



# John Deere R Series Sprayer/Dry Box Lubrication System Installation Guide





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## **Preparation/Installation Overview**

The following steps will assist the installer with a systematic approach for installing the Automated lube system on the John Deere R Series Sprayer. By following the steps Outlined, a successful installation will be achieved and will increase the service life of all pins and Bearings connected to the lube system.

### **Preparation**

- Compare the bill of material with the kit contents
- Clean machine thoroughly
- Survey the equipment and locate all lubrication points to be serviced by the lubrication system
- Lubricate each point with a grease gun prior to removing grease fittings to assure grease acceptance. Any points that will not accept grease must be repaired prior to system installation.
- After confirming all points will accept grease, remove all grease fittings.

### **Installation Overview**

- Install appropriate adapters and tube fittings in lube points.
- Position valve mounting brackets on machine.
- Attach metering valves to previously mounted brackets.
- Using tubing cutters, cut to length individual tubing feed lines from secondary valves to lube points and make connections.
- When installing feed line tubing into the Quicklinc fittings, push until firmly seated.
- Neatly bundle, loom with spiral wrap provided and tie strap feed lines wherever possible to protect from abrasion.
- Size, cut and attach appropriate hose ends to all supply lines. The high-pressure hose is used as supply lines from the pump to the primary valve and the primary to the secondary valves. It is recommended that the supply lines be routed and cut only after all valves and the electric pump have been attached to the machine. This assures the supply line is cut to the proper length. Also, allow for unrestricted movement while the machine is in motion.
- Route supply lines from the pump to primary valve and from the primary valve to the secondary valves and make connections.
- Secure supply/feed lines with tie straps, so not in harms way.
- Mount pump and make electrical connections (electrical diagram included with the pump).



## **Introduction**

Thank you for purchasing the Quicklub® On Board Grease System for your John Deere R Series Sprayer. The system has been designed to increase the component life and overall productivity of your equipment, while reducing labor costs related to the traditional method of point-by-point manual lubrication.

The system consists of the Quicklub® progressive metering valves that positively displace and meter precise amounts up to N.L.G.I. #2 shop grease down to -13°F temperature. Grease is distributed to each connected point through high-pressure tube and hose.

This Quicklub® kit is designed to work with your John Deere R Series Sprayer. This is a fully automated lubrication system utilizing a 24 volt DC heavy duty electric pump with integrated timer that dispenses lubricant to the progressive metering valves at timed intervals. The lubricant is pumped to the primary metering valve, which distributes it to secondary metering valves in specific zones of service. The secondary metering valves deliver measured amounts of lubricant proportional to each lube point in its zone.

The components are connected with lengths of high-pressure hose and tubing that are included in the kit. Contents of the kit are specifically marked to coincide with this instruction manual to achieve a consistent and quality installation.

This manual has been included with the system as an easy-to-follow guide for installation and operation. Keep it with the equipment, as it is also a trouble-shooting manual to keep your automated lubrication system working properly.

This kit also contains Installation and Operation Instructions for the 203 series system supply pump. Please refer to this manual for detailed information on operations, maintenance, trouble shooting and technical data. If missing, please contact Lincoln and request service page form #403439. Durable and reliable, the Quicklub® On Board Grease System has been carefully designed using industry proven products to provide long and trouble-free life under the most severe farming conditions.

For further information on this system please contact Lincoln Technical Services at 1-314-679-4200 ext. 4782# or fax 1-314-679-4357.

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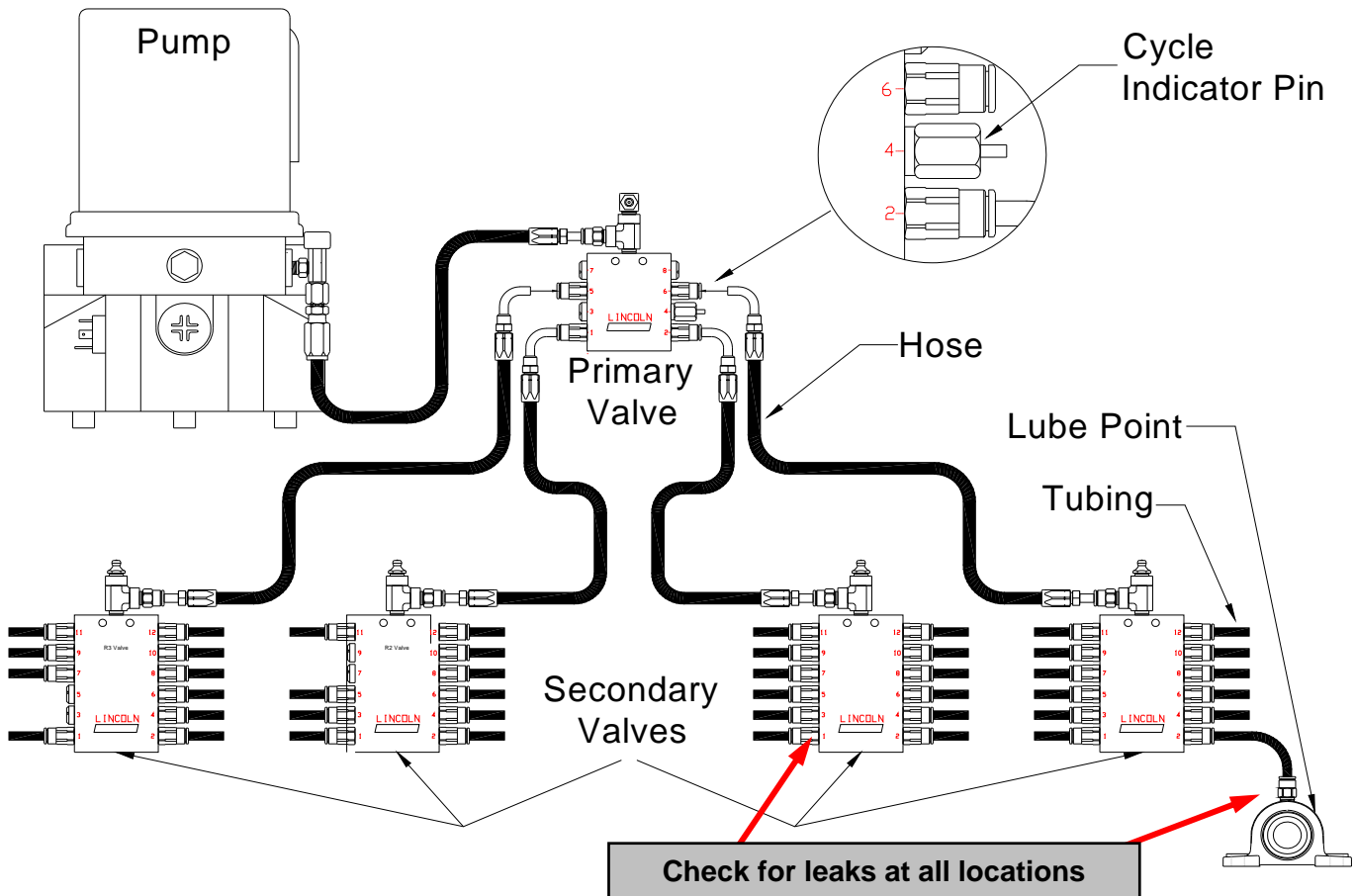
**Prime the system to check for proper operation and leaks. This can be done using the pump or a grease gun:**

**Grease Gun Method:**

1. Hook up a grease gun to the grease zerk on the divider block.
2. During the pumping process, each valve Cycle Indicator Pin should move in & out indicating grease flow through the valve. It is recommended to continue to pump through five cycles of the Cycle Indicator Pin. Check for leaks at all fitting connections to ensure the hose & tubing connections are solid.
3. Repeat for each block including the primary.

