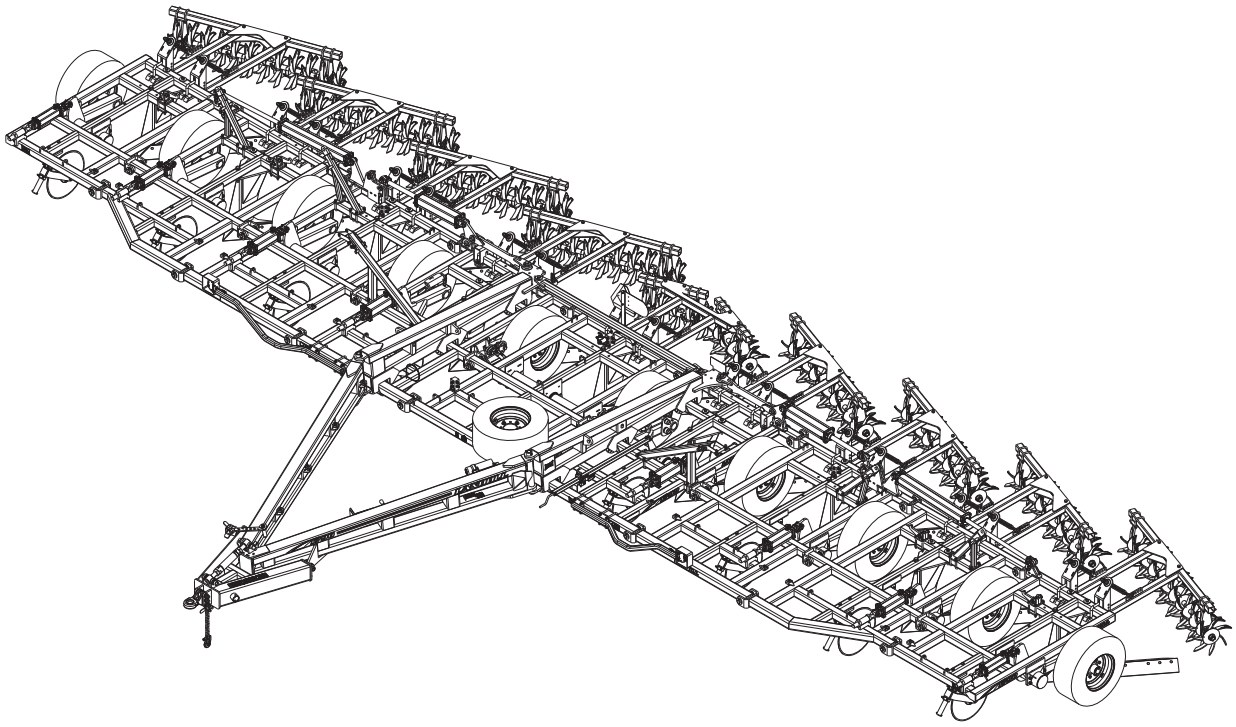
Model 1760, 1770, 1790, 1711
Blade Plow
Operator's Manual



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 1700 Blade serial number

17H240000 = xxmyysssss

QR CODE DECAL

The 1700 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. 17 for Blade Plow)
m	= month of manufacture (ex. “H” means October. The letter I is not used.)
yy	= year manutactured (ex. “24” means 2024)
SSSSS	= Sequential number used to track warranty and service information.

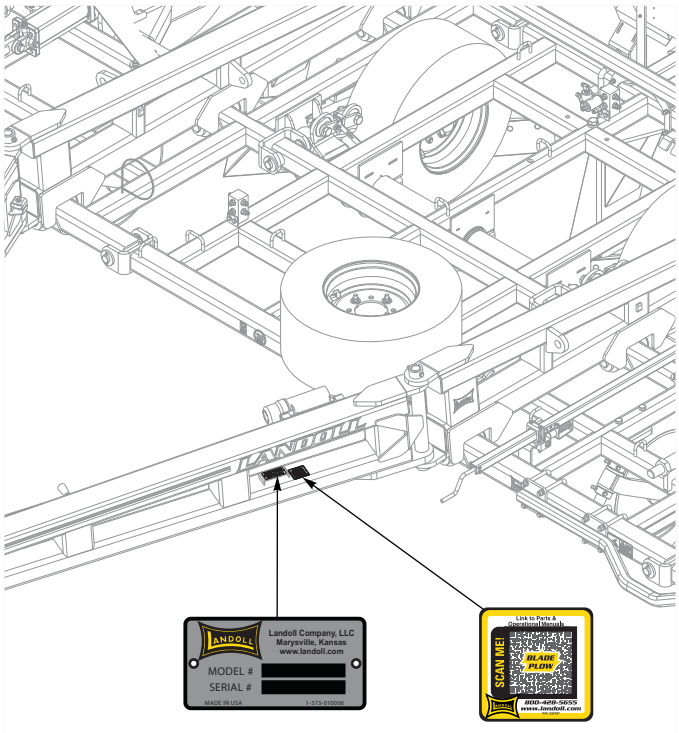


Figure 1-1: Identification Plate and QR Code Decal Location

Manuals for 1700 Blade Plow

Manual Number	Manual Type
F-920	Operator’s Manual
F-921	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 1700 Blade Plow is a quality product designed to give years of trouble free performance. By following each section of this manual, your system will perform as designed for you and your operation.

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

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

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

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

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

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

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

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

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

WARRANTY To be eligible for Warranty, registration must be on file at Landoll Company, LLC. It is the responsibility of the dealer to register the machine within 10 days of purchase or lease. Check with the dealer to verify the machine has been registered.
NOTE: IMPROPER ASSEMBLY, MODIFICATION, OR MAINTENANCE OF YOUR LANDOLL MACHINE CAN VOID YOUR WARRANTY.

COMMENTS Address comments or questions regarding this publication to:

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

Understanding Safety Statements

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

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

NOTE

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

NOTICE

Special notice - read and thoroughly understand

CAUTION

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

WARNING

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

DANGER

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

NOTE

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

The safety statements contained in this manual relate to the operation of the Model 1700 Blade Plow.

Decal Safety

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

DANGER

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

Transporting Safety

1. Thoroughly read and understand all operating procedures contained in this manual before attempting to transport this implement.
2. ***It is the responsibility of the operator to understand and comply with all federal, state, and local requirements before transporting the 1700 Blade Plow.***
3. When transporting the implement on road or highway, use adequate warning symbols, reflectors, lights, SIS, and slow moving vehicle signs as required. Verify that all symbols and lights are clearly visible and functioning before transporting. Transport during daylight hours whenever possible. Slow moving tractors and implements can create a hazard when driven on public roads and can be difficult to see especially at night.
4. Do not tow an implement that when fully loaded, weighs more than 1.5 times the weight of the towing vehicle. Never tow the implement with a motor vehicle. Tow the implement only with a properly ballasted tractor.
5. Use a locking-style hitch pin that properly fits the tractor drawbar and the implement hitch. Lock the tractor drawbar in the center position to prevent loss of steering control.

6. Attach the safety chain to the tractor recommended drawbar support. Provide only enough slack in the chain for turning. Do not attach the safety chain to an intermediate support. Safety chain must have rating greater than the gross weight of the towed implement(s). Replace the safety chain if it is worn or damaged in any way.
7. Verify that all hydraulic hoses and electrical wiring between the tractor and implement are safely routed to avoid damage.
8. Check implement tire pressure for correct inflation. Verify that lug nuts are properly torqued before transporting.
9. Install all cylinder lockouts and pins before transporting.
10. Never allow riders on the implement.
11. ***Maximum transport speed for the 1700 Blade Plow is 20 mph, regardless of the tractor capabilities***. Excessive speed may result in loss of control of the tractor and implement, reduced braking, or failure of the implement tires and/or structure.Slow down when road surface conditions are poor or rough, or when driving on inclines. Reduce speed when turning, on curves and slopes, to avoid tipping. Equipment altered other than the place of manufacture, may further reduce the maximum transport speed.
12. Avoid overhead power lines. Serious injury or death can result. Electrocution can occur without direct contact. Know the transport height and width of the implement before transporting. Attachments can increase the height and width of the implement.

Attaching, Detaching, and Storage

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

Maintenance Safety

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

High Pressure Fluid Safety

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

Protective Equipment

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

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

Chemical Safety

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

Prepare for Emergencies

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

Tire Safety

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

Safety Chain

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

Safety Decals and Reflectors

The 1700 Blade Plow is equipped with all safety signs installed for safe operation.

For you safety:

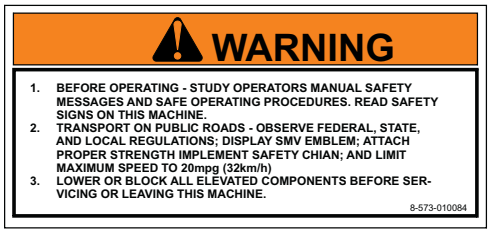
- Carefully read and follow safety sign directions.
- Keep the safety signs clean and visible.
- Replace damaged, missing, or illegible safety signs.
- Be sure any new equipment or repair parts include safety signs.

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

To Install new safety signs:

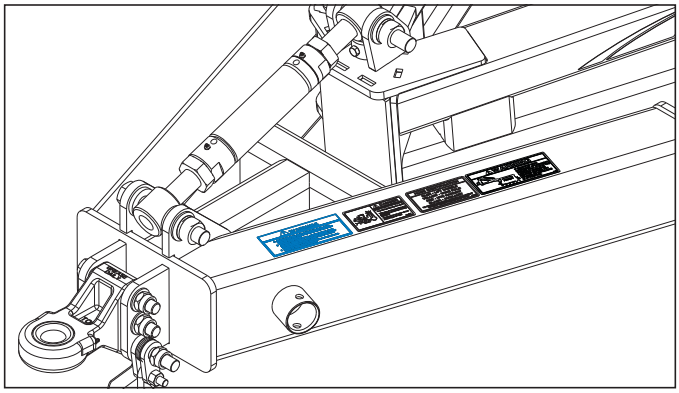
1. Remove the old damaged safety sign if still present.
2. Clean placement area to remove any dirt or grease.
3. Remove backing from new safety sign.
4. Apply the safety sign starting from one end pressing firmly and working across the safety sign being careful not to create any air bubbles.

P/N 8-573-010084
Warning: Before Operating

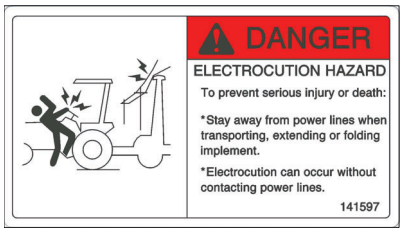


Front of hitch, 1st from left

QTY. 1

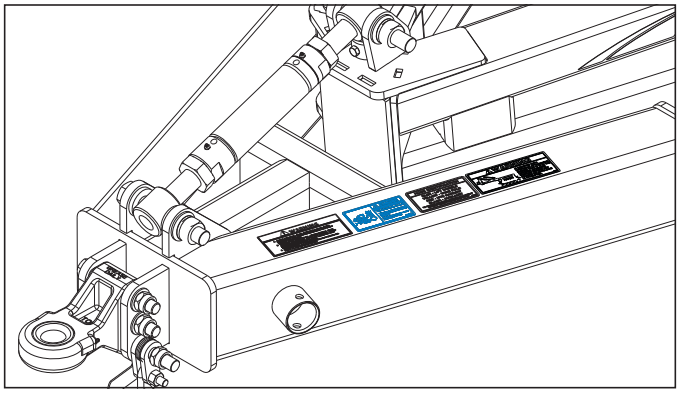


P/N 141597
Danger: Electrocution Hazard

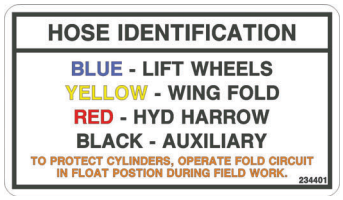


Front of hitch, 2nd from left

QTY. 1

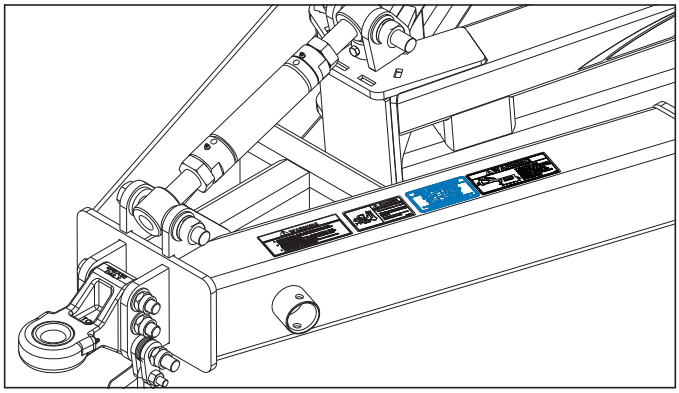


P/N 234401
Hose Identification



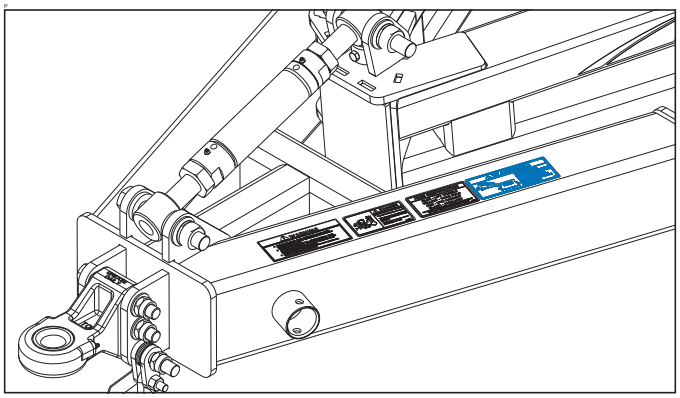
Front of hitch, 3rd from left

QTY. 1



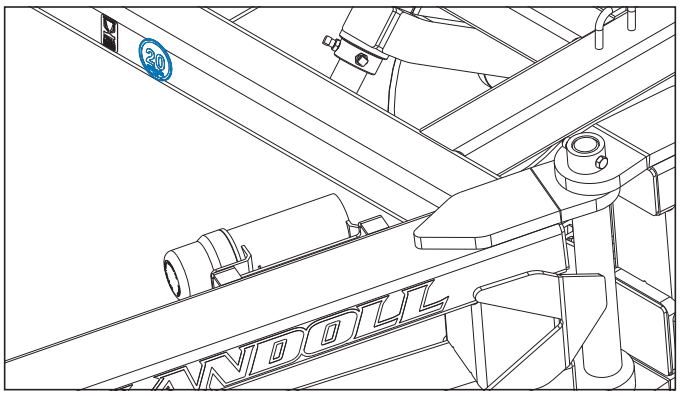
P/N 214590
Warning: Hydraulic Treader

Front of hitch, 4th from left
QTY. 1

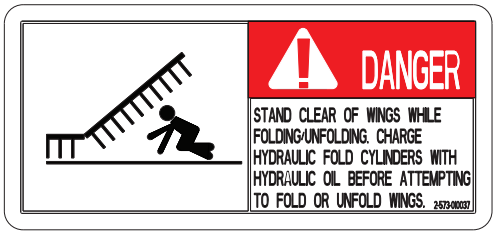


P/N 144193
SIS 20MPH

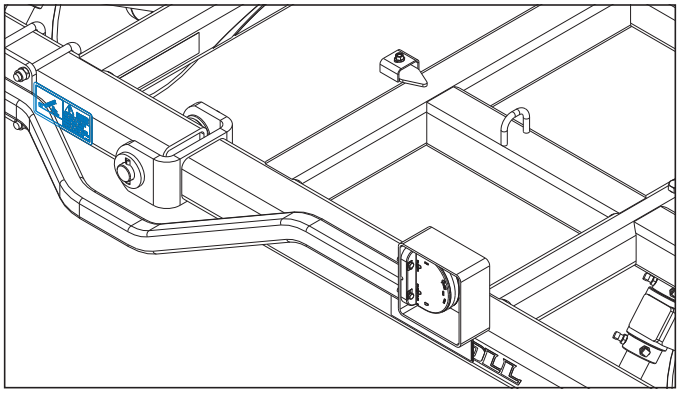
Front of center frame
QTY. 1



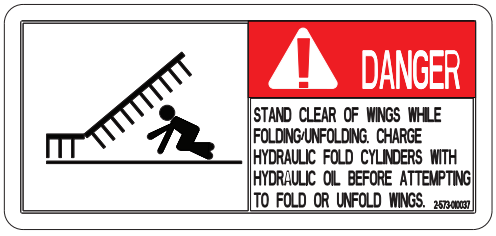
P/N 2-573-010037
Danger: Folding wing



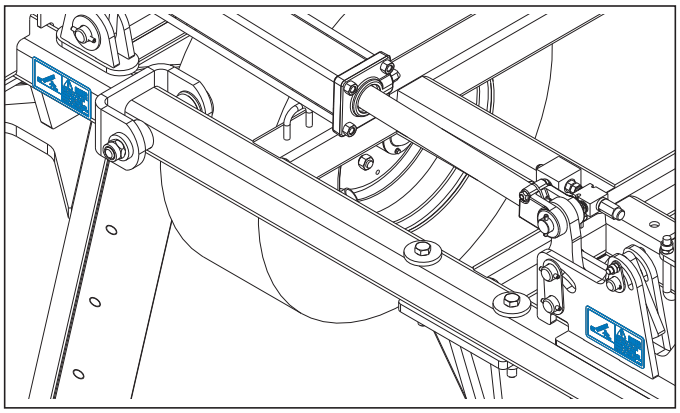
Front side, center frame, both sides
QTY. 2



P/N 2-573-010037
Danger: Folding wing

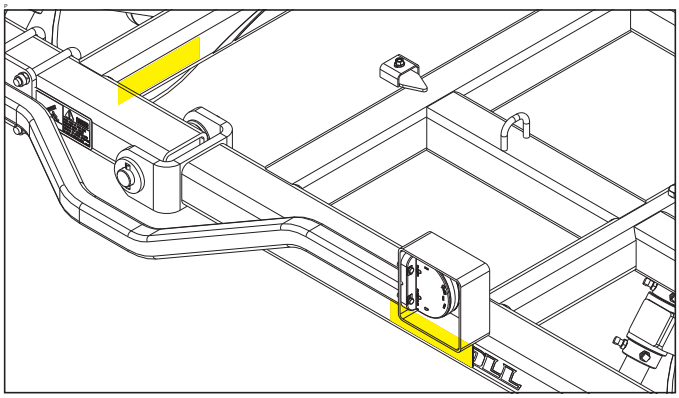


Rear side, center frame, rear fold bracket, both sides
QTY. 4



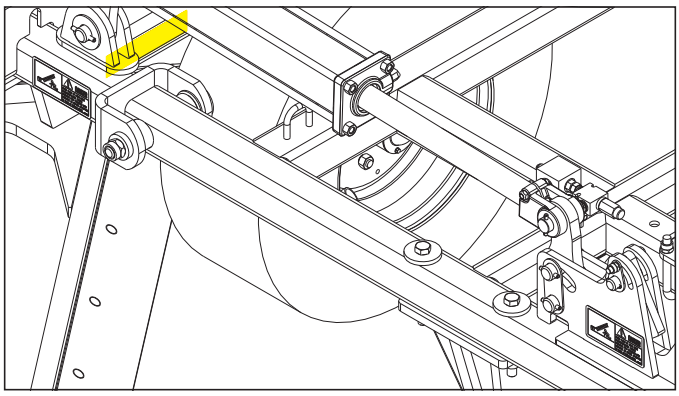
P/N 528934
Yellow Reflector

Left side front, center frame, front wing frame, both sides
QTY. 4



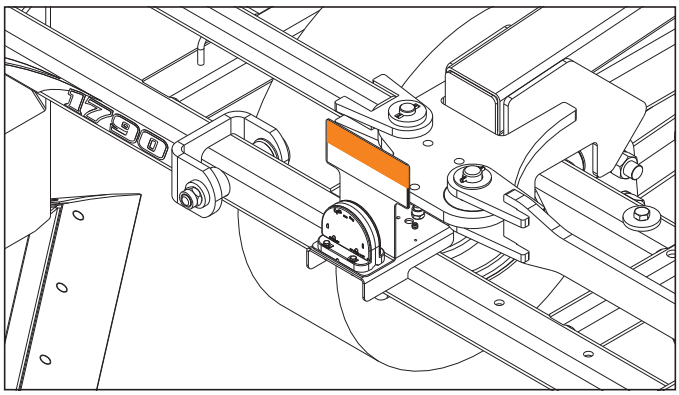
P/N 528934
Yellow Reflector

Right rear, center frame, both sides
QTY. 2



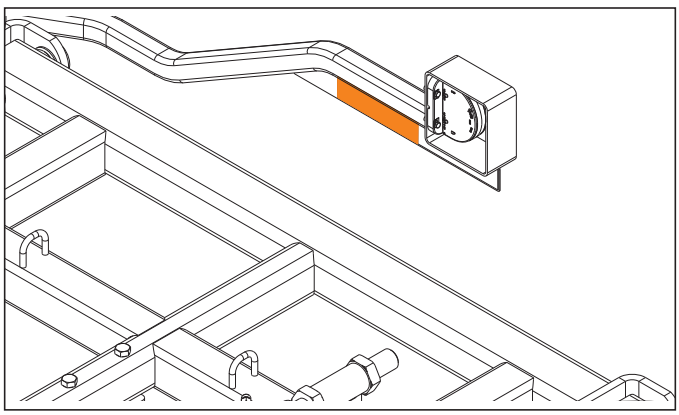
P/N 528933
Orange Reflector

Back side, red light brackets, top, both sides
QTY. 2



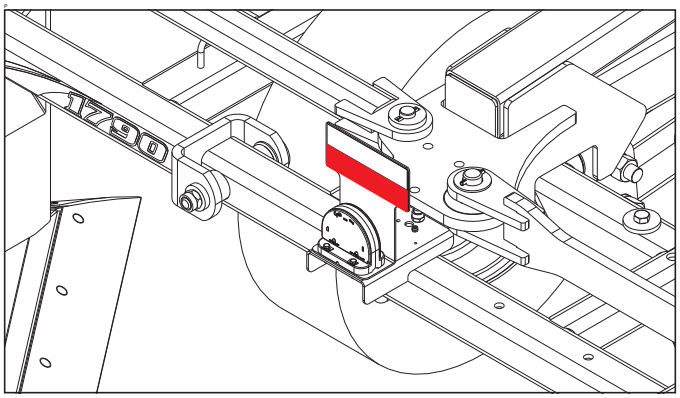
P/N 528933
Orange Reflector

Back side, orange light brackets, inner, both sides
QTY. 2



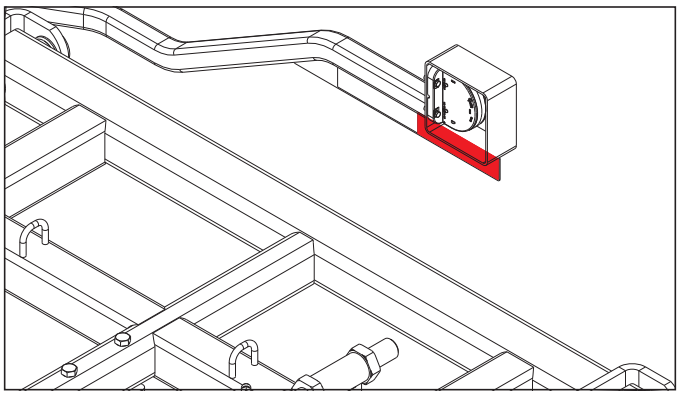
P/N 528933
Red Reflector

Back side, red light brackets, bottom, both sides
QTY. 2



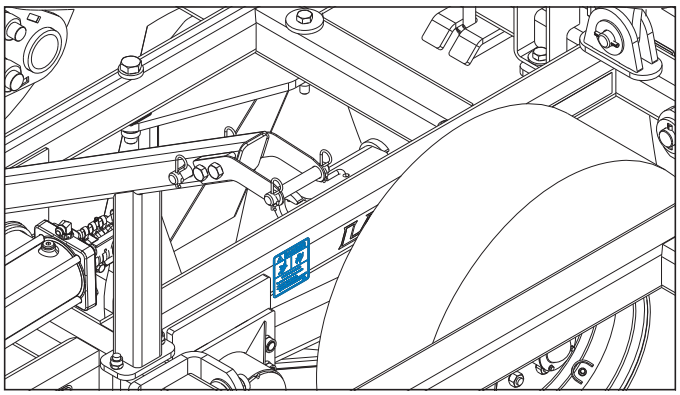
P/N 528933
Red Reflector

Back side, orange light brackets, outer, both sides
QTY. 2



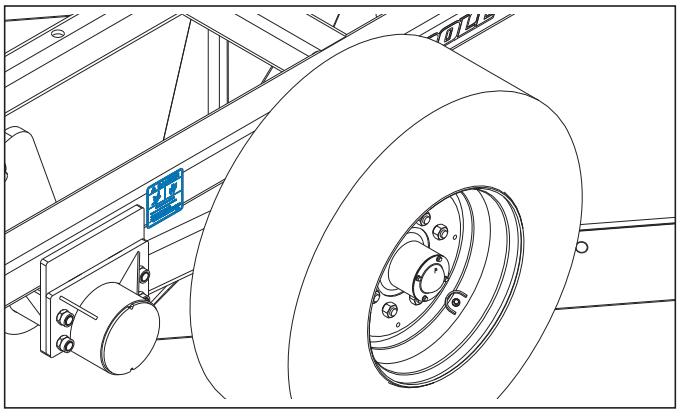
P/N 247227
Danger: Crushing Hazard

Outside, center frame, both sides
QTY. 2



P/N 247227
Danger: Crushing Hazard

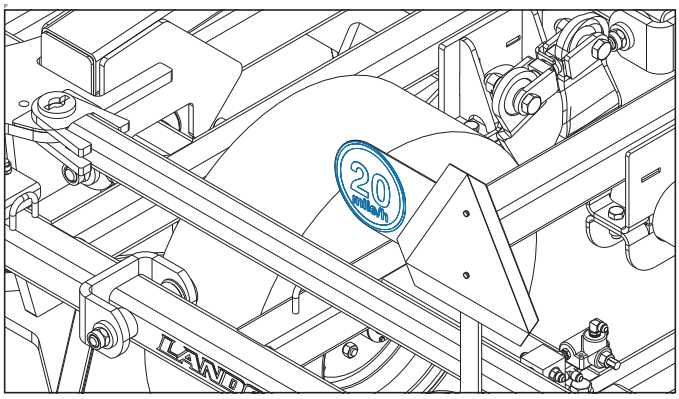
Outside, outer wing frame, both sides
QTY. 2



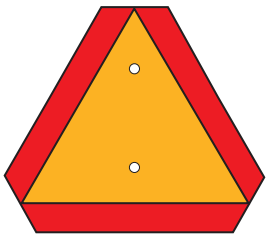
P/N 224589
SIS 20 mile/h

Back side of SIS 20MPH mount plate

QTY. 1



P/N 70260977
SMV Emblem



Back side, SMV mount plate

QTY. 1

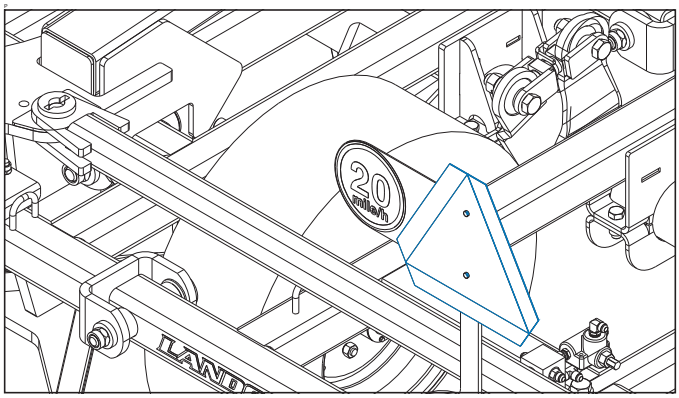


Table provided for general use.

NOTES:

Chapter 2

Specifications

Introduction

This manual is compiled as a guide for owners and operators of the 1700 Blade Plow. Read it carefully so as to be able to follow the suggestions made. Please take time to understand the proper maintenance schedule and SAFE operation of your equipment.

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

Owner Assistance

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

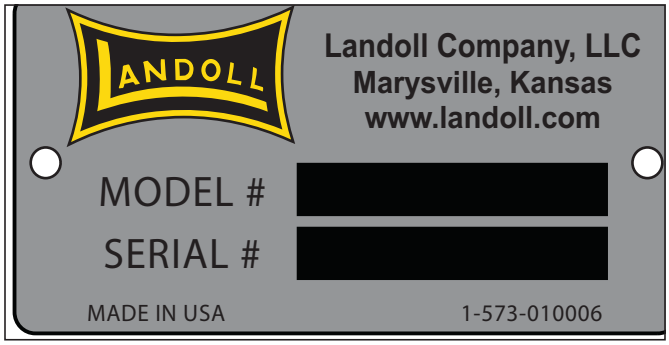


Figure 2-1: ID Plate

Warranty Registration

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

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

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

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

MODEL_____

SERIAL #_____

DATE OF PURCHASE_____

DEALER NAME_____

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

LANDOLL TILLAGE PRODUCT THREE YEAR LIMITED WARRANTY

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

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

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

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

...continued on following page.

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

LANDOLL TILLAGE PRODUCT THREE YEAR LIMITED WARRANTY

...continued from previous page.

USER'S OBLICATION:

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

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

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

WARRANTY LABOR:

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

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

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

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

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

General Torque Specifications

LANDOLL
FASTENER TORQUE SPECIFICATIONS
(Rev. 23/04)

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

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

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

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

Thick Nuts must be used on grade 8 cap screws.

SAE TORQUE SPECIFICATIONS (FOOT-POUNDS)

[ ] Indicates specifications for Prevailing Torque Nuts.

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

See back side for SAE UNF and Metric torques.

Form No. F-257-0322

SAE TORQUE SPECIFICATIONS (FOOT POUNDS)

[ ] Indicates specifications for Prevailing Torque Nuts.

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

METRIC TORQUE SPECIFICATIONS

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

[ ] Indicates specifications for Prevailing Torque Nuts.

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

See front side for SAE UNC and notes.

Figure 2-4: General Torque Specifications

Hydraulic Fitting Torque Specifications

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Figure 2-5: Hydraulic Fitting Torque Specifications

Model Specifications

1700 Blade Plow									
Model Number	Working Width	Transport Width	Transport Height	Blade Width	No. of Blades	Blade Angle	Spindle Size	Wheel Bolt Pattern	Estimated Weight
1760-35’	35’ 0”	19’ 6”	14’ 8”	6’	6	75°	3”	8 Bolt	12,210 lbs.
1770-40’	40’ 6”	24’ 3”	11’ 10”	6’	7	75°	3”	8 Bolt	15,890 lbs.
1790-52’	52’	26’ 4”	13’ 8”	6’	9	75°	3”	8 Bolt	19,690 lbs.
1711-64’	63’ 6”	30’ 0”	15’ 8”	6’	11	75°	3” & 3-1/4”	8 Bolt	24,830 lbs.
NOTE: Specifications Are Subject To Change Without Prior Notification									

Tire Inflation			
Tire Size	Tire Manufacturer	Ply/Load Rating	Inflation Pressure (Psi) (Max.)
320/70R15	FIRESTONE	LOAD INDEX 144 6,150 LBS.	74 psi.
380/55R 16.5 IMP	BKT	LOAD INDEX 150A8/B 7,400 LBS.	74 psi.
480/45R17	BKT	LOAD RANGE 12,015 LBS.	78 PSI
265/70R 19.5 IMP	DYNATRAC	LOAD RANGE 6,005 LBS.	120 psi.

Recommended Torque Specification For Lug Bolts and Nuts	
Bolt Size	Torque (FT. LBS.)
5/8-18	85 - 100 FT. LBS.
3/4-16	250 - 265 FT. LBS.
M22 X 1.5 (1711 CENTER FRAME)	450 - 500 FT. LBS.

Table provided for general use.

NOTES:

Treader Hydraulic Placement

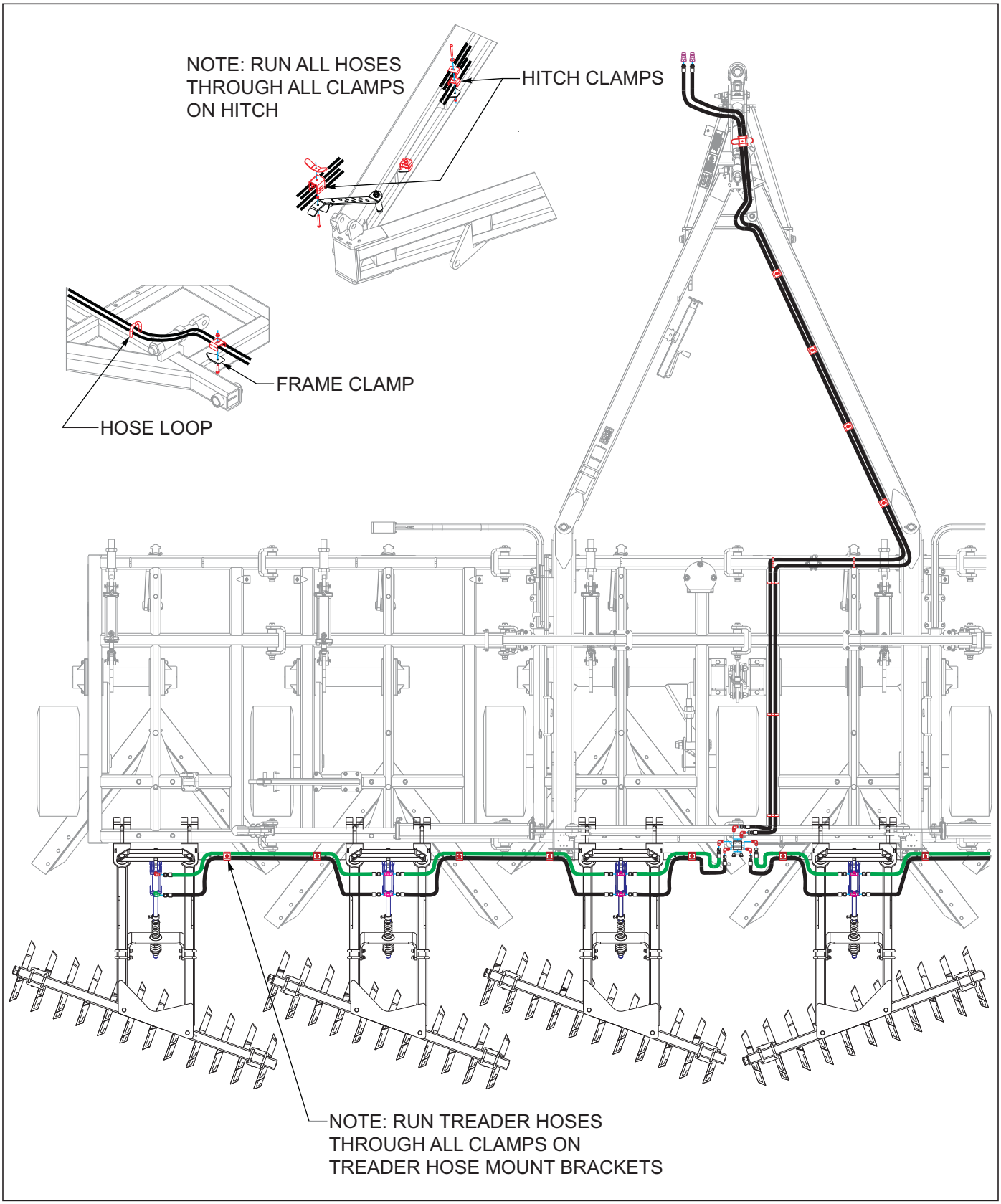


Figure 2-6: Treader Hydraulic Layout LH 1760-35'

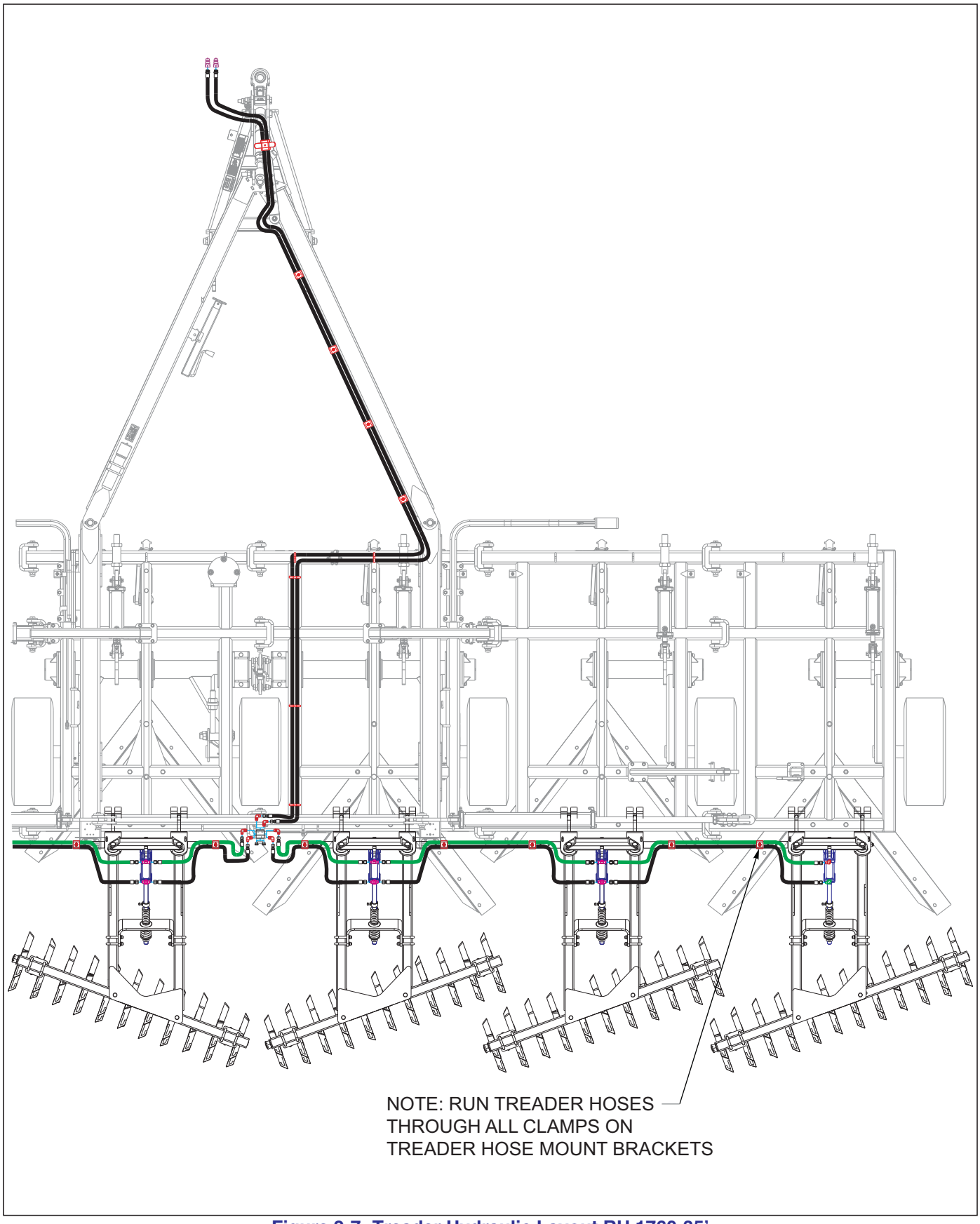


Figure 2-7: Treader Hydraulic Layout RH 1760-35'

