod and are adjustable to level out the wings. Cylinder pressure will need to be relieved to turn the rod. Adjust both front and rear fold cylinders the same.

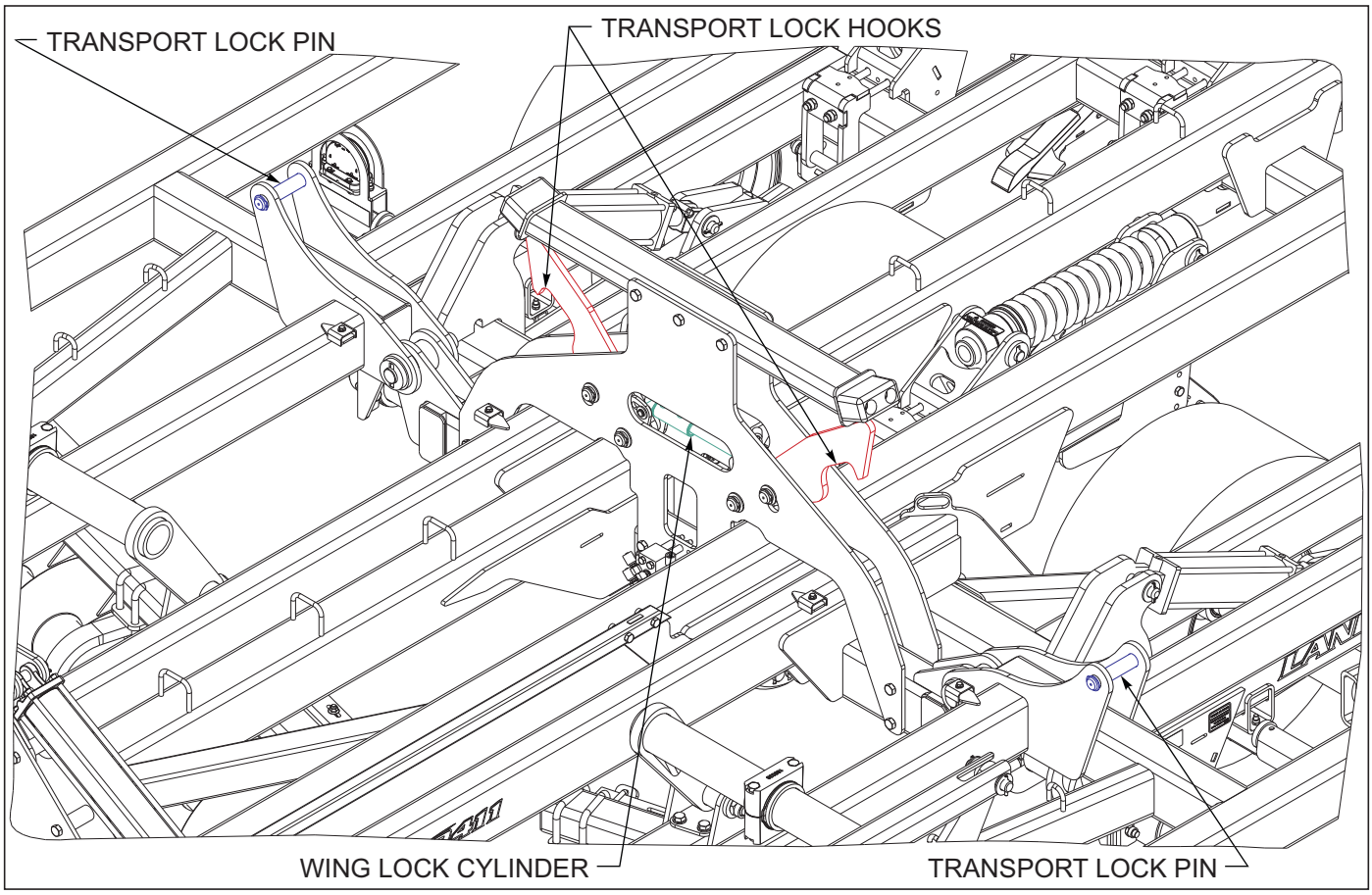


Figure 4-4: Automatic Wing Lock 2411AFG-07-09

General Operation

1. The horsepower requirements are typically 40-50 horsepower per shank. This will vary widely due to speed, depth, moisture, residue and types of soils. Local dealers can help in making recommendations for your areas.
2. Operating speed is typically 4.5-6 mph. Excessive speed can cause the unit to bounce, uneven depth, and create undesirable ridges.
3. Lift wheels must always be in contact with the ground and carrying some implement weight. Lift wheels are used to gauge the depth and to control the leveling feature.
4. Do not turn with the Weatherproofer in the ground. This can put excessive side load on the gangs and hitch. Raise the unit fully when making turns to prevent gouging and pushing a ridge.

Field Operation

1. Raise the unit to take the weight off of the transport locks. Remove the transport locks from the lift cylinders. Store the transport locks on the light bracket assemblies ***See Figure 4-5***.

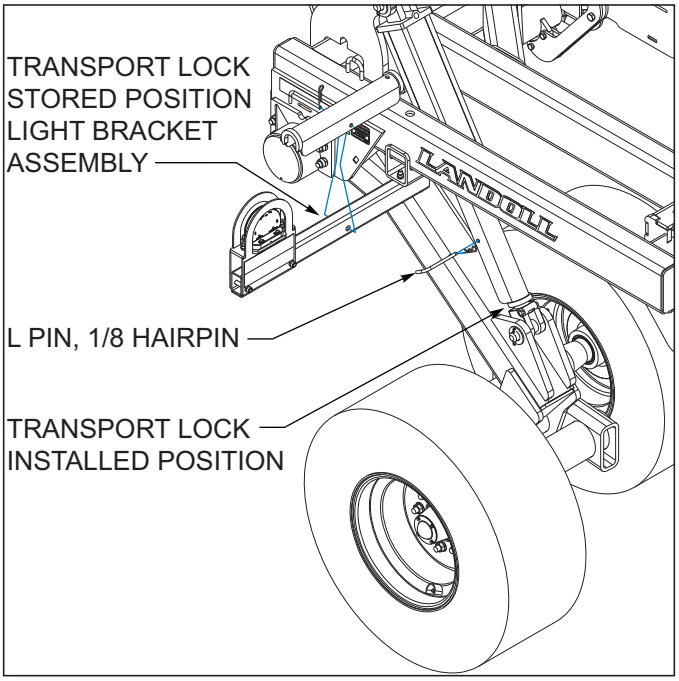


Figure 4-5: Transport Locks

Leveling (Front-to-Rear)

NOTE

The Weatherproofer will have to be field leveled for optimum performance. Once leveling is complete, it is normal operating procedure for machine to bias forward when fully raised allowing additional ground clearance for rear attachment.