**Manual Lube from pump:**

1. Fill pump with grease using the grease zerk on the right side of the pump.
2. Cycle the pump using the manual lube button on the touch-pad.
3. Check to make sure the Cycle Indicator Pin is moving in and out on ALL divider valves
4. Check that grease is flowing to each lube point. You should see a grease “donut” at each point.
5. Check for leaks at all fitting connections to ensure the hose & tubing connections are solid.
6. This process may take multiple manual lube cycles.

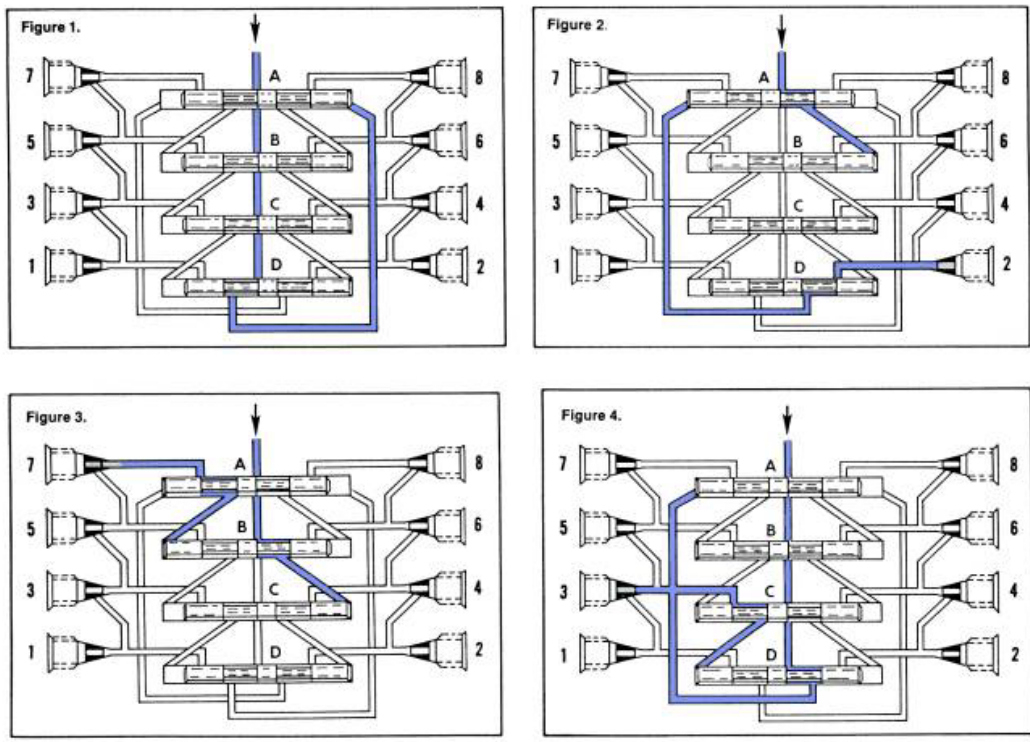




## Divider Valve Operation



At the heart of every Quicklub System is the metering valve or progressive distributor block, designed to positively meter the input of lubricant (oil up to NLGI #2 greases) out to the connected number of lubrication points irrespective of distance and back pressure. The inlet passageway is connected to all piston chambers at all times with only one piston free to move at any one time.



- With all pistons at the far right, lubricant from the inlet flows against the right end of piston A (fig. 1).
- Lubricant flow shifts piston A from right to left, dispensing piston A output through connecting passages to outlet 2. Piston A shift directs flow against right side of piston B (fig. 2).
- Lubricant flow shifts piston B from right to left, dispensing piston B output through valve ports of piston A and through outlet 7 (fig. 3).
- Lubricant flow shifts piston C from right to left dispensing piston C output through valve ports of piston B and through outlet 5.
- Piston C shift directs lubricant flow against right side of piston D (not illus.)
- Lubricant flow shifts piston D from right to left, dispensing piston D output through valve ports of piston C and through outlet 3.
- Piston D shift directs lubricant through connecting passage to the left side of piston A (fig. 4).
- Lubricant flow against left side of piston A begins the second half cycle which shifts pistons from left to right, dispensing lubricant through outlets 1, 8, 6 and 4 of the divider valve.

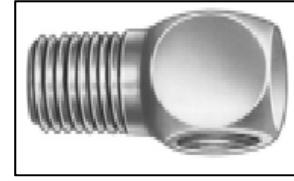
Component Glossary



**242125**  
Fitting Cap



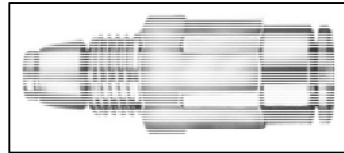
**303-17499-3**  
Closure Plug



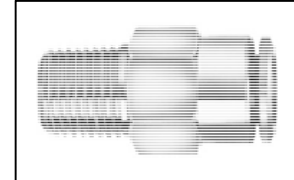
**20029**  
1/8" 90 Degree Adapter



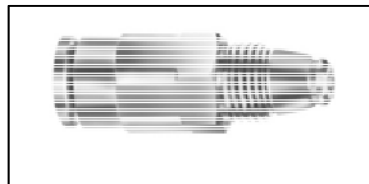
**700506**  
Grease Fitting



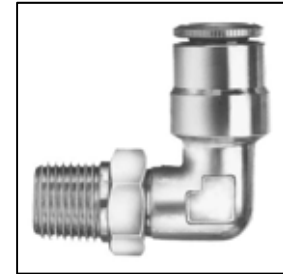
**244883**  
Tube Valve Outlet



**244047**  
1/4" Tube to 1/8"  
NPT Straight



**272658**  
Hose Valve Outlet



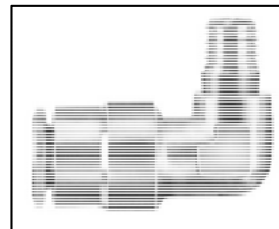
**243699**  
1/4" Tube to 1/8"  
NPT Swivel