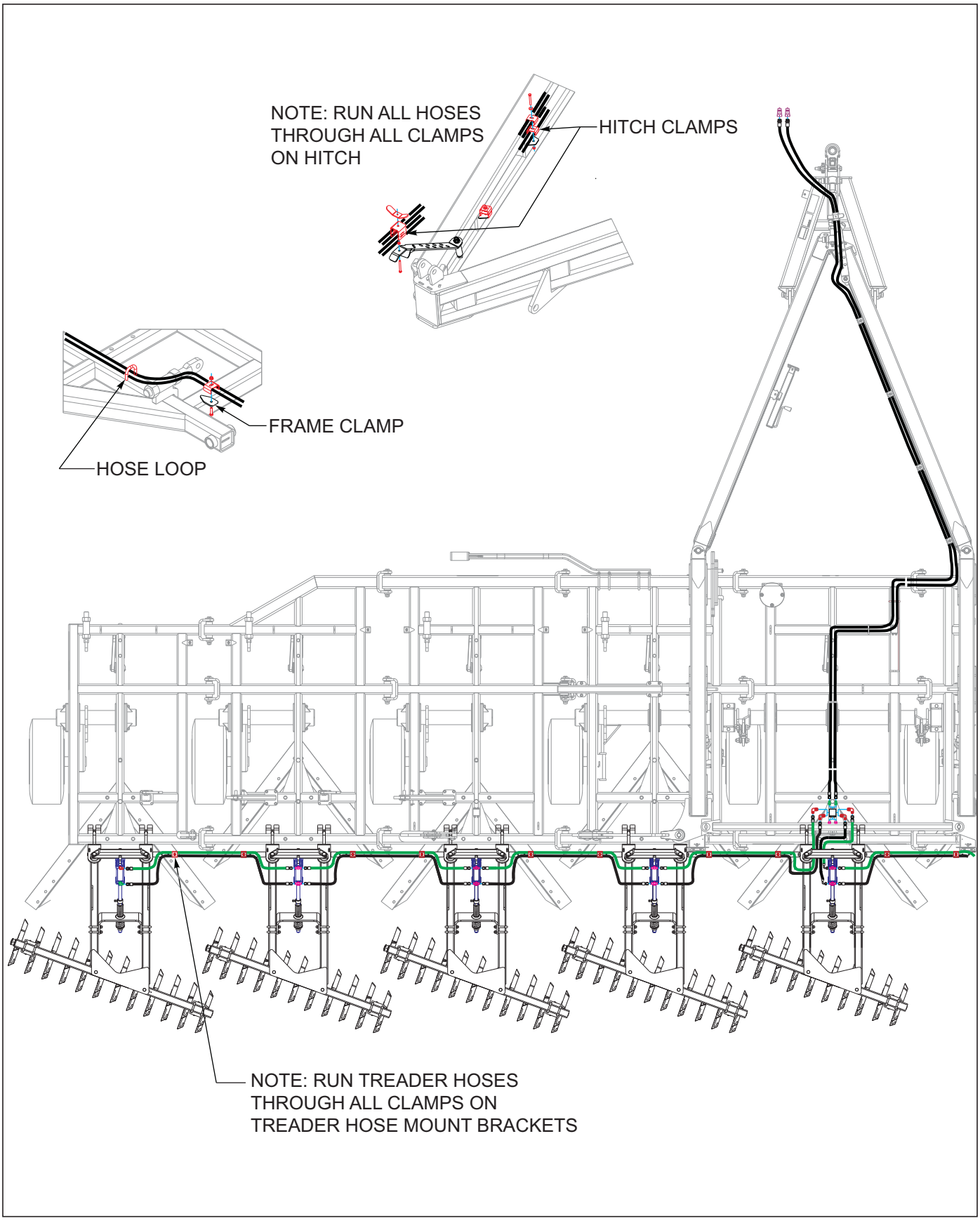


Figure 2-8: Treader Hydraulic Layout LH 1770-40' & 1790-52'

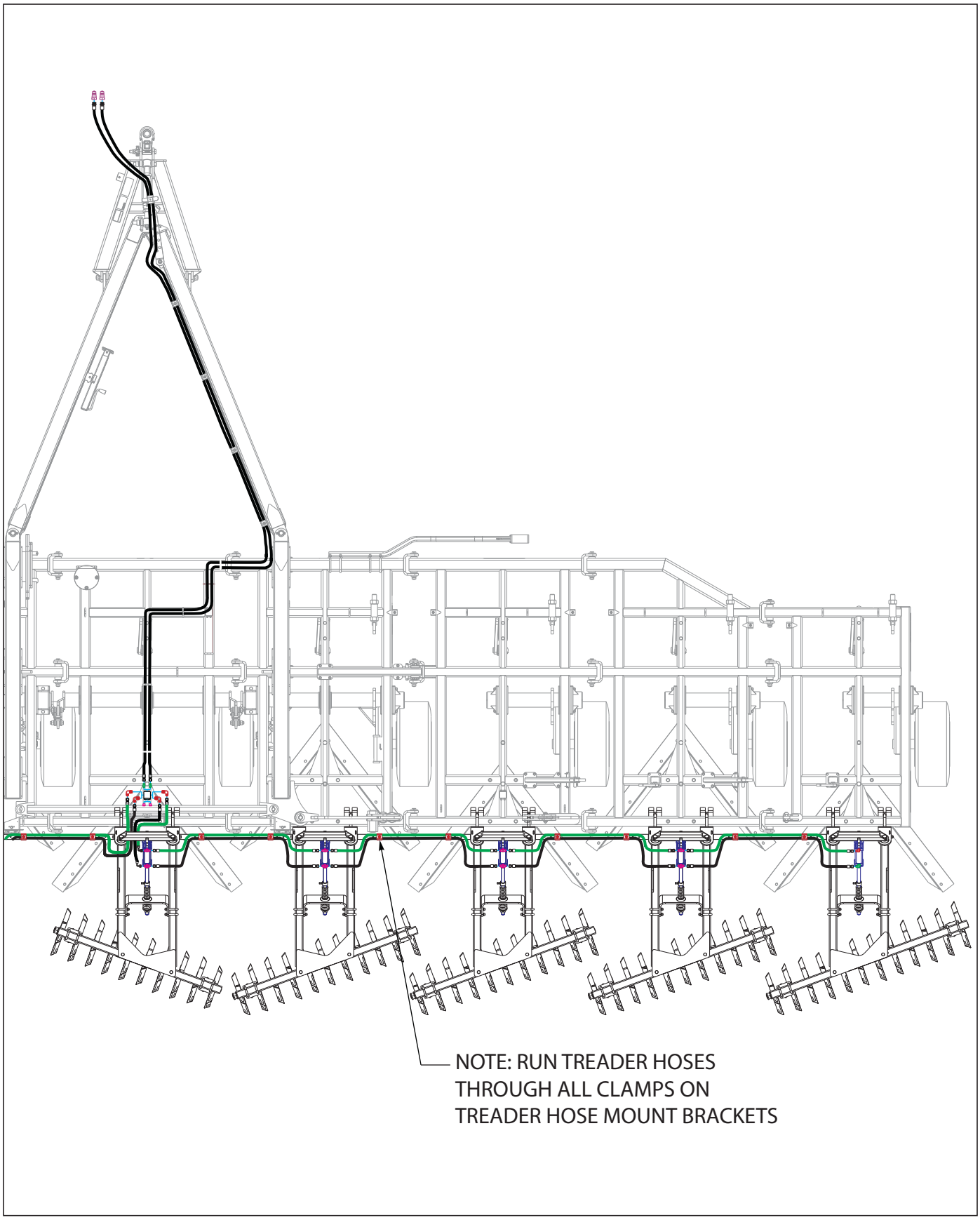


Figure 2-9: Treader Hydraulic Layout RH 1770-40' & 1790-52'

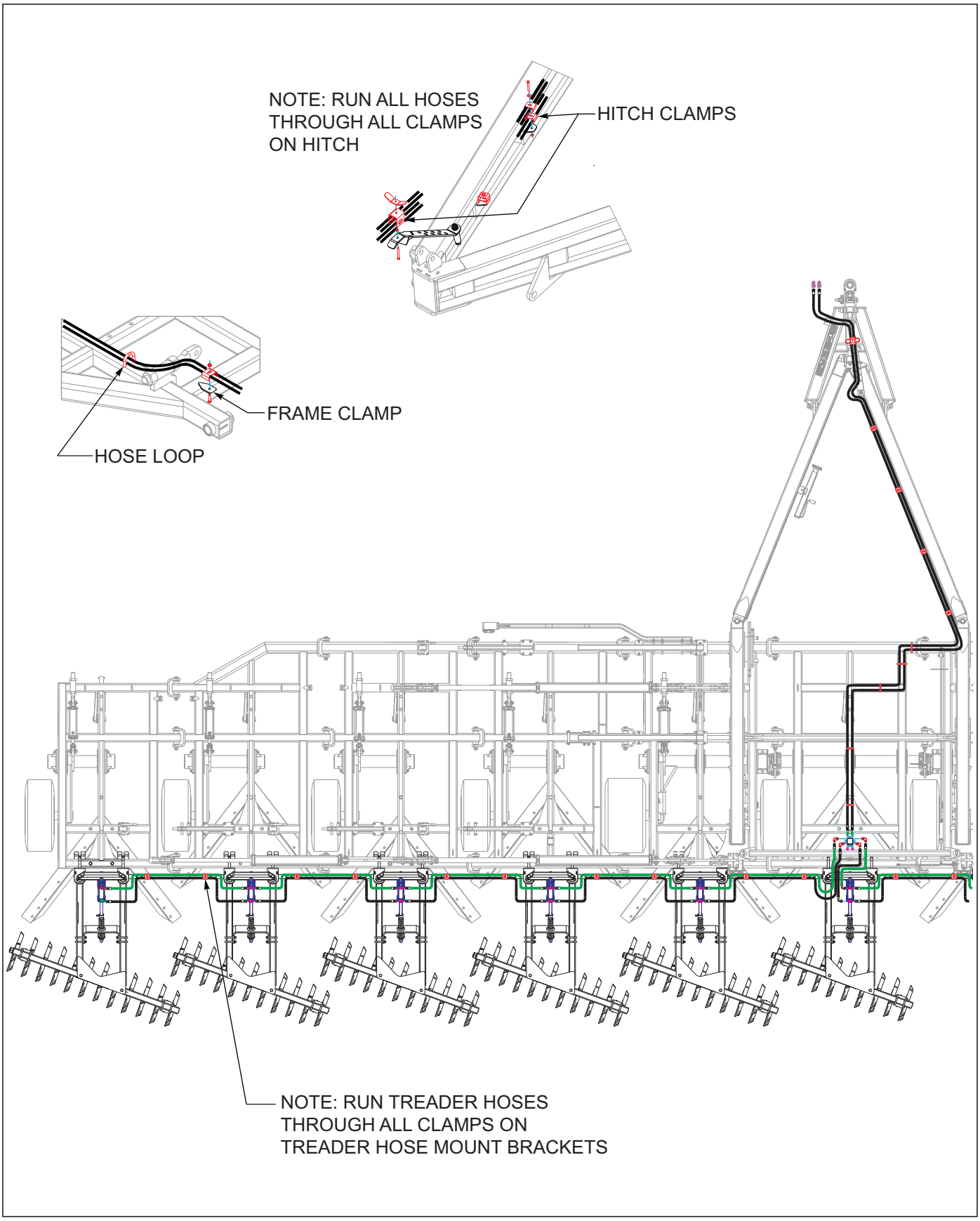


Figure 2-10: Treader Hydraulic Layout LH 1711-64'

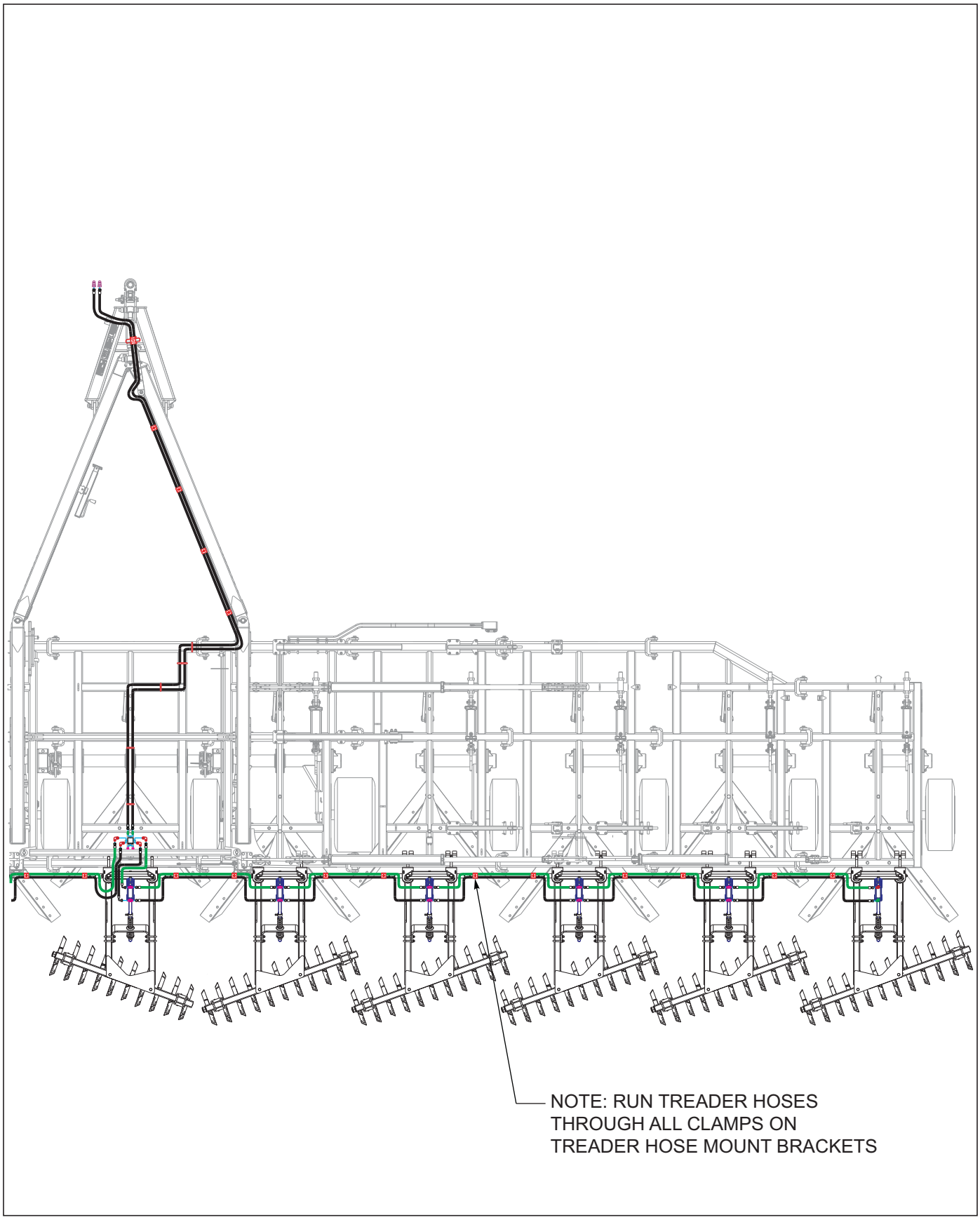


Figure 2-11: Treader Hydraulic Layout RH 1711-64'

Treader Arm & Wheel Placement

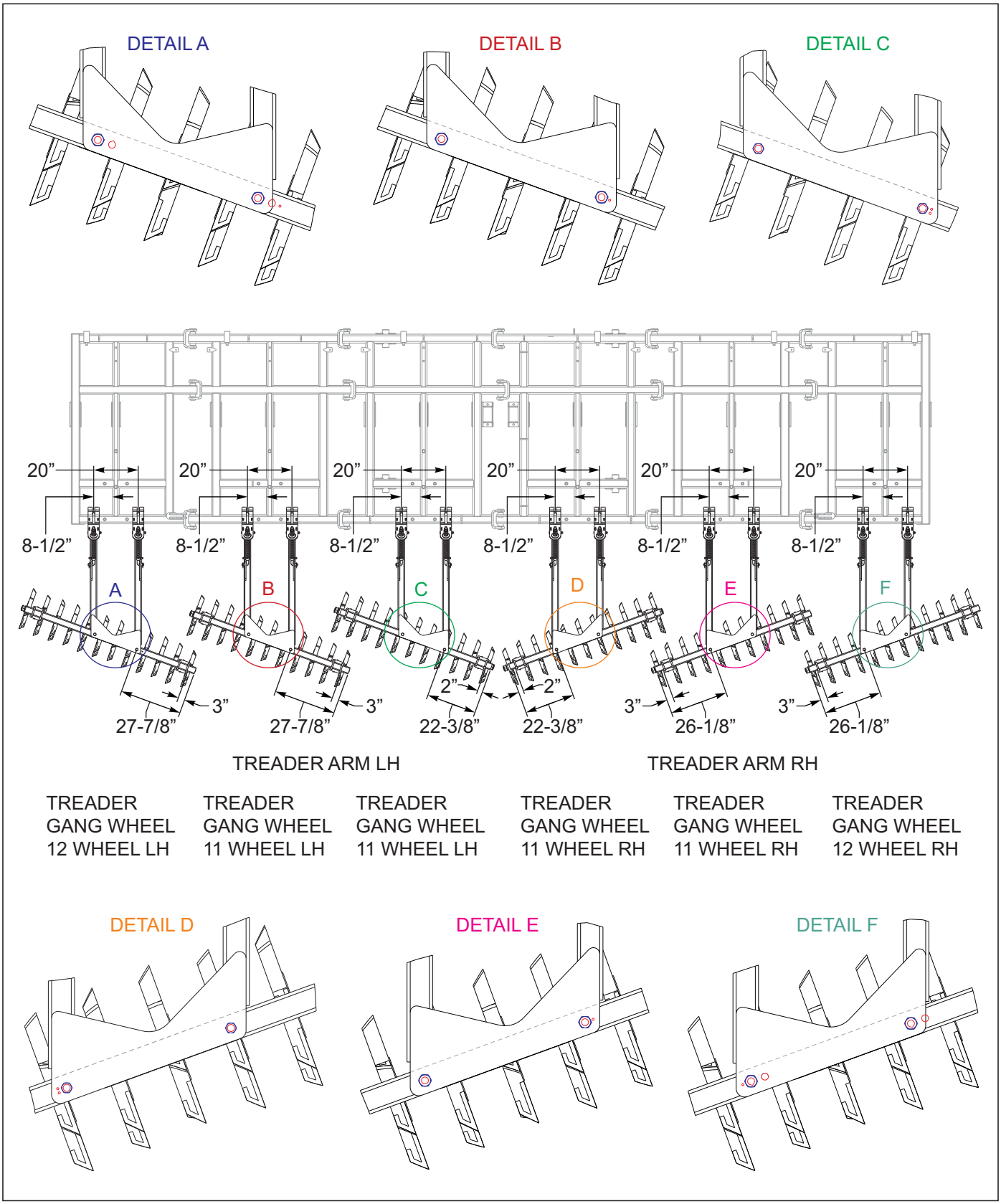


Figure 2-12: Treader Arm & Wheel Placement 1760-35’

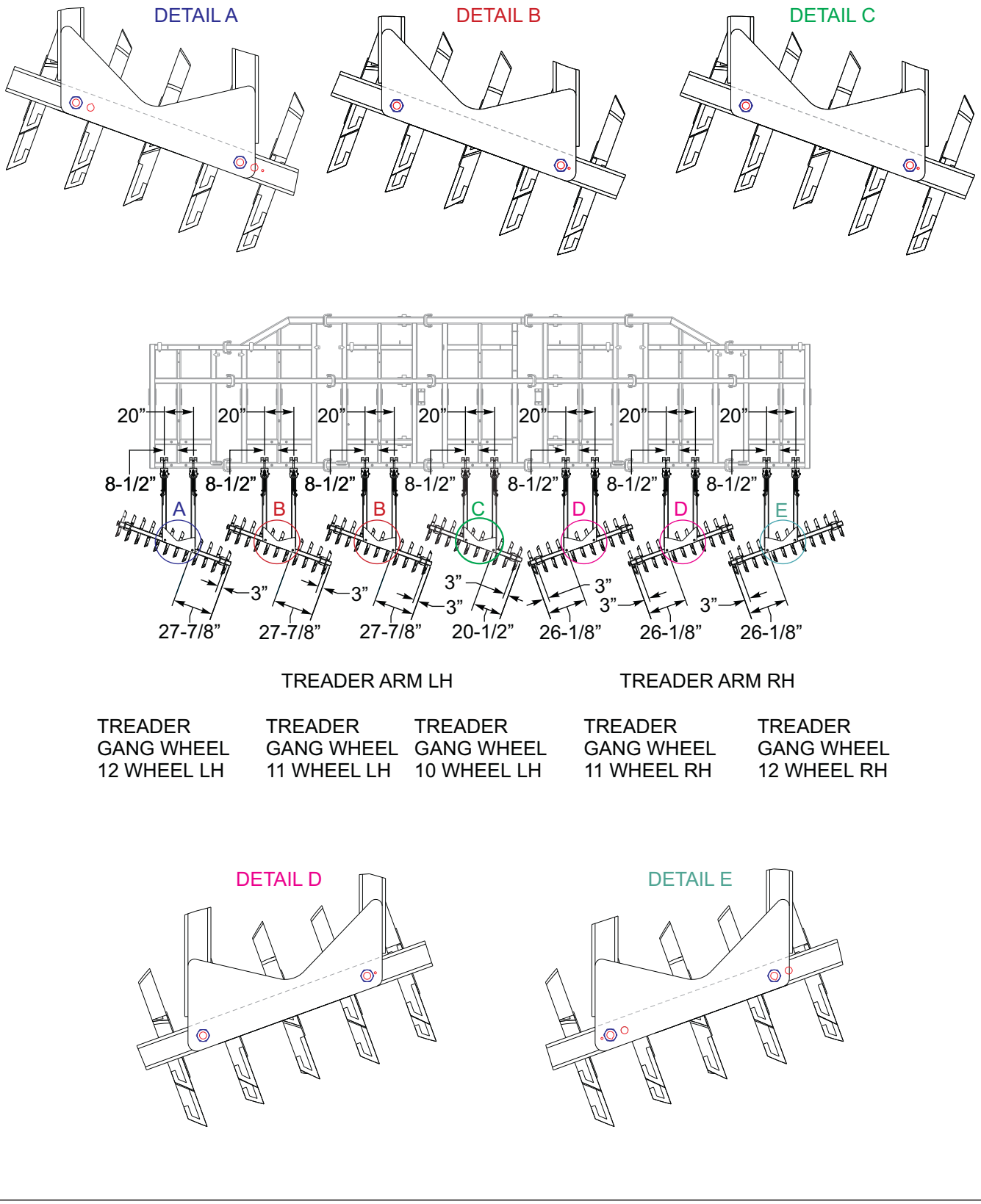


Figure 2-13: Treader Arm & Wheel Placement 1770-40’

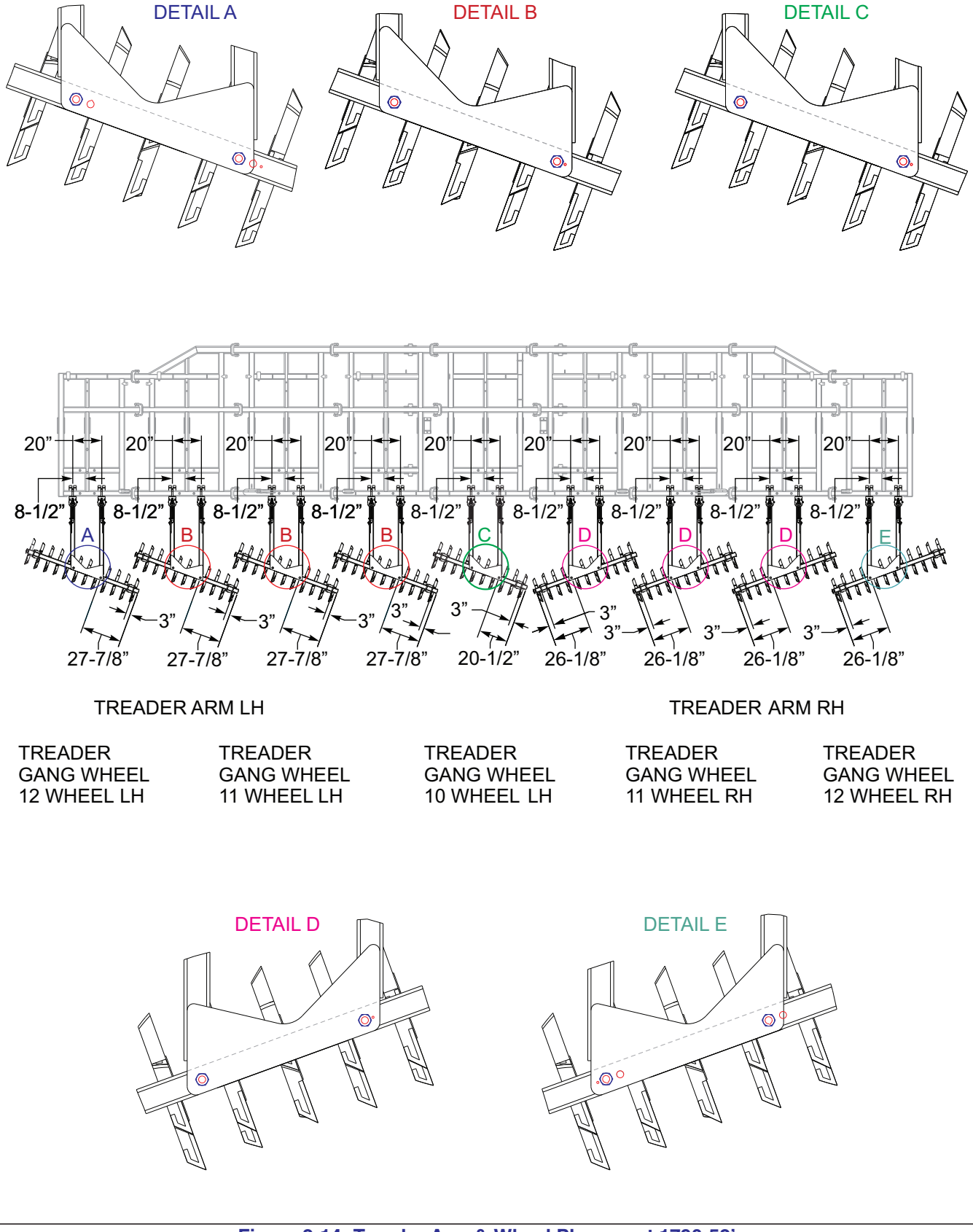
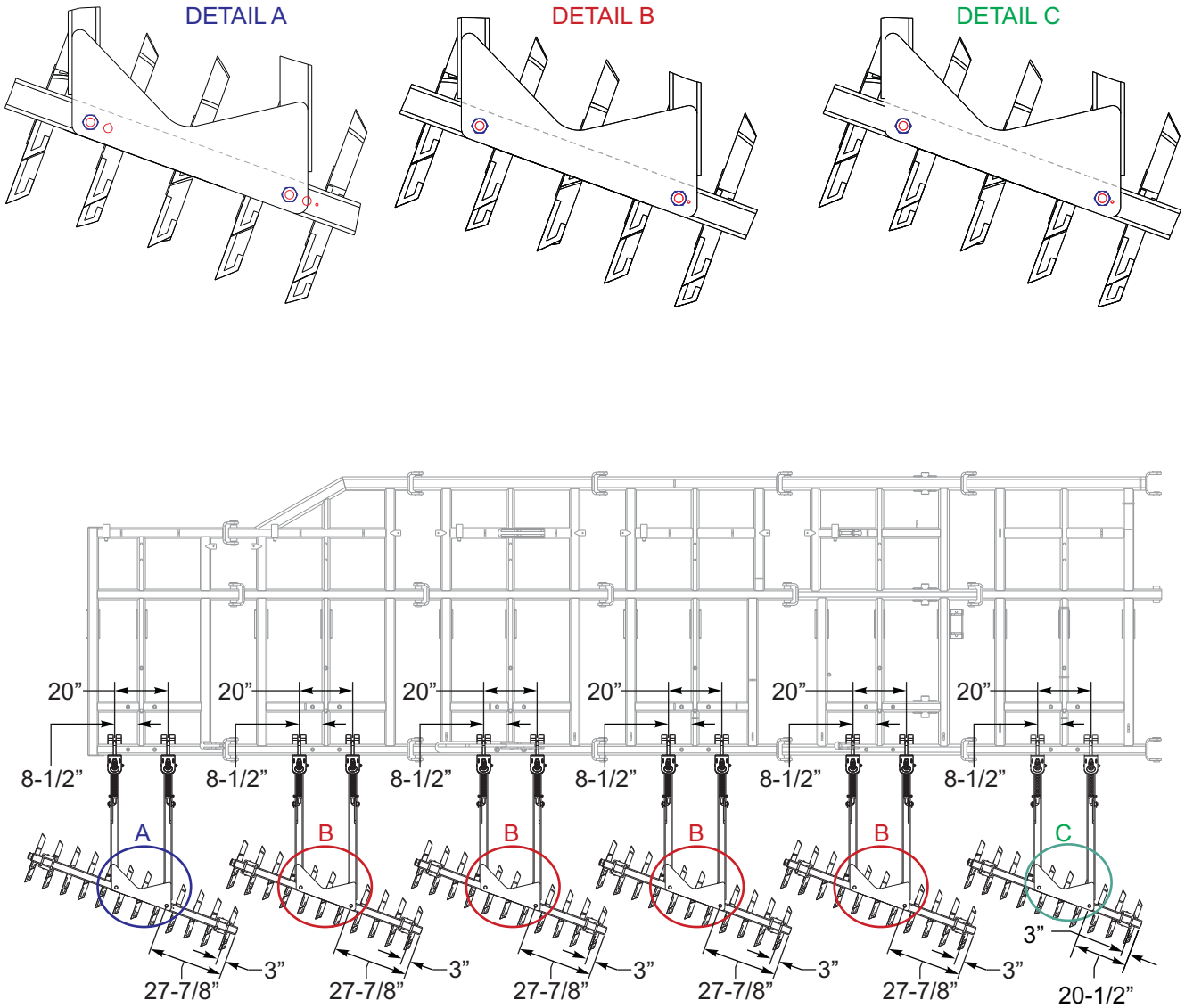


Figure 2-14: Treader Arm & Wheel Placement 1790-52’

Table provided for general use.

NOTES:



TREADER ARM LH

TREADER GANG WHEEL 12 WHEEL LH	TREADER GANG WHEEL 11 WHEEL LH	TREADER GANG WHEEL 11 WHEEL LH	TREADER GANG WHEEL 11 WHEEL LH	TREADER GANG WHEEL 11 WHEEL LH	TREADER GANG WHEEL 10 WHEEL LH

Figure 2-15: Treader Arm & Wheel Placement 1711-64’ LH

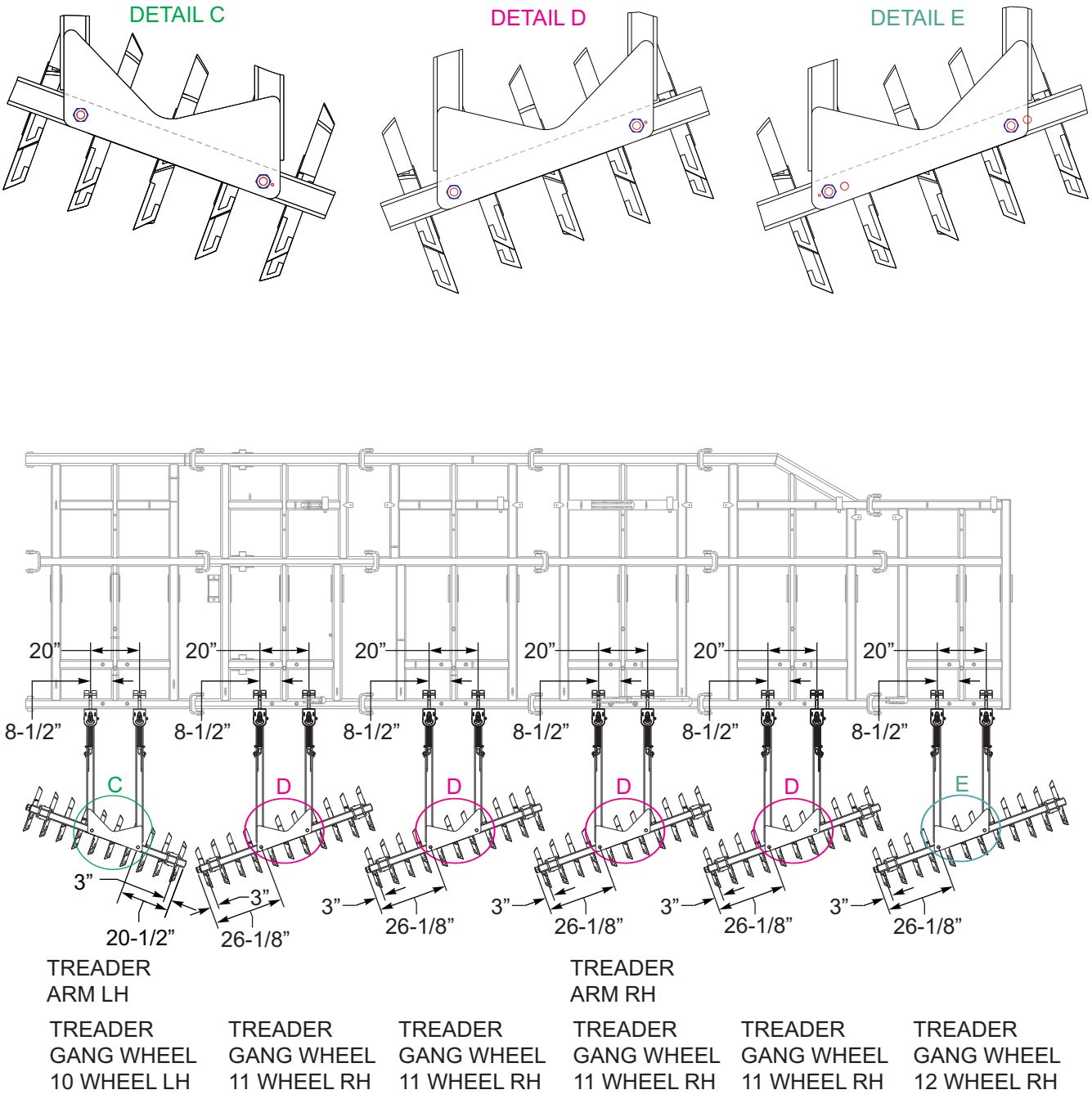


Figure 2-16: Treader Arm & Wheel Placement 1711-64’ RH

Table provided for general use.

NOTES:

Chapter 3

Assembly Instructions

It is very important that your new 1700 Blade Plow be properly assembled, adjusted and lubricated before use. Illustrations in this section show proper assembly procedures. They show proper lift and fold hydraulic routing, light kit placement and treader arm and wheel placement. The Blade Plow will come fully assembled except for the treader wheel assemblies (if equipped). The hydraulics will all be plumbed and charged and the LH and RH hitch weldments will be un-pinned and swung around against front of center frames. The machine will be completely folded with all transport pins installed. Illustrations in this section show hydraulic assembly drawings and proper assembly procedures for components that need installed once unit is unloaded from truck. 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 *"General Torque Specifications" on page 2-4* and *"Hydraulic Fitting Torque Specifications" on page 2-5*.

DANGER

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

WARNING

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

DANGER

To prevent accidental lowering:

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

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

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.

Blade Plow Hitch Assembly

IMPORTANT

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

1. When Blade Plow is unloaded from truck be sure the assembly area is a large level area of sufficient size to accommodate the Blade Plow when fully assembled.

WARNING

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

2. The hitch weldments, RH and LH will need un-banded from center frames, LH and RH, and swung forward ***See Figure 3-1***, to the field position.

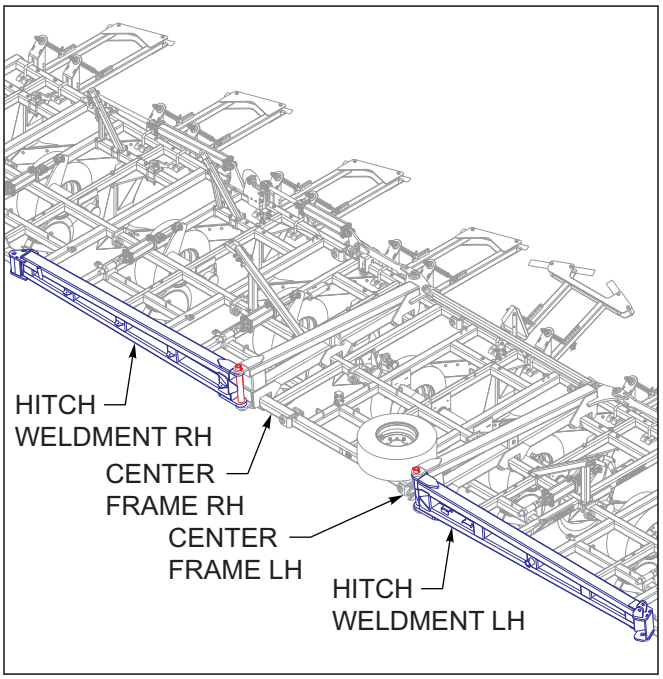


Figure 3-1: Hitch Transport Position

3. Swing hitch weldments, RH and LH until holes are aligned in front, slide 1.75" x 14-7/8 hitch pin through holes, install collar on top and bottom, secure with 1/2 x 3-1/4 bolts and 1/2 lock nuts as shown ***See Figure 3-2***.
4. Attach the hose holder bracket with 3/4 x 7 bolt and 3/4 flange nuts. Install the stor-a-way harness to bottom of hose holder bracket, using 1/4 x 1 bolts and 1/4 lock nuts. Attach the hose holder clamp to top of the hose holder bracket, secure with 3/8 x 3-1/2 all thread bolt, 3/8 nut and wing nut. Do not tighten wing nut until all hoses are run through clamp.