1. The leveling feature on the Weatherproofer is used to keep the machine level when raising the unit from a working position to a transport position. The leveling feature is also used to level the unit from front-to-rear to perform a level operation in the field.
2. The unit should be level from front to rear. This will reduce horsepower requirements, allow a more uniform tillage operation, and reduce unnecessary point wear.
3. To adjust the leveling feature, loosen 2-12 jam nuts at each end of the radius rod assembly using the adjustment wrenches ***See Figure 4-6***. To raise the front of the Weatherproofer, lengthen the radius rod assembly. To lower the front of the Weatherproofer, shorten the radius rod assembly. After adjusting, retighten jam nuts at each end. Adjustments should be made in small increments.

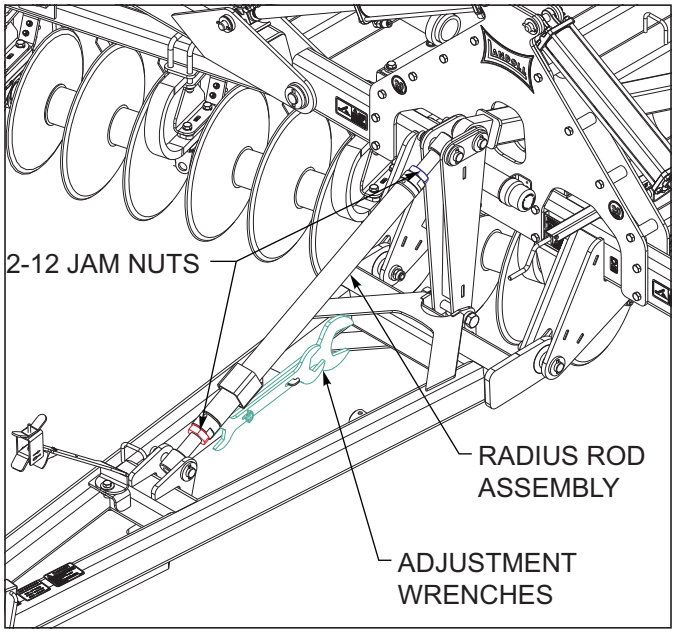


Figure 4-6: Radius Rod Leveling Adjustment

Disc Blades

1. The 2411 Weatherproofer is equipped with 24" or 26” disc blades.
2. The 24” diameter blades are concave with a thickness of 4 ga (.256”) and are standard for the 2411 Weatherproofer.
3. Sharpening – In some cases there is a desire to sharpen disc blades for improved cutting. There are several people who roll-sharpen disc blades. Most disc blades used today are made of chrome-boron steel. The chrome-boron steel has a higher hardness than traditional carbon-steel blades for increased wear. Higher hardness makes roll sharpening more difficult often with mixed results, and is not covered by warranty. Disc blade manufacturers will not cover any alterations to blades other than the place of manufacture. Results from roll-sharpening damage may not be immediate, and may take more than a season to be noticeable. If you choose to sharpen disc blades, check with local dealers for reputable experienced sharpeners that will stand behind their work.

DANGER

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

Disc Gang Operation

1. The 2411 Weatherproofer equipped with hydraulically adjustable disc gangs. The gang cylinders are on a rephasing operating system, so they will occasionally need to be rephased to keep them working in unison. This is done by fully raising the gangs and holding the hydraulic lever for 15 to 20 seconds and then resetting them as desired.
2. The disc gangs are fully adjustable as you are traveling through the field. Making large adjustments may require releveling the Weatherprooferf you are going to continue to work with the gangs at this setting.
3. We do not recommend to operate the disc gangs at much more than 4” deep. If occasional plugging or sliding of disc gangs occurs raise the gangs slightly to prevent this.

Depth Stop Adjustment

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

1. Adjust the depth stop by turning the handle in (clockwise) to increase operating depth ***See Figure 4-7***. Turn the handle out (counter-clockwise) to decrease operating depth.
2. The A to E letter gauge on the side of the depth stop tube gives a reference for depth setting. The “A“ setting when aligned with pointer 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 and does not allow the leveler to function properly.

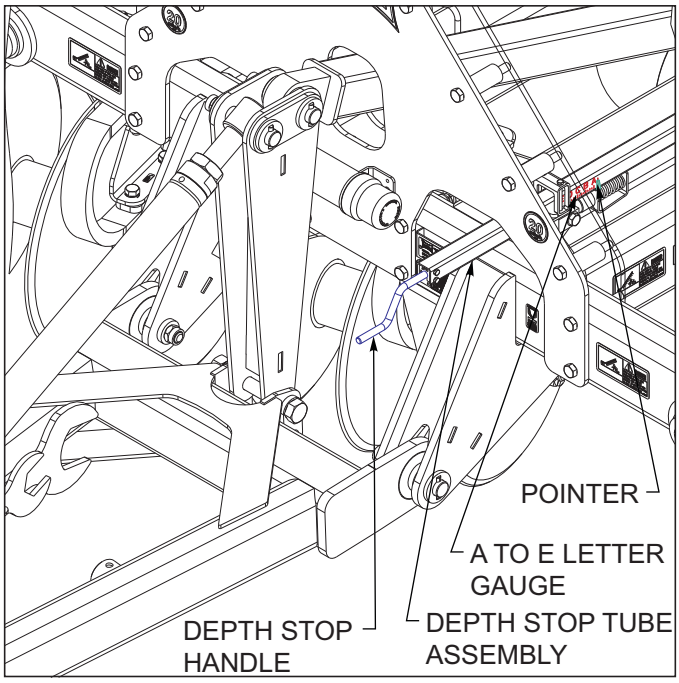


Figure 4-7: Depth Stop Adjustment

Hydraulic Maintenance

1. Check the tractor hydraulic fluid level per tractor owners 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

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

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

Transport

1. Check and follow all federal, state, and local requirements before transporting the Weatherproofer.
2. The Weatherproofer should be transported only by a tractor required for field operation. The implement weight should not exceed more than 1.5 times the tractor weight.
3. 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 flat washers between the clamp plates to assure a tight connection. Always use a 1" GD 8 bolt for this connection.

   b.Attach the safety chain to the tractor drawbar ***See Figure 4-8***. Provide only enough slack in the chain for turning. Do not use an intermediate chain support as the attaching point for the chain on the tractor. Do not pull the implement by the safety chain.