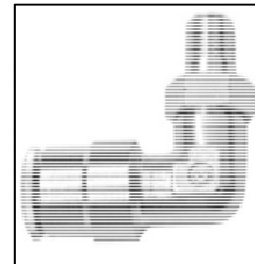
**246002**  
Hose End



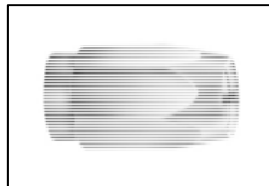
**244058**  
Union



**244054**  
1/4" Tube to 1/4"-28  
90 Degree Rigid



**244053**  
1/4" Tube to 1/4"-28  
90 Degree Swivel



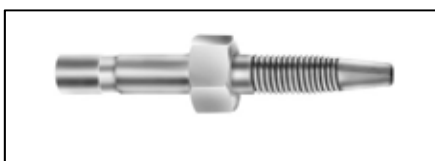
**272427**  
Hose Collar



**244048**  
1/4" Tube to 1/8" NPT  
90 Degree Rigid



**276407**  
Steel Tee



**272401**  
Hose Standpipe Straight

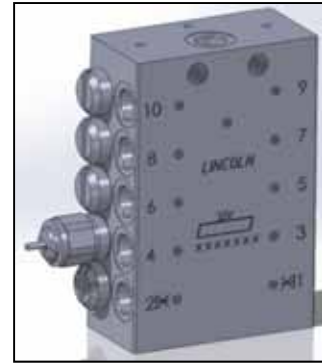
Component Glossary



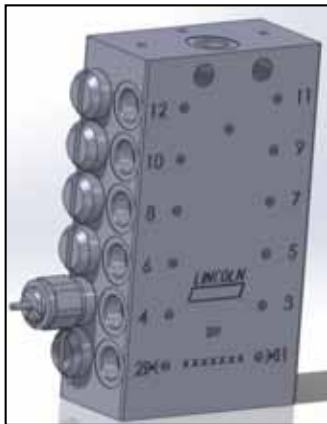
**619-27122-1  
Divider Valve (6 Point)**



**619-26646-2  
Divider Valve (8 Point)**



**619-26645-2  
Divider Valve (10 Point)**



**619-26648-2  
Divider Valve (12 Point)**



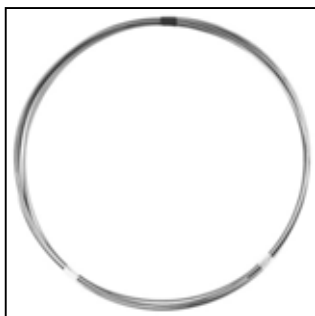
**246416  
Valve Bracket**



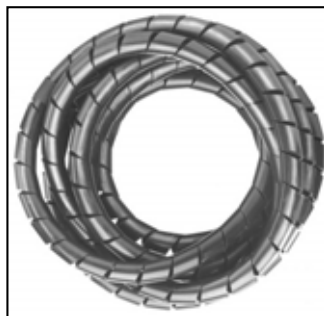
**51034 & 247023  
Valve Mounting Nut  
& Bolt**



**270931 P-Clamp ((3/4"))  
249913 P-Clamp (3/8")**



**241288  
Grease Filled Hose**



**241120  
Spiral Wrap**



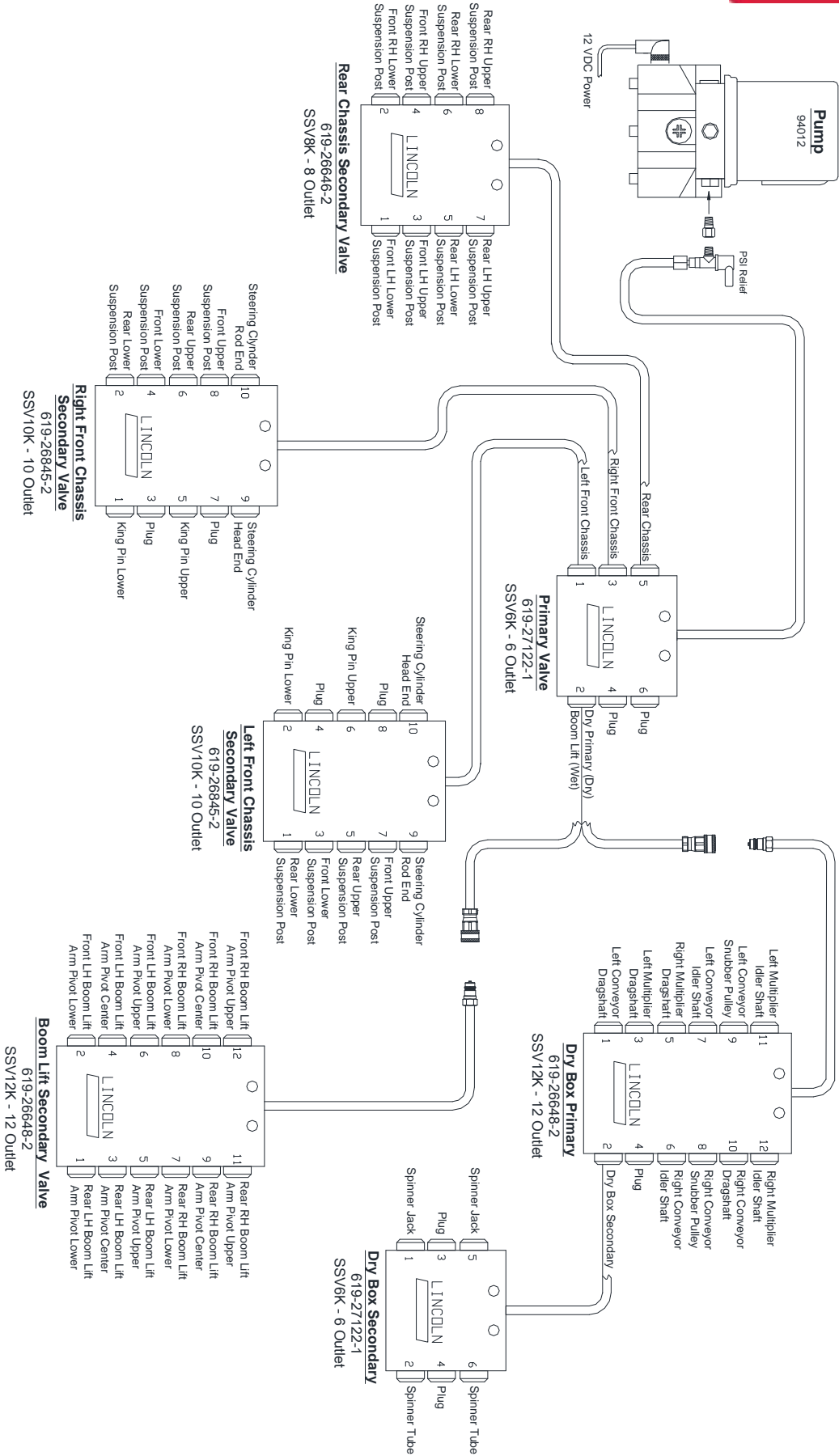
**270864  
PSI Relief Valve**



**241054  
Nylon Ties**



# John Deere R Series Sprayer Lubrication System Layout



## Bill of Material



Part #	Desc	Qty
<b>Pump/Acc</b>		
94012	Pump	1
278667	Bracket	1
<b>Valves/Acc</b>		
619-27122-1	SSV 6	2
619-26648-2	SSV 12	2
619-26646-2	SSV 8	1
619-26845-2	SSV 10	2
242125	Zerk Cap	6
700506	High Pressure Zerk	6
246416	Valve Bracket	6
51304	Valve Mounting Nut	12
247023	Valve Mounting Bolt	10
276407	1/8" Tee	6
244883	Tube Valve Outlet	52
272658	Hose Valve Outlet	5
303-17499-3	Valve Plug	13
<b>Hose/Fittings</b>		
241288	Hose 40'	1.51
246002	1/8" Swivel Hose Fitting	11
272427	Hose collar	5
272401	Hose Standpipe Straight	5
<b>Tube/Fit</b>		
270784	Zerk-Lock Adapter	2
274048	Grease Filled Tubing	8
244053	1/4" tube to 1/4"-28 90 Swivel	24
244054	1/4" tube to 1/4"-28 90 Rigid	4
244055	1/4" tube to 1/4"-28 90 Straight	2
243699	1/4" tube to 1/8" NPT 90 swivel	4
244048	1/4" tube to 1/8" NPT 90 Rigid	12
244047	1/4" tube to 1/8" NPT straight	6
241110	Spiral Wrap 10'	15
241054	Zip Ties (100)	4
20031	1/8" 90 deg Adptr	2
20029	1/8" 90 deg Adptr	3
13154	Adaptor	2
<b>Couplers</b>		
272356	Coupler	1
272357	Nipple	2
272358	Couple Plug	1
272359	Nipple Cap	2