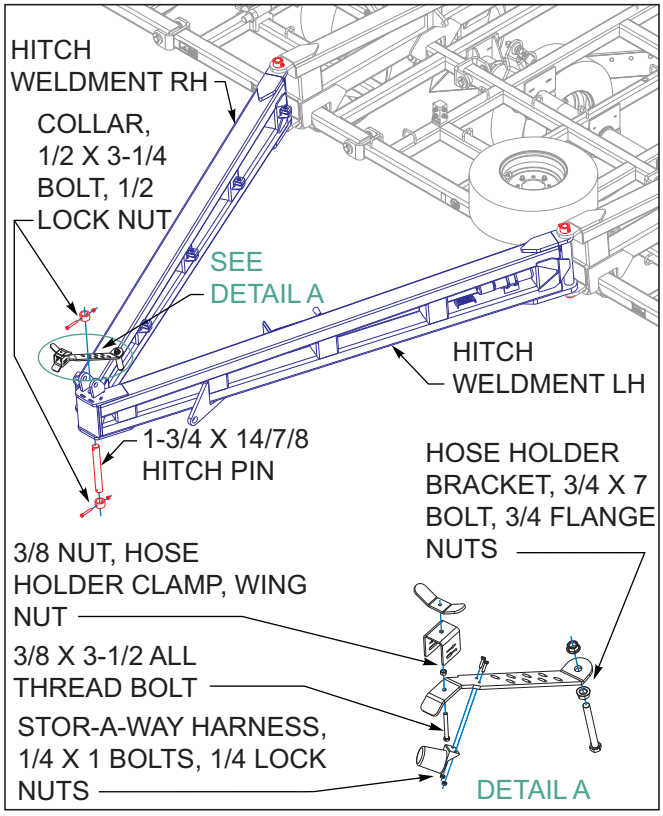


Figure 3-2: Hitch Field Assembly

5. Attach rear of the leveler hitch to the front ears of the hitch weldments with 2, 1-3/4 x 2-3/4 pin, 1/2 x 2-1/4 grooved pins and 1-1/4 lock nut as shown ***See Figure 3-3***.
6. Swing front of the leveler hitch up until rear of radius rod assembly aligns with holes of plates on front of hitch weldments.
7. Install the 1-1/4 x 8 bolt through aligned holes, secure with 1-1/4 flat washer, 1-1/4 lock washer and 1-1/4 nut.
8. Move the tongue jack to the forward mounting tube and rotate to parking position to support the front of the hitch.

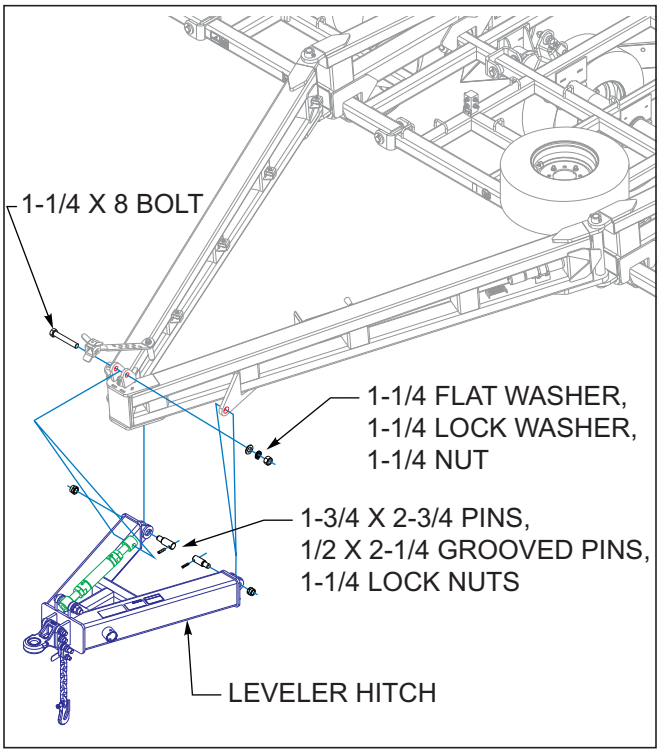


Figure 3-3: Hitch Leveler Assembly

Slip-In Spindle Assembly

NOTE

The slip-in spindles are shipped from factory assembled in lift weldments. Check to see if they are correct in location.

1. The slip-in spindle should be in the inner most hole in tube. This hole has a notch cutout for a visual, ***See Figure 3-4*** for model 1760-35'.

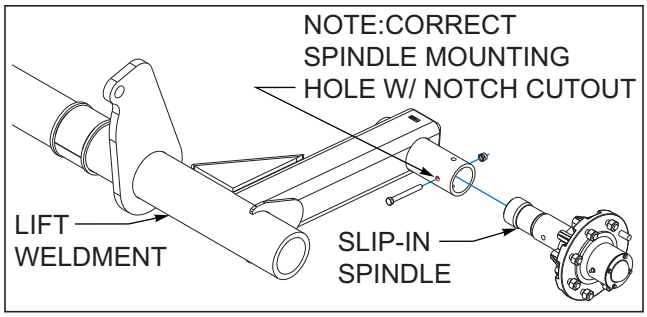


Figure 3-4: Spindle Mounting 1760-35'

2. The slip-in spindle should be in the outer most hole in tube, ***See Figure 3-5*** for models 1770-40', 1790-52' & 1711-64'.

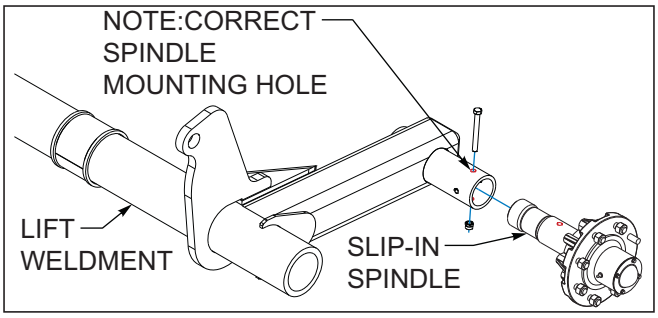


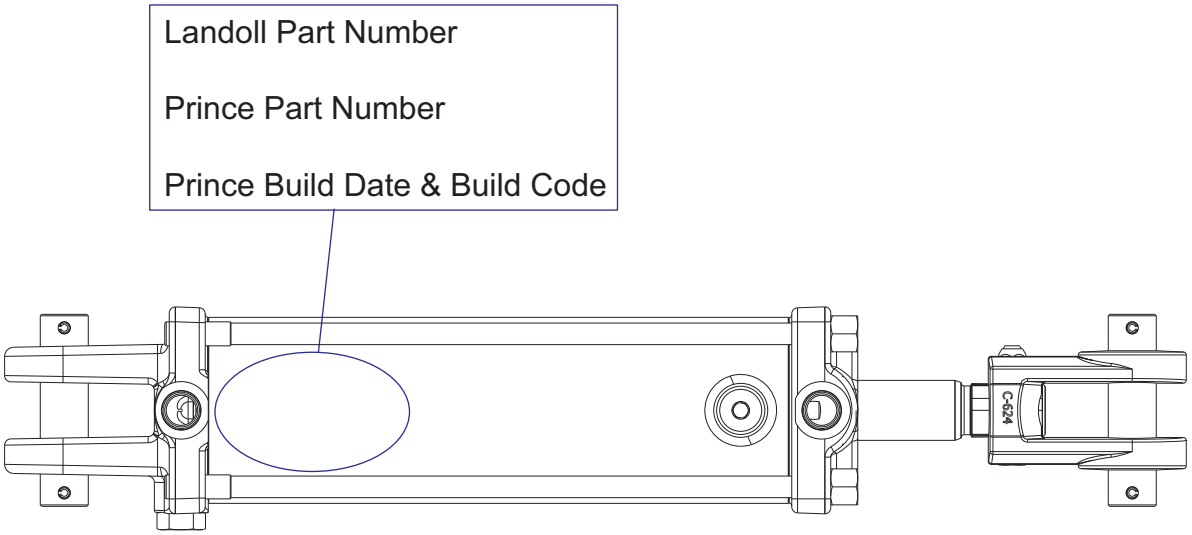
Figure 3-5: Spindle Mounting 1770-40, 1790-52' & 1711-64'

Rephasing Hydraulic Cylinder Change

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

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

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



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

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

Figure 3-6: Rephasing Hydraulic Cylinder Change

Cross Reference Matrix For Model 1700 BP

Old Landoll Part Number	New Landoll Part Number	Landoll Part Description
202273	247544	Cylinder, 3-1/4 x 10, Rephase
164172	247545	Cylinder, 3-1/2 x 10, Rephase
164172M	247545M	Cylinder, 3-1/2 x 10, Rephase
140471	247546	Cylinder, 3-3/4 x 10, Rephase
140470	247547	Cylinder, 4 x 10, Rephase
184784	247550	Cylinder, 4-1/2 x 10, Rephase
184784M	247550M	Cylinder, 4-1/2 x 10, Rephase

Hydraulic Installation

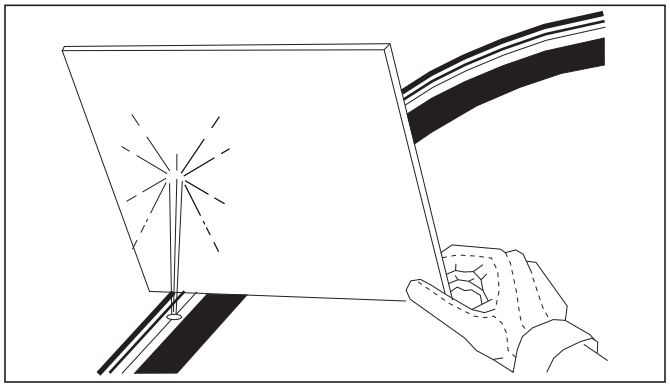


Figure 3-7: Hydraulic Leak Detection

⚠ WARNING

Escaping hydraulic fluid can cause serious personnel injury. Relieve system pressure before repairing, adjusting, or disconnecting. Wear proper hand and eye protection when searching for leaks. Use cardboard instead of hands *See Figure 3-7*. Keep all components (cylinders, hoses, fittings, etc.) in good repair.

1. Install the lift 8 port manifold at the front center of the center frame and the fold 8 port manifold(s) at the rear of the machine to the welded mount plate using 1/2 x 3-1/2 bolts and 1/2 lock nuts ***See Figure 3-8***. For placement of manifolds and hose placement ***See Figure 3-9*** through ***3-32***.

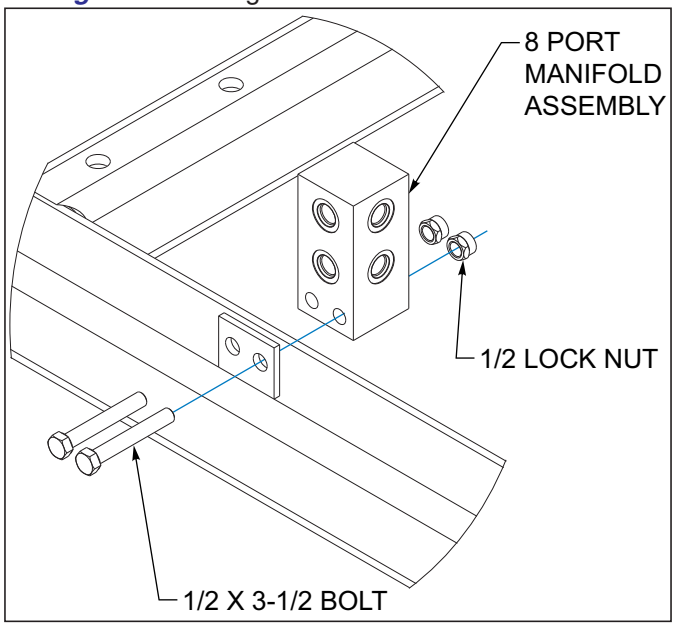


Figure 3-8: 8 Port Manifold Assembly

2. Install 90 degree regular adapter fittings in both ends of all lift cylinders. Install adapter fittings into the limit valve and 8 port manifold. Install the lift cylinder hoses as shown in ***Figures 3-9*** **through** ***3-20***. Route the hoses along the right side of the hitch, and through the hose loops provided along the frames. Wrap the front two ends of the lift hoses with a blue hose wrap.

NOTE

Rod ends of the fold cylinders need to be left unassembled until fold system is fully charged with oil to prevent machine damage. Hydraulic fold cylinders will have restricted fittings installed in each fold cylinder.

3. Install fold cylinders and pressure relief valves as shown, ***See Figure 3-21*** through ***3-32***. Install adapter fittings in all fold cylinders, manifolds and pressure relief valves as shown, ***See Figure 3-21*** through ***3-32***.
4. After the fold system has been charged, the rod ends of cylinders may be connected with the cylinder pins provided with cylinders.

⚠ CAUTION

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

5. Install the fold cylinder hoses as shown in ***Figure 3-21*** **through** ***3-32***. Route the hoses along the right side of the hitch, and through the hose loops provided along the frames. Wrap the front two ends of the fold hoses with a yellow hose wrap.

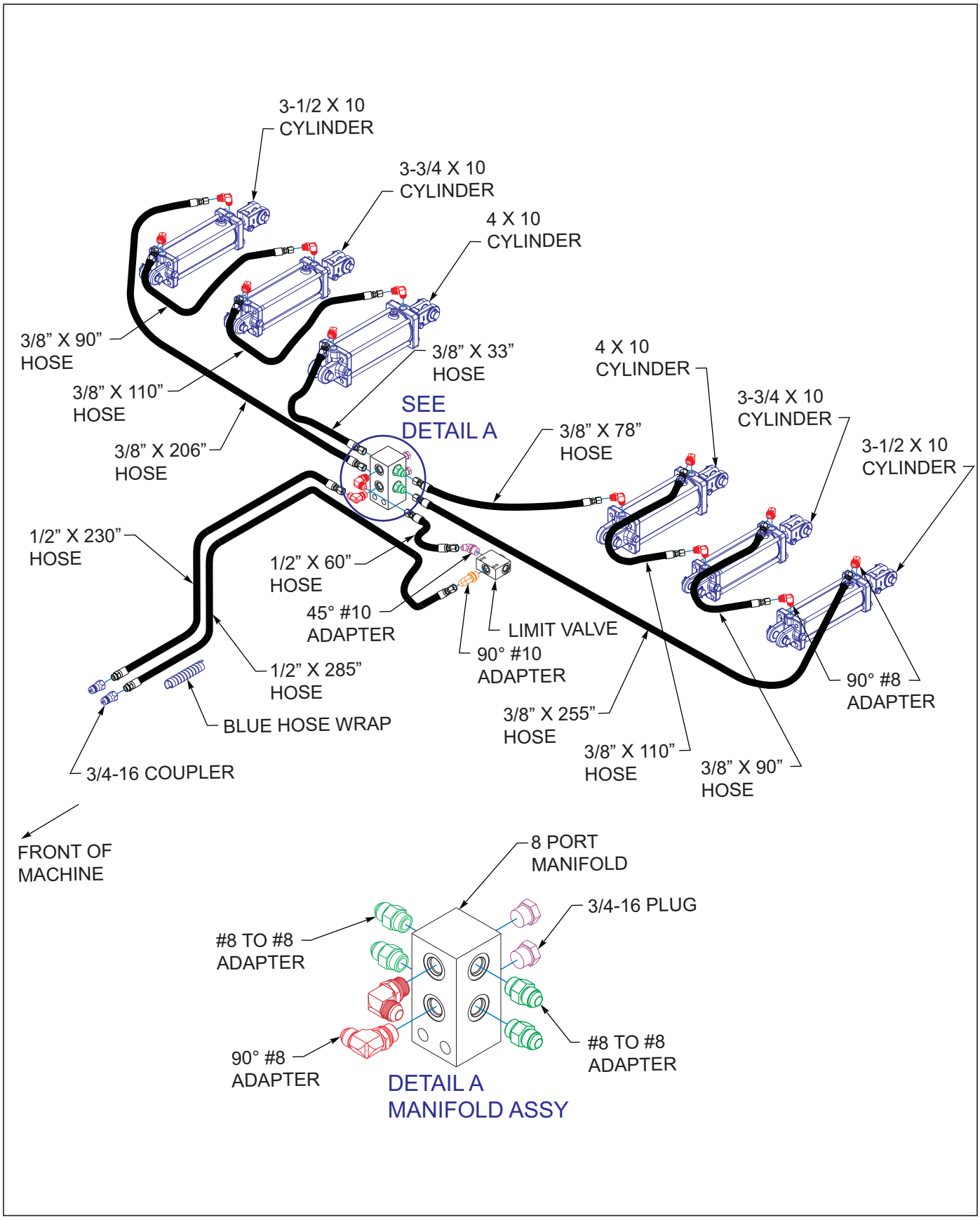


Figure 3-9: Hydraulic Lift Installation 1760-35'

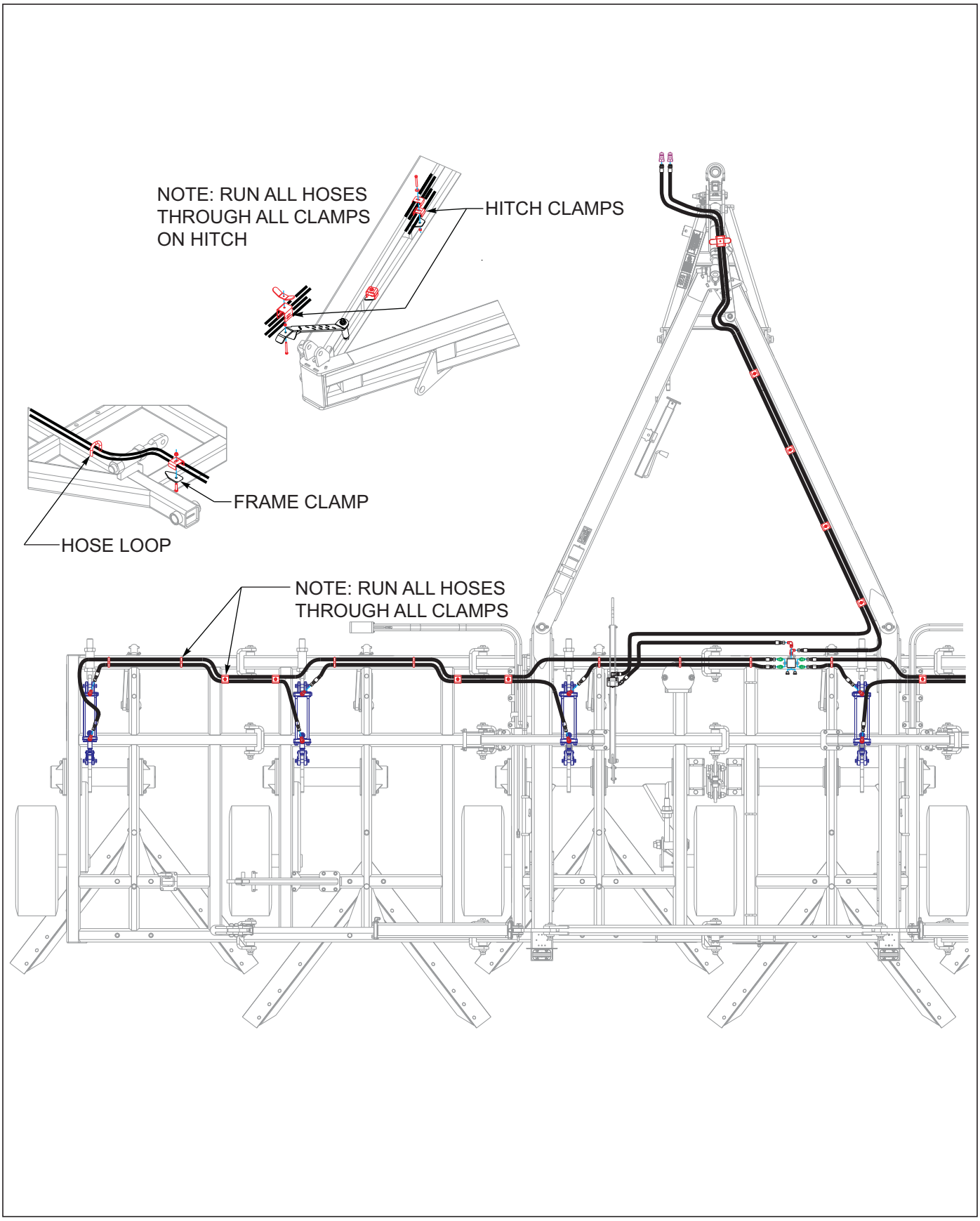


Figure 3-10: Lift Hydraulic Placement LH 1760-35'

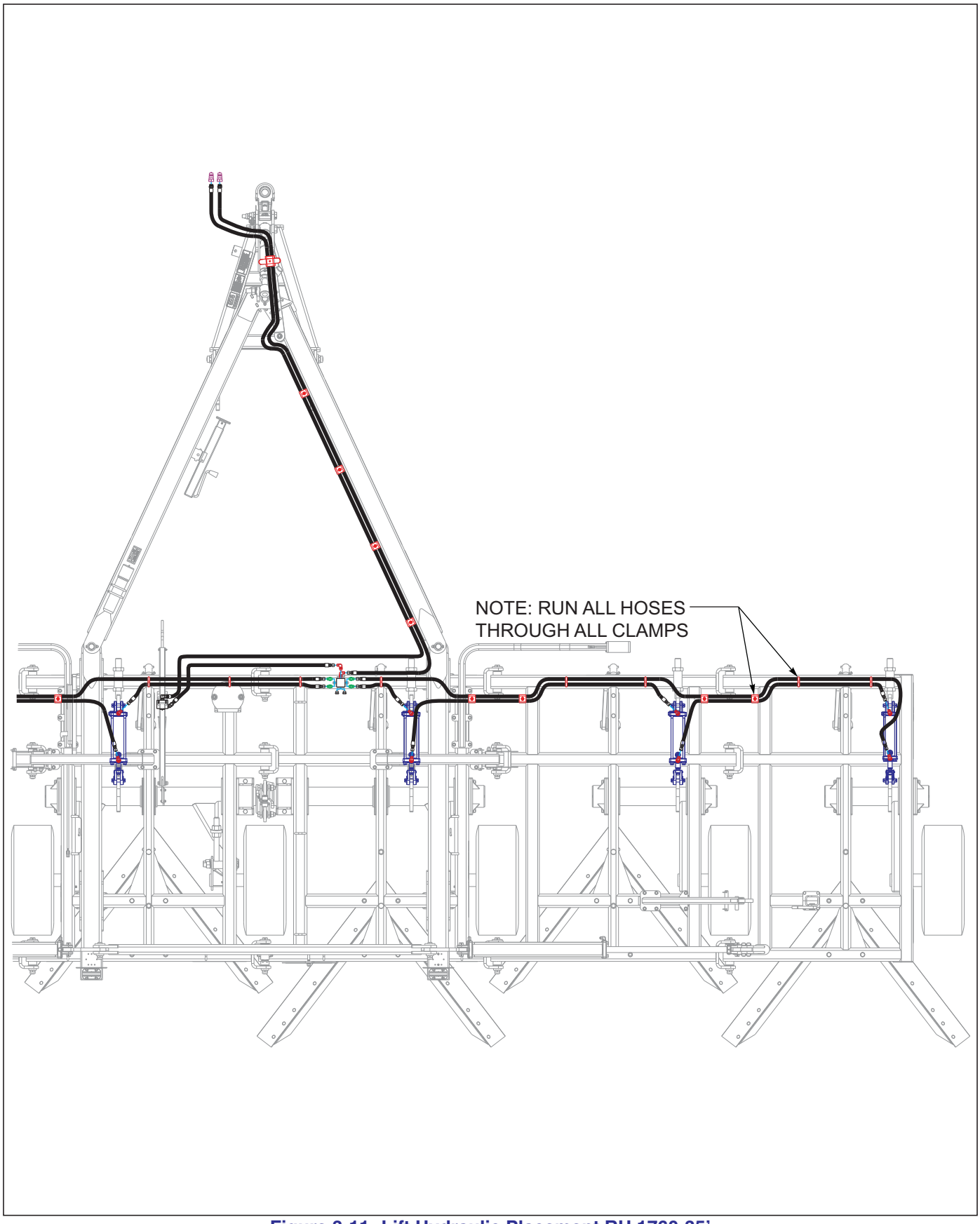


Figure 3-11: Lift Hydraulic Placement RH 1760-35’

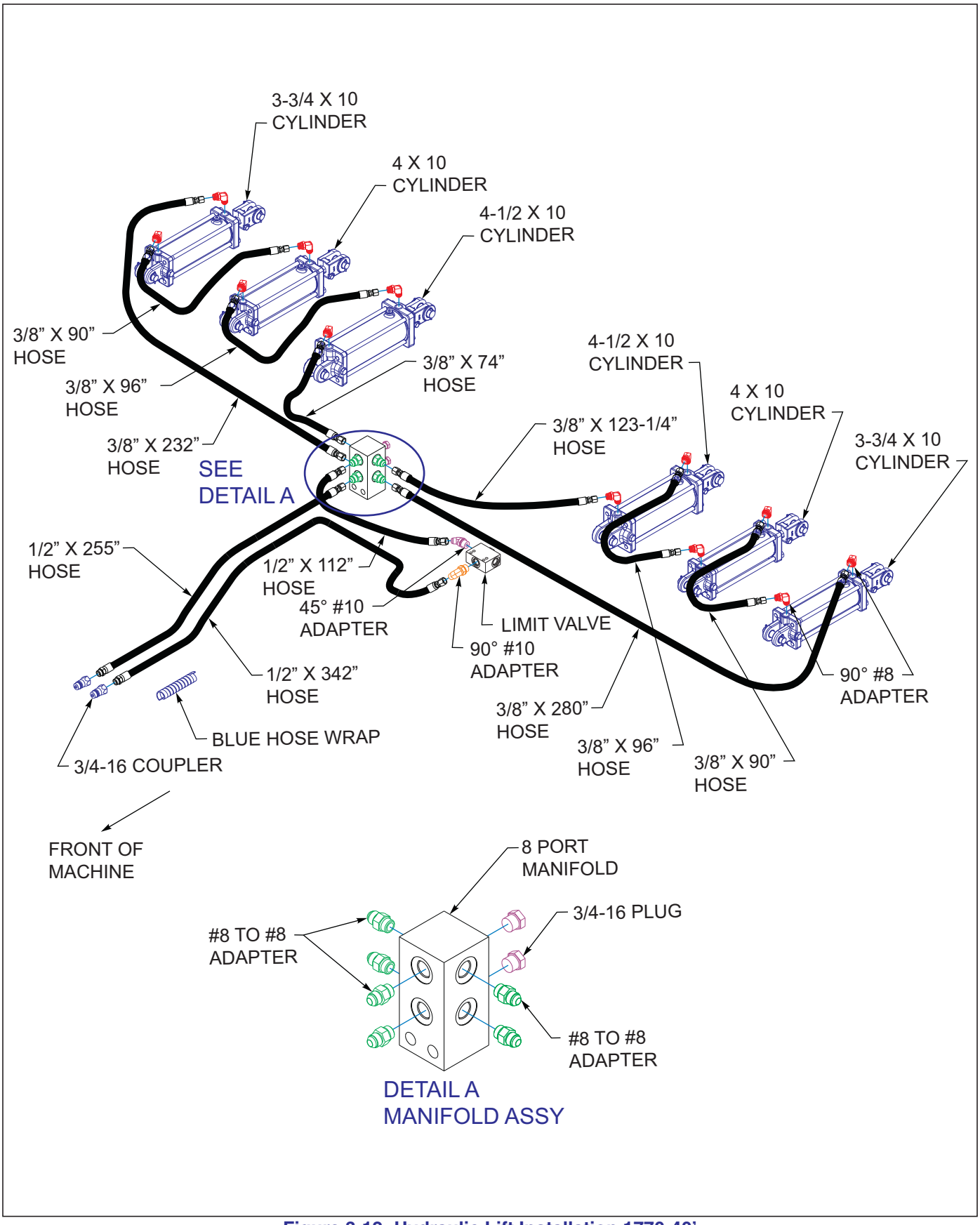


Figure 3-12: Hydraulic Lift Installation 1770-40'

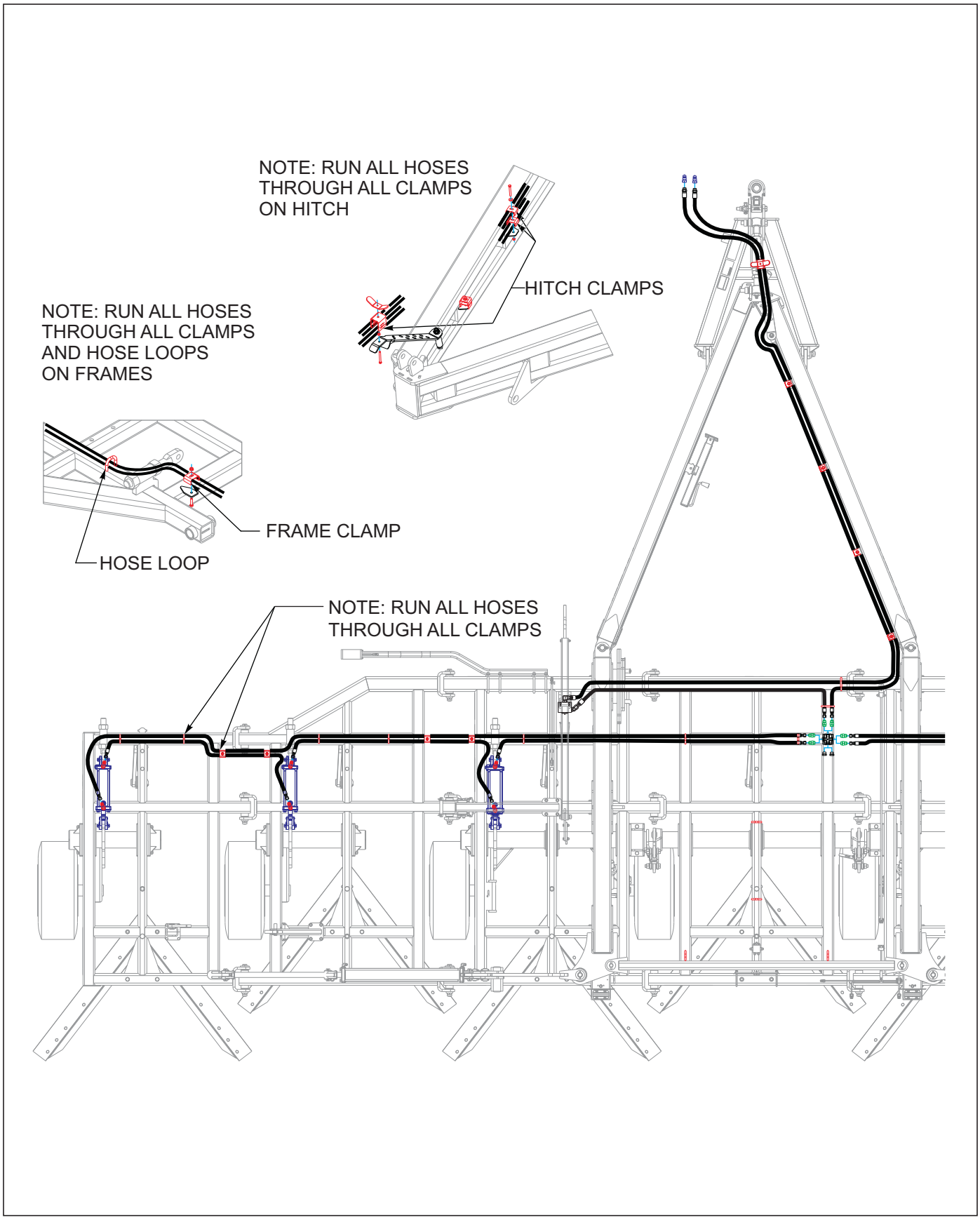


Figure 3-13: Lift Hydraulic Placement LH 1770-40'

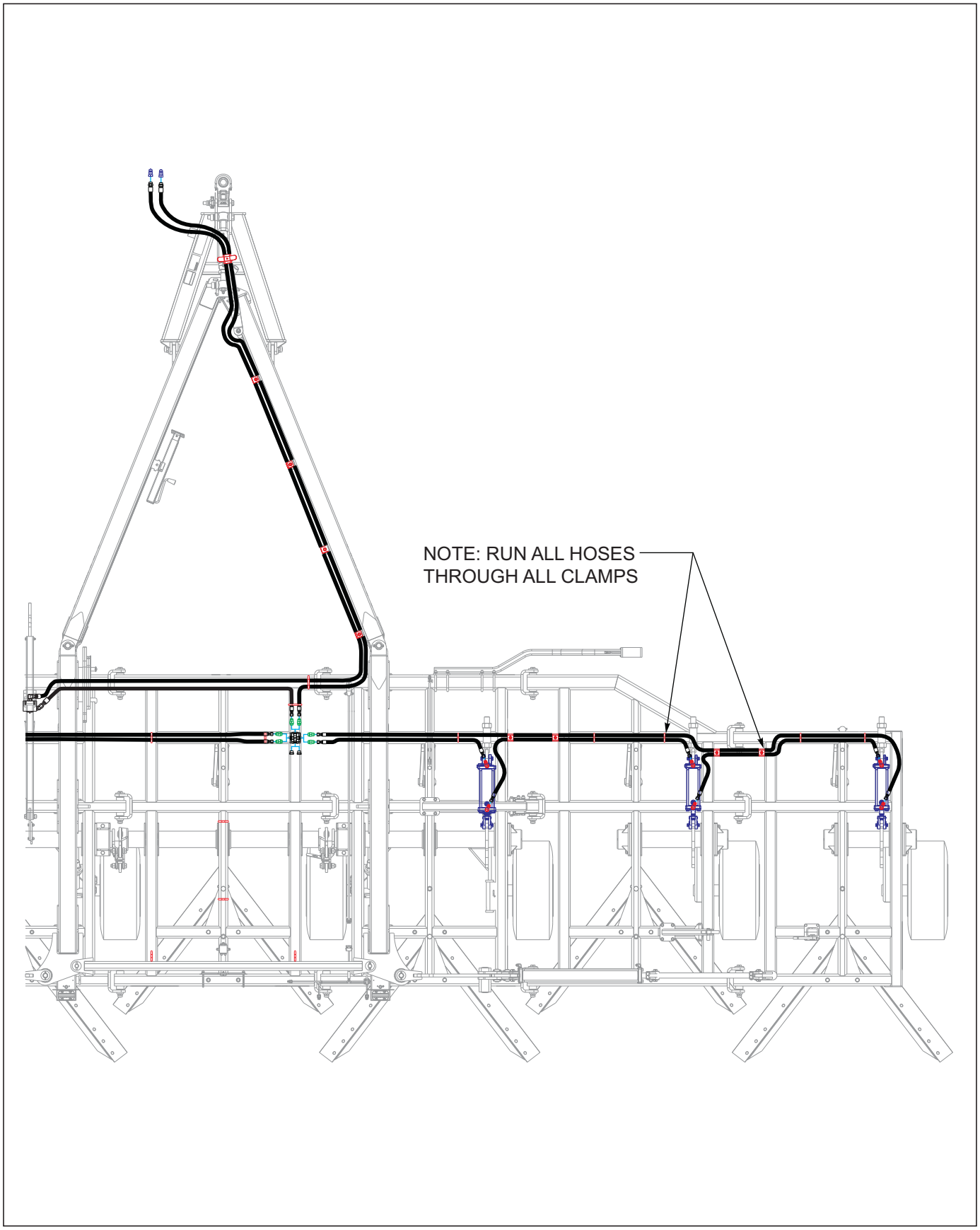


Figure 3-14: Lift Hydraulic Placement RH 1770-40’

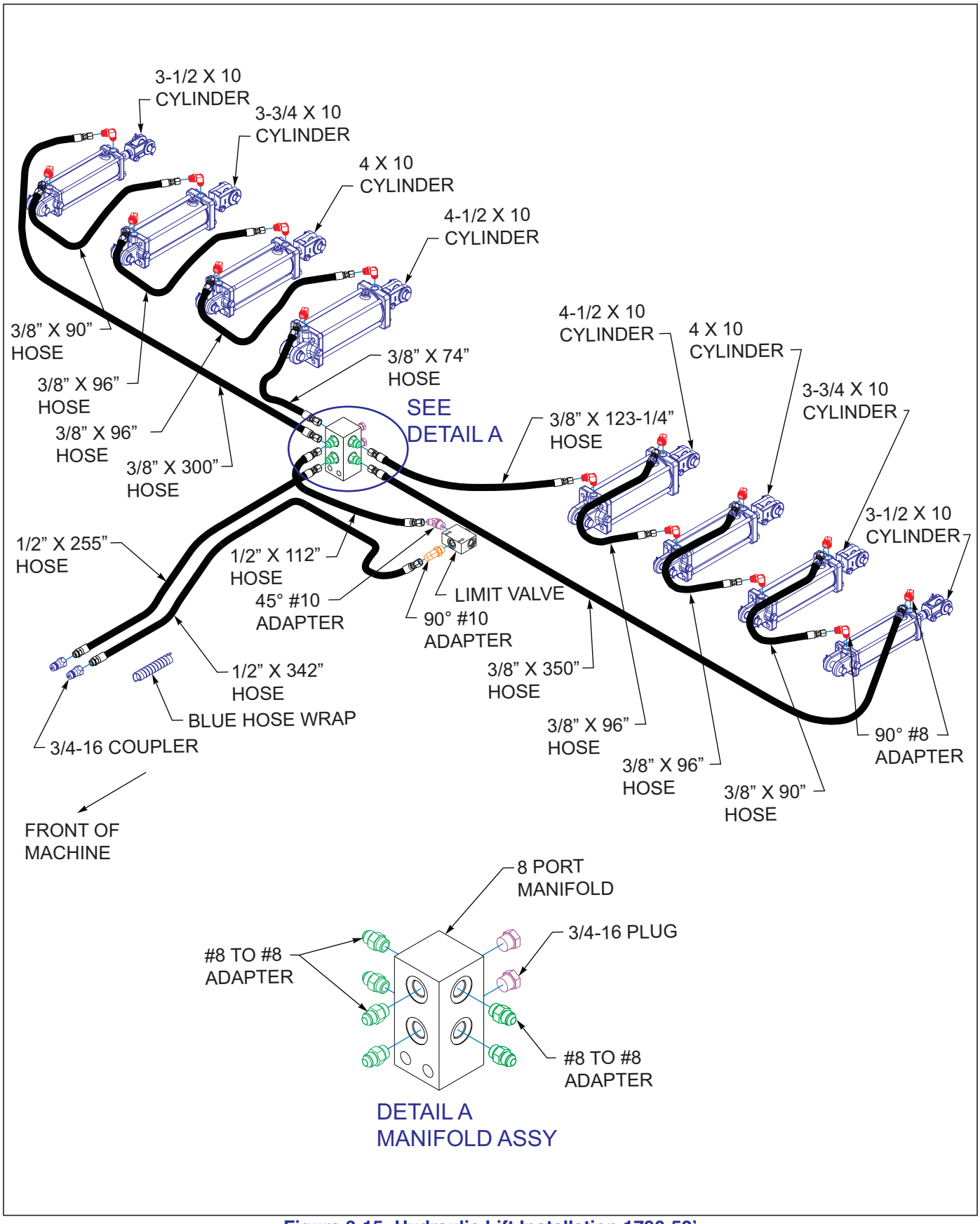


Figure 3-15: Hydraulic Lift Installation 1790-52'