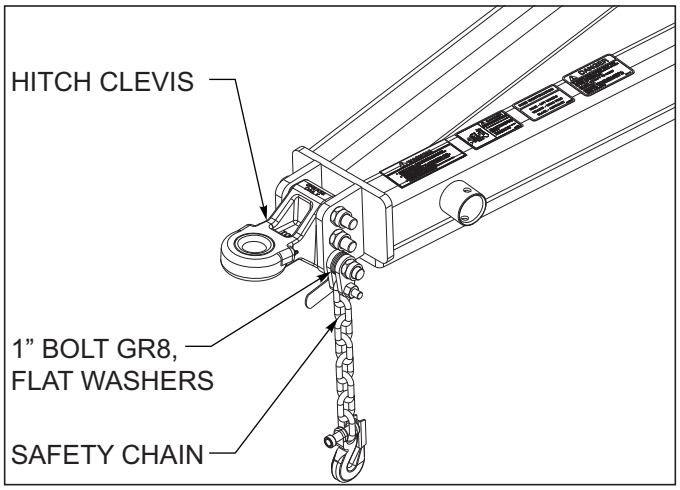


Figure 4-8: Hitch and Safety Chain

3. Unless noted on the implement, maximum transport speed is 20 mph for the implement. There are 2, SIS 20MPH decals located on the front of machine, Model 2411-06 ***See Figure 4-9***, Models 2411AFG-07-09 ***See Figure 4-10*** and 1, on the rear of machine, Model 2411-06 ***See Figure 4-11***, Models 2411AFG-07-09 ***See Figure 4-12***. Slow down when driving on rough roads. Reduce speed when turning, or on curves and slopes to avoid tipping.

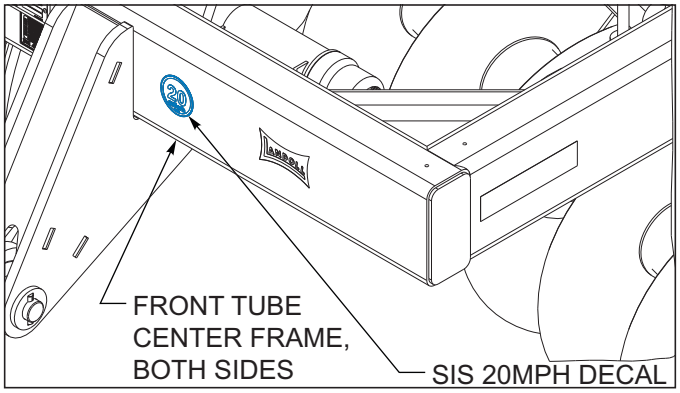


Figure 4-9: SIS 20MPH Decal Front 2411-06

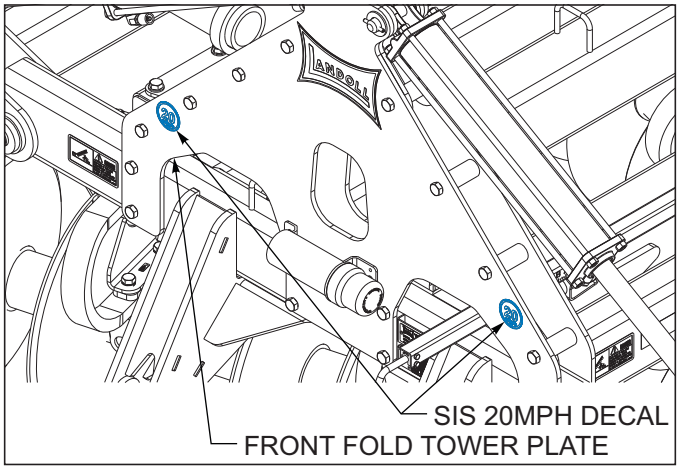


Figure 4-10: SIS 20MPH Decal Front 2411AFG-07-09

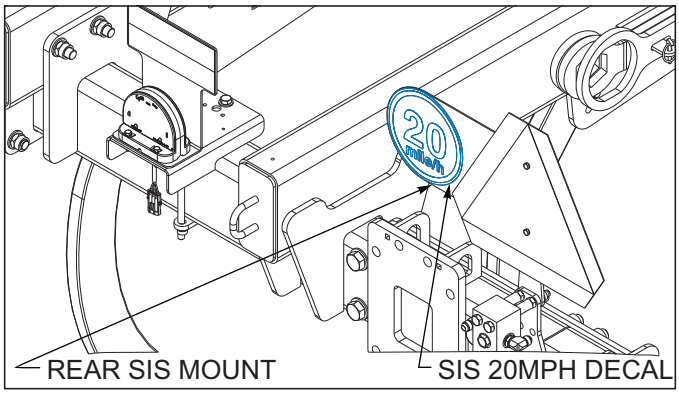


Figure 4-11: SIS 20MPH Decal Rear 2411-06

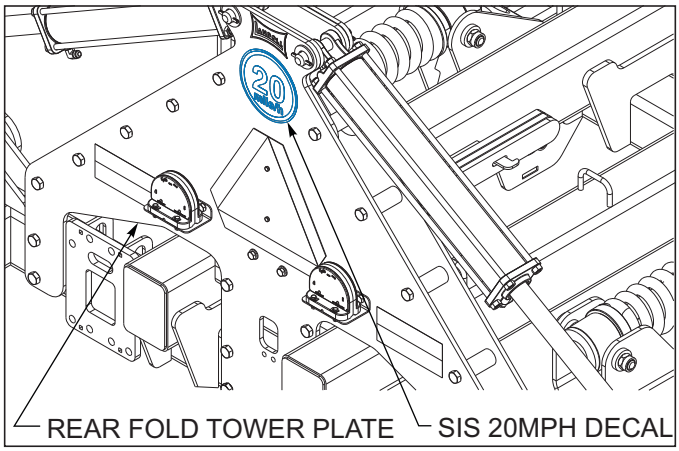


Figure 4-12: SIS 20MPH Decal Rear 2411AFG-07-09

4. 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.
5. 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.
6. Check that tires are of proper size, load rating, and inflated to manufacture specifications before transporting. Check wheel lug bolts to insure tightness.
7. Know the transport heights and widths of the unit before transporting. Attachments can increase the transport dimensions of the implement. Use caution when transporting near bridges and power lines.

WARNING

Electrocution can occur without direct contact.

8. Raise the unit to full transport height.
9. Remove the transport locks from the light bracket assemblies. Install transport locks on both lift cylinders. Do not depend solely on implement hydraulics for transport ***See Figure 4-13***.