## Lubrication Point Overview (Sprayer)

The Lincoln Lubrication System automatically lubricates 36 lube points on the John Deere R Series Sprayer. Individual lube points are categorized by proximity and injector bank.

### Left Front Chassis Secondary Valve (8 points)

<u>Qty</u>	<u>Description</u>
1	Steering Cylinder Cap End
1	Steering Cylinder Rod End
1	King Pin Upper
1	King Pin Lower
1	Front Upper Suspension Post
1	Rear Upper Suspension Post
1	Front Lower Suspension Post
1	Rear Lower Suspension Post

### Right Front Chassis Secondary Valve (8 points)

<u>Qty</u>	<u>Description</u>
1	Steering Cylinder Cap End
1	Steering Cylinder Rod End
1	King Pin Upper
1	King Pin Lower
1	Front Upper Suspension Post
1	Rear Upper Suspension Post
1	Front Lower Suspension Post
1	Rear Lower Suspension Post

### Rear Chassis Secondary Valve (8 Lube Points)

<u>Qty</u>	<u>Description</u>
1	Rear RH Upper Suspension Post
1	Rear RH Lower Suspension Post
1	Front RH Upper Suspension Post
1	Front RH Lower Suspension Post
1	Rear LH Upper Suspension Post
1	Rear LH Lower Suspension Post
1	Front LH Upper Suspension Post
1	Front LH Lower Suspension Post

### Boom Lift Secondary Valve (12 Lube Points)

<u>Qty</u>	<u>Description</u>
1	Front RH Boom Lift Arm Upper
1	Front RH Boom Lift Arm Center
1	Front RH Boom Lift Arm Lower
1	Front LH Boom Lift Arm Upper
1	Front LH Boom Lift Arm Center
1	Front LH Boom Lift Arm Lower
1	Rear RH Boom Lift Arm Upper
1	Rear RH Boom Lift Arm Center
1	Rear RH Boom Lift Arm Lower
1	Rear LH Boom Lift Arm Upper
1	Rear LH Boom Lift Arm Center
1	Rear LH Boom Lift Arm Lower



## Lubrication Point Overview (Dry Box w/ Multiplier)

The Lincoln Lubrication System automatically lubricates 36 lube points on the John Deere R Series Sprayer. Individual lube points are categorized by proximity and injector bank.

### Left Front Chassis Secondary Valve (8 points)

<u>Qty</u>	<u>Description</u>
1	Steering Cylinder Cap End
1	Steering Cylinder Rod End
1	King Pin Upper
1	King Pin Lower
1	Front Upper Suspension Post
1	Rear Upper Suspension Post
1	Front Lower Suspension Post
1	Rear Lower Suspension Post

### Right Front Chassis Secondary Valve (8 points)

<u>Qty</u>	<u>Description</u>
1	Steering Cylinder Cap End
1	Steering Cylinder Rod End
1	King Pin Upper
1	King Pin Lower
1	Front Upper Suspension Post
1	Rear Upper Suspension Post
1	Front Lower Suspension Post
1	Rear Lower Suspension Post

### Rear Chassis Secondary Valve (8 Points)

<u>Qty</u>	<u>Description</u>
1	Rear RH Upper Suspension Post
1	Rear RH Lower Suspension Post
1	Front RH Upper Suspension Post
1	Front RH Lower Suspension Post
1	Rear LH Upper Suspension Post
1	Rear LH Lower Suspension Post
1	Front LH Upper Suspension Post
1	Front LH Lower Suspension Post

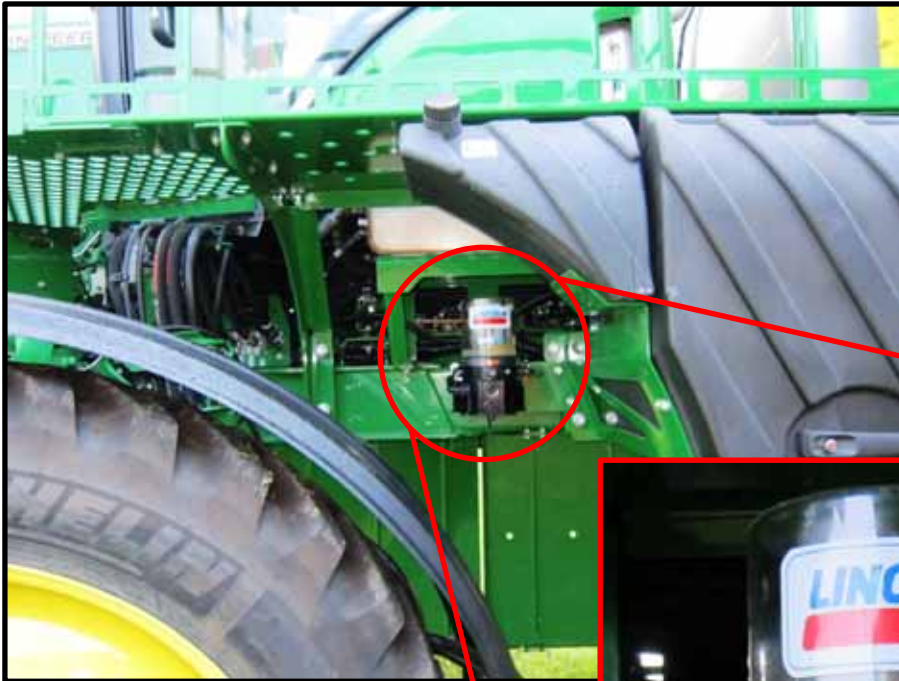
### Dry Box Primary Valve (11 Points)

<u>Qty</u>	<u>Description</u>
1	LH Conveyor Idler Shaft
1	RH Conveyor Idler Shaft
1	LH Multiplier Idler Shaft
1	LH Conveyor Dragshaft
1	LH Multiplier Dragshaft
1	RH Conveyor Idler Shaft
1	RH Multiplier Idler Shaft
1	RH Conveyor Dragshaft
1	RH Multiplier Dragshaft
1	RH Conveyor Snubber Pulley
1	Dry Box Secondary Valve