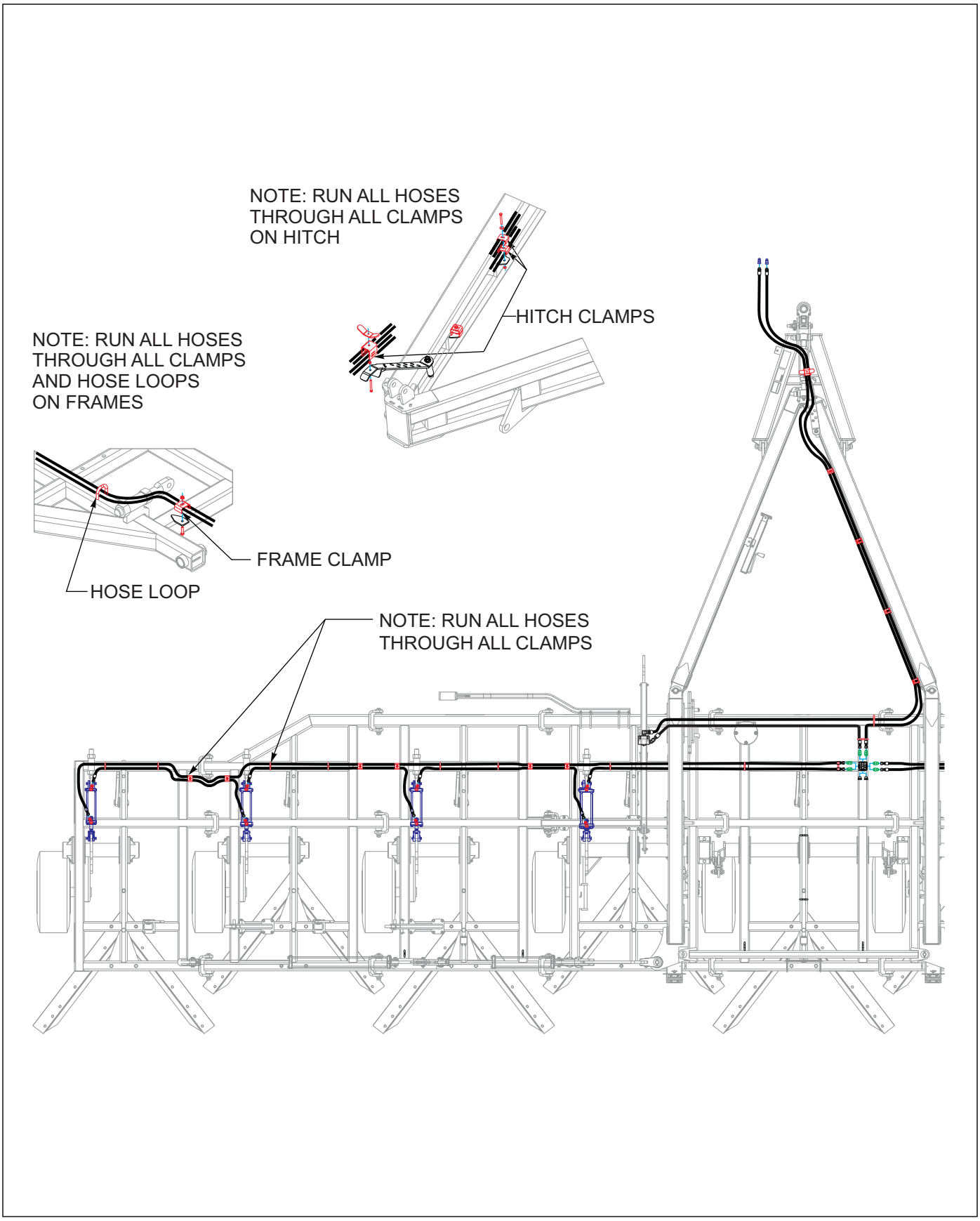


Figure 3-16: Lift Hydraulic Placement LH 1790-52'

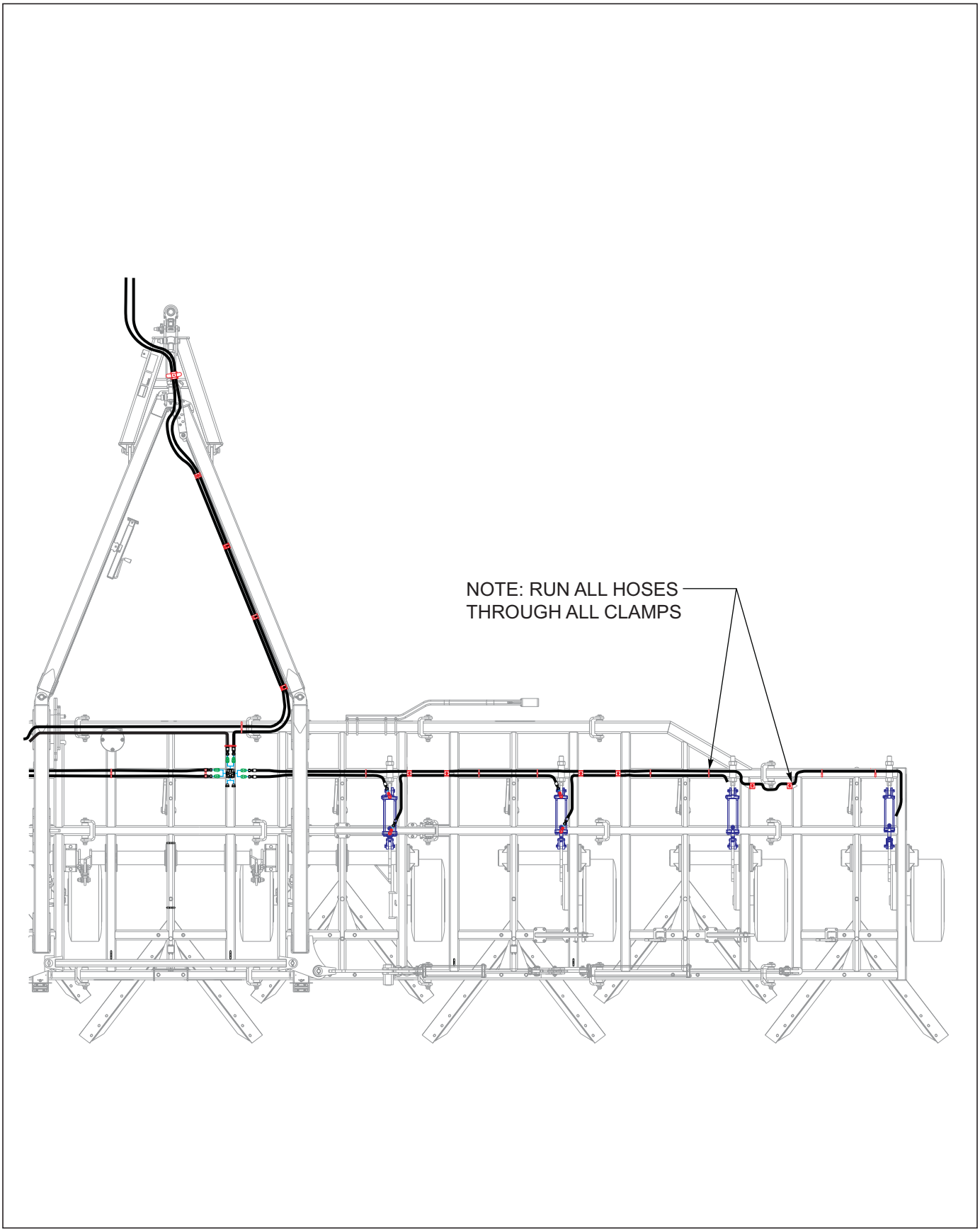


Figure 3-17: Lift Hydraulic Placement RH 1790-52’

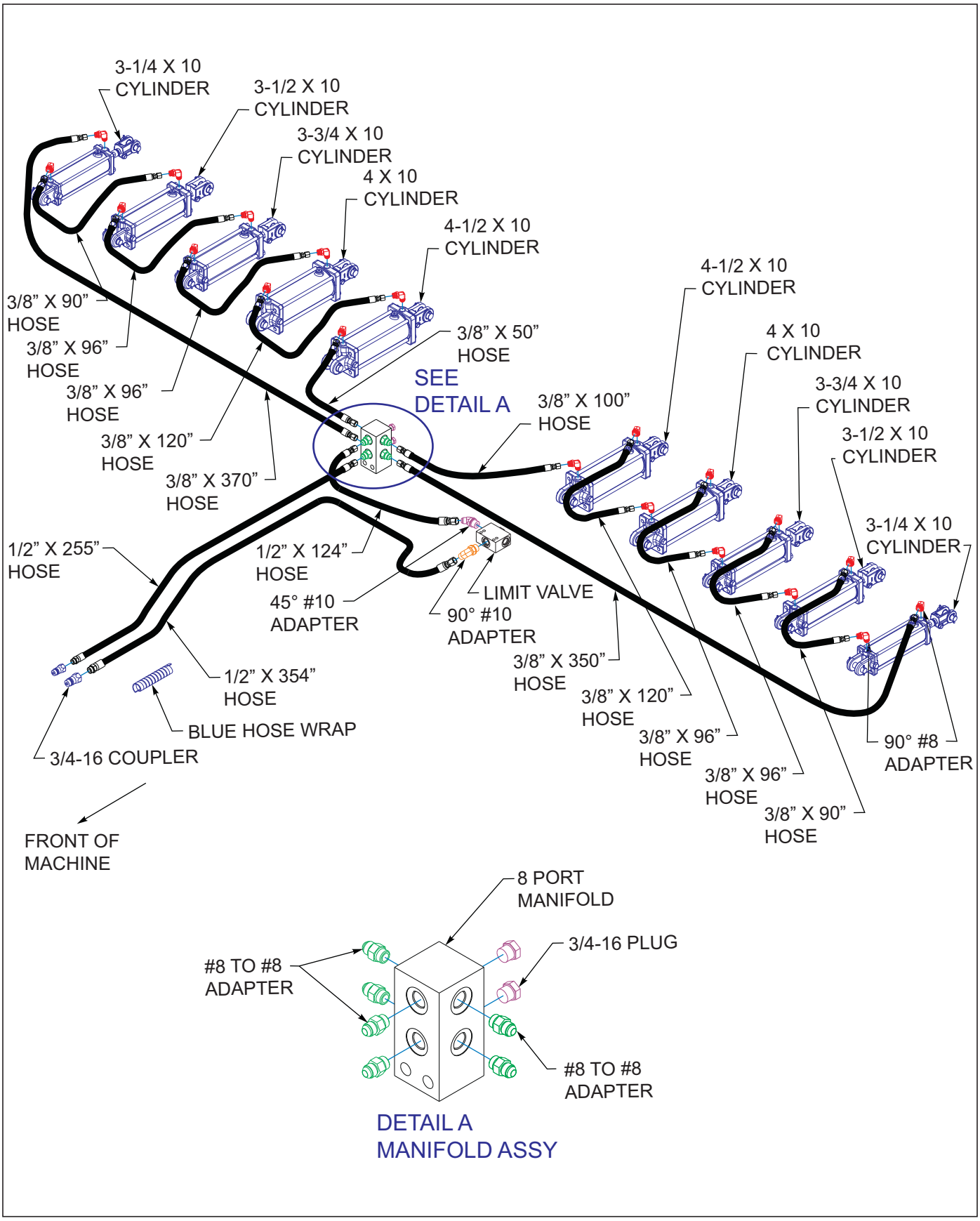


Figure 3-18: Hydraulic Lift Installation 1711-64'

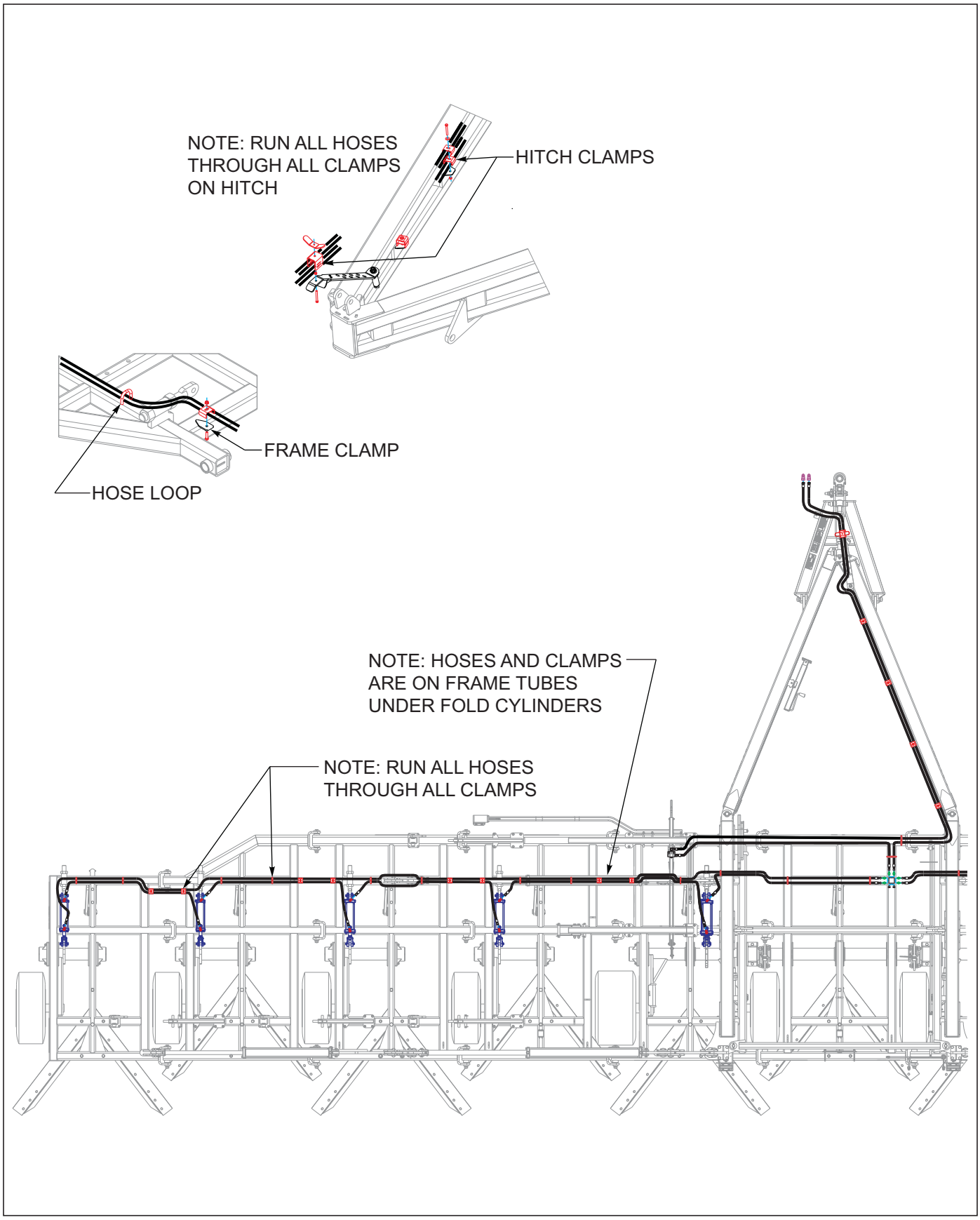


Figure 3-19: Lift Hydraulic Placement LH 1711-64'

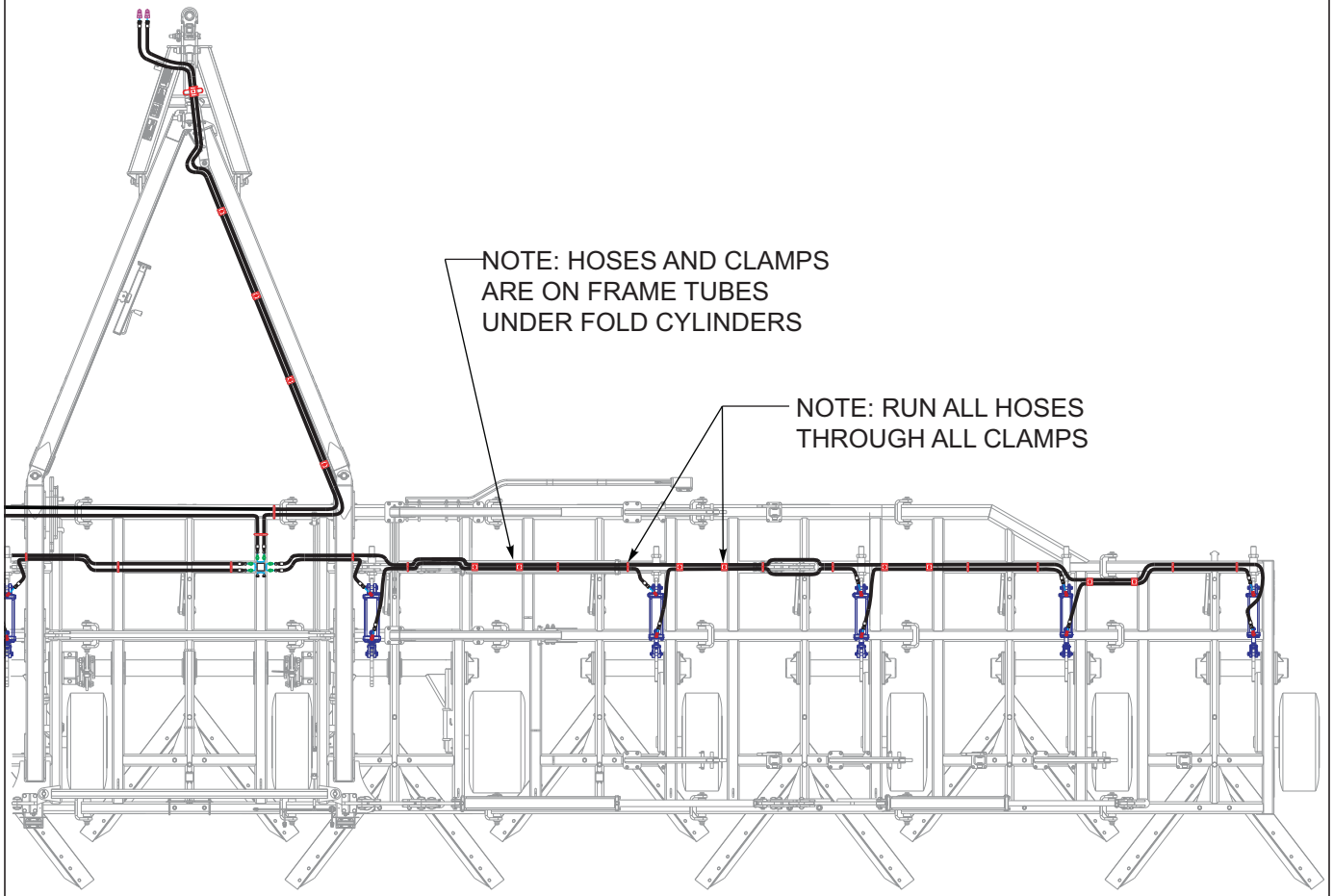


Figure 3-20: Lift Hydraulic Placement RH 1711-64'

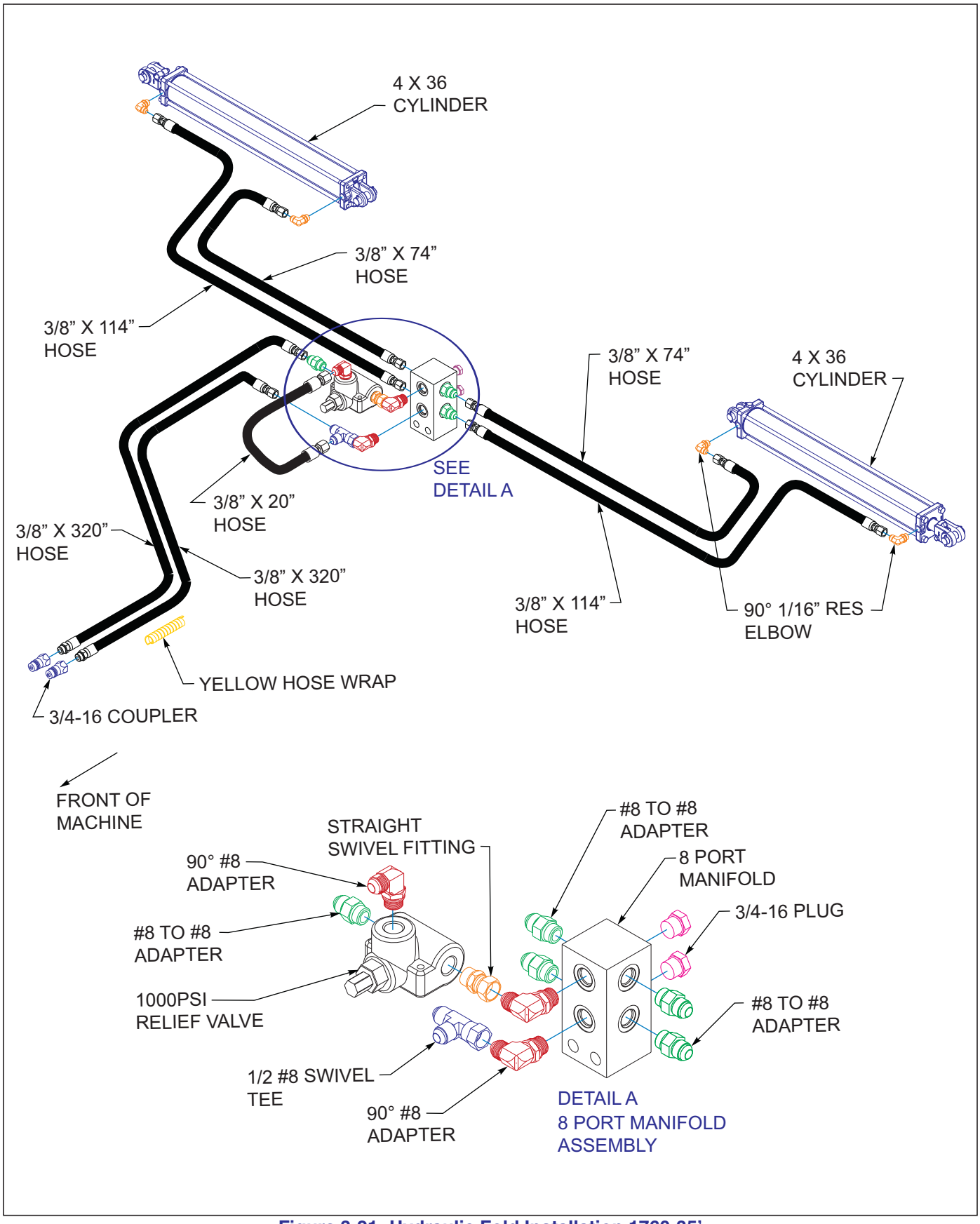


Figure 3-21: Hydraulic Fold Installation 1760-35'

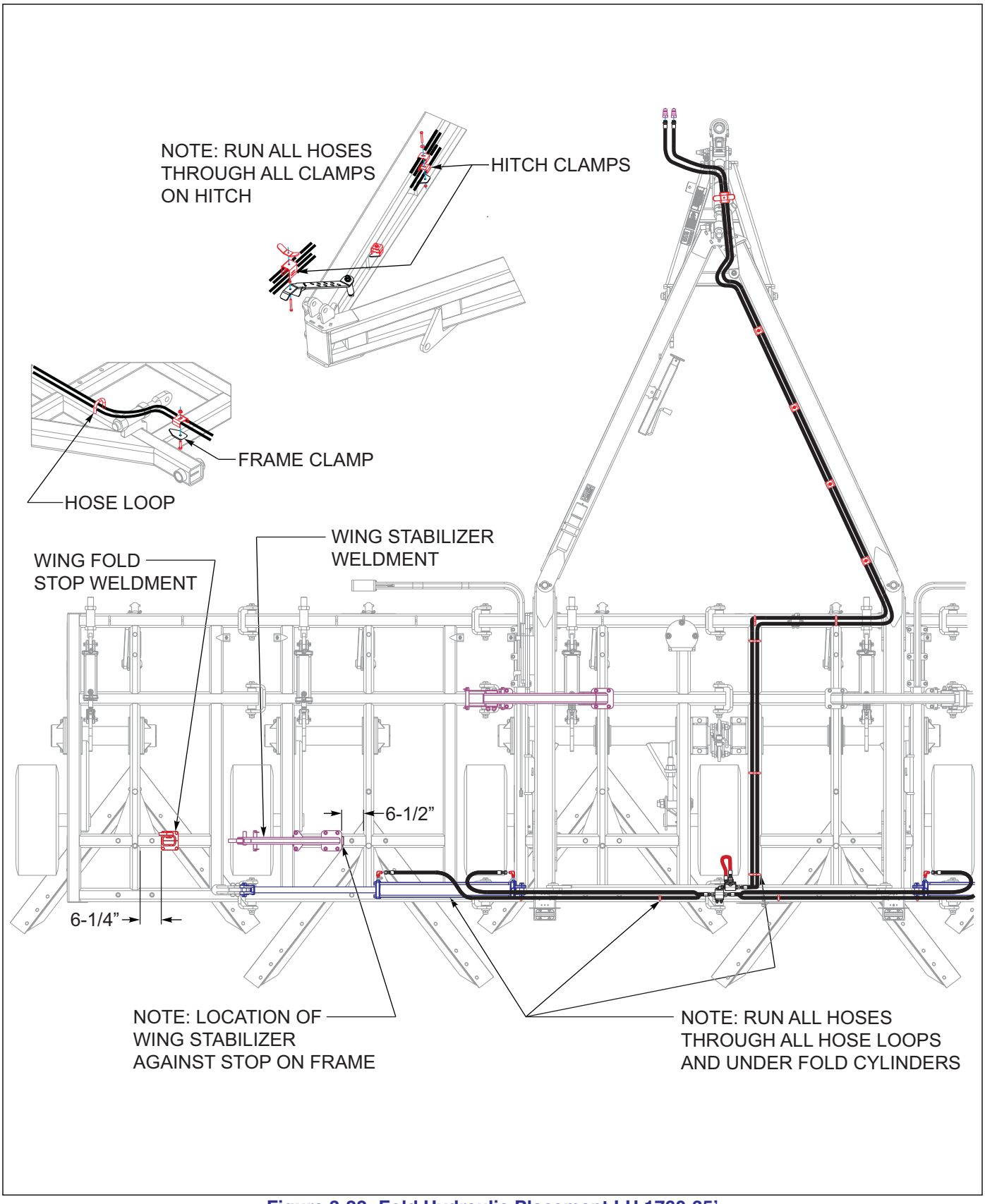


Figure 3-22: Fold Hydraulic Placement LH 1760-35’

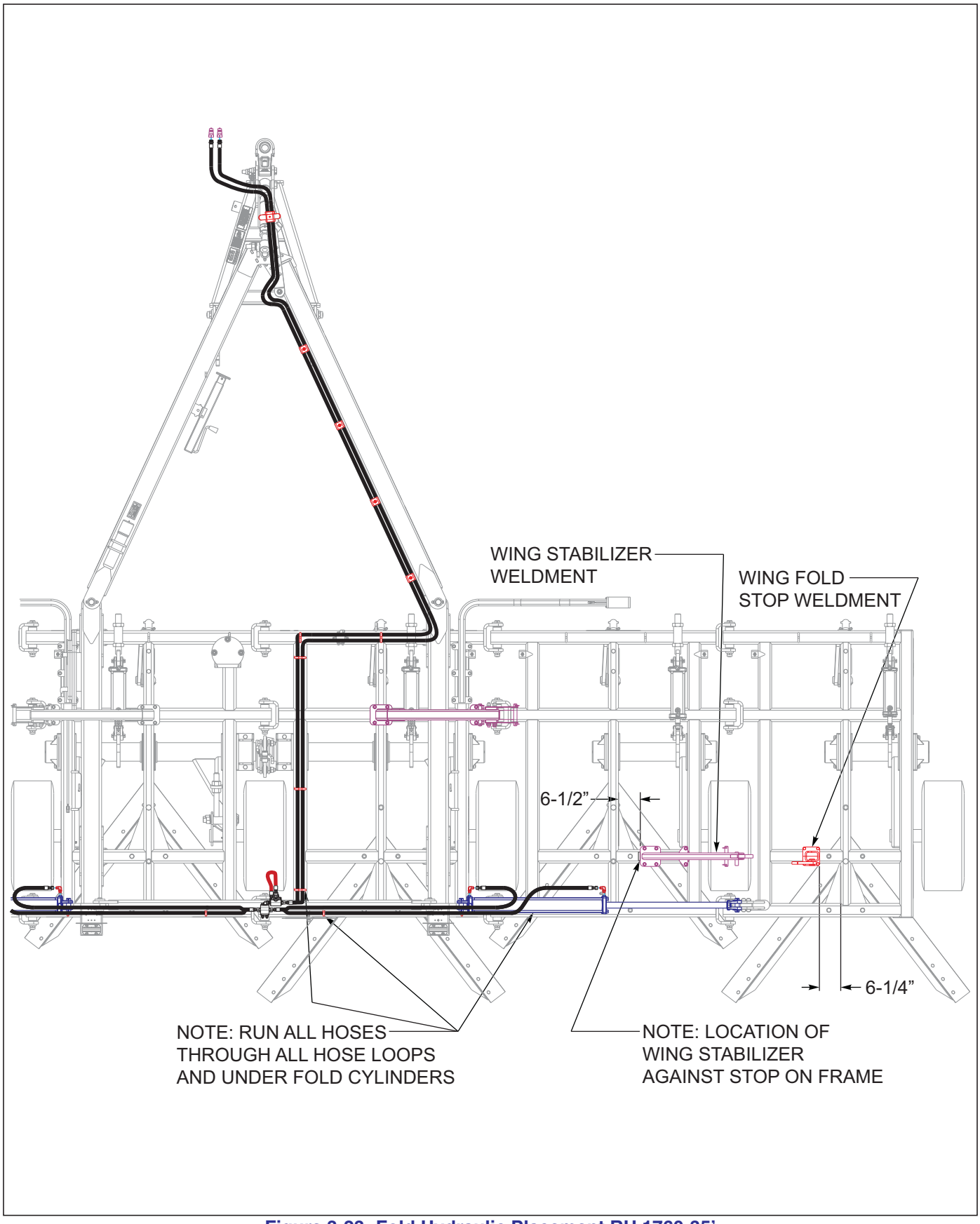


Figure 3-23: Fold Hydraulic Placement RH 1760-35’

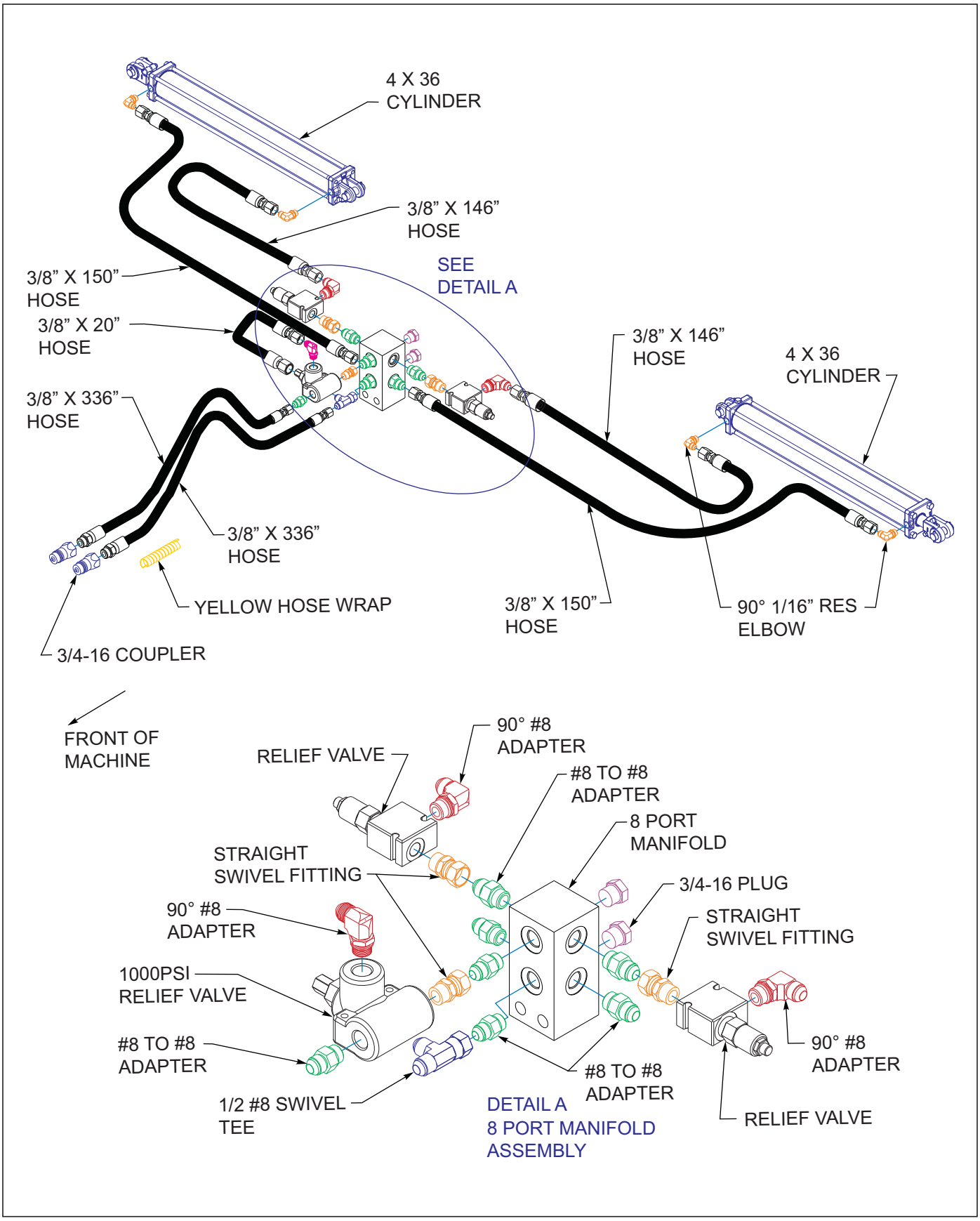


Figure 3-24: Hydraulic Fold Installation 1770-40'

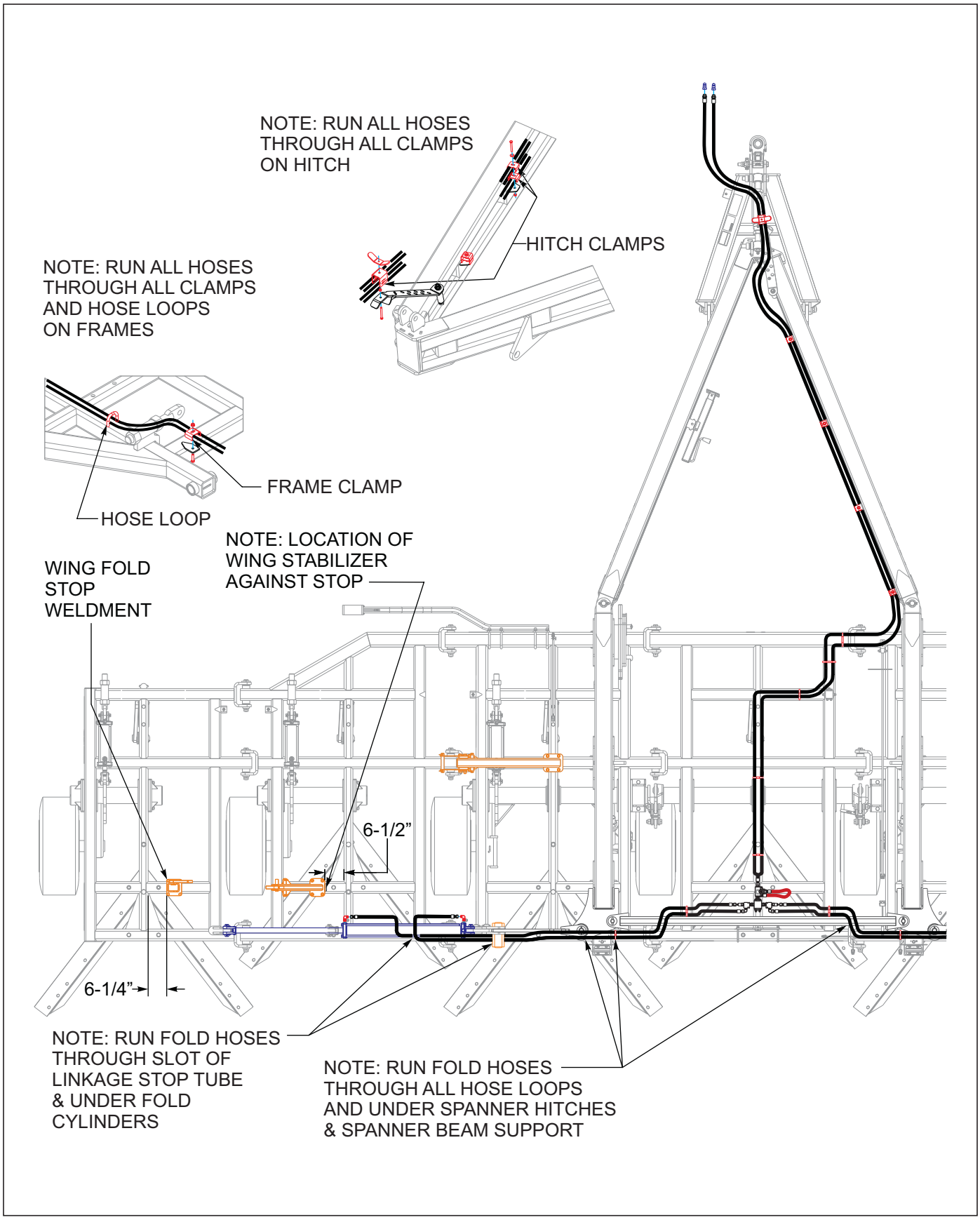


Figure 3-25: Fold Hydraulic Placement LH 1770-40’

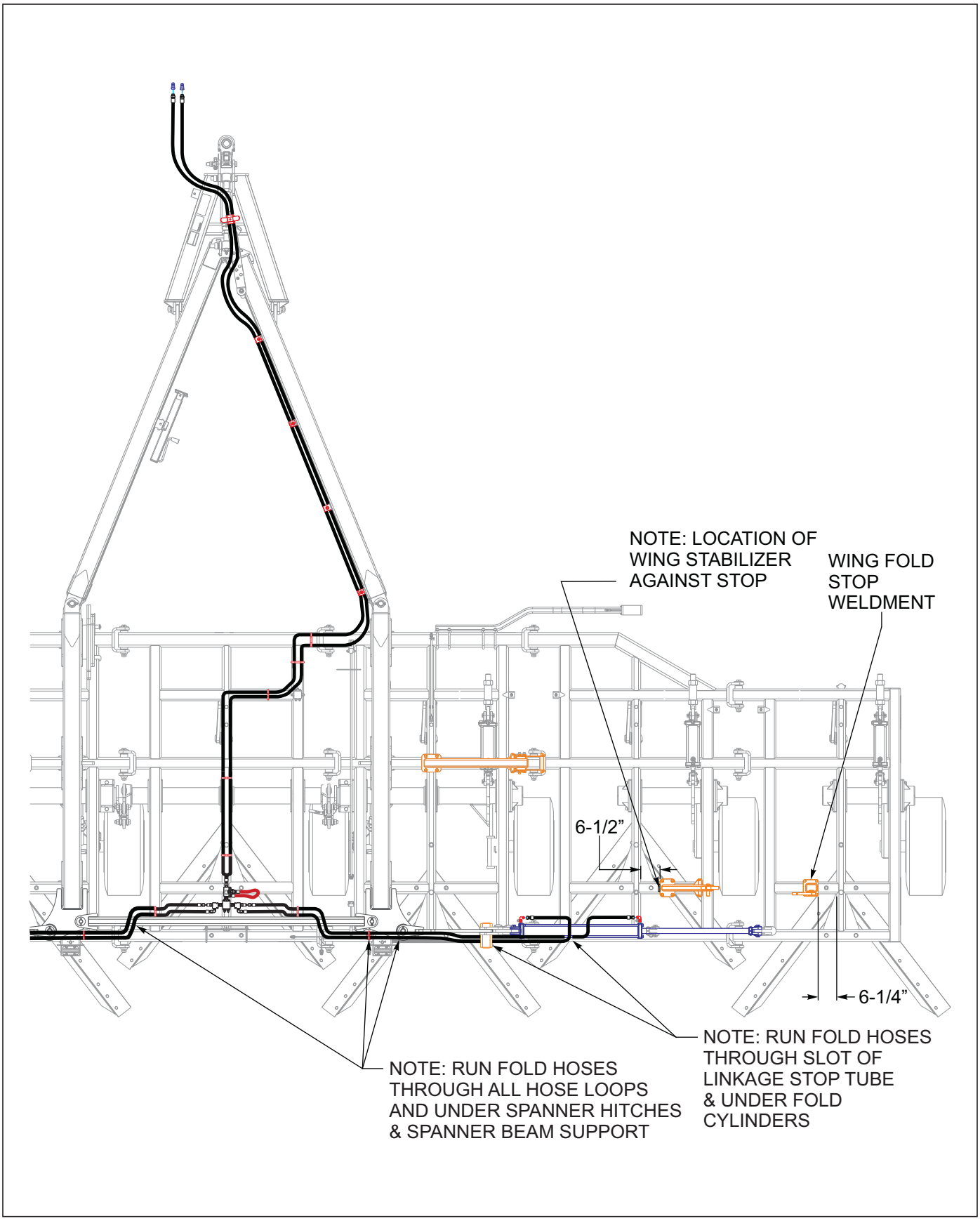


Figure 3-26: Fold Hydraulic Placement RH 1770-40’