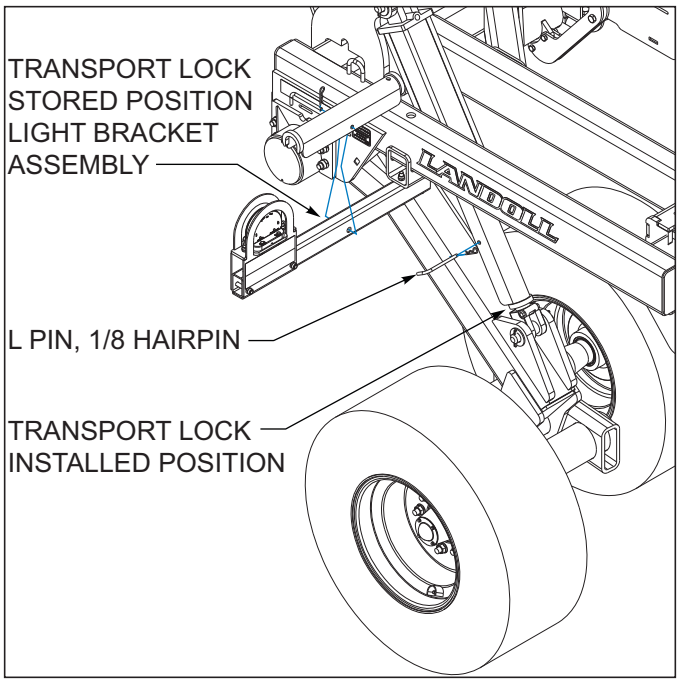


Figure 4-13: Transport Locks

WARNING

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

10. 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.

3BCT/Chopper Reel Adjustments

1. The optional 3BCT/ chopper reel attachment consists of a tine harrow and reel assembly that operate independently from each other.
2. The reel assemblies may have either a standard spring assembly arm or spring assembly/ hydraulic arm option.

WARNING

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

3. The coil tine harrow should run level with the coulter chisel frame. If this needs adjusted, remove the 1/2 x 1-1/4 rd head sq neck screws and rotate tine assembly to level, re-install screws and nuts. When operating the coil tine harrow, a more vertical tine tooth angle will make the harrow more aggressive. A lower/flatter tine angle will make the harrow less aggressive but will handle more residue and wetter conditions. To change the tine angle, raise the harrow off the ground. Remove the harrow pin from both angle adjustment tubes per tine gang bar tube ***See Figure 4-14***. Rotate the angle adjustment tubes forward (less aggressive) or rearward (more aggressive) and reinstall both spring clip pins. Repeat the tine adjustment for each tine gang bar tube and harrow section. Each row can be adjusted as needed, all three rows do not need to be set at the same tine angle.
4. To adjust the height of the tine harrow assemblies remove the 3/16 dia pin, 1 x 7-5/16 pins. Remove the harrow height adjustment wrenches from left center frame arm and turn the harrow height adj handle tube to raise or lower the tine harrow assemblies. In certain conditions, it may work better to leave the tine angle more aggressive, and raise the tine harrow.

NOTE

Coil tine sections are heavy. Do not place feet under tines while adjusting. Adjustments can be made on the side of a section, and them doing the other side. This will keep one pin always installed to prevent it from falling uncontrolled.

5. Re-install the 1 x 7-5/16 pins, 3/16 dia pins through aligned holes of harrow arm assemblies.
6. Reels are set to 21-1/2” from Landoll. To adjust the standard reel height, loosen the locking hex nut against the threaded spring end ***See Figure 4-14***. The hydraulic reel can be raised as needed to prevent plugging.

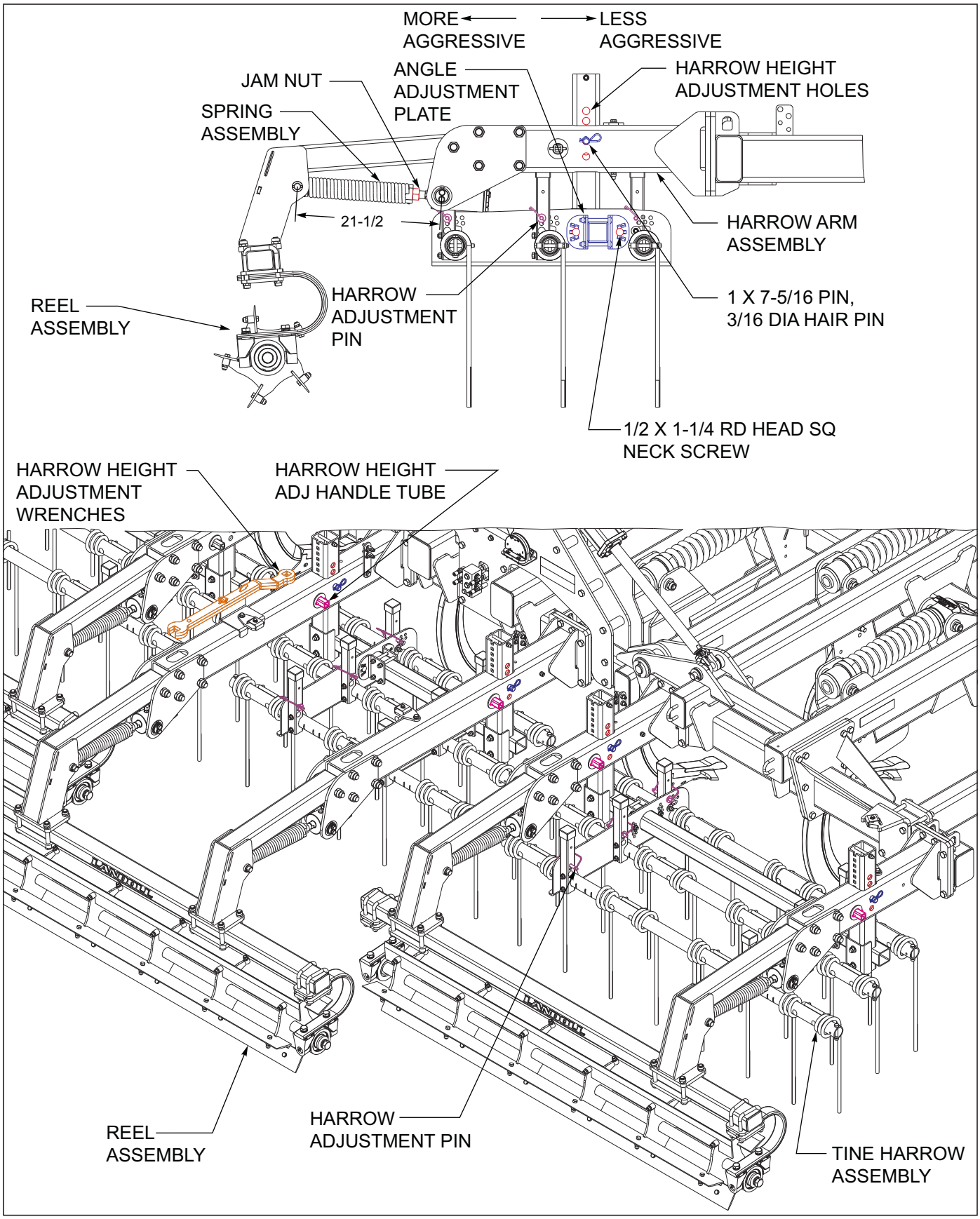


Figure 4-14: 3BCT-Chopper Reel Adjustments

Disc Lev/Hyd Flat RL Adjustments

1. The optional Disc Leveler/Hydraulic Flat Reel attachment consists of independent disc assemblies that are meant to cover the shank tracks with soil and then a reel assembly that firms up the soil ***See Figures 4-17***.
2. The disc leveler assemblies are independent of the reels allowing them to be adjusted to the operators preference. The hydraulic reels are equipped to either be up or down, they are not to be run in float.