### Dry Box Secondary Valve (6 Points)

<u>Qty</u>	<u>Description</u>
2	Spinner Jack
2	Spinner Tube

## Pump Installation Detail



Use these holes and hardware to mount the bracket

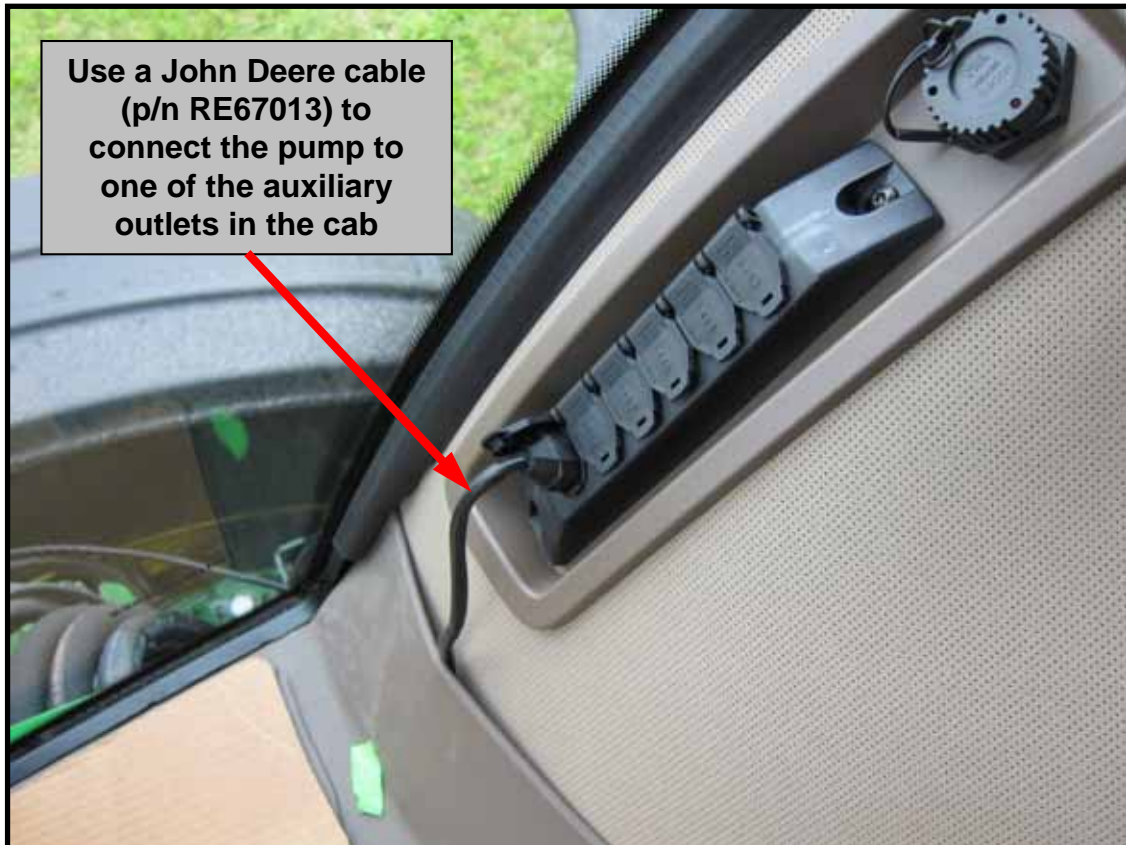
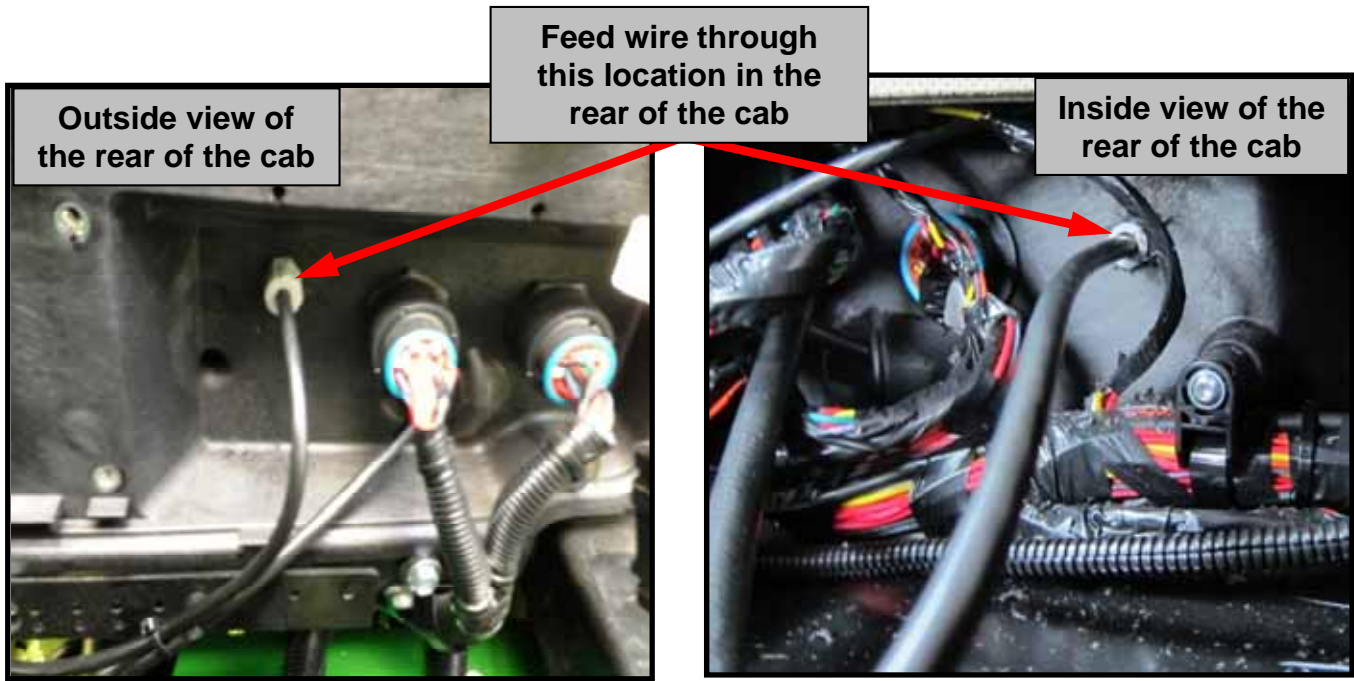


P203 pump to be mounted below the cab on the left hand side as facing forward. Mount the pump using 278667 pump bracket using the existing mounting holes and hardware.