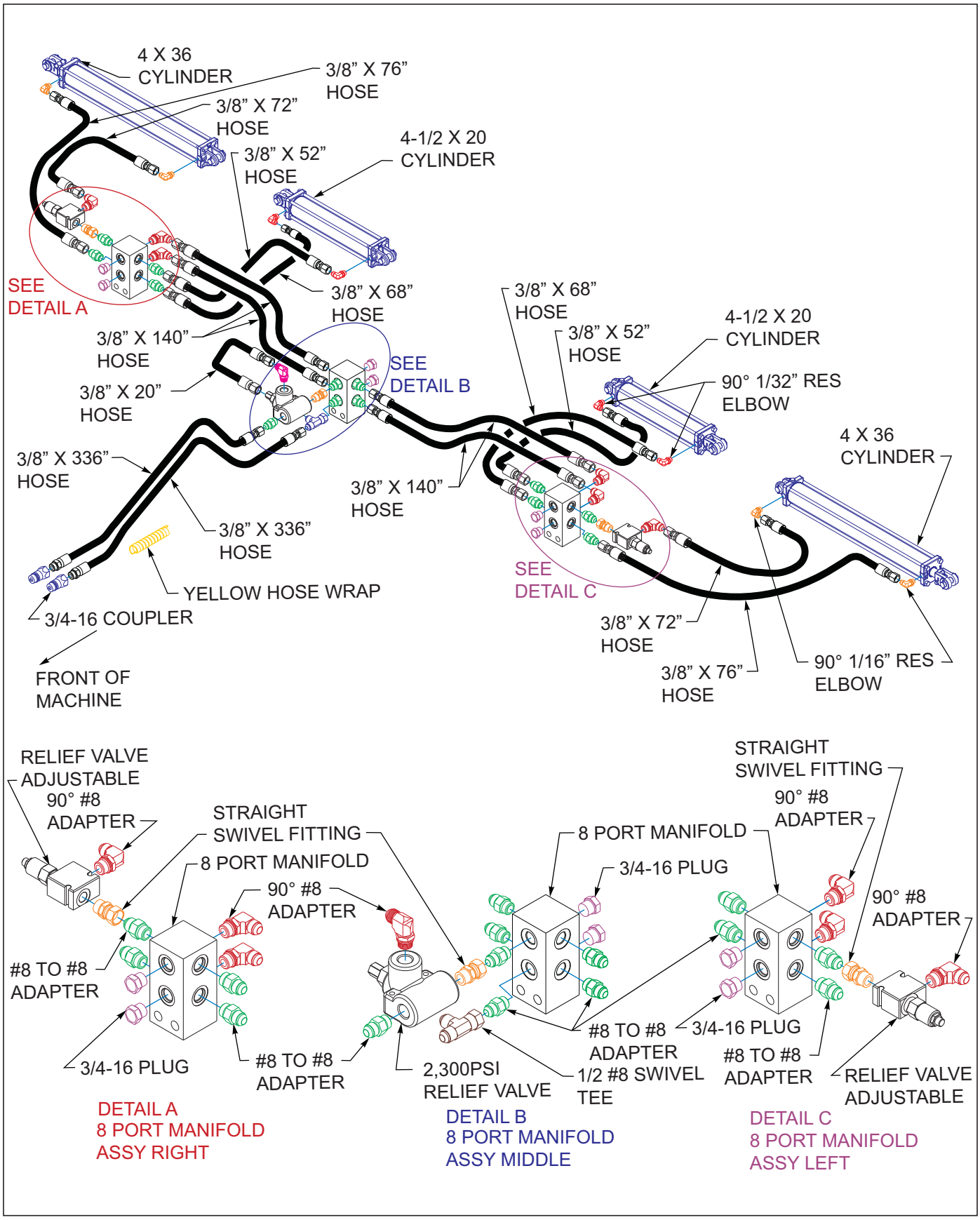


Figure 3-27: Hydraulic Fold Installation 1790-52'

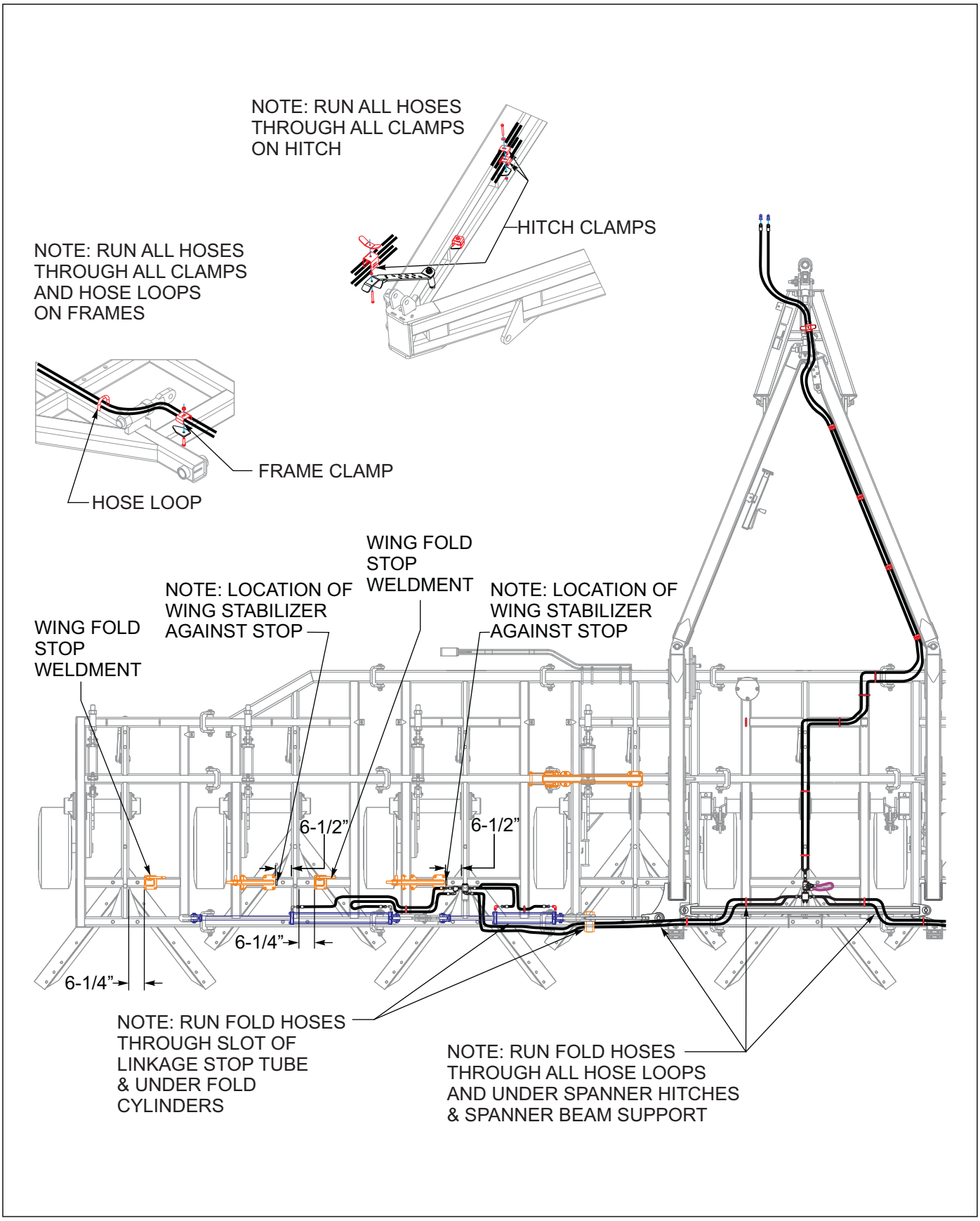


Figure 3-28: Fold Hydraulic Placement LH 1790-52'

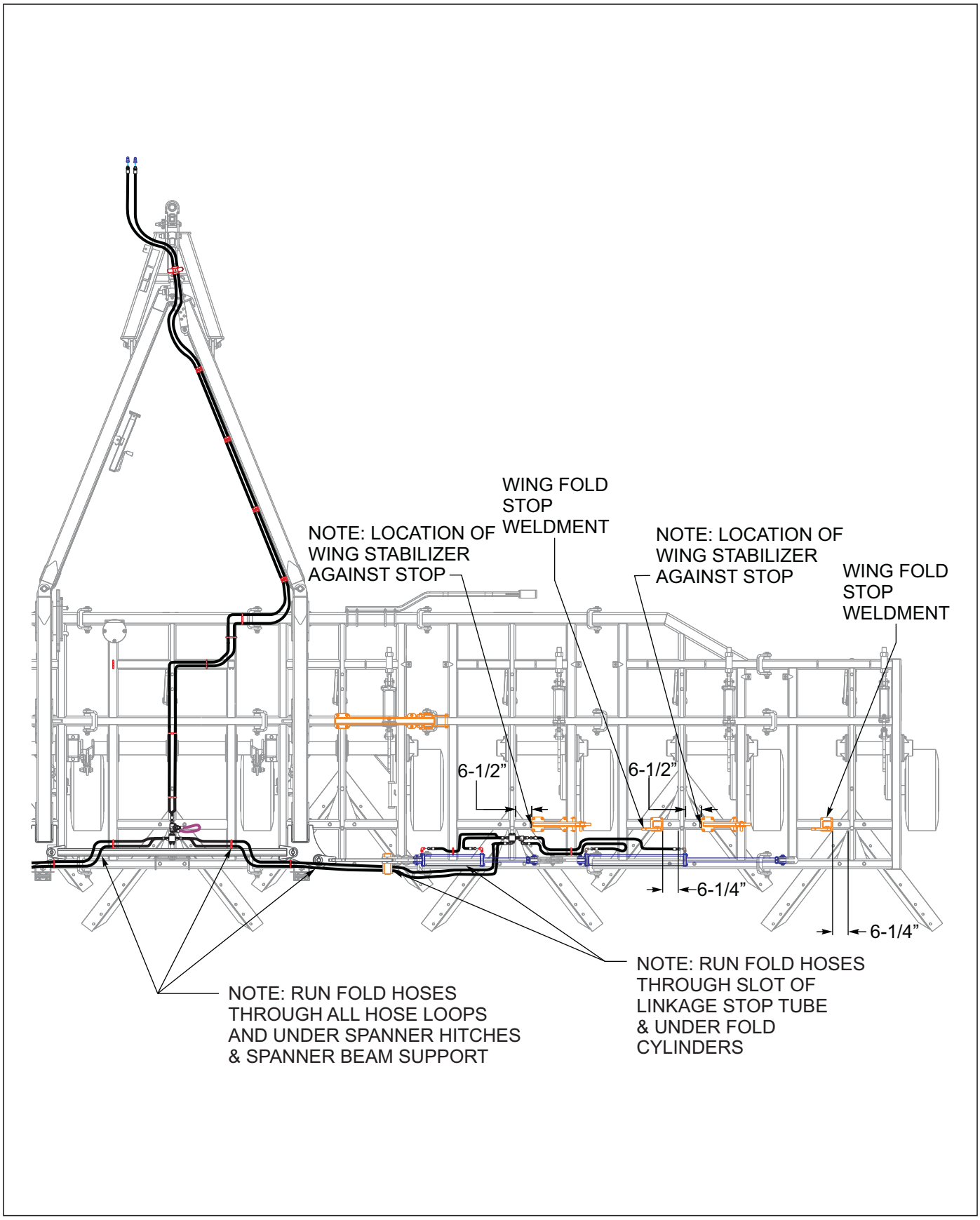


Figure 3-29: Fold Hydraulic Placement RH 1790-52’

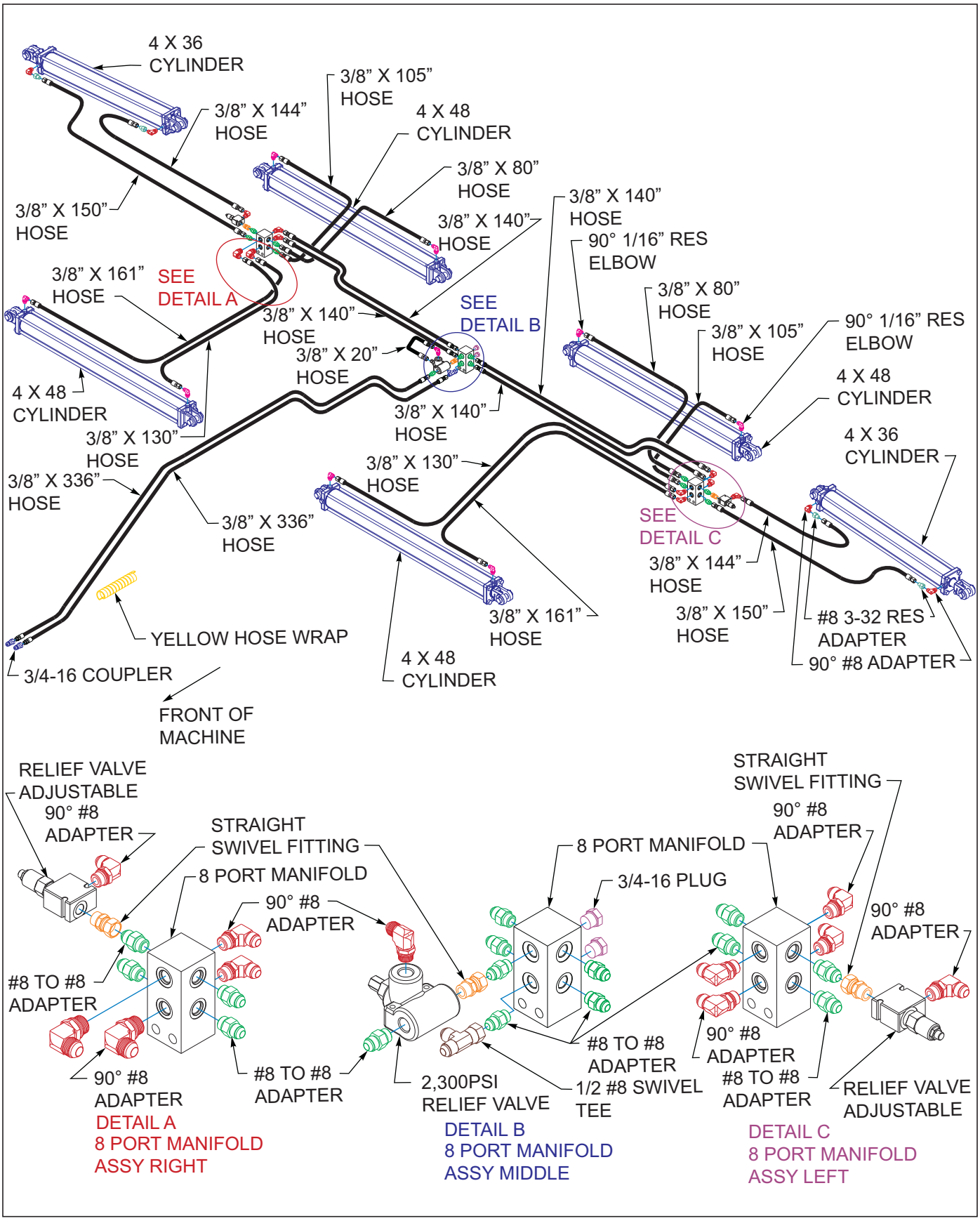


Figure 3-30: Hydraulic Fold Installation 1711-64'

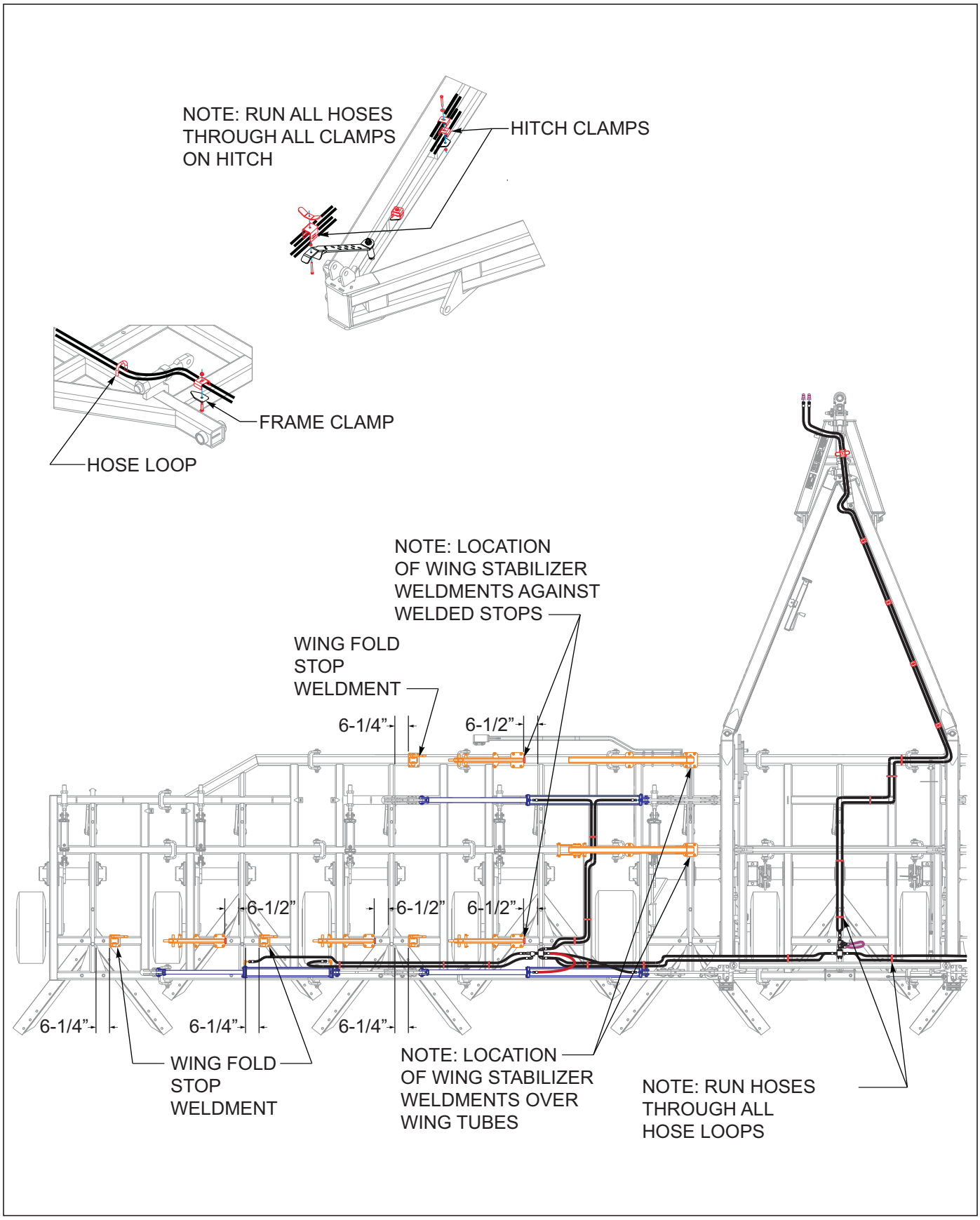


Figure 3-31: Fold Hydraulic Placement LH 1711-64'

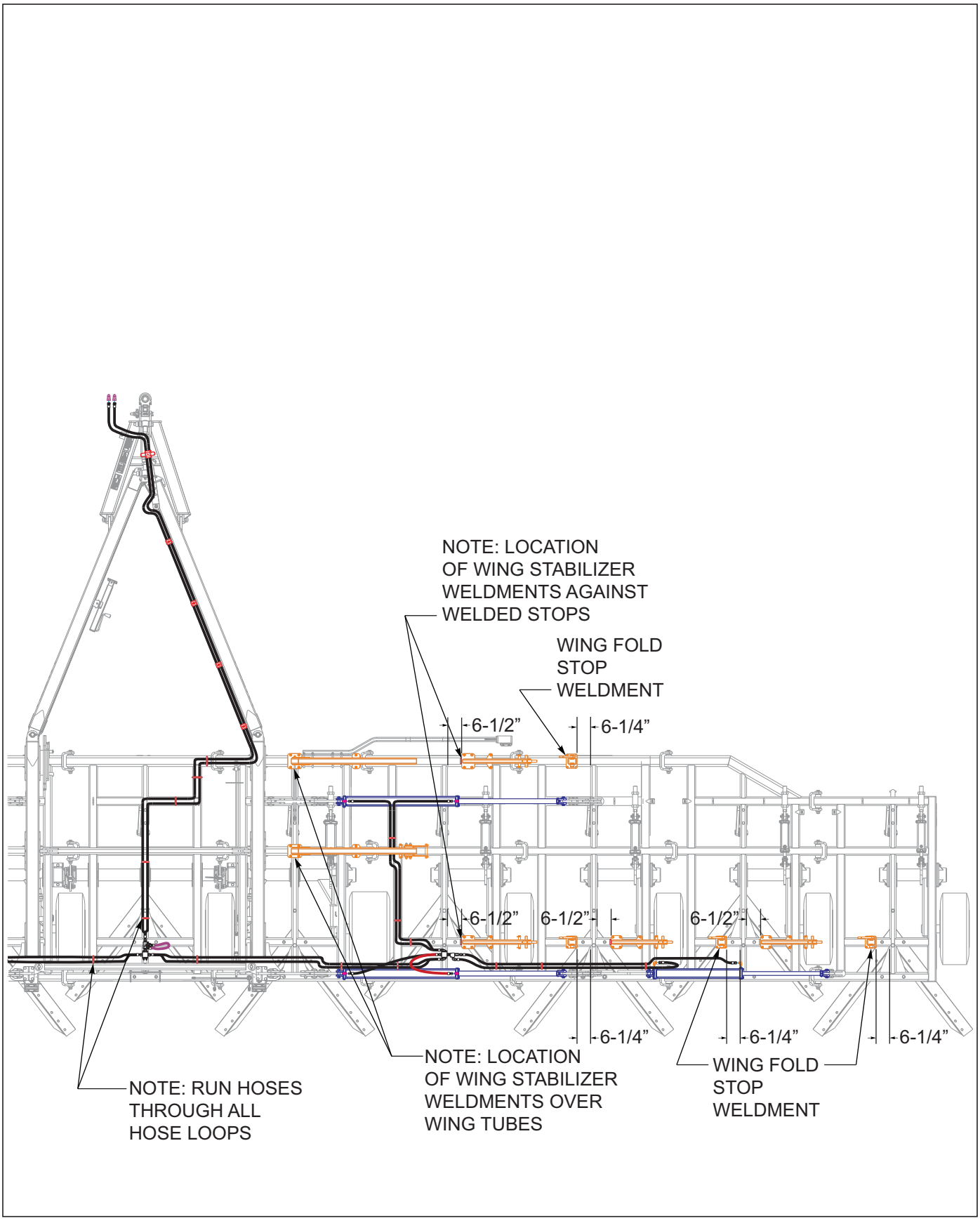


Figure 3-32: Fold Hydraulic Placement RH 1711-64’

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

MAIN WARNING LIGHT HARNESS - WIRING CHART
(NOTE: The Color Of The Wire Jacket Does Nor Necessarily Match The Color Of The 7 Pin Connector)

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

REAR WARNING LIGHT HARNESS - WIRING CHART

Figure 3-33: LED Light Harness Wire Designations

LED Light and SMV Bracket Installation

1. When the LH & RH hitch weldments are rotated back around to field position, the light mount weldment LH & RH may be installed in correct location shown ***See Figure 3-34*** for 1760-35' and ***See Figure 3-35*** **for** 1770-40', 1790-52', 1711-64'**.**
2. Secure light mount weldment LH & RH with 5/8 x 4 x 6-1/2 u-bolts and 5/8 lock nuts model 1760-35' ***See Figure 3-34*** or 1770-40', 1790-52', 1711-64**'** ***See Figure 3-34***.
3. Attach the amber led ag lamps to both light brackets with 1/4 x 1-1/4 bolts and 1/4 lock nuts.
4. Attach wiring harness to lead on amber ag lamps.
5. Model 1760-35' attach the SMV mounting bracket to back of rear tube with 5/8 x 4-11/16 x 5-3/4 u-bolt, 5/8 flat washers and 5/8 lock nuts**.**
6. Model 1760-35'attach the SMV emblem, SIS decal, SIS decal mount using 1/4 x 1 bolts and 1/4 lock nuts ***See Figure 3-34***.
7. Model 1760-35'Attach the AG flasher control module to bottom side of the RH mount plate with 1/4 x 1-1/2 bolts and 1/4 lock nuts. Install the reflector mounts, red LED lamps to top side of the mount plate, both sides, with 1/4 x 1-1/2 bolts and 1/4 lock nuts.
8. Models 1770-40', 1790-52', 1711-64' attach the SMV mounting bracket to back of rear tube with 5/8 x 4-11/15 x 5-1/2 u-bolt, and 5/8 lock nuts ***See Figure 3-35*****.**
9. Mount the SMV emblem, SIS decal, SIS decal mount using 1/4 x 1 bolts and 1/4 lock nuts.
10. Install the tail light mounts to top side of rear tube with 5/8 x 4 x 6-1/2 u-bolt and 5/8 lock nuts. Attach the AG flasher control module to bottom side of the RH tail light mount, with 1/4 x 1-1/2 bolts and 1/4 lock nuts. Install the reflector mounts, red LED lamps to top side of the welded plate, both sides, with 1/4 x 1-1/2 bolts and 1/4 lock nuts.
11. Refer to "Electrical Assembly w/led lights" section in Parts Manual for part numbers of light components. Refer to "Light Kit Layout" to insure all components are installed correctly ***See Figure 3-36*** **for 1760-35' or** ***See Figure 3-37*** **for 1770-40', 1790-52 & 1711-64'**.
12. Tighten all bolts to specs ***"General Torque Specifications" on page 2-4***.

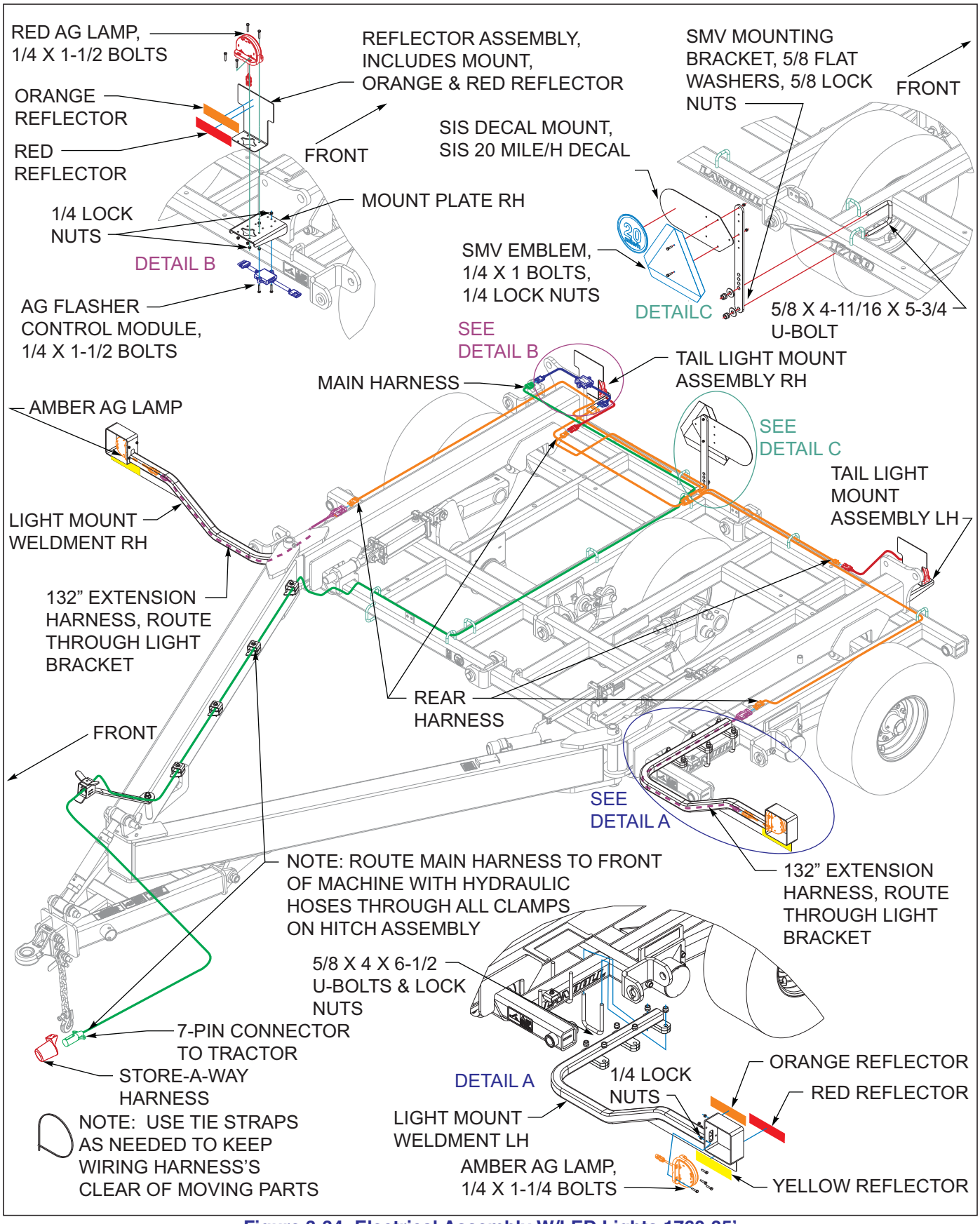


Figure 3-34: Electrical Assembly W/LED Lights 1760-35'

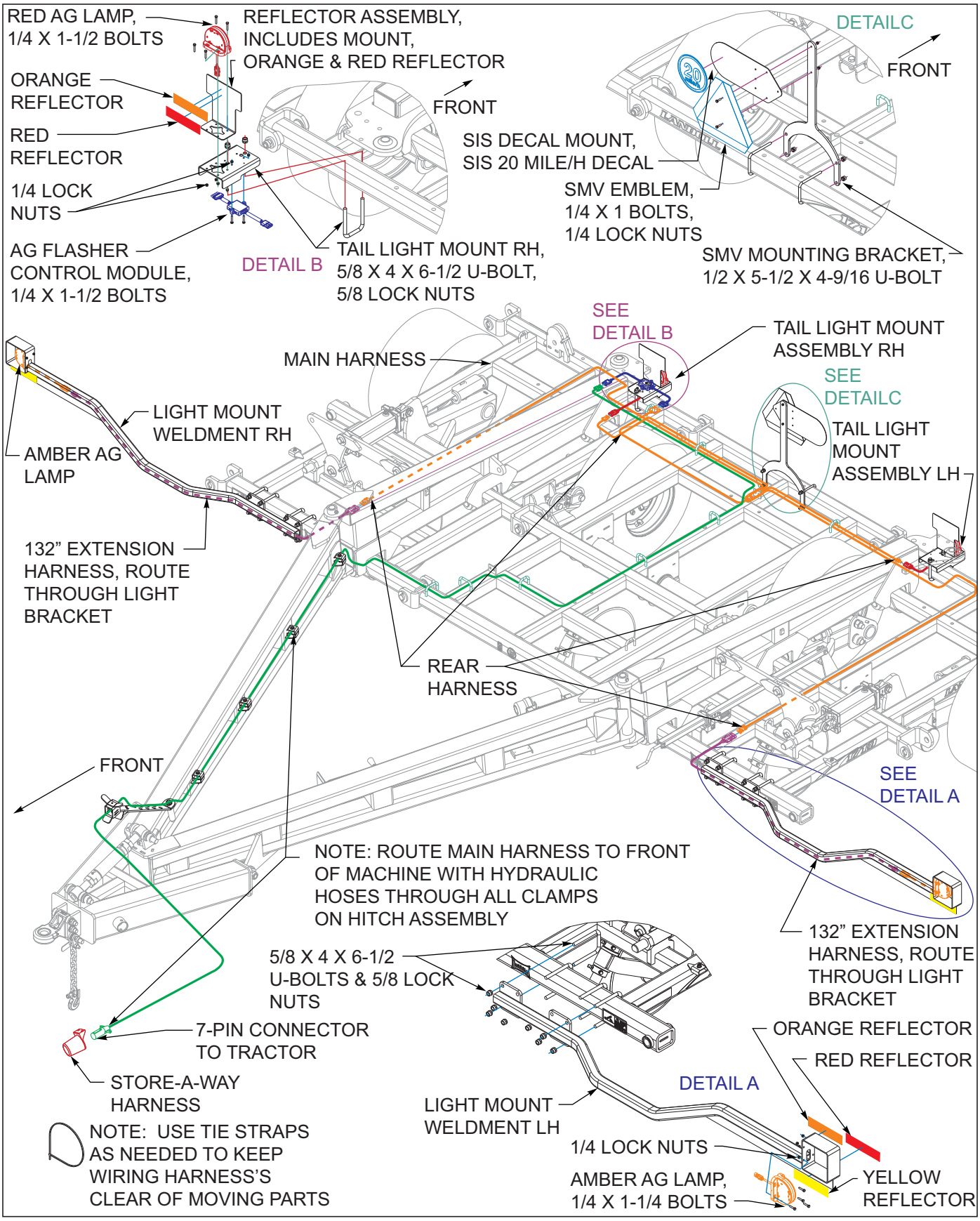


Figure 3-35: Electrical Assembly W/LED Lights 1770-40', 1790-52', 1711-64'

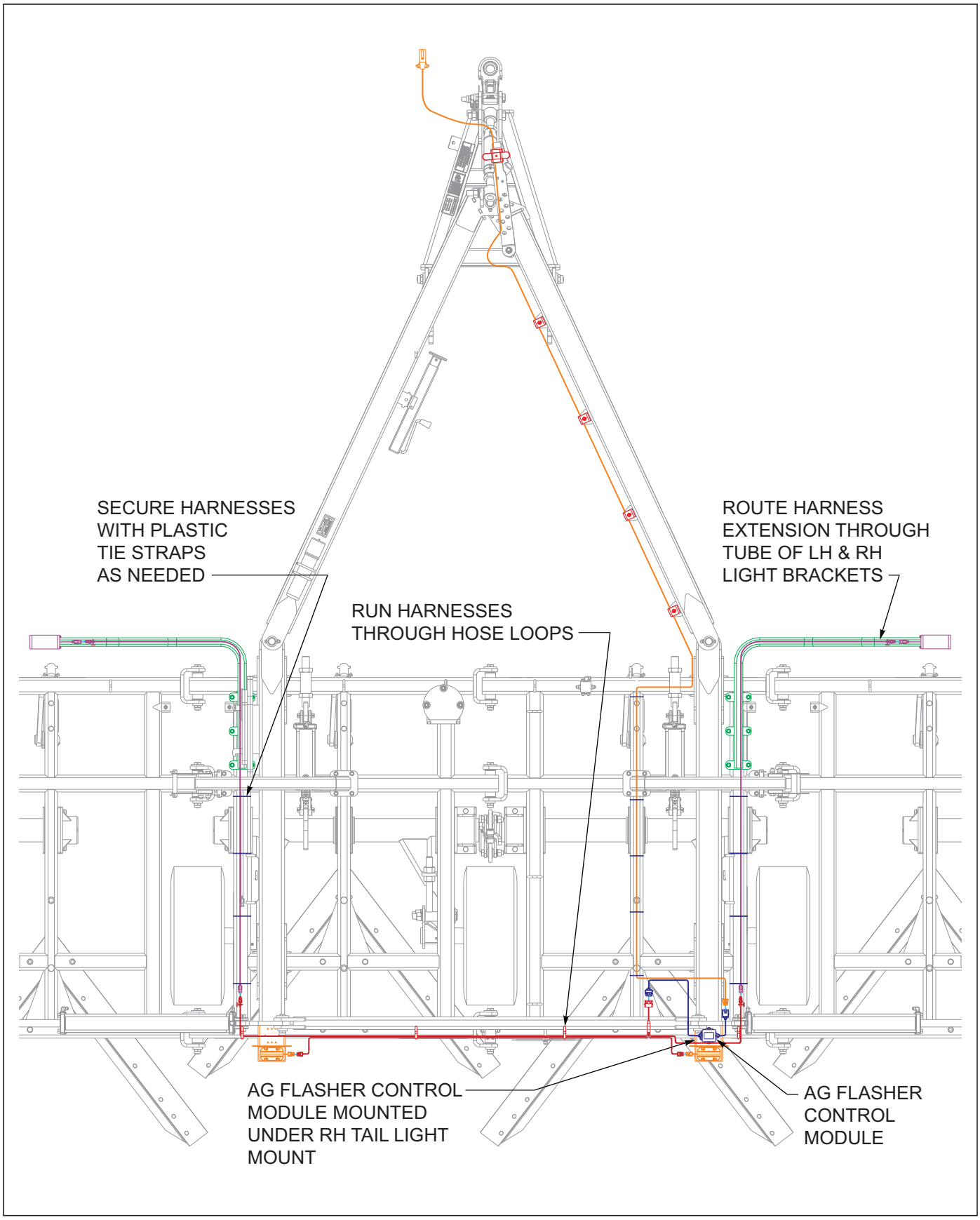


Figure 3-36: LED Light Layout 1760-35'

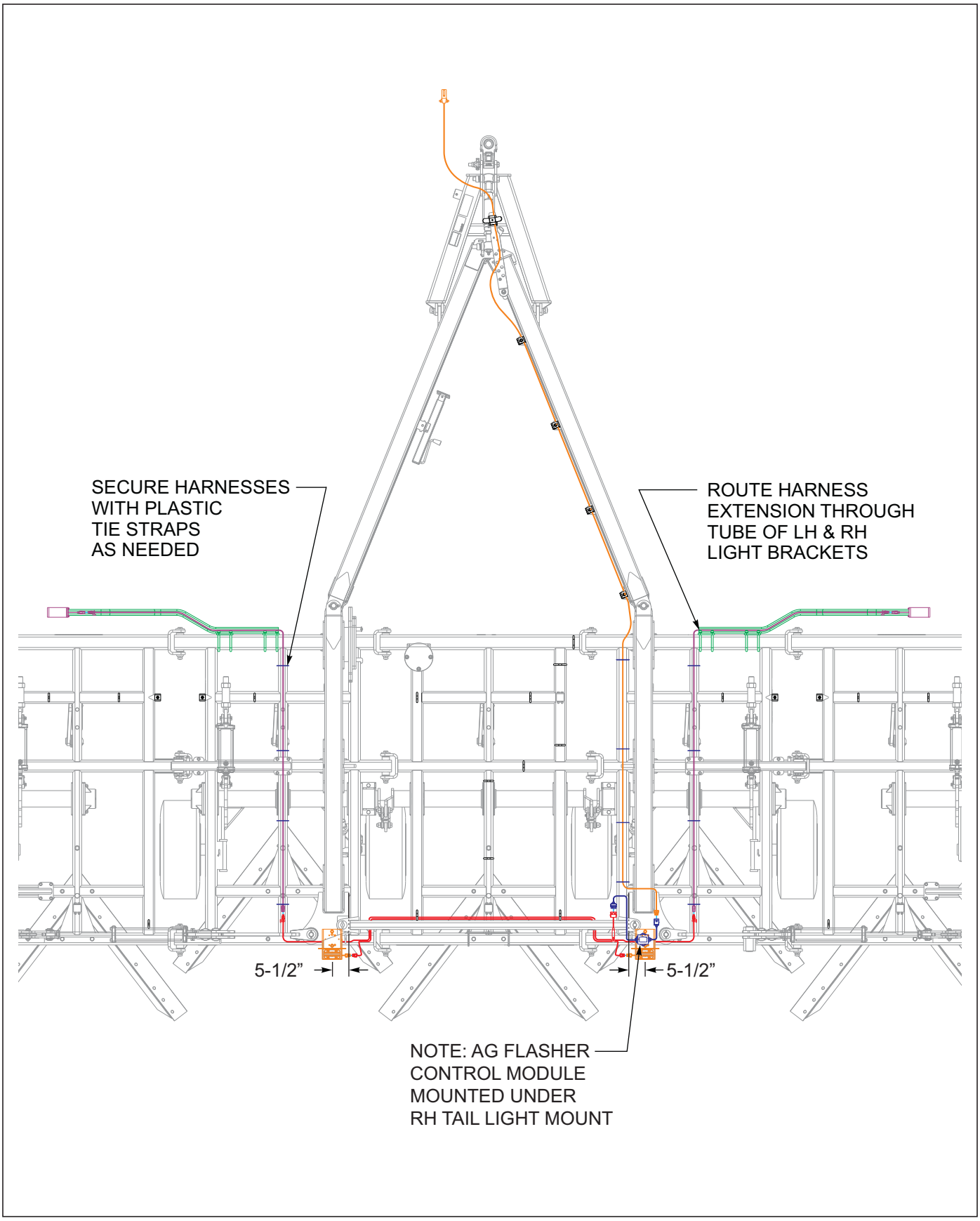


Figure 3-37: LED Light Layout 1770-40’, 1790-52’, 1711-64’

Treader Wheel Assembly (Standard)

NOTE

The treader arm brackets and spring rod assemblies will be shipped assembled on back of frames on units assembled at factory.The gang wheel assemblies will be shipped assembled but will need attached to the treader arm weldments.