⚠ WARNING

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

3. When starting out it is recommended to have the disc leveler assemblies raised completely up. Once the machine depth is obtained, then start lowering the discs until the desired finish is achieved.

NOTE

The discs are not meant to be run deep creating trenches, they are only intended to be a finishing tool.

4. Each individual disc can be adjusted to 3 different angle settings to allow more or less soil movement ***See Figures 4-15***. To adjust them, loosen the front 3/4 x 5 bolt, and remove the rear 3/4 x 5 bolt to rotate the mount either direction. The discs are in the middle position when shipped from the factory. Ground speed and depth will both change how the finish looks, they will have to be adjusted accordingly.

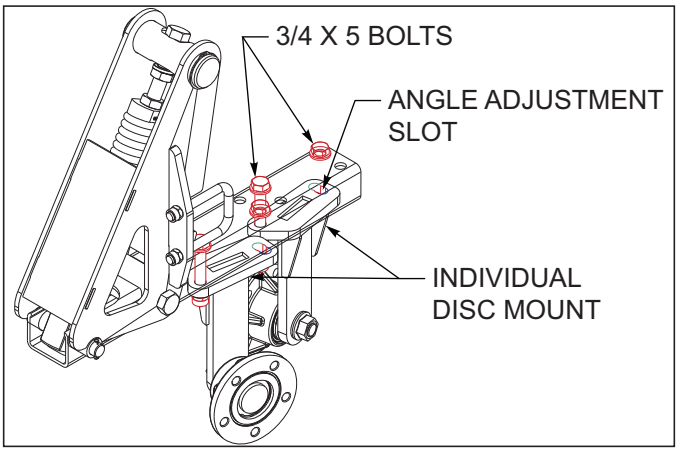


Figure 4-15: Individual Disc Angle Adjustment

NOTE

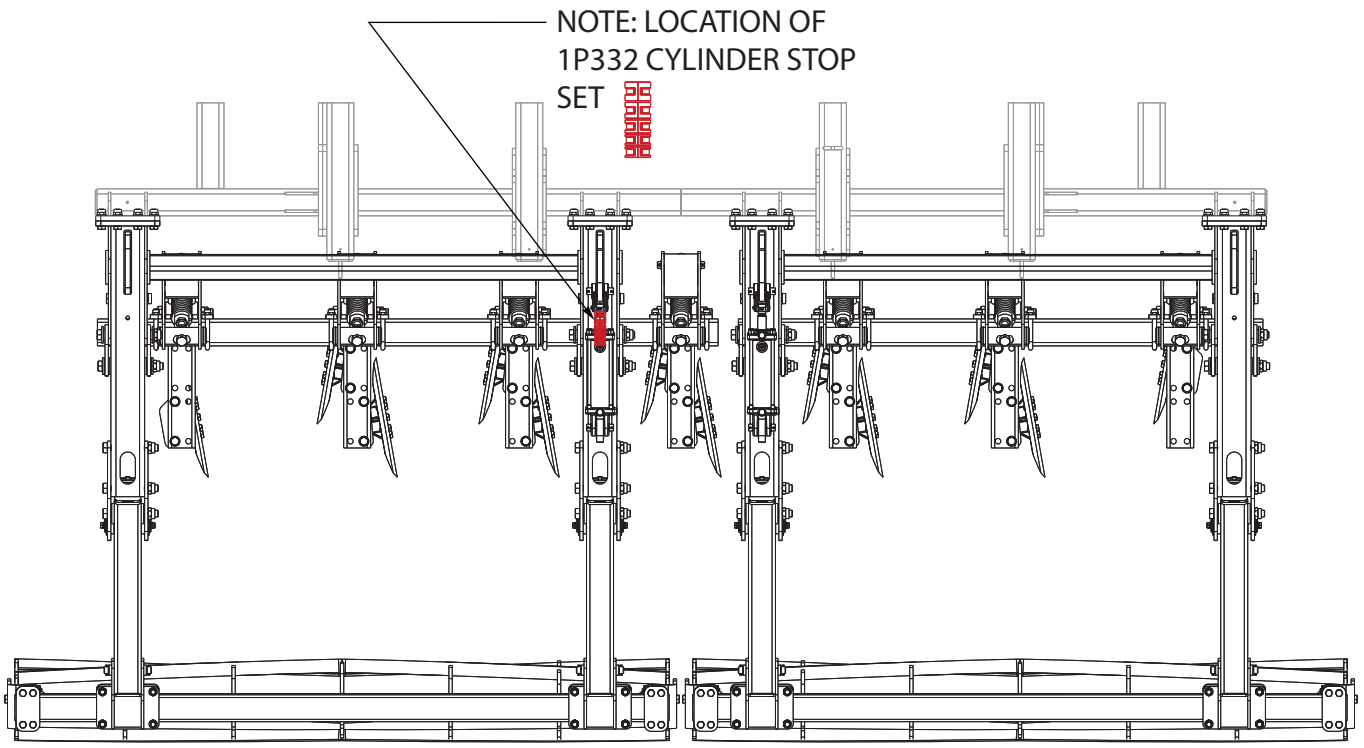
Model 2411-06 uses 1 set of 1P332 cylinder stops and Models 2411AFG-07-09 uses 2 sets.

5. Cylinder stops have been provided to maintain depth position. With the cylinder stops installed, the leveler will still be able to fully raise for transport. ***See Figures 4-16*** for the cylinders to place the cylinder stops on.

IMPORTANT

The 2411-7/9 shank machines must have the same cylinder stops on each cylinder or the connecting tube will be twisted when they are lowered if they do not stop together.

6. Periodically fully raise the disc leveler and rephase the cylinders to keep them all in unison.
7. The reel assembly down pressure spring is preset at 21-1/2”, if more or less pressure is needed the cylinder rod may be turned inside the spring to adjust this length ***See Figures 4-17***. Adjust the cylinders as follows, loosen up the jam nut against the spring, loosen the set screw in the end casting of the spring, and using the wrench flats on the cylinder the reel may be lowered or raised as needed. Then re-tighten the set screw and jam nut. The reel may be ran fully raised if needed to prevent plugging in adverse conditions.
8. Both the individual disc blades and the reel bearings are maintenance free.