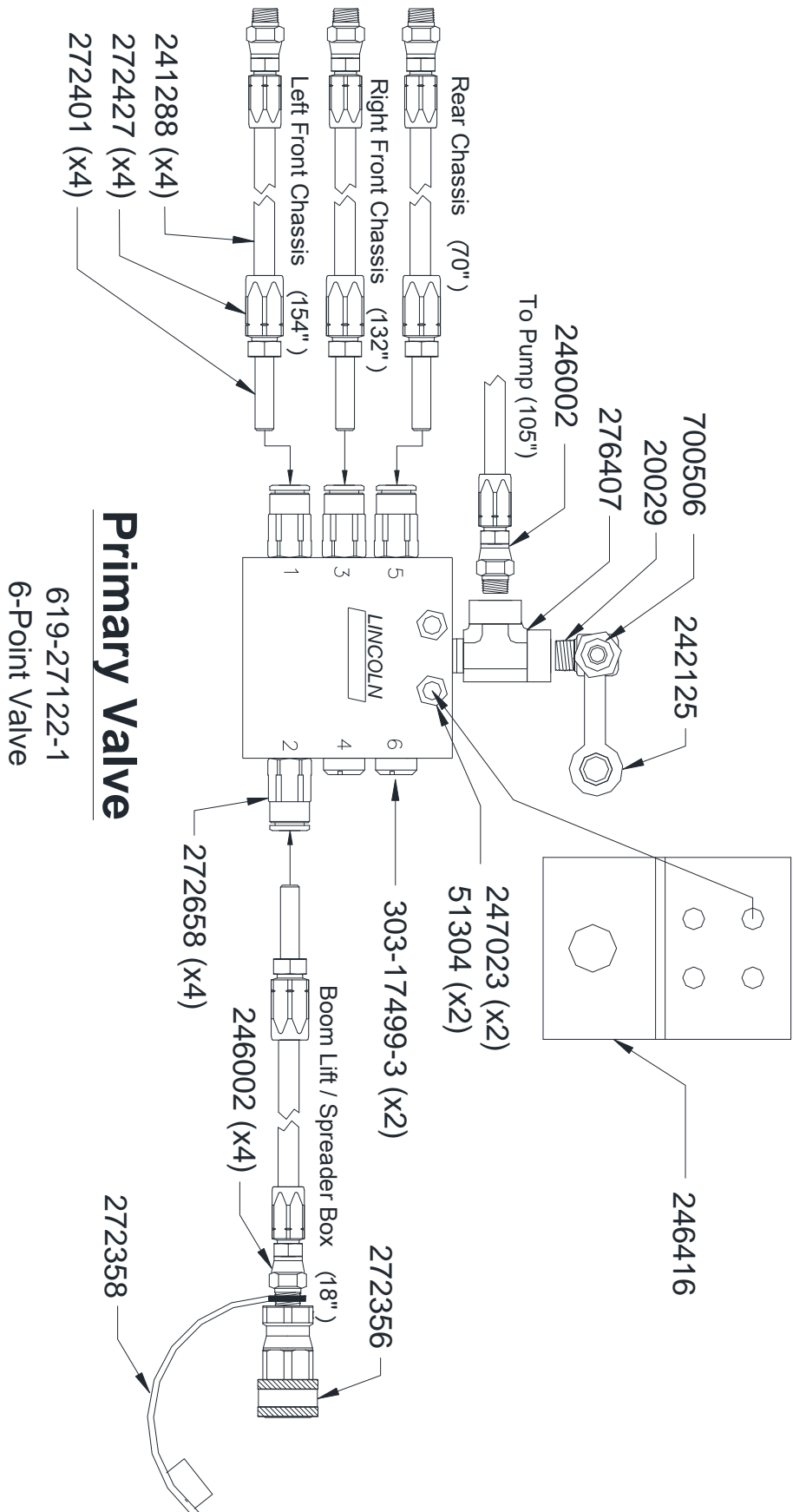
Pump Settings:  
Set pump “OFF” time at 60 minutes and pump “ON” time at 4 minutes for “normal” utility operation.



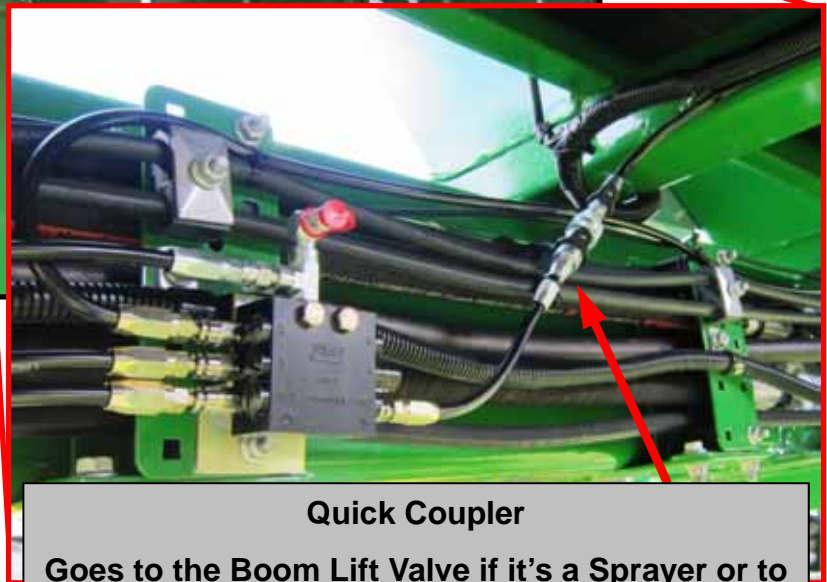
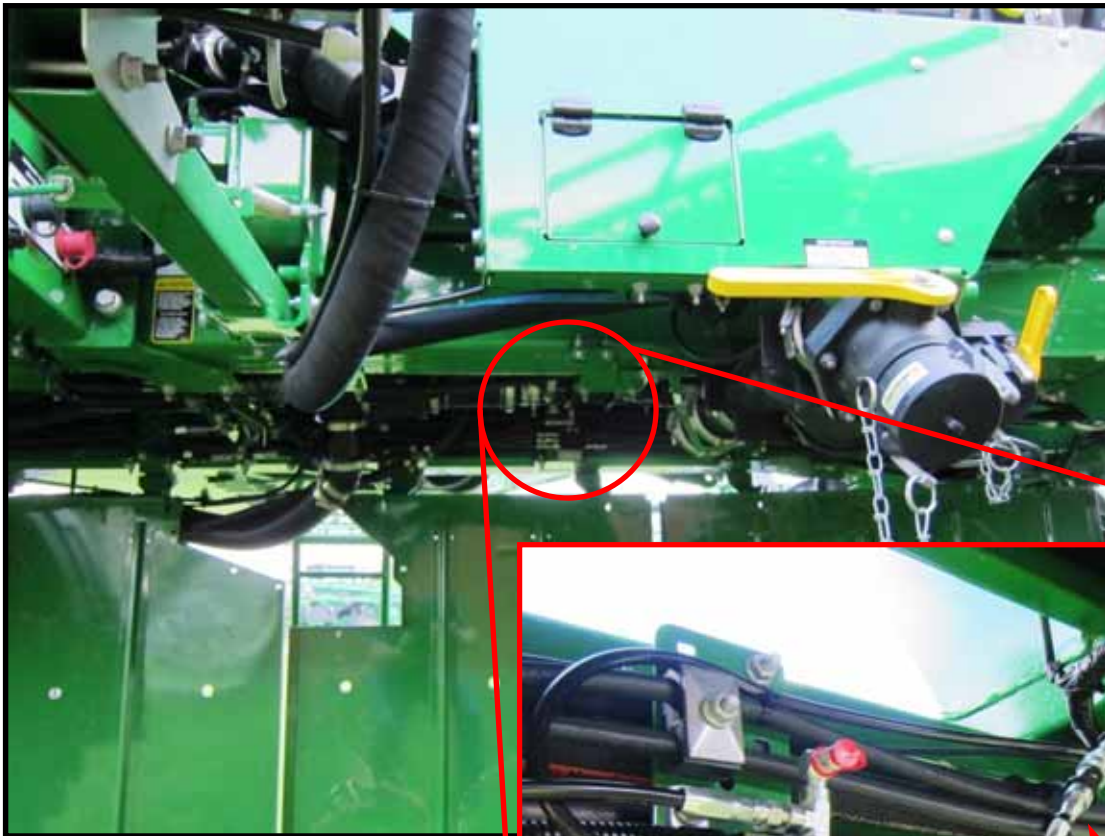
# Pump Installation Detail