1. Refer to "Treader Arm & Wheel Placement" ***See Figure 2-6*****, 1760-35',** ***See Figure 2-13*****, 1770-40'** or ***See Figure 2-14*** **1790-52' or** ***See Figure 2-15*** **1711-64'** for proper placement of treader arms. Loosen L-bolts on treader arm mounts if they need adjusted. Re-tighten L-bolts to specs when moved to positions shown.
2. Refer to Treader Arm Assembly ***See Figure 3-38*** for proper assembly of treader arms.
3. Install bearing flanges and treader hinge bushings in both tubes of treader arm weldments. Align holes of treader arm weldments with second hole from bottom of treader arm mounts. Install 3/4 x 5-1/2 bolts, 3/4 lock washers and 3/4 nuts.
4. Raise treader arm weldments until spring rod assemblies will slide into 2nd hole from front and secure with 1 flat washers and 3/16 hair pin ***See Figure 3-38*****.**
5. The treader gang wheel assemblies may now be attached to the rear of the treader arm weldments with 3/4 x 5 bolts and 3/4 lock nuts. Refer to "Treader Arm Assembly & Wheel Placement" ***See Figure 2-6*****, 1760-35',** ***See Figure 2-13*****, 1770-40'** or ***See Figure 2-14*** **1790-52' or** ***See Figure 2-15*** **1711-64'** for proper treader arm assemblies placement.
6. Refer to Treader Spring Preset ***See Figure 4-19*****.** for proper spring adjustment. The spring may be set to proper dimensions now.
7. Check that all bolts are tightened to specs.

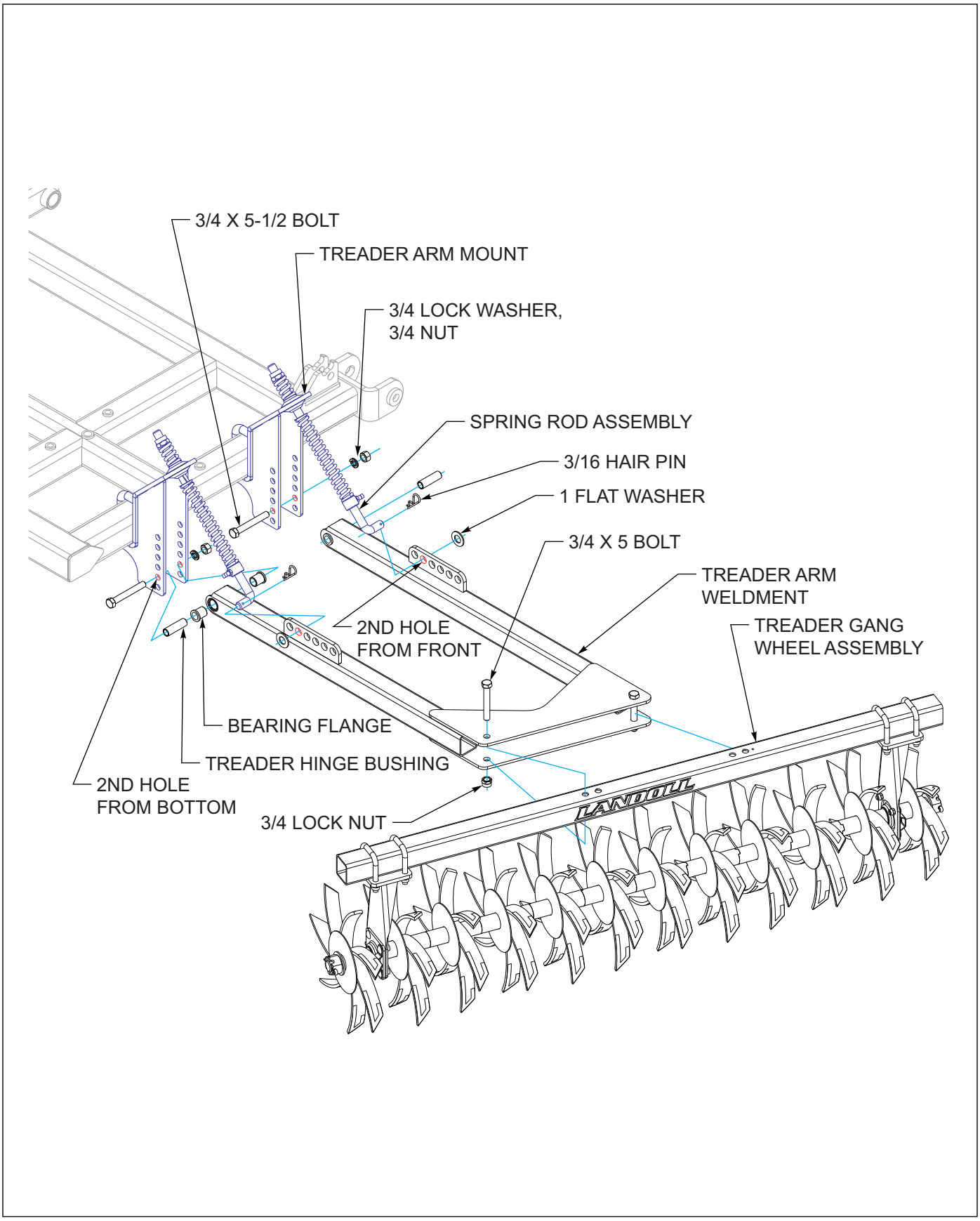


Figure 3-38: Treader Arm & Reel Assembly (Standard)

Treader Wheel Assembly (Hydraulic)

NOTE

On machines that are not shipped fully assembled see "Hydraulic Bracket & Treader Assembly" in Parts Manual for assembly of treader arm brackets and hydraulic treader mount assembly. Refer to the following steps to install rest of hydraulic treader assembly.

NOTE

The treader arm brackets, treader cylinders and hydraulic hoses will be assembled to machine and hydraulics will be charged on units assembled at factory.The gang wheel assemblies will be shipped assembled but will need attached to the treader arm weldments

1. Refer to "Treader Arm & Wheel Placement" ***See Figure 2-6*****, 1760-35',** ***See Figure 2-13*****, 1770-40'** or ***See Figure 2-14*** **1790-52' or** ***See Figure 2-15*** **1711-64'** for proper placement of treader arms. Loosen L-bolts on treader arm mounts if they need adjusted.
2. Re-tighten L-bolts to specs when moved to positions shown.
3. Slide locking collar over cylinder rod, secure with 1/2 jam nut and 1/2 x 1-1/4 square head set screw, ***See Figure 3-39***. Slide 1.313 id x.468 wire x 5 x comp spring, lower treader mount, hydraulic treader washers, 1.28 id x 2-5/8 comp spring secure with 1-1/4 lock nut.
4. Install bearing flanges and treader hinge bushings in both tubes of treader arm weldments. Align holes of treader arm weldments with second hole from bottom of treader arm mounts. Install 3/4 x 5-1/2 bolts, 3/4 lock washers and 3/4-10 hex nuts.
5. Raise treader arm weldments until lower treader mount slides between treader arm weldment, secure with 5/8 x 3-11/16 x 4-5/8 u-bolts and 5/8 lock nuts.
6. The treader gang wheel assemblies may now be attached to the rear of the treader arm weldments with 3/4 x 5 hex bolts and 3/4 lock nuts. Refer to "Treader Arm Assembly & Wheel Placement" ***See Figure 2-6*****, 1760-35',** ***See Figure 2-13*****, 1770-40'** or ***See Figure 2-14*** **1790-52' or** ***See Figure 2-15*** **1711-64'** for proper treader arm assemblies placement.
7. Remove the 1/2 x 3-1/2 bolts from the 8 hose manifold, ***See Figure 3-42***. Re-install the 8 hose manifold with new 1/2 x 4 bolts, manifold mount plate and 1/2 lock nuts. Attach another 8 hose manifold with1/2 x 3-1/2 bolts and 1/2 lock nuts.
8. Attach the hose mount plates with 3/4 x 1-1/2 bolts, 3/4 lock washers and 3/4 x 1-1/2 lock nut in the top hole of the treader arm brackets.
9. Attach the hose clamps with 3/8 x 1-1/2 bolts, and 3/8 x 1-1/2 flange lock nuts. Do not tighten until hose are routed under all clamps.
10. Refer to Treader Spring Preset ***See Figure 4-19*** for proper spring adjustment. The spring may be set to proper dimensions now.
11. Check that all bolts are tightened to specs.

NOTE

Rotate 90° adapter down 45°, both sides as shown See Figure 3-40)

NOTE

Refer to Figure 3-41 for treader hydraulic diagram for the 1760-35' model.

efer to Figure 3-42 for treader hydraulic diagram for the 1770-40' model.

Refer to Figure 3-43 for treader hydraulic diagram for the 1790-52' model.

Refer to Figure 3-44 for treader hydraulic diagram for the 1711-64' model.

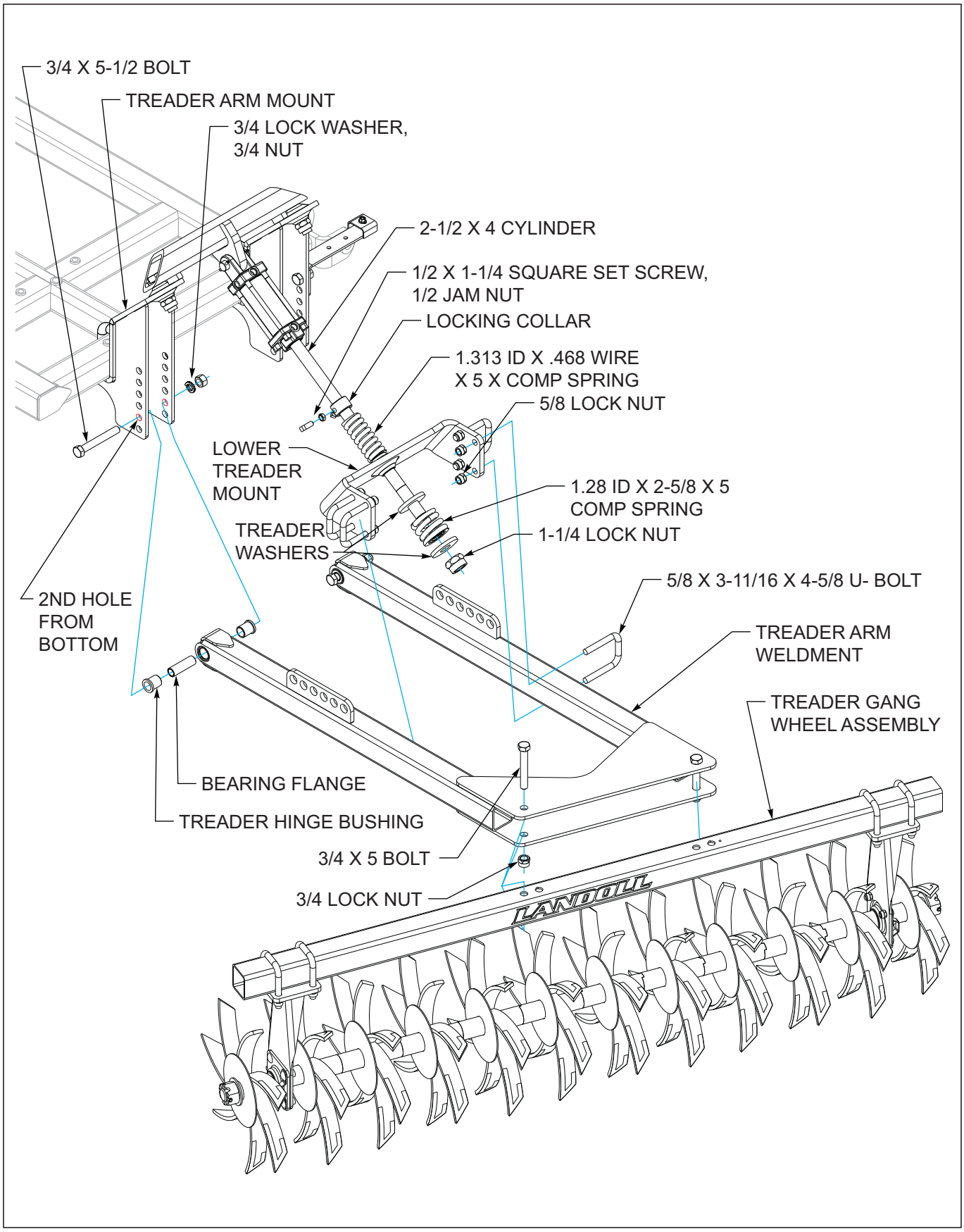


Figure 3-39: Hydraulic Bracket & Treader Assembly Hydraulic

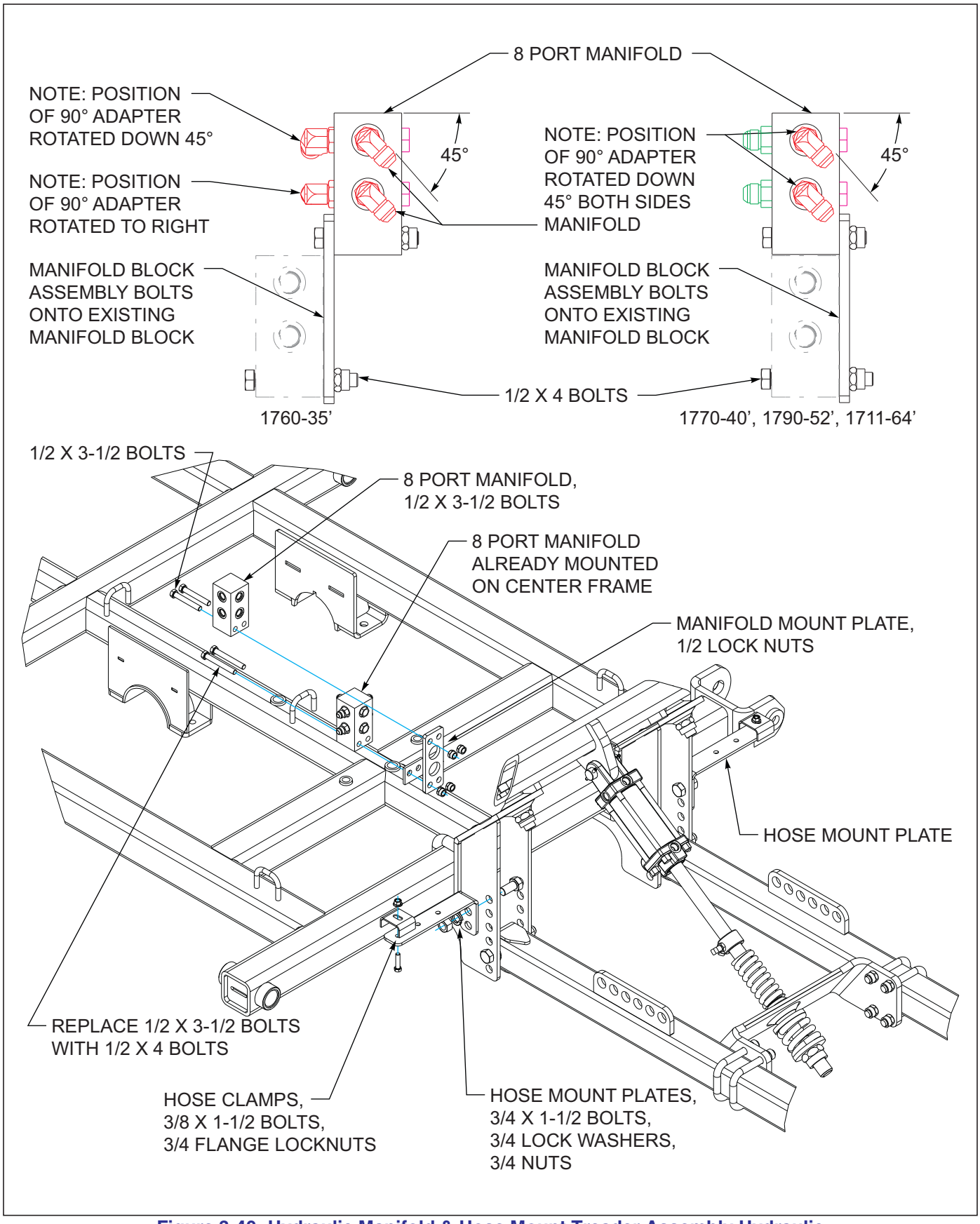


Figure 3-40: Hydraulic Manifold & Hose Mount Treader Assembly Hydraulic

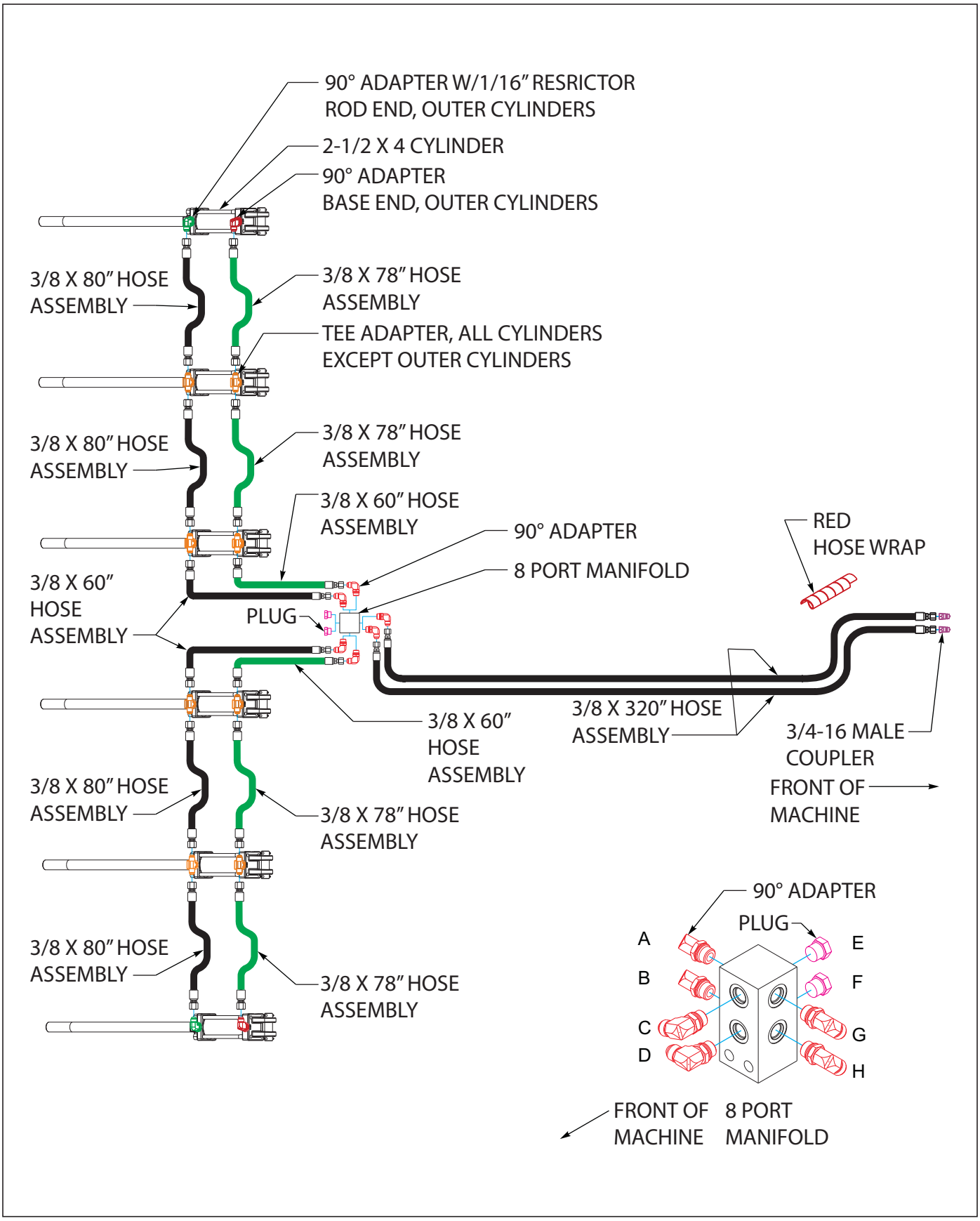


Figure 3-41: Treader Hydraulic Installation 1760-35'

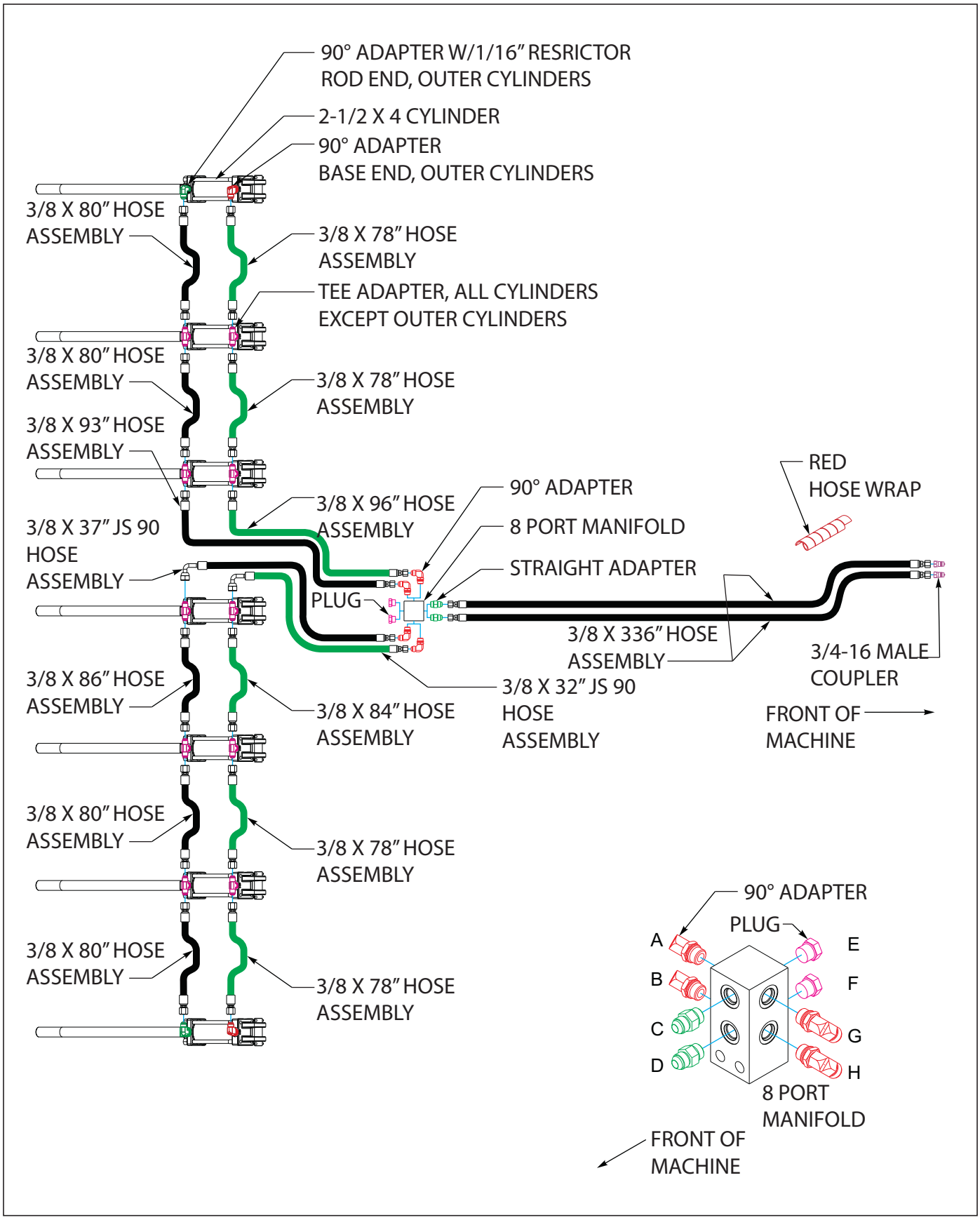


Figure 3-42: Treader Hydraulic Installation 1770-40'

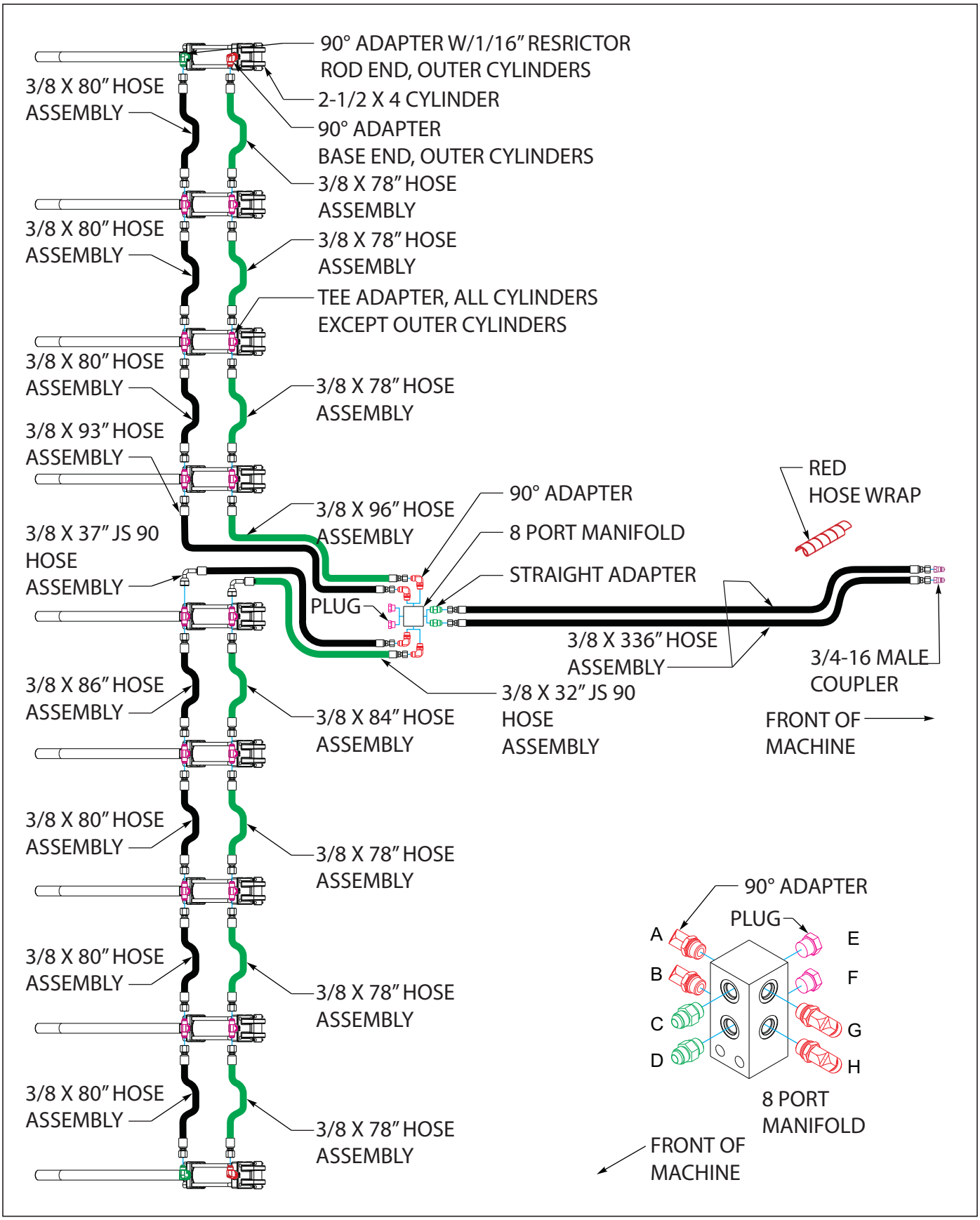


Figure 3-43: Treader Hydraulic Installation 1790-52'

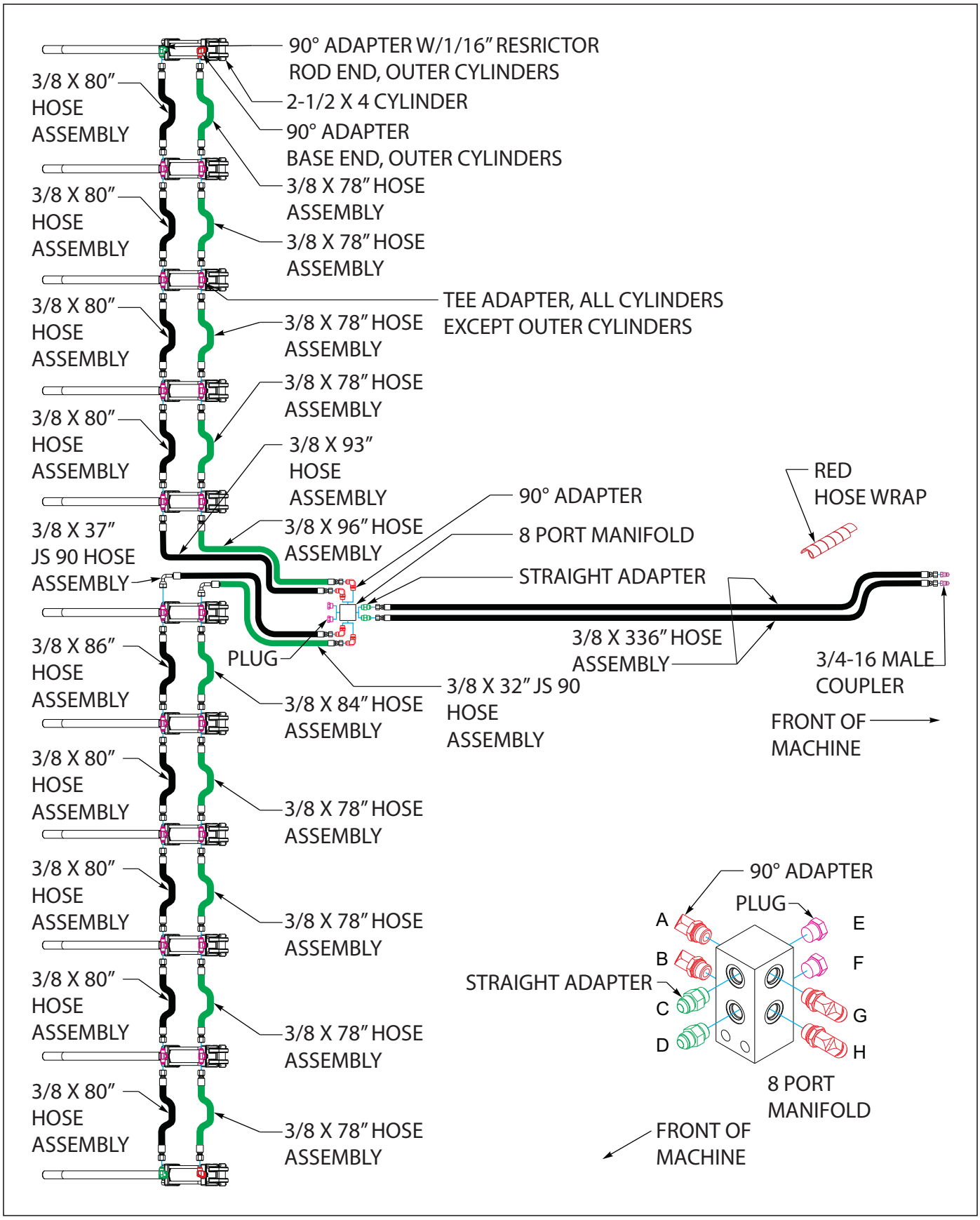


Figure 3-44: Treader Hydraulic Installation 1711-64'

Rear Tow Hitch Installation

A rear tow hitch assembly is available for use on the rear of the blade plow.

1. Unfold and lower the blade plow to the ground.
2. Model 1760-35 position the 1760 rear tow hitch weldment into place over the top of the LH center frame ***See Figure 3-45***. Secure with 5/8 x 4-11/16 x 5-3/4 u-bolts to the middle and rear bar of the left center frame and 5/8 lock nuts. Slide the 1760 rear tow hitch weldment as close as possible to the right tube of the left center frame.
3. Attach the rear tow hitch assembly to the bottom side of the 1760 rear tow hitch weldment using 3/4 x 2 hex bolts and 3/4 lock nuts.
4. Models 1700-40'-52'-64' remove the 1-1/4 x 2-3/4 step pins and 1 lock nuts from the spanner beam support weldment and remove the spanner beam support weldment ***See Figure 3-47***.
5. Position the LH & RH rear tow hitch weldments into place over the top of the middle center frame. Secure with 5/8 x 4-11/16 x 5-3/4 u-bolts to the middle and rear bar of the middle center frame, 5/8 N flat washers and 5/8 lock nuts. Do not tighten any u-bolts until the rest of the hitch is bolted in place.
6. Slide the rear tow brace weldment between the LH & RH rear tow hitch weldments, secure with 5/8 x 5-11/16 x 5-1/2 u-bolts, 5/8 w flat washers and 5/8 lock nuts.
7. Install the rear tow hitch tube, LH & RH rear tow hitch plates, rear tow hitch assembly to the bottom side of the rear tow hitch weldments using 3/4 x 6-1/2 hex bolts and 3/4 lock nuts.
8. Reinstall the spanner beam support weldment with the 1-1/4 x 2-3/4 step pins and 1 lock nuts.
9. Tighten all hardware once rear tow hitch assembly is adjusted correctly.
10. Install the coupler mount bracket to the rear of the rear to hitch assembly. Model 1760 ***See Figure 3-46***, Model 1700-40'-52'-64' ***See Figure 3-48***.
11. Route the tandem light harness through the back side of the coupler mount bracket, along top side of rear tow hitch assembly across the rear frame bar to the right rear tail light. Unplug the existing four-pin main wiring harness from the lighting module. Model 1760 ***See Figure 3-46***, Model 1700-40'-52'-64' ***See Figure 3-48***. Mount bulkhead fitting bracket in location shown for each Model 1700-40'-52'-64' ***See Figure 3-48***.
12. Install the bulkhead fitting w/nuts in bulkhead fitting bracket.
13. Connect the front set of hydraulic hoses to the bulkead fittings, route hoses along with the other hydraulic hoses through all hose loops of center frame to the front of the hitch.
14. Secure the hoses & wiring to the frame using tie-straps and hose clamps.