2411-06

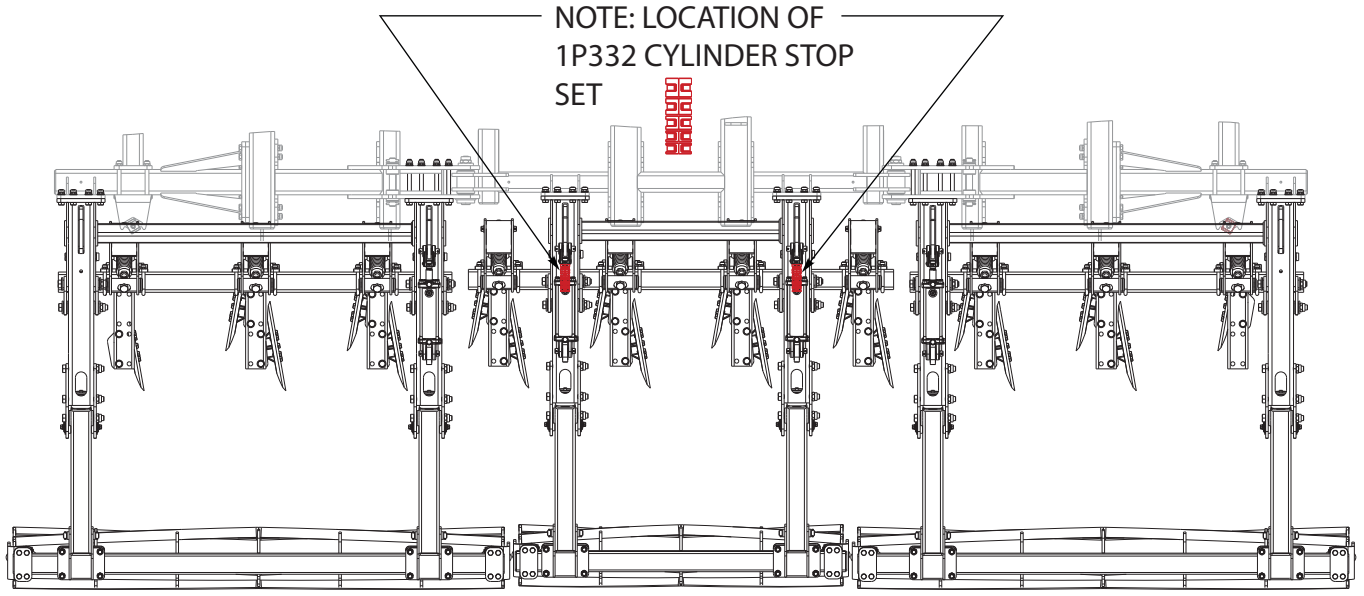


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Figure 4-16: Disc Lev/Hyd Flat RL Cylinder Stop Location

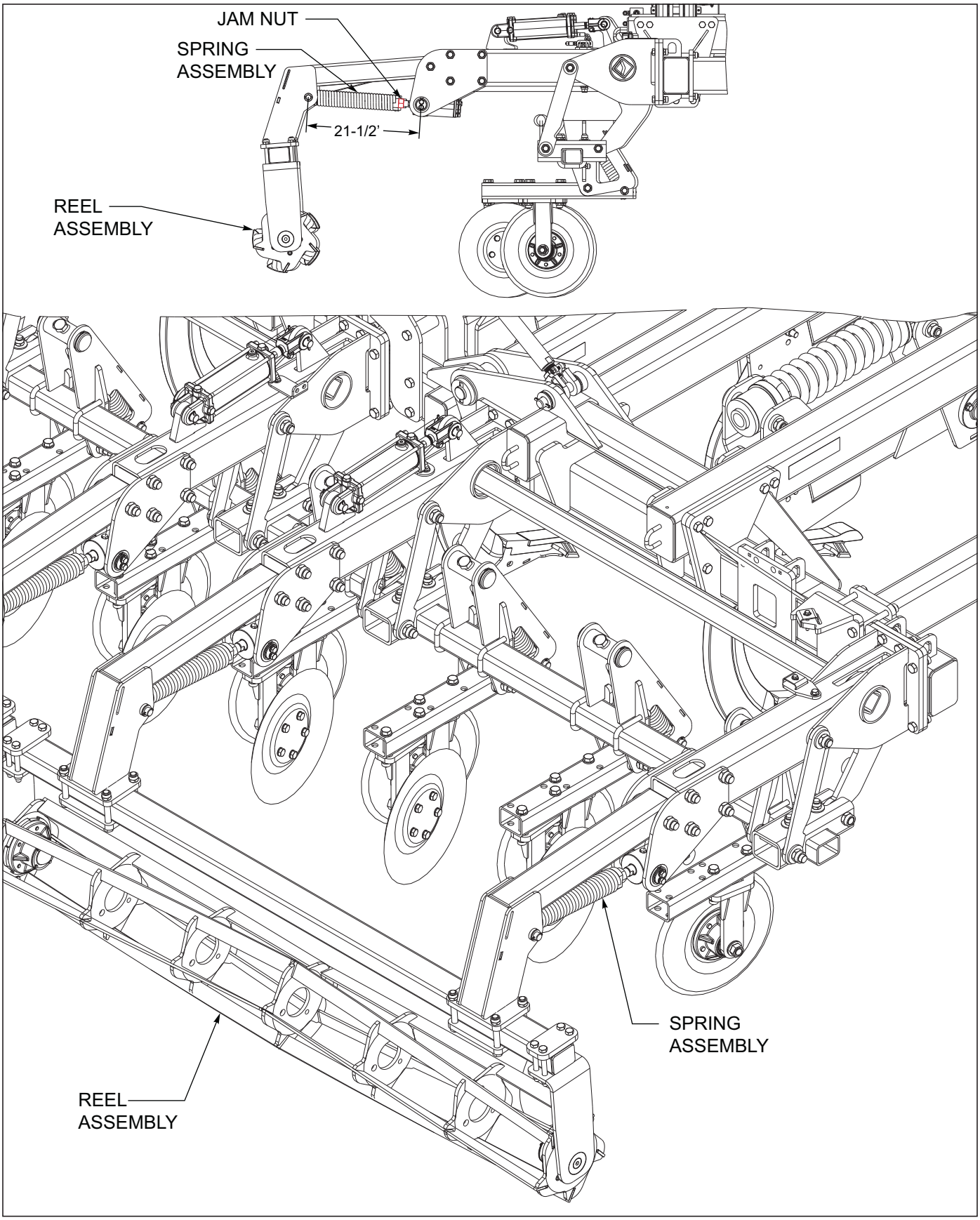

Figure 4-17: Disc Lev/Hyd Flat RL Adjustments

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 ***See Figure 5-2***.
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 5-1.