## Primary Valve



# Primary Valve



**Quick Coupler**  
 Goes to the Boom Lift Valve if it's a Sprayer or to the Dry Box Primary if it's a Dry box as shown here

**Primary Valve:**

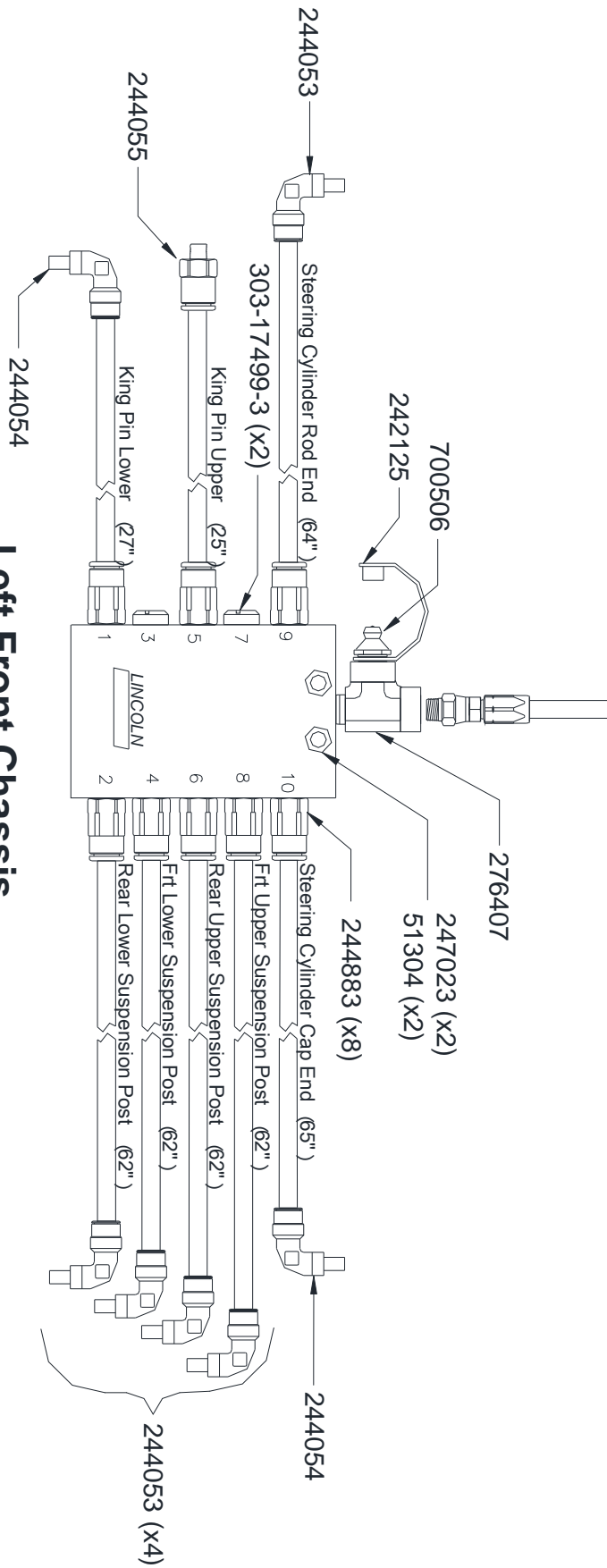
Use a 6-point divider block mounted under the cab along the right side using the existing support as shown above.

Part number: 619-27122-1

**Points and Secondary Valves Serviced and % of total lube to each:**

Left Front Chassis	16.67%
Right Front Chassis	16.67%
Rear Chassis	16.67%
Boom Lift / Dry Box	50.00%

## Left Front Chassis Secondary Valve

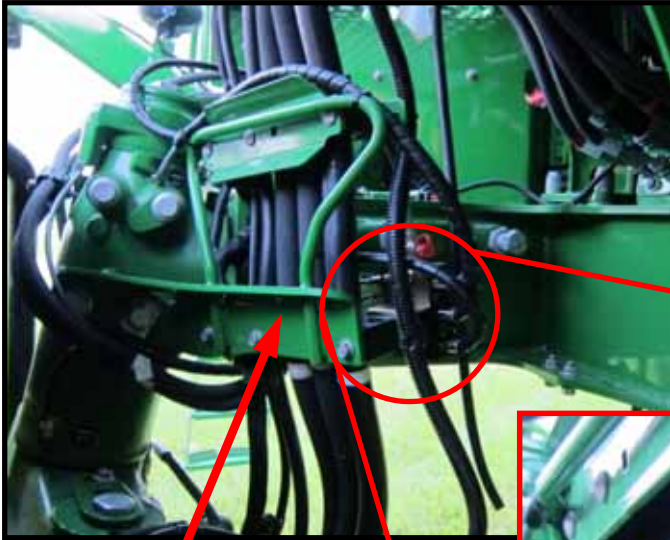


## Left Front Chassis Secondary Valve

619-26845-2  
 10-Point Valve



# Left Front Chassis Secondary Valve



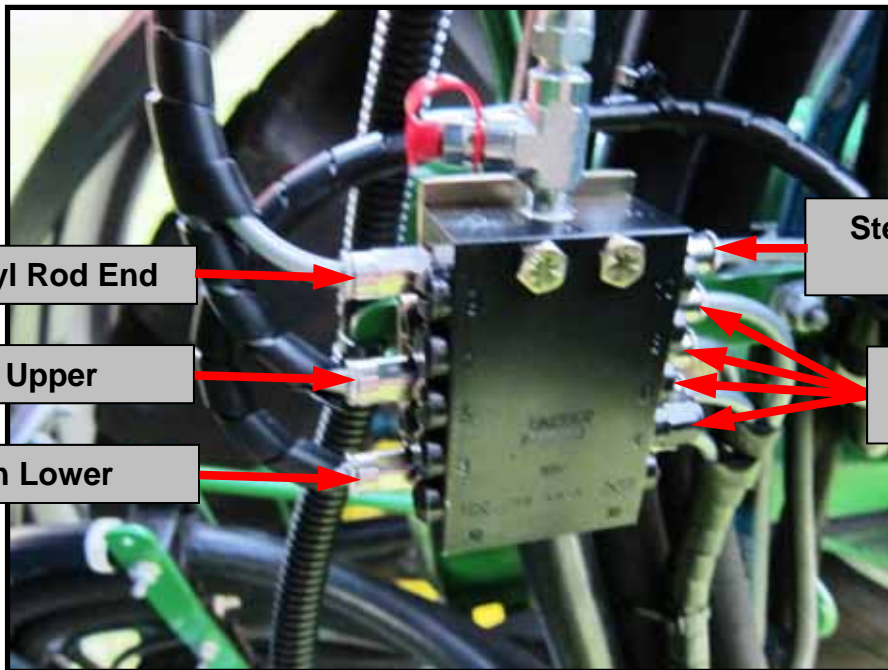
The 10-point divider block mounted on the inside of the left wheel suspension.