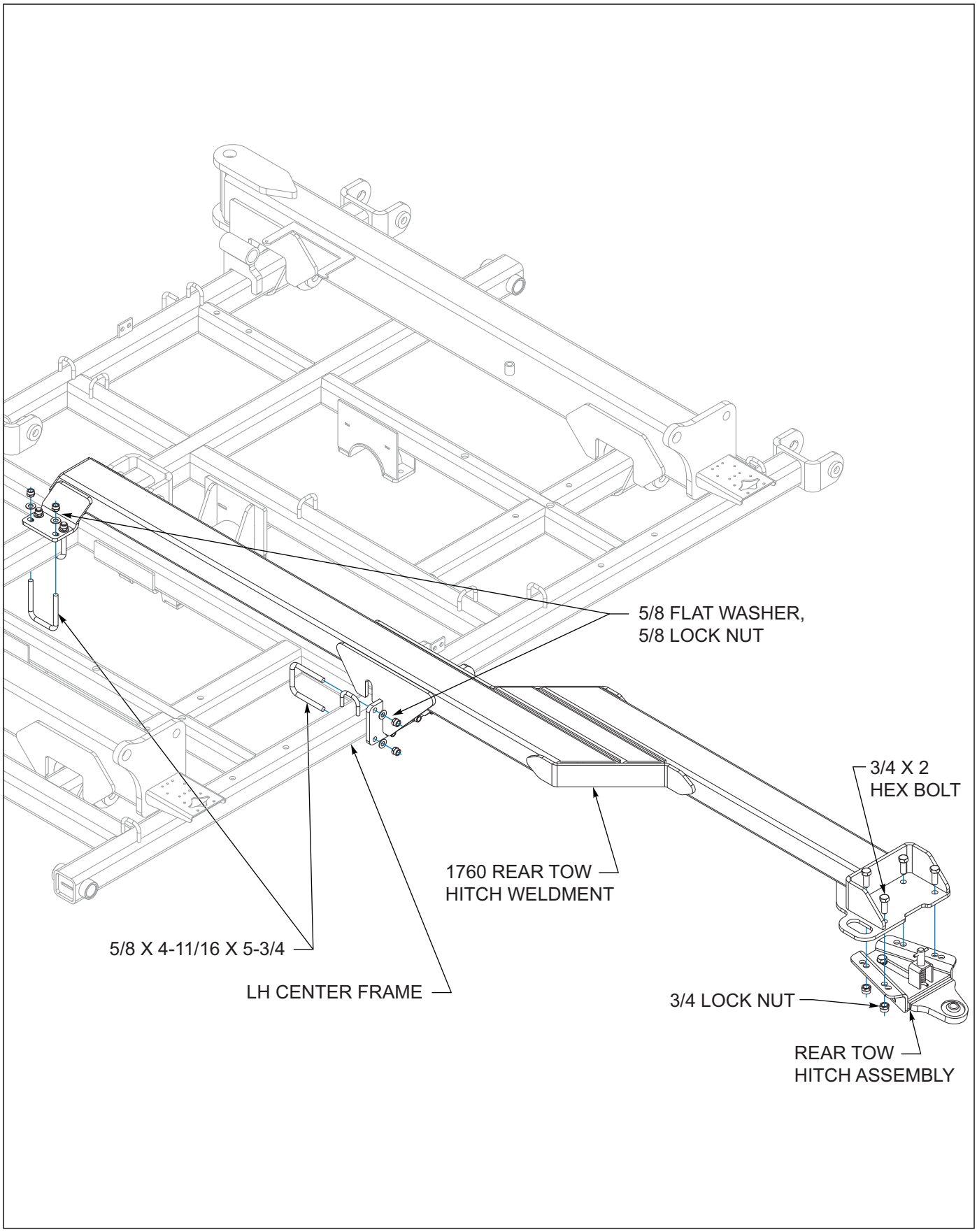


Figure 3-45: Rear Tow Hitch Installation 1760

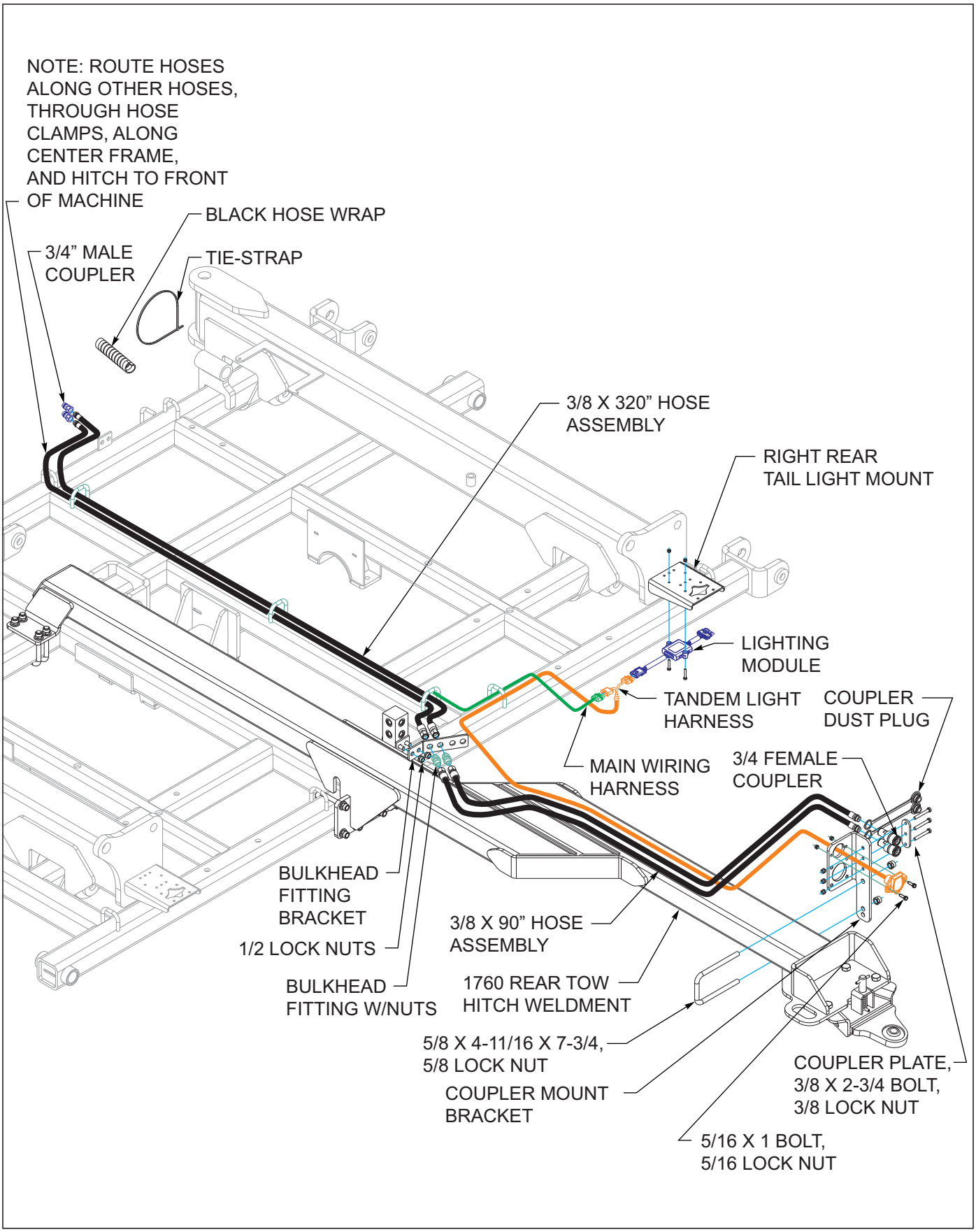


Figure 3-46: Rear Tow Hitch Hydraulic Installation 1760

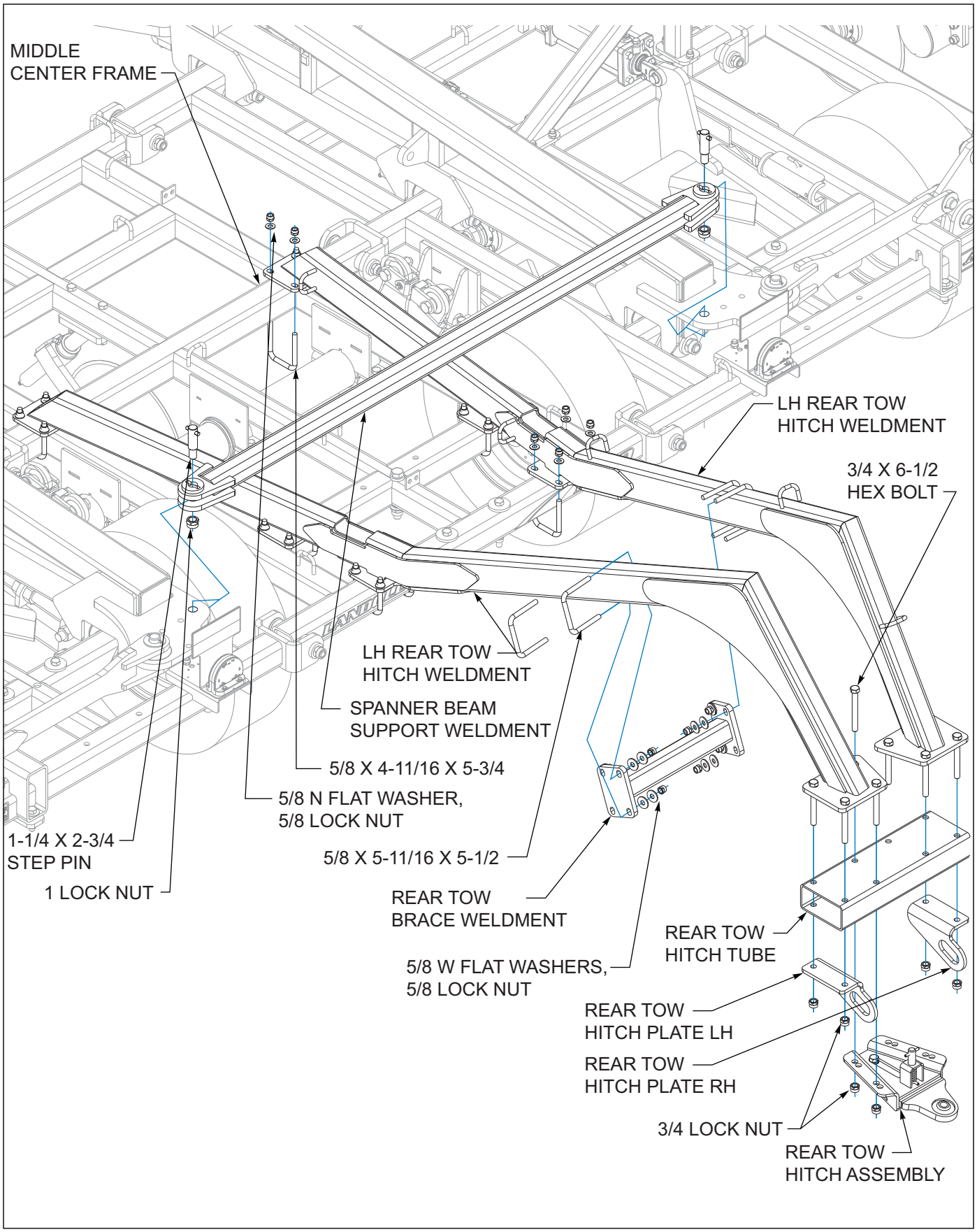


Figure 3-47: Rear Tow Hitch Installation 1700

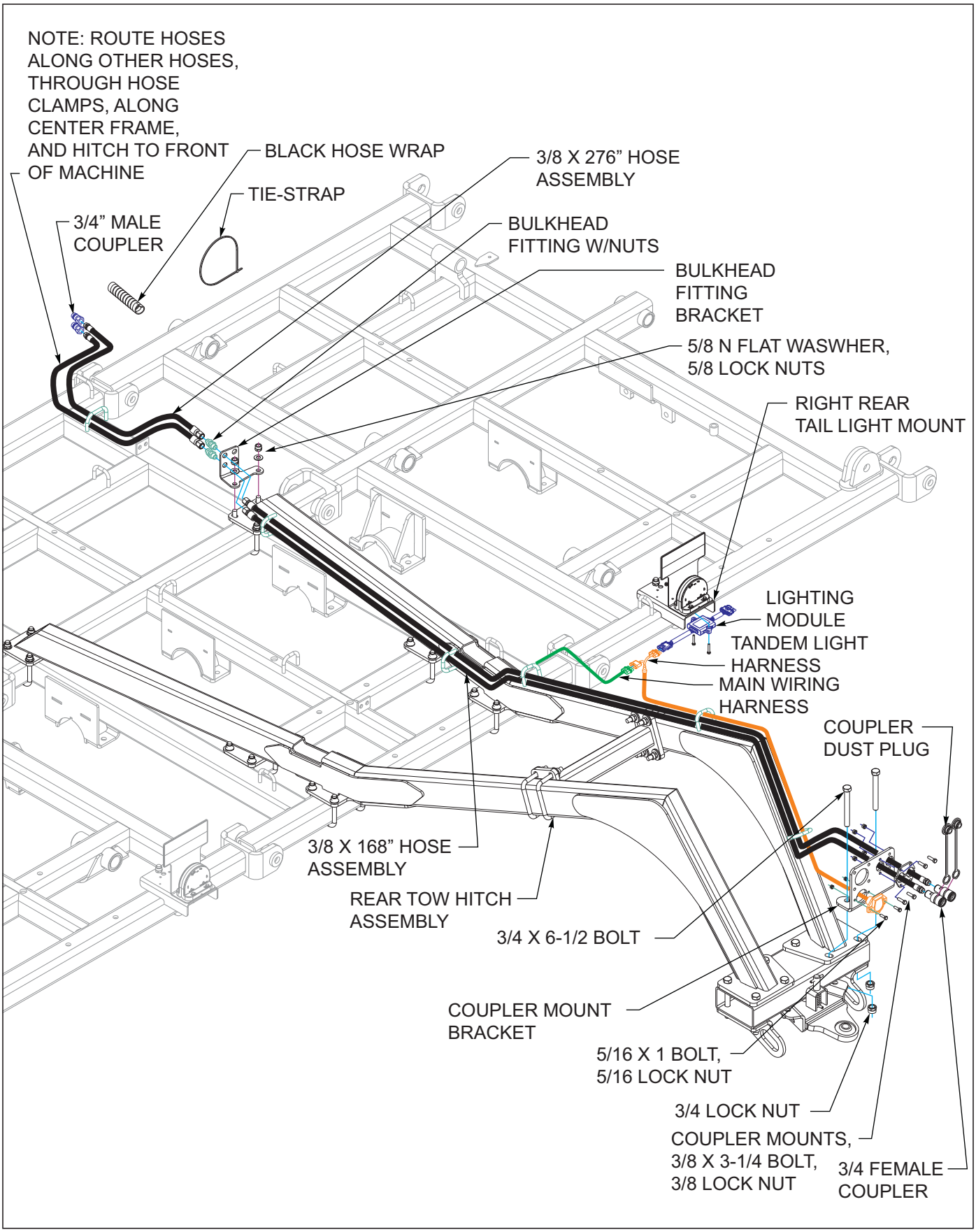


Figure 3-48: Rear Tow Hitch Hydraulic Installation 1700

Spare Tire Installation

A spare tire assembly is available for use on the front of the blade plow.

See Figure 3-49 for 320/70R15 and 380/55R15 16.5 tire/wheel assembly installation.

See Figure 3-50 for 480/R45R17 and 265/70R15 19.5 tire/wheel assembly installation.

1. Attach the tire mount to front of center frame using 5/8 u-bolts and 5/8 flange head lock nuts.
2. Attach the tire/wheel assembly to the top of the tire mount.

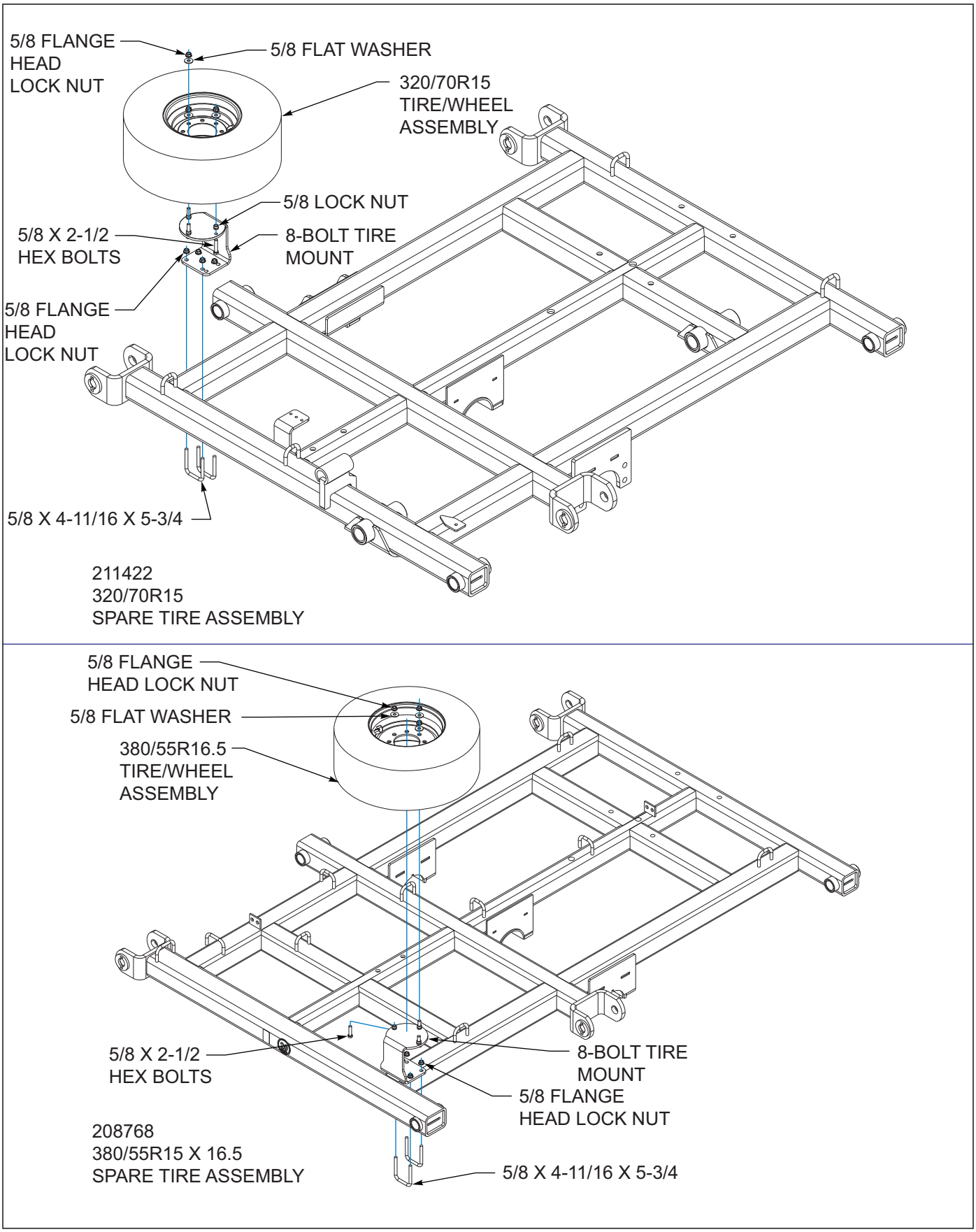


Figure 3-49: Spare Tire Assembly 320/70R15 & 380/55R15 16.5

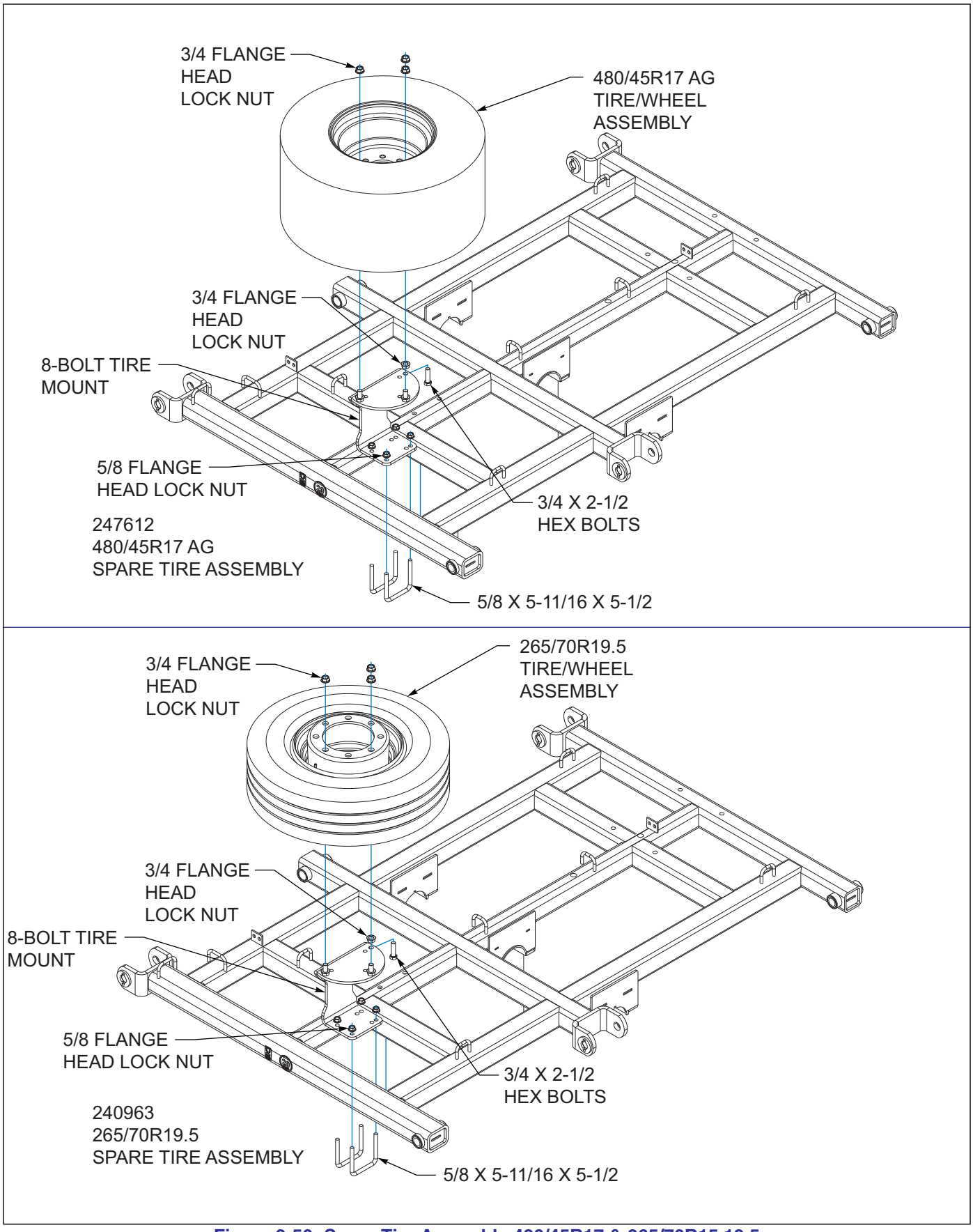


Figure 3-50: Spare Tire Assembly 480/45R17 & 265/70R15 19.5

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 cylinder lockouts on both 4-1/2 x 10 master cylinders on the center frame.
3. Connect lights to the tractor and verify operation.
4. Check tires for proper inflation.
5. Level the blade plow from side to side as described in *"Leveling (Blades & Coulters)" on page 4-6*.
6. Inspect the final implement assembly, and verify that all bolts have been tightened, cotter pins spread, and that there are no leaking hydraulic connections.
7. Rotate each treader gang to verify that each gang rotates freely.
8. Lubricate the blade plow at all locations as shown in *"Lubrication Maintenance" on page 5-4*.
9. Touch up with paint any areas that may have been scratched during moving, handling, or assembly.
10. Thoroughly read and understand the operating section before using the disc.

Chapter 4

Operation

DANGER

Never allow anyone to ride on the 1790 Blade Plow at any time. Allowing a person to ride on the machine can inflict serious personal injury or death to that person.

DANGER

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

WARNING

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

DANGER

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

DANGER

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

CAUTION

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

Tractor Preparation

The Landoll Blade Plow is designed to be pulled by tractor equipped with a double lip or clevis type hitch. If your tractor is not equipped as such, you need to purchase the hitch from your local tractor dealer. Before attaching the Blade Plow, 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.

Attaching To The Tractor

1. Align the tractor drawbar with the machine. Raise or lower the Blade Plow hitch clevis, as needed, using the swivel jack ***See Figure 4-1***. Attach the unit with proper size hitch pin.
2. Always place the swivel jack on the interior mount before setting the machine in motion.

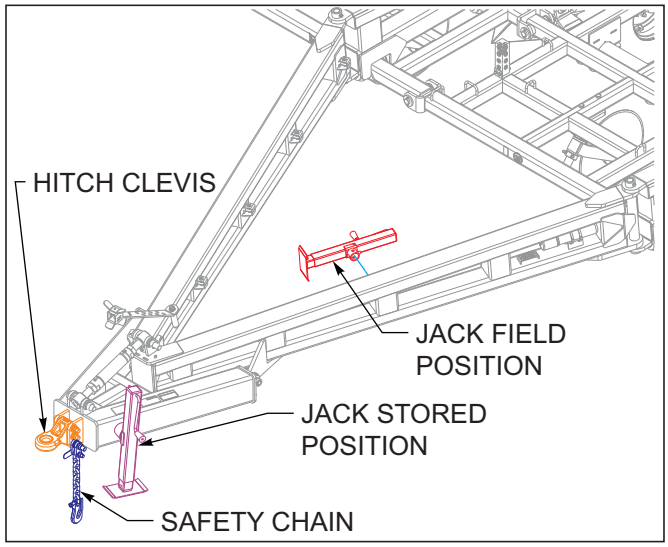


Figure 4-1: Jack Storage

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 ***See Figure 4-1***. 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 key way 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.

Blade Plow Preparation

1. Prior to operating the Blade Plow, inspect it thoroughly for good operating condition.
2. Replace worn or missing parts.
3. When the machine is new, check the bolt tightness after a few hours of operation. Tighten any loose nuts or bolts. Check the lift wheel lug bolts daily.
4. Check the lift wheel tire inflation. Inflate all tires equally to avoid side draft. Follow the tire manufacturer's recommended pressures listed on the sidewall of the tires.
5. Lubricate the machine ***See Figure 5-4***.
1. If the unit is new or if new blades have been installed on the unit, there is a break-in period for those blades. This break-in period is known as "setting the edge" on the new blades and will aid in maintaining a sharp and uniform edge profile for the life of the blade. It is recommended that during the break-in period that the unit be ran thru previously tilled ground for ½ mile. This will allow the blade to create a smooth edge and it should maintain this edge for the life of the blade. Failure to do so can result in a jagged or "saw-tooth" edge profile, which may cause less than satisfactory working results.

Hydraulic Lift System

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

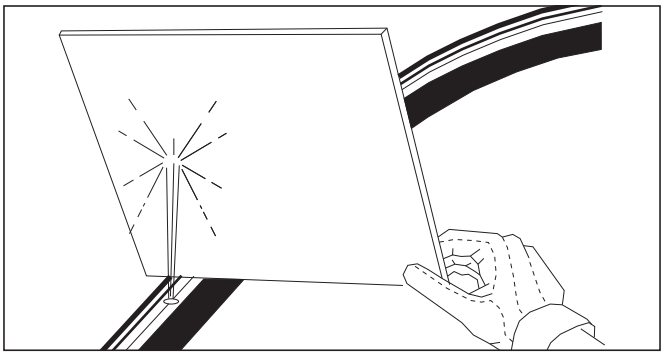


Figure 4-2: Hydraulic Leak Detection

⚠ WARNING

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

1. When the cylinders are fully extended and held in this position, oil is able to flow through the cylinders (or rephase) and allow the cylinders to operate in sync. This also allows the system to purge any air that may enter the system without having to loosen or crack hydraulic lines.
2. The hydraulic system is not filled with oil and should be purged of air before transporting and field operations. Carefully hitch the Blade Plow to the tractor and connect the hydraulic lift hoses.
3. Check to make sure the tractor hydraulic reservoir is full of the manufacturer's recommended oil. Slowly raise the machine, and continue to hold the hydraulic lever until all lift cylinders are fully extended.
4. With all cylinders fully extended, remove the 1/8" hairpin, L pin and 2 x 10 cylinder lockout ***See Figure 4-3***.

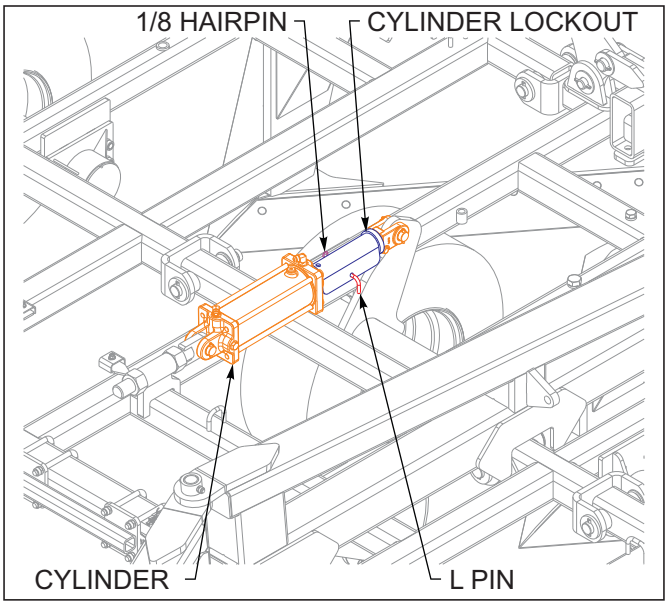


Figure 4-3: Installed Cylinder Lockout

5. Store 2 x 10 cylinder lockout on frames as shown in ***See Figure 4-4***.
6. Lower and raise the unit to verify that all lift cylinders are working simultaneously throughout the stroke. If the cylinders are not working evenly or together, fully extend the lift cylinders and continue to hold the lever to purge any remaining air. Do not loosen any hoses or fittings. Recheck tractor reservoir to make sure it is within operating limits.
7. Always fully extend the cylinders and hold the lever to ensure the cylinders are rephased before starting any field operation. This will keep all cylinders in time and level when operating.

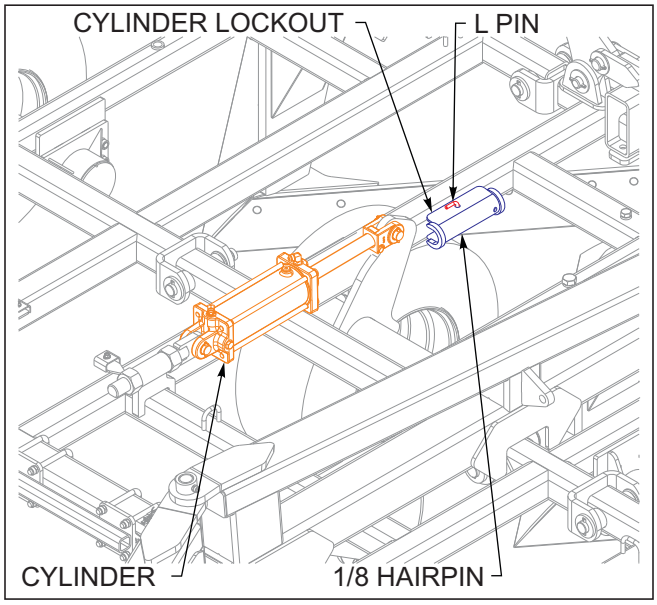


Figure 4-4: Stored Cylinder Lockout

Hydraulic Fold System

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

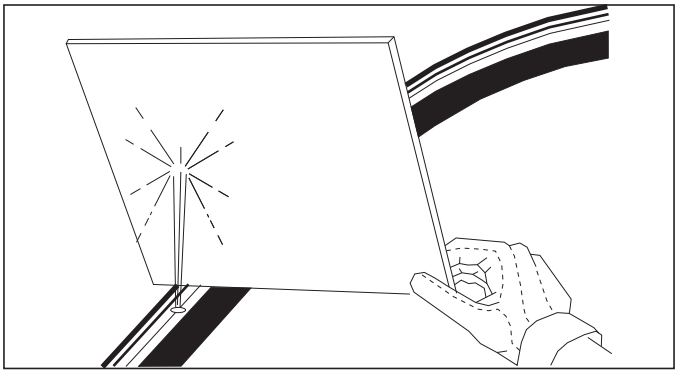


Figure 4-5: Hydraulic Leak Detection

3. To charge the system, carefully hitch the Blade Plow 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 cylinders to prevent uncontrolled falling of wing frames when unfolding. Removal or improper assembly of these restrictors can cause the machine to fold improperly and result in serious machine damage.

⚠ WARNING

Escaping hydraulic fluid can cause serious personal injury. Relieve system pressure before repairing, adjusting, or disconnecting. Wear proper hand and eye protection when searching for leaks. Use cardboard instead of hands *See Figure 4-5* Keep all components (cylinders, hoses, fittings, etc.) in good repair.

5. To fold/unfold the Blade Plow, find a level area large enough to accommodate the Blade Plow when it is fully unfolded. The tractor should be stopped and not moving with the unit fully raised. **See *(See "Folding the Blade Plow" on page 4-5)* and *"Unfolding the Blade Plow" on page 4-5*** for further instructions on folding and unfolding the Blade Plow.
6. Be sure the system is fully charged with hydraulic oil before attempting to fold/unfold the unit. Air in the system can allow uncontrolled dropping of the wing frames causing serious personal injury or machine damage. The system needs to be charged with oil initially and any time the system has been opened for repair such as cylinder, hose, or fitting replacement/repair.

Figure 4-6: Treader Warning Decal

7. If unit is equipped with the optional Hydraulic Attachment, the attachment must be in the lowered (or working) position before any folding or unfolding is attempted. This is to ensure that there will be no interferences during the folding or unfolding procedures. Failure to do so can cause the machine to fold/unfold improperly and result in serious machine damage.
8. The hydraulic fold system is equipped with a hydraulic pressure relief valve to prevent fold cylinder damage. During the unfold sequence, it is possible that the folding gravity hooks will NOT disengage properly. If this does occur there will be a spike in hydraulic pressure, at this time the pressure relief valve will divert oil back to tractor to prevent damage to the fold cylinders. ***(See "Unfolding the Blade Plow" on page 4-5)*** for further instructions.

Folding the Blade Plow

1. Ensure the machine is on level ground and fully raise the machine.
2. Begin folding the machine. During the folding process, visually check that all gravity hooks are engaging correctly ***See Figures 4-7***.

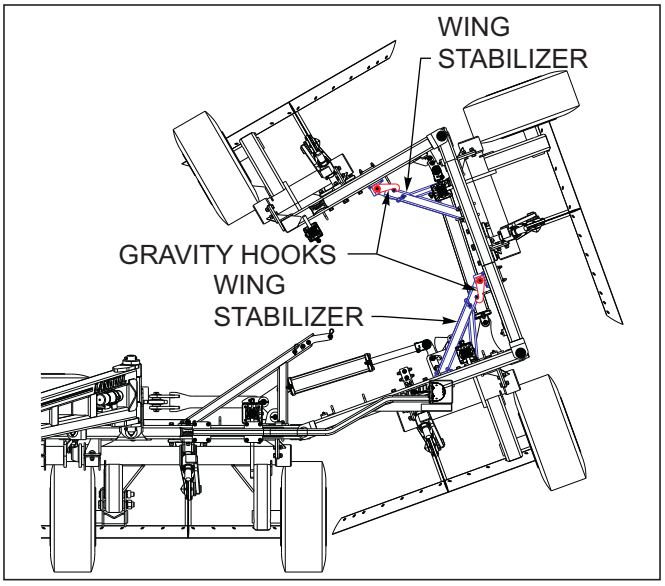


Figure 4-7: Folding Gravity Hooks

3. Fully fold all wing sections.
4. Ensure that the inner most fold cylinder(s) are fully retracted and that the gravity stops are in the correct orientation **Model 1790-52' & 1711-64' Only** ***See Figure 4-8***.

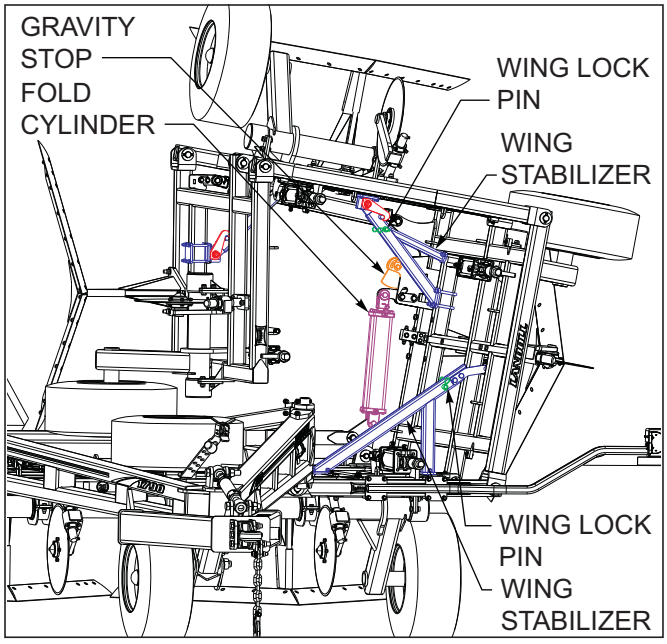


Figure 4-8: Folding Cylinder (Model 1790-52' Shown)

5. Install wing lock pin ***See Figure 4-9***.

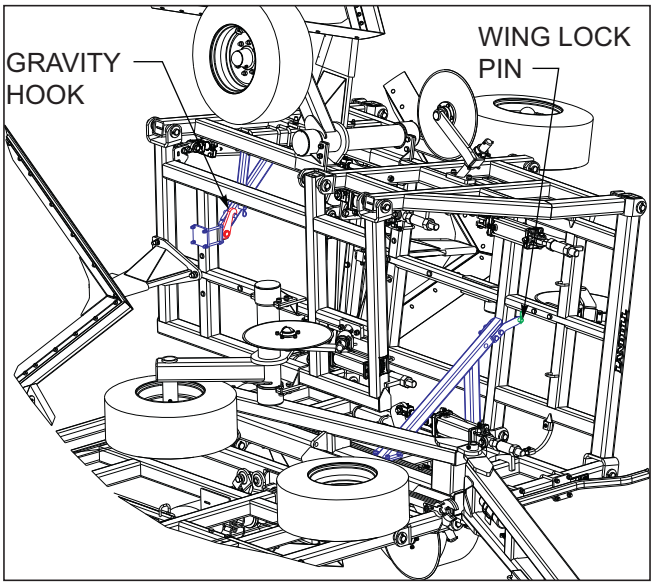


Figure 4-9: Folding Wing Lock Pin

Unfolding the Blade Plow

1. Ensure the machine is on level ground and that the area is large enough to accommodate the Blade Plow when it is fully unfolded.
2. Remove wing lock pin and store in wing stabilizer as shown **Model 1790-52' Shown** ***See Figure 4-8***.
3. Ensure that the gravity stop has remained in the correct orientation ***See Figure 4-8***.
4. Begin unfolding the machine. During the unfolding process, **it may be necessary to slightly reverse cylinder travel to allow the gravity hooks to disengage** ***See Figures 4-7***.
5. Fully unfold all wing sections.
6. Continue to hold leveler until all fold cylinders are fully extended. This will allow the wings to fully flex in the field.
7. It is recommended to operate fold circuit in "float" position during field operation.

WARNING

Operate the fold hydraulic system at normal hydraulic flow rate. Because of restrictors in the fold system, increasing the hydraulic flow rate from tractor will not speed up the fold/unfold procedure

General Operation

1. The horsepower requirements are typically 8-10 horsepower per foot of cut. This will vary widely due to speed, depth, moisture, residue and types of soils. Local dealers can help in making recommendations for your areas.
2. Operating speed is typically 4.5-6 mph. Excessive speed can cause the unit to bounce, creating an uneven cutting depth.
3. Lift wheels must always be in contact with the ground and carrying some implement weight. Lift wheels are used to gauge the depth of each frame section and to control the leveling feature.
4. Do not turn with the blades in the ground, this can put excessive side load on the blades and hitch. Raise the unit slightly when making turns to prevent gouging and pushing a ridge.

Field Operation

1. Raise the unit to take the weight off of the cylinder lockouts. Remove the cylinder lockouts from the lift cylinders (on the main frame only) and store them on the retainers above the main lift ***See Figure 4-4*.**
2. To help protect the fold cylinders from damage, it is recommended to operate the fold circuit in "FLOAT" position during field operation. This will allow the cylinder rod to be able to retract if necessary ***See Figure 4-10*.**

Figure 4-10: Hose Identification Decal

Leveling (Blades & Coulters)

Leveling the Blade Plow blades, involves leveling each blade to the frame that it attaches to. This will insure the frames are operating evenly and consistent depth.

NOTE

Leveling the Blade Plow involves leveling the blade and standard assemblies first. The Blade Plow must be on level ground or level concrete to level machine.