11. Install a new cotter pin and replace the hub cap. ***See Figure 5-1.***

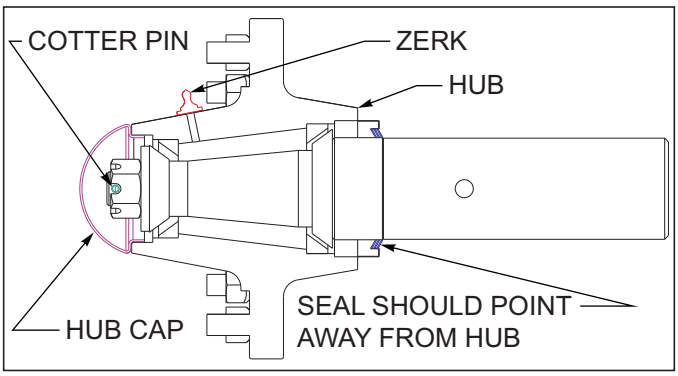

Figure 5-1: Triple Lip-Seal

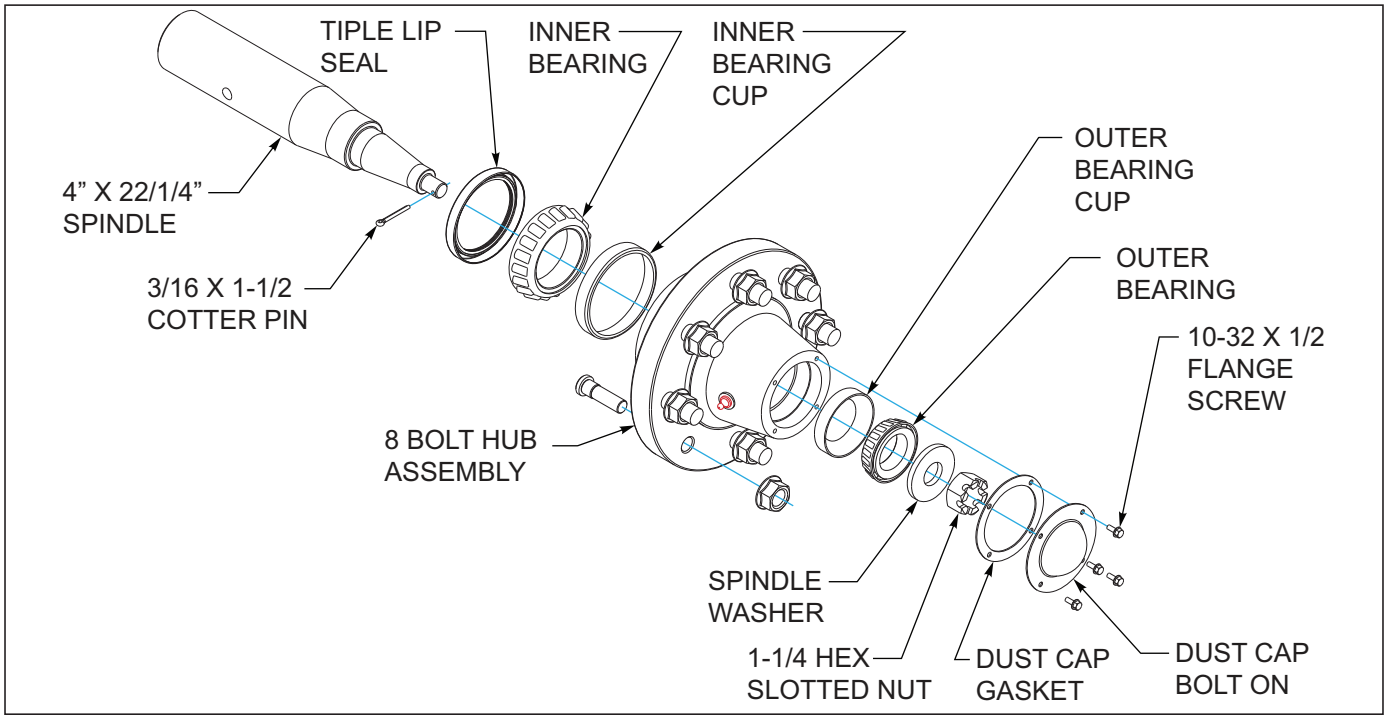

Figure 5-2: Wheel Bearing Maintenance

Lubrication Maintenance

1. ***Table 5-1*** specifies the lubrication points and intervals on the 2411. Proper maintenance of your machine will, under normal operating conditions, help to keep it operating at or near its peak performance for an extended period of time. Proper maintenance is also a condition of keeping your warranty in good status ***See Figure 5-3*****.**
2. When lubricating the Weatherproofer, 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. Coulter gang bearings are equipped with triple-lip seals that will let grease pass and not harm the seal. Regular lubrication will maintain a full grease cavity and help purge any contaminants. Grease the bearings before long periods of storage to prevent moisture buildup within the bearing cavity.
4. Wheel seals, when properly installed, will allow grease to pass without harm to seals. Regular lubrication will extend service life, particularly in severe operating conditions.
5. The Weatherproofer equipped with maintenance-free bearings in the lifts and leveler. These areas require no lubrication.

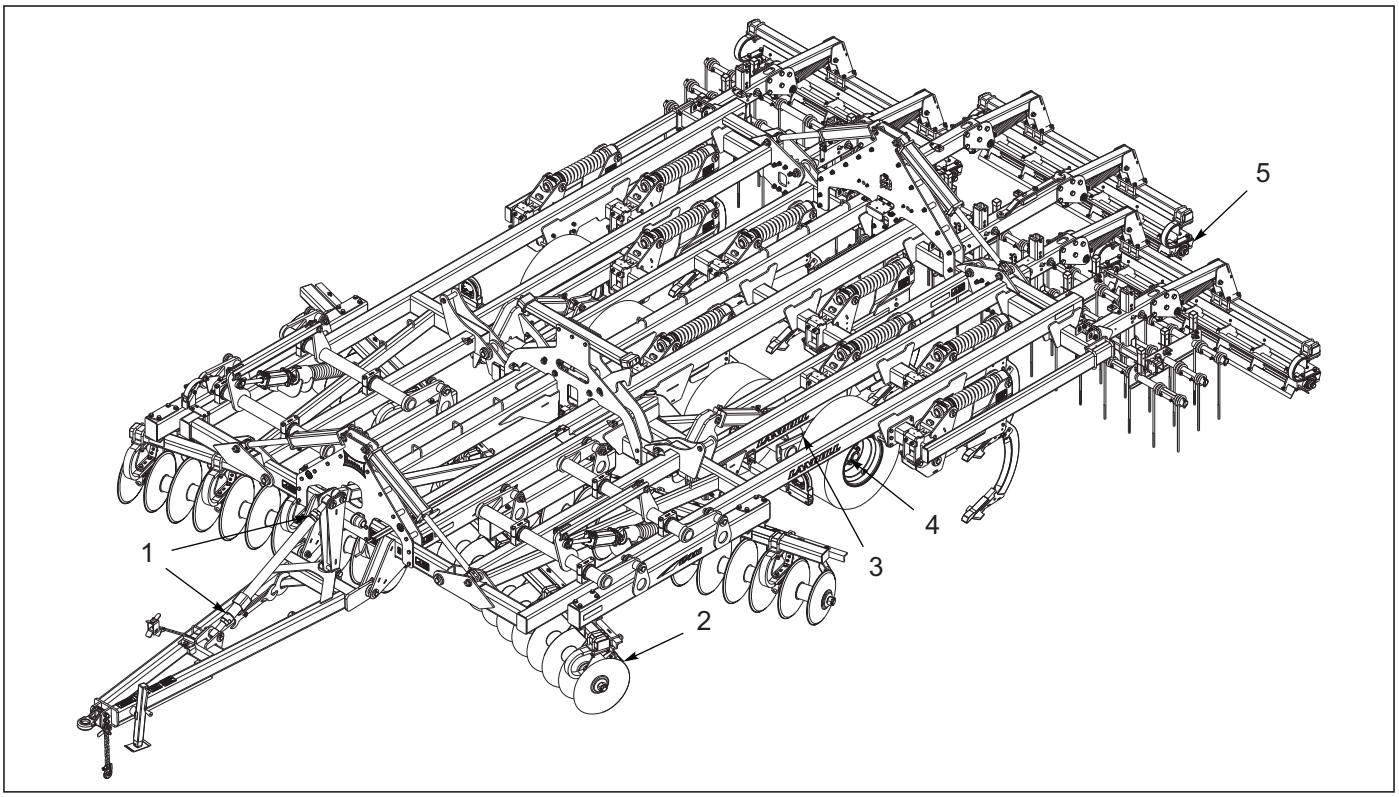

Figure 5-3: Lubrication Schedule

LUBRICATION TABLE			
ITEM	**DESCRIPTION**	**NO. OF LUBE POINTS**	**INTERVAL (Hours Unless Stated)**
1	Radius Rod	2	50
2	Disc Gang Bearings	1 each	10
3	Walking Tandem Hubs	4 each	50
4	Wheel Hubs	1 each	50
5	Reel Bearings	1 each	10

Table 5-1: Lubrication Table

Storage

1. The service life of the 2411 Weatherproofer will be extended by proper off-season storage practices. Prior to storing the unit, complete the following procedures:
   a. Completely clean the unit.
   b. Inspect the machine for worn or defective parts. Replace as needed.
   c. Repaint all areas where the original paint is worn off.
   d. Grease all exposed metal surfaces of shanks, points and discs.
   e. Apply a light coating of oil or grease to exposed cylinder rods to prevent them from rusting.
   f. Lubricate each point of the machine as stated in ***"Lubrication Schedule" on page 5-2***.
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.

Table provided for general use.

NOTES:

Chapter 6

Troubleshooting Guide

The Troubleshooting Guide, shown below, is included to help you quickly locate problems that can happen using your 2411 Weatherproofer. Follow all safety precautions stated in the previous sections when making any adjustments to your machine.

PROBLEM	PROBABLE CAUSE	SOLUTION
UNEVEN DEPTH	Unit not level when under power in the field	Level unit front to rear *(See "Leveling (Front-to-Rear)" on page 4-6.)*
	Excessive disc gang depth or down pressure	Reduce machine depth.
	Tire pressure too low	Check inflation.
	Unit not level front to rear	Adjust unit to be level.
UNIT SIDE DRAFTS OR MOVES SIDE TO SIDE	Lift wheels not carrying enough weight	Adjust depth stop and raise implement.
	Unit not level front to rear	Adjust unit to be level.
SHANKS PLUGGING WITH RESIDUE	Unit not level	Level machine *(See "Leveling (Front-to-Rear)" on page 4-6.)*
	Discs not cutting residue	Adjust machine depth.
SHANKS NOT PENETRATING	Unit not level	Level unit front to rear *(See "Leveling (Front-to-Rear)" on page 4-6.)*
	Points worn	Install new points.
WHEEL BEARING FAILURE	Triple-lip seals not installed correctly	Install seals with the lips pointing outward away from the hub.
DISC BLADES LOOSE AND/OR SHEARING ROLL PIN	Gang not tightened properly	Retighten gang shafts to 1200-1500 ft-lbs. If gangs have ran loose, gangs may require disassembly to remove soil to properly torque gang shafts. Replace any worn components, shafts/spools, etc.
HYDRAULIC - ENTIRE UNIT SETTLING	Depth stop valve not working	Repair valve
DISC GANG PLUGGING	Operating depth too deep	Raise unit or raise disc gangs..
	Conditions too wet	Wait until conditions more favorable.
DISC GANG WILL NOT TURN OR PUSHES SOIL	Depth set too deep for loose or wet conditions	Raise implement or wait until conditions are more favorable.
	Gang bearing failure	Replace bearing
UNIT NOT LEVEL, LEAVING RIDGE ON OUTSIDE OF UNIT	Unit not level front to rear, front running too deep	Adjust unit to be level
	Wings not level with center frame	Adjust side to side level. Wings should typically be set even with center section
	Operating speed too fast, front gang moving soil past rear gang	Slow down to proper operating speed for field conditions.
HARROW BUNCHING RESIDUE	Harrow too aggressive	Use lower tine tooth angle and/or raise harrow
HARROW DRAGS GROUND WHEN TRANSPORTING	Operating depth set too low	Raise harrow height
	Disc leveler linkage not set correctly	Reposition in lower leveler hole
LIGHTS DO NOT WORK	Harness or lamp connection unplugged	Check all harness/lamp connections to verify that everything is properly connected.
	7 prong Connector	Fully Insert on clean connection

Table provided for general use.

NOTES:

Document Control Revision Log:

Date	Form #	Improvement(s): Description and Comments
03/24/2022	F-1130	New manual
06/17/2022	F-1130-0622	Initial release
04/21/2023	F-1130-2304	Added model 2411-06, added disc lev/hyd rl attachment, updated 2411AFG-07-09 center frame, updated shank assembly

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

Model 2411
Weatherproofer
Operators Manual
Re-order Part Number F-1130

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