1. Fully raise the implement and hold the hydraulic lever for approximately 1 minute to rephase all lift cylinders.
2. The distance from bottom of frame to top of blade standard should be 26" at all three bolts ***See Figure 4-11*.**
3. If the blade and standard assemblies need adjusted, loosen the 1 locking nut on the front, of the 1 x 7 bolt and the two, 3/4 lock nuts on the rear of the 3/4 x 4 bolts. There are 1 x 1/16 or 1 x 1/8 shims for the front and 3/4 x 1/16 or 3/4 x 1/8 shims for the rear. Add or take out shims, between the bottom of frame and top of standard to get the blade and standard assemblies level.
4. Tighten all three bolts and be sure the 26" measurement is correct at all three bolts, if not loosen nuts again and add or remove shims until the correct distance is set.
5. Repeat this procedure on all the center and wing frames

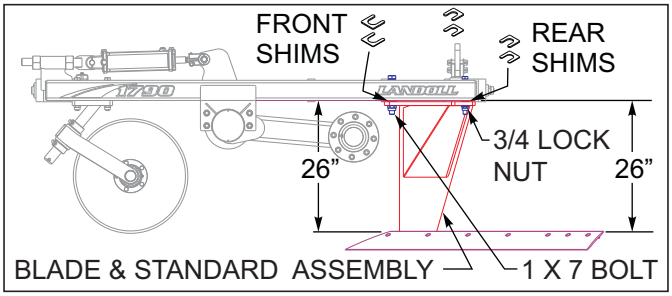


Figure 4-11: Blade & Standard Adjustment

6. The initial starting distance from bottom of frame to center of coulter hub spindle should be 15" ***See Figure 4-12*.** The coulter arm assemblies may be adjusted for different field conditions as needed.
7. If coulter arm assembly needs adjusted, loosen set screws in collars and slide coulter arm assembly up or down to desired distance. Tighten set screw in bottom collar first, then slide top collar down and tighten set screw. Be sure coulter arm will still swing freely on coulter arm shaft.

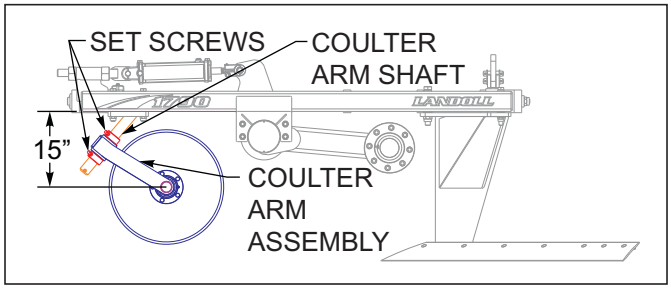


Figure 4-12: Coulter Arm Assembly Adjustment

Leveling (Side to Side)

Leveling the Blade Plow from side-to-side, involves leveling the center sections side-to-side, then leveling the wings to the center sections. This will ensure that all sections are operating evenly and at a consistent depth. The unit should be level side-to-side when operating in the field.

NOTE

Do not attempt to level the center sections by only adjusting the turnbuckles.

The Blade Plow must be on level ground or level concrete to level the machine.

1. To level the center sections, lower the unit to the ground, and remove both the adjustable turnbuckles between the main lifts and the idler lift.
2. Fully raise the implement and hold the hydraulic lever for approximately 1 minute to rephrase all lift cylinders. Then lower the implement to the ground and fully retract the cylinders. The two master cylinders on the center sections should measure 22-1/4" at the pin centers, and there should not be any visible plated shaft showing.
3. Lay a straight edge across the top of the frame and measure from the top of the frame to the top of the spindle tube (of the non-adjustable spindle) of both center frame axles ***See Figure 4-13.*** If the measurements are more than 1/4" different, the cylinders will need adjusted.

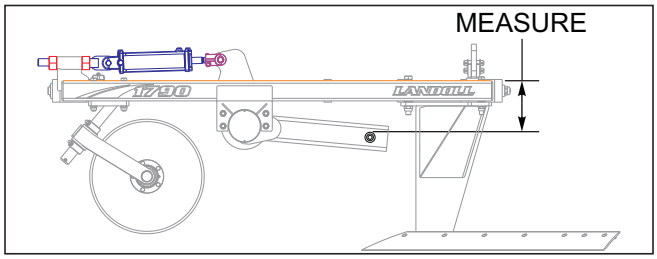


Figure 4-13: Frame Level Adjustment

4. The initial starting distance from threaded end of cylinder anchor to front side of tube should be 3-3/4" ***See Figure 4-14.*** If cylinder anchor needs adjusted, loosen one of the 1-3/4 nut, turn the other 1-3/4 nut until desired distance is set. Tighten both 1-3/4 nuts to secure the cylinder anchor. Adjust both center cylinders equally by turning one cylinder anchor in and the other out.

NOTE

It may be necessary to lower the implement to the ground to relieve the weight on the cylinder anchor to make this adjustment. Also, if more adjustment is needed, the cylinder clevises can be loosened and threaded in or out. If this is done, ensure that the locking bolts on the cylinder clevises are re-tightened after the adjustment has been made.

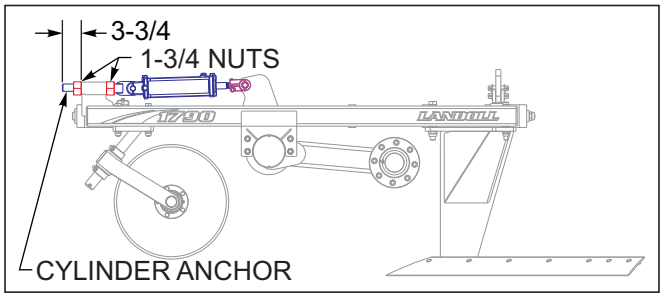


Figure 4-14: Cylinder Level Adjustment

5. Verify that the cylinders are still fully retracted and check the measurement from top of frame to top of rigid spindle tube again. Adjust the cylinder anchor until the measurements are within 1/4".
6. Re-tighten all components to ensure that the cylinders are secured.
7. With the cylinders still fully retracted, install the adjustable turnbuckles between the main lifts and the idler lift. This will ensure the lifts are properly timed and not binding. The turnbuckle center-to-center measurements will be set at approximately 8" long ***See Figure 4-15.***

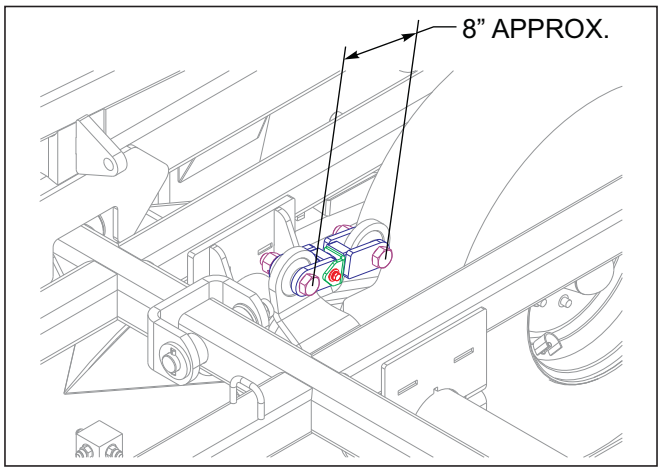


Figure 4-15: Turnbuckle Adjustment

8. When the center frames have been leveled side-to-side, the wings may now be leveled to the center frames. Fully raise the implement and hold the cylinders extended for approximately 1 minute to again rephrase the lift cylinders.

9. Lower the implement until the blades are approximately 1” above the ground. Measure the distance from the top of the frame to the top of the rigid spindle tube of the center frame. Now measure the distance from the top of the frame to the top of the spindle tube on the first wing. These two measurements should be the same.
   - For the 1711-64’ model that is equipped with the dual 265 center frame tires, this measurement should be 1-1/8” larger on the wings than on the center frame. For example, if the center frame measures 15”, then the wings need to measure 16-1/8”.
   - For the 1711-64’ model that is equipped with the 480 center frame tires, this measurement should be 1-1/4” larger on the wings than on the center frame. For example, if the center frame measures 15”, then the wings need to measure 16-1/4”.
   - (This measurement difference was 1” for 1710-64’ models)
10. If adjustments need to be made, adjust the wing to match the center frame ***See Figure 4-14.*** On the wing cylinder anchor, loosen the one of the 1-3/4 nut, turn the other 1-3/4 nut until desired distance is set. Tighten both 1-3/4 nuts to secure the cylinder anchor.
11. Repeat wing adjustment for all wing sections, ensuring that they match the center frames. **(For 1711-64’ model, see step 9. above for measurement details).**
12. The Blade Plow is equipped with either one or two adjustable spindles, depending on the model. These adjustable spindles allow the operator to set the tires of the same lift at different heights. It is recommended that the blade plow tires that are directly behind the tractor tires be set 1/4” lower than the rest of the machine.
13. To adjust, lower the Blade Plow until the pressure is off the hub/spindle assembly. Loosen the 1-1/2 nut on the spindle adjustment rod and adjust the other 1-1/2 nut until the spindle reaches the desired measurement. After the adjustable spindle reaches the required placement, tighten both 1-1/2 nuts to secure ***See Figure 4-16.***
14. When the spindle adjustment gauge is even with the back side of the plate ***See Figure 4-16*** the rigid spindle and the adjustable spindle are in the same position. This is only a visible gauge, leveling measurements from frame to spindle tube ***See Figure 4-13*** will still be needed to ensure the desired location of the adjustable spindle has been achieved.

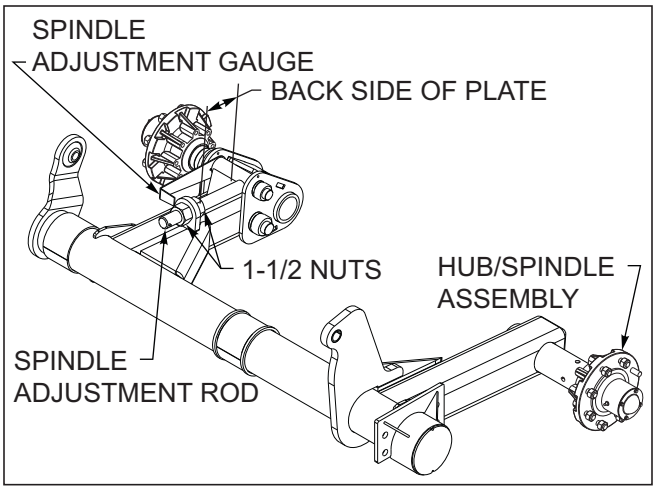


Figure 4-16: Center Spindle Adjustment

Leveling (Front-to-Rear)

The radius rod may need adjusted for different working depths and for tractors with different drawbar heights. Adjust the radius rod until the blades are running level in the working position.

1. The radius rod assembly should be pre-set to 5-1/8” from center of front bolt to the front side of the radius rod tube weldment and an overall length of 24” from center of bolts ***See Figure 4-17.***
2. To adjust loosen the 1-3/4 nut and 1-3/4 LH jam nut.
3. Adjust the radius rod tube weldment to proper distance and re-tighten jam nuts.

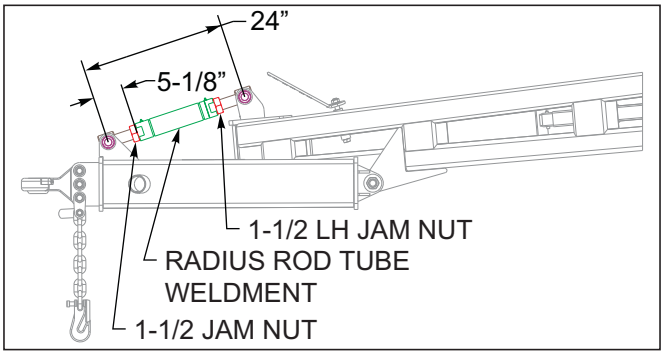


Figure 4-17: Hitch Leveler Adjustment

Treader Wheels (Standard)

The Blade Plow may be equipped with optional treader wheel attachment.

1. Initially set the depth of the treader wheels as shown ***See Figure 4-18*.**
2. Set the treader arm weldments in the 2nd hole from the bottom of the treader arm mount. Set the bent end of the treader adjustment rod in the 2nd hole from front. The 1” locking collar should be set at 19” from top of treader adjustment rod to the top of locking collar.
3. To adjust the treader wheels, loosen set screw on the locking collar and slide collar up or down until the 19” distance is set. Tighten 1/2 x 1-1/4 set screw and tighten the 1/2 jam nut. Now the 1 lock nut can be adjusted until the 2” distance is set.
4. For different field conditions or different working depths the treader may be raised or lowered. Start by adjusting the treader adjustment rod by removing 3/16” hair pin and moving this to a different hole in plate (rear hole to raise or front hole to lower). Re-install the 1 flat washer and the 3/16 hair pin to secure.
5. If more adjustment is needed, the 3/4 x 5-1/2 bolts may be removed and either move treader arm weldments up to a different hole to raise wheels or a lower hole to lower wheels. Re-install the 3/4 x 5-1/2 bolts, 3/4 lock washers and 3/4 nuts.
6. To obtain maximum performance the treader arm weldments need to be level while in the working position.

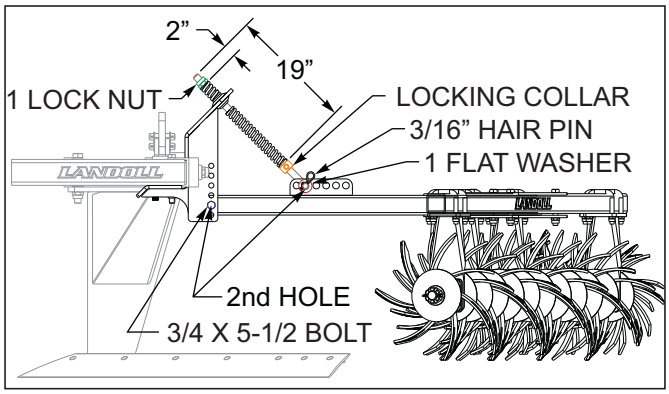


Figure 4-18: Treader Wheel Setting

Treader Wheels (Hydraulic)

The Blade Plow may be equipped with optional hydraulic treader wheel attachment.

1. Refer to Treader Arm Cylinder Spring Adjustment ***See Figure 4-19*.** for initial spring adjustment.
2. Set the treader arm weldments in the 2nd hole from the bottom of the treader arm mount. With the hydraulic cylinder fully extended, set the rear most edge of the cylinder mount to the 30-3/4” distance ***See Figure 4-19***.
3. Set the 5-7/8” distance for the lower sprin by adjusting the 1-1/4 lock nut. After the lower spring is located correctly, set the 1” distance between the upper spring and the 1-1/4 locking collar.
4. For different field conditions or different working depths the treader may be raised or lowered. Start by adjusting the lower cylinder mount by loosening the 5/8 lock nuts on the 5/8 u-bolts. Slide the lower cylinder mount foreword or rearward to achieve desired location. Tighten 5/8 lock nuts on the 5/8 u-bolts.
5. If more adjustment is needed the 3/4 x 5-1/2 bolts may be removed and either move treader arm weldments up to a different hole to raise wheels or a lower hole to lower wheels. Re-install the 3/4 x 5-1/2 bolts, 3/4 lock washers and 3/4 nuts.
6. To obtain maximum performance the treader arm weldments need to be level while in the working position.

Treader Wheel Gang Assembly

1. On new machines and after loosening treader gangs for maintenance, check and tighten all treader gangs after first 40 and 160 hours of usage.
2. To tighten treader gang, first remove roll pin that is installed through the castle nut. Torque castle nut to 1,200 ft-lbs and re-install roll pin.

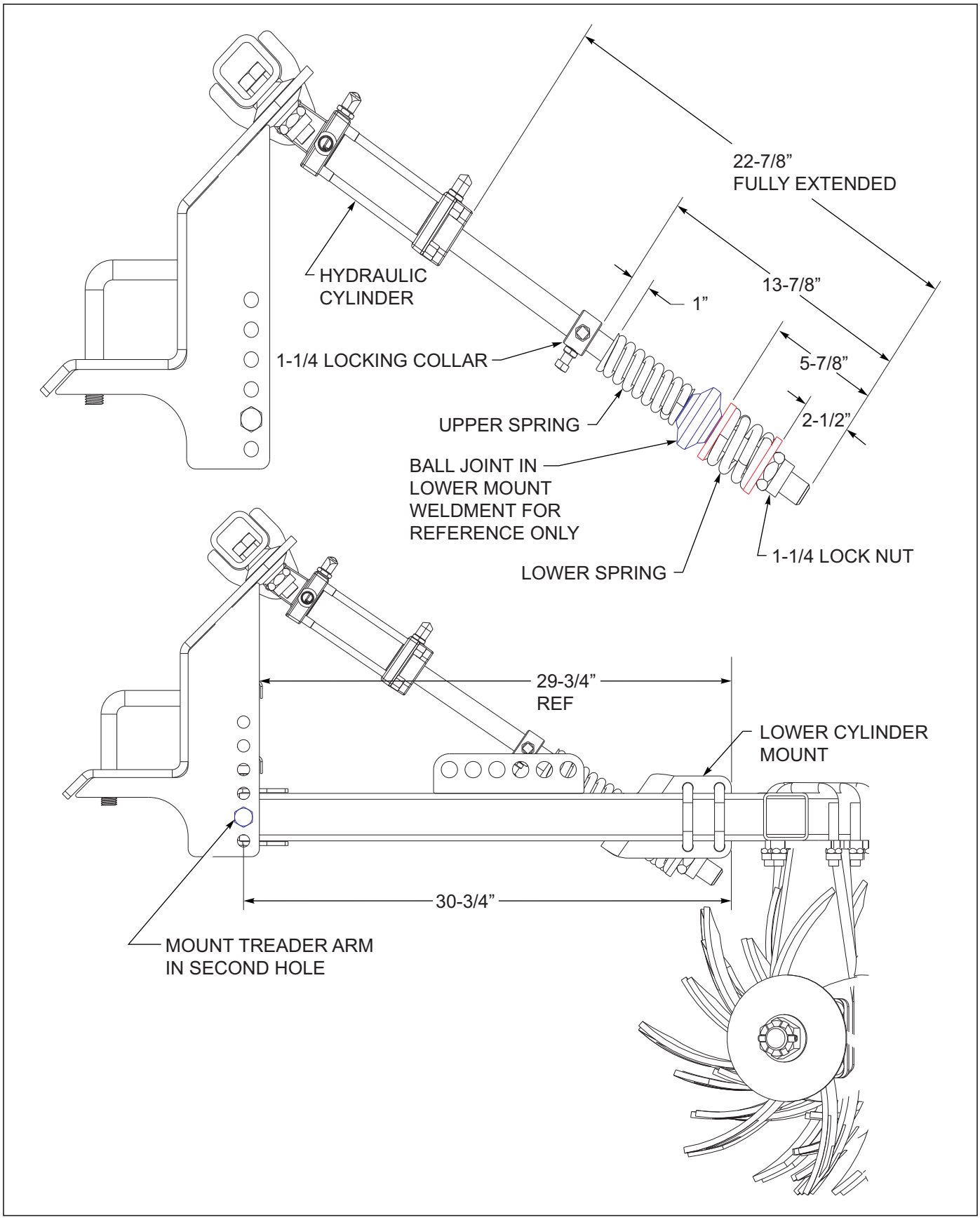


Figure 4-19: Treader Arm Cylinder Spring Adjustment

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. Cylinder lockouts 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 cylinder lockouts. 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 Blade Plow.
2. The Blade Plow should be transported only by tractor required for field operation. The implement weight should not exceed more than 1.5 times the tractor weight. Maximum transport speed for the Blade Plow is 20 mph for the implement and is designated on the speed identification symbol located on the front and rear of the implement ***See Figure 4-20***.

⚠ CAUTION

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

Slow down when driving on rough roads. Reduce speed when turning, or on curves and slopes to avoid tipping. Equipment altered other than the place of manufacture may reduce the maximum transport speed. Additional weight, added tanks, harrowing attachments, etc. may reduce implement load carrying capabilities.

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 two flat washers between the clamp plates to assure a tight connection. Always use a 1" diameter Grade 8 bolt for this connection.
   b. Attach the safety chain to the tractor drawbar ***See Figure 4-20***. 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.

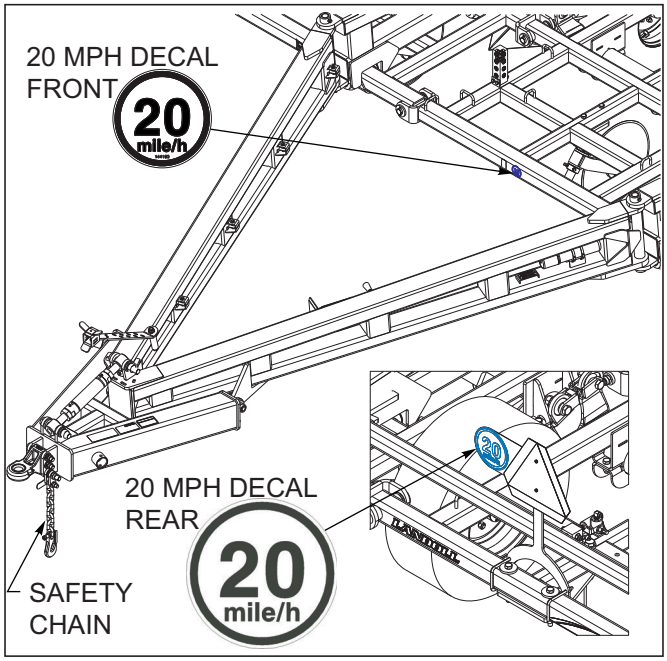


Figure 4-20: Hitch, Speed Identification Symbol, and Safety Chain

   c. When unhitching from the tractor attach the hook end of the chain to a free link close to the hitch clevis for storage. This will keep the hook off the ground, reducing corrosion and keep the hook functioning properly.
   d. Regularly inspect the safety chain for worn, stretched, or broken links and ends. Replace the safety chain if it is damaged or deformed in any way.

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

⚠ WARNING

Electrocution can occur without direct contact.

6. **Before transporting the Blade Plow on road, always install all cylinder lockouts and fold stop pins. Do not depend solely on implement hydraulics for transport, *See Figure 4-21*.**
7. With all lift cylinders fully extended, remove the 2 x 10 cylinder lockouts from stored position on frame and install on both LH and RH center frame lift cylinders, secure with L pin and 1/8” hairpin.

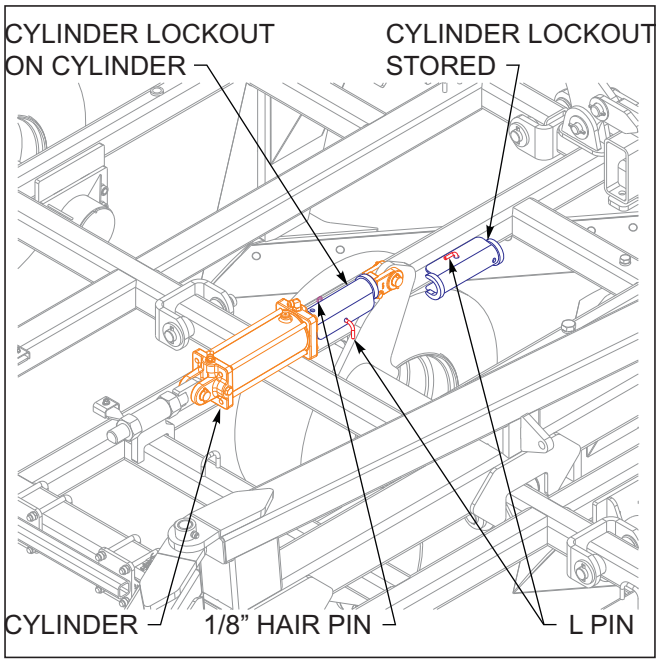


Figure 4-21: Installed Transport Locks

8. Fold the Blade Plow completely and be sure wing fold locks completely engage and install the fold stop pins on both sides.

⚠ WARNING

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

9. 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.

Storage

1. The service life of the Blade Plow 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 ***"Maintenance and Lubrication" on page 5-1*.**
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:

1711-64’ Blade Plow Wheel Bearing Maintenance

1711-64’ Blade Plow Center Frame

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

NOTE

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

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

NOTE

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

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

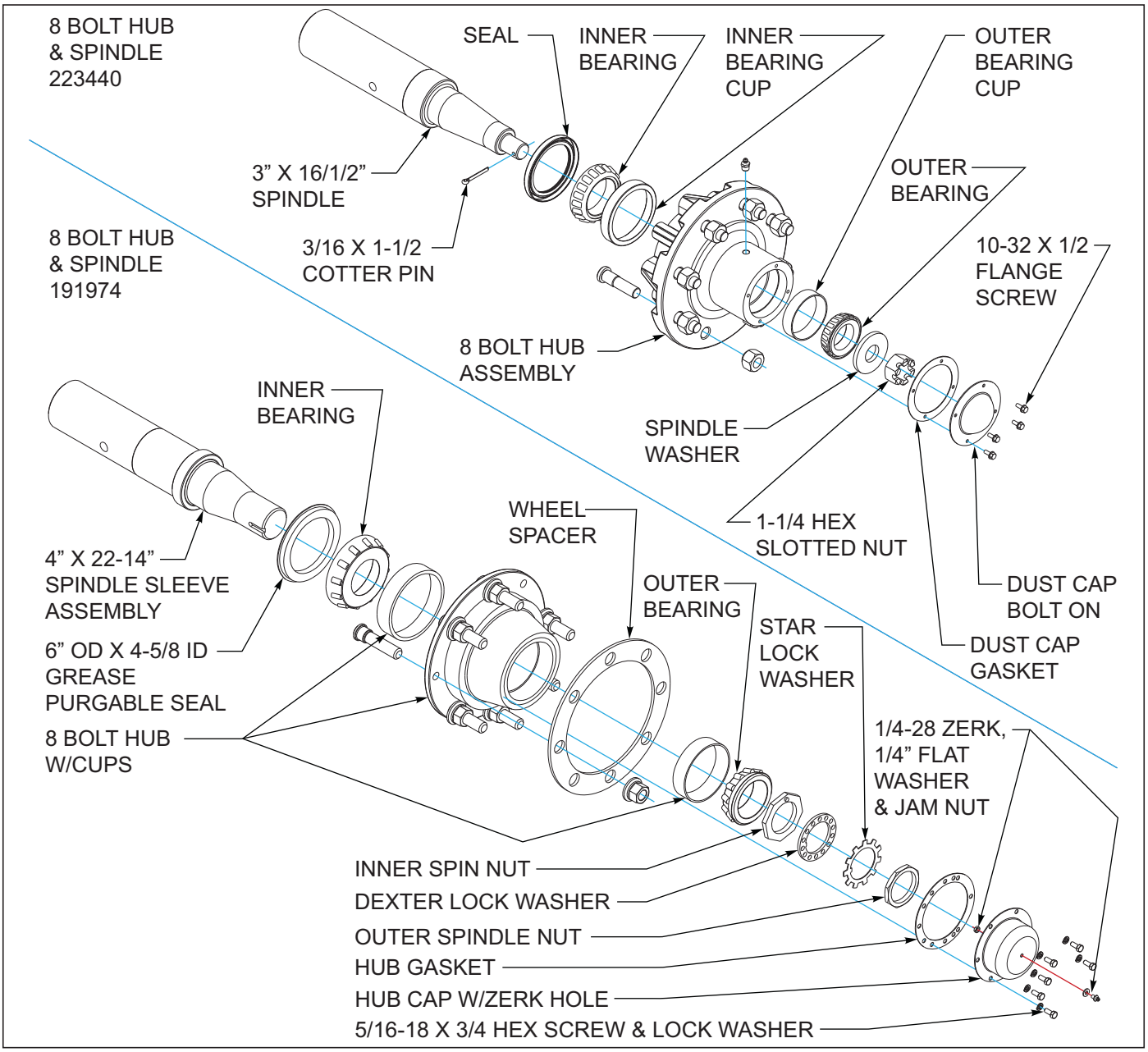


Figure 5-1: Wheel Bearing Maintenance

Wheel Bearing Maintenance – Non Triple-Lip

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

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

1. Place the frame on blocks or stands sufficiently to lift the tire clear of the ground.
2. Remove the tire.
3. Remove the dust cap, gasket, cotter pin, slotted nut, and washer.
4. Remove the hub assembly from the spindle. Clean and inspect the bearings and hub cavity. Replace any worn or defective parts.
5. **Repack** the bearings using a high-quality wheel bearing grease.
6. Install the inner bearing into the hub and install new grease seal. Use a driver to install the seal, to avoid damaging the outer edge of the seal. Drive the seal squarely into the hub to avoid any seal distortion.
7. Slide the hub, bearing, and seal onto a clean spindle.
8. Install the outer bearing, washer, and slotted nut.
9. Tighten the slotted nut while rotating the hub until there is a slight resistance to hub rotation. Then back the slotted nut off one notch or torque to 30-35 FT-LBS. A new seal will have some resistance, making the hub turn a little harder than usual.
10. Install a new cotter pin. Before installing the cap, fill hub with grease with grease gun through the zerk until it starts coming out around the washer.
11. Install the gasket and dust cap. Do not over tighten the dust cap screws causing the gasket to come out.
12. Through the zerk, give 6-8 more pumps of grease. It is not necessary to purge grease through a new seal, as they are filled ***See Figure 5-2***.

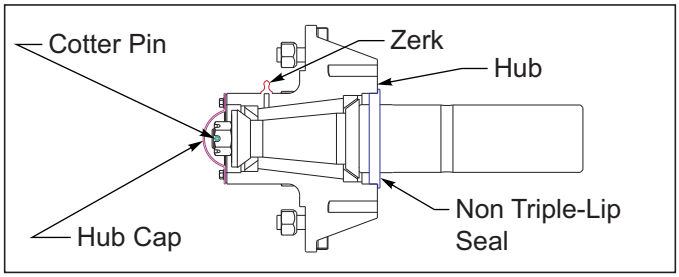


Figure 5-2: Non-Triple Lip-Seal

Wheel Bearing Maintenance -- Triple-Lip

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

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

The triple-lip seals should point away from the hub to keep contaminants out and allow grease to pass See Figure 5-3.

13. Install a new cotter pin and replace the hub cap. ***See Figure 5-3.***

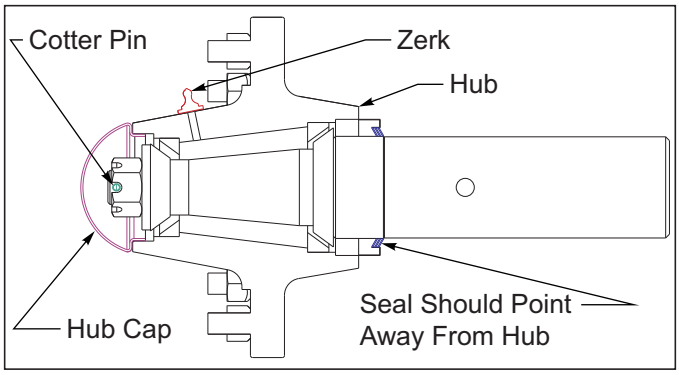


Figure 5-3: Triple Lip-Seal

Lubrication Maintenance

1. ***Table 5-1*** specifies the number and the period of lubrication points on the Blade Plow. 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 5-4*****.**
2. When lubricating the Blade Plow, 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. Regular lubrication will maintain a full grease cavity and help purge any contaminants. Grease the bearings before long periods of storage to prevent moisture buildup within the bearing cavity.
4. Wheel seals, when properly installed, will allow grease to pass without harm to seals. Regular lubrication will extend service life, particularly in severe operating conditions.

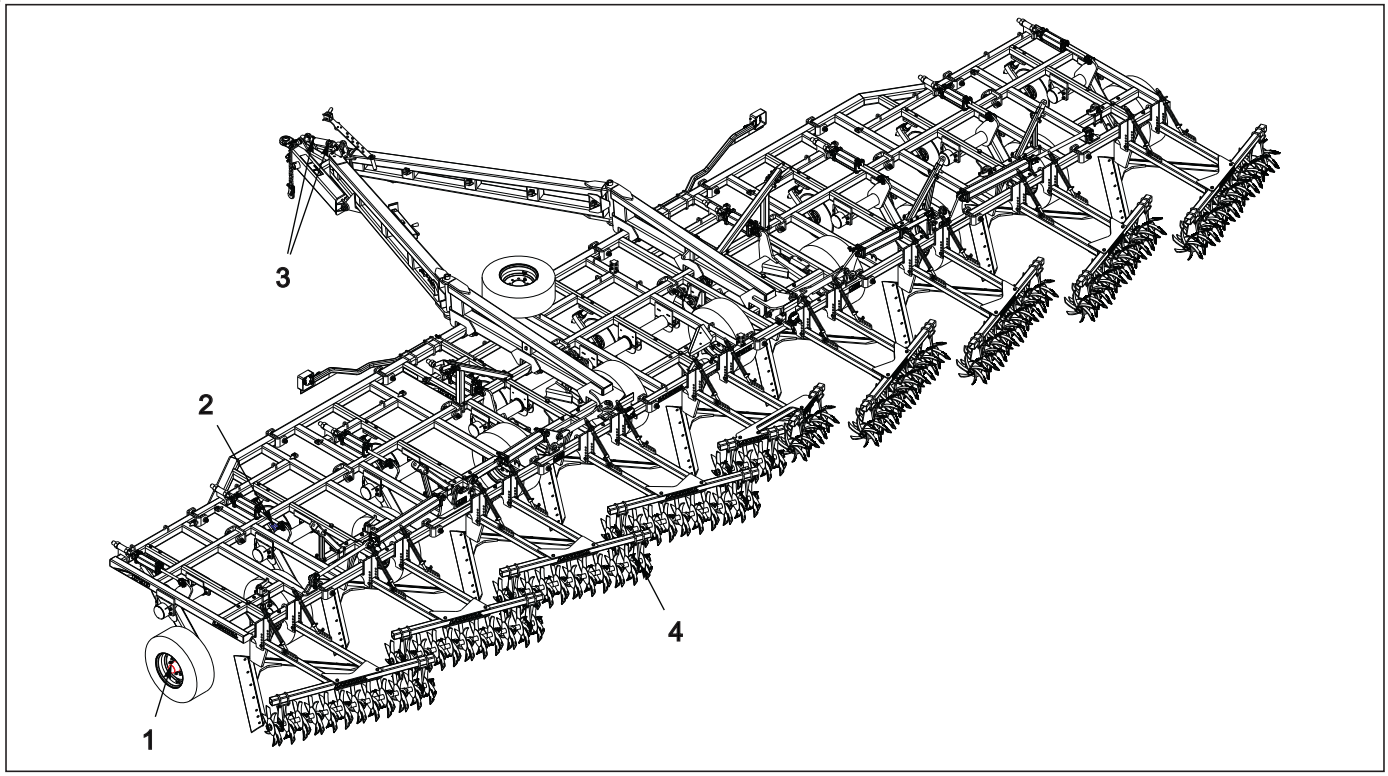


Figure 5-4: Lubrication Schedule

LUBRICATION TABLE			
ITEM	**DESCRIPTION**	**NO. OF LUBE POINTS**	**INTERVAL (Hours Unless Stated)**
1	Wheel Hubs	1 each	50
2	Coulter Assembly	2each	20
3	Radius Rod Assy	2 each	50
4	Treader Bearings (Optional)	1 each	10

Table 5-1: Lubrication Table

Chapter 6

Troubleshooting Guide

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

PROBLEM	PROBABLE CAUSE	SOLUTION
UNIT NOT LEVEL, LEAVING CENTER RIDGE	Leveler not adjusted properly	Adjust leveler, lower front gang
	Hitch adjustment too low	Raise implement hitch point
UNIT NOT LEVEL, LEAVING CENTER FURROW	Leveler not adjusted properly	Adjust leveler, raise front gang
	Hitch adjustment too high	Lower implement hitch point
UNIT NOT LEVEL, LEAVING RIDGE ON OUTSIDE OF UNIT	Unit not level front to rear, front running too deep	Adjust unit to be level
	Operating speed too fast, front gang moving soil past rear gang	Slow down to proper operating speed for field conditions
	Hitch adjustment too high	Lower implement hitch point
UNEVEN DEPTH	Frame not level side to side	Level center frame side to side
	Lift cylinders not in phase	Fully extend lift cylinders and hold hydraulic lever until all cylinders are fully extended
	Lift wheels not carrying enough weight	Adjust depth stop and raise implement
	Tire pressure too low	Check inflation
	Unit not level front to rear	Adjust unit to be level
UNIT SIDE DRAFTS OR MOVES SIDE TO SIDE	Lift wheels not carrying enough weight	Adjust depth stop and raise implement
	Unit not level front to rear	Adjust unit to be level
	Level unit side to side	Level center frame side to side
WHEEL BEARING FAILURE	Triple-lip seals not installed correctly	Install seals with the lips pointing outward away from the hub
HYDRAULIC - LIFT CYLINDERS NOT FULLY EXTENDING	Lift cylinders not in phase	Fully extend cylinders and hold hydraulic lever until all cylinders are fully extended
	Hoses not properly connected	Check hose routing
BLADE PLOW PLUGGING	Harrow height set too low	Raise harrow height
	Tine angle too steep	Use lower tine tooth angle
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
GANG TREADER REELS PLUGGING	Excessive Down pressure	Raise Reel
TREADER INTERFERENCE WHILE FOLDING/UNFOLDING	Treader assemblies in the raised position	Lower treader assemblies to the lowered (working) position

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 1700 Blade serial number

17H240000 = xxmyyssssss

QR CODE DECAL

The 1700 series QR code decal, may be scanned to link you to the most current manuals, located on the front of the frame *See Figure 7-1*

xx	= model series (i.e. 17 for Blade Plow)
m	= month of manufacture (ex. “H” means October. The letter I is not used.)
yy	= year manutactured (ex. “24” means 2024)
SSSSS	= Sequential number used to track warranty and service information.

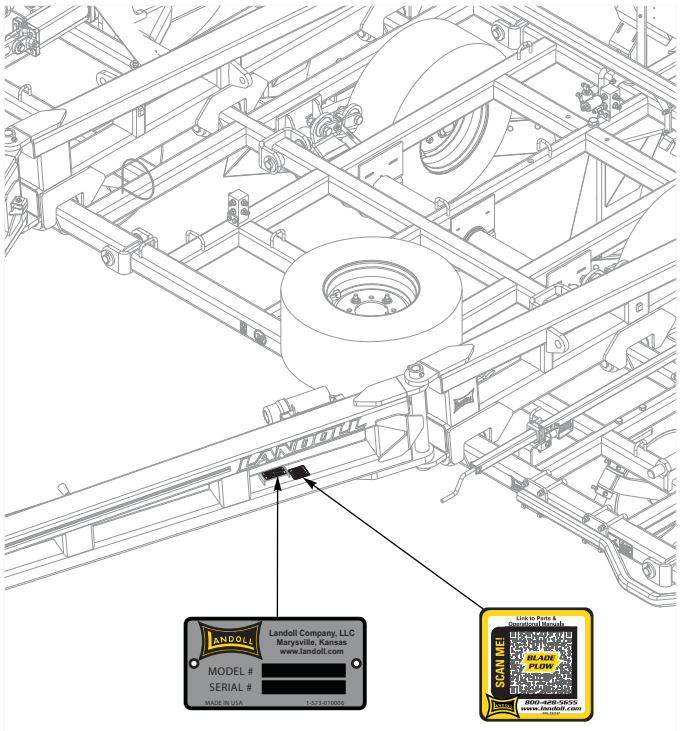


Figure 7-1: Identification Plate and QR Code Decal Location

Manuals for 1700 Blade Plow

Manual Number	Manual Type
F-920	Operator’s Manual
F-921	Parts Manual

Document Control Revision Log:

Date	Form #	Improvement(s): Description and Comments
11/09/2017	F-920-0717	Initial Release
07/27/2021	F-920-0721	Added rear tow hitches, updated hose wraps and hose identification decal
04/30/2024	F-920-2404	Updated to new FrameMaker format, updated hydraulics in assembly section, added safety decals, new ISO logo
01/13/2025	F-920-2501	Prince cylinder update

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

Model 1760, 1770, 1790, 1711

Blade Plow

Operator's Manual

Re-order Part Number F-920

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