### Points Serviced:

- Suspension Post (4 points)
- Steering Cylinder Cap End
- Steering Cylinder Rod End
- King Pin (2 points)

Mount block to the inside of this hose clamp.

Use this bolt to mount the valve



Steering Cyl Rod End

Kin Pin Upper

King Pin Lower

Steering Cyl Cap End

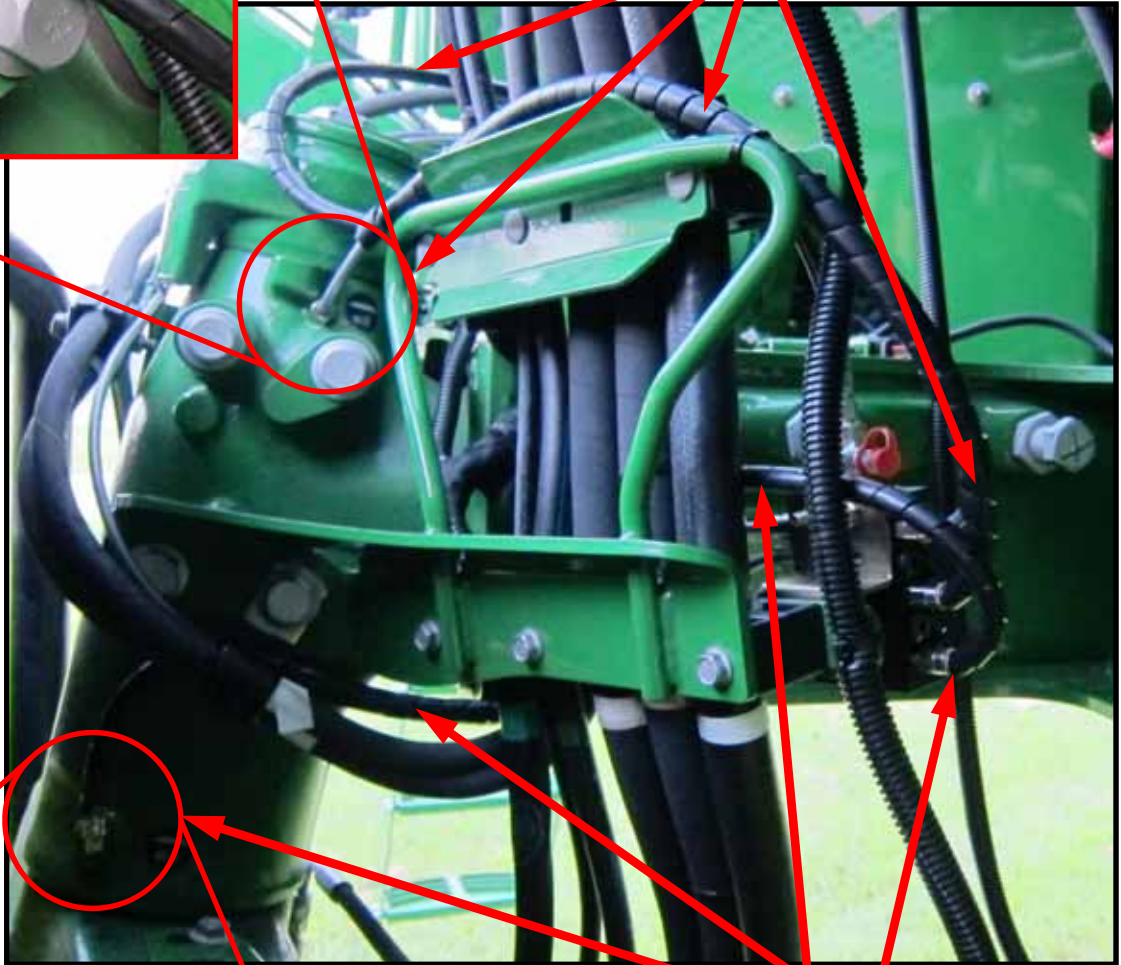
Suspension Post



# Left Front Chassis Secondary Valve

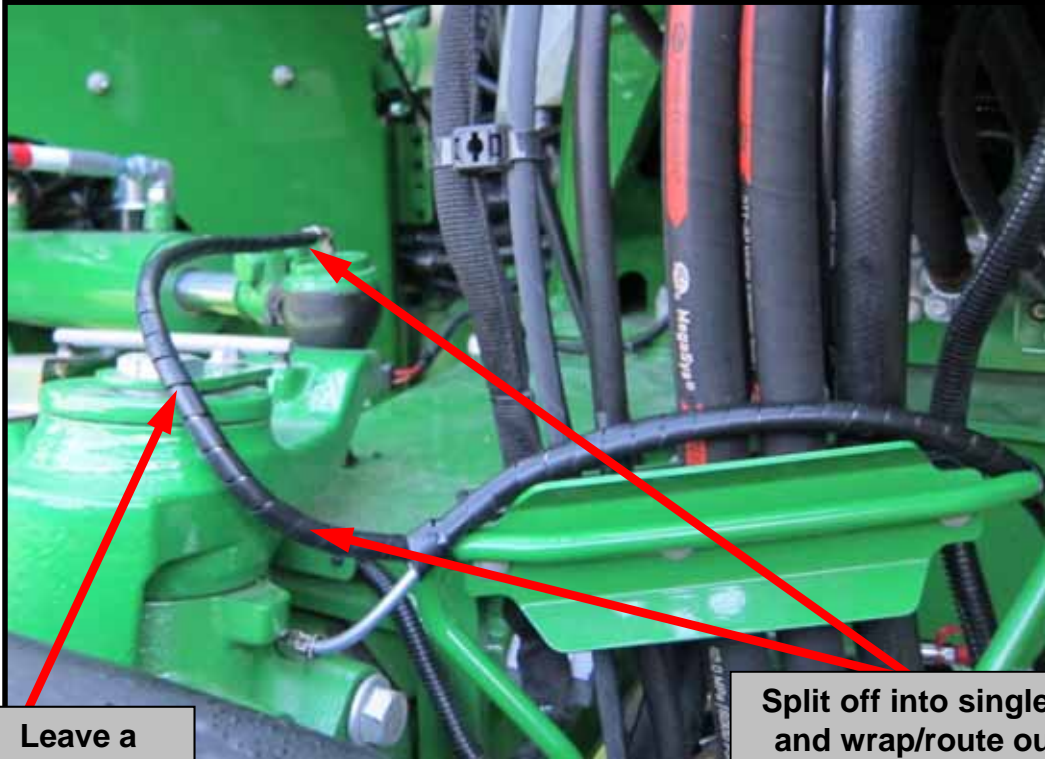


Wrap/route both lines over the top side of the upper hose clamp. The double shot goes to the Upper King Pin while the single shot goes on to the Rod End of the Steering Cylinder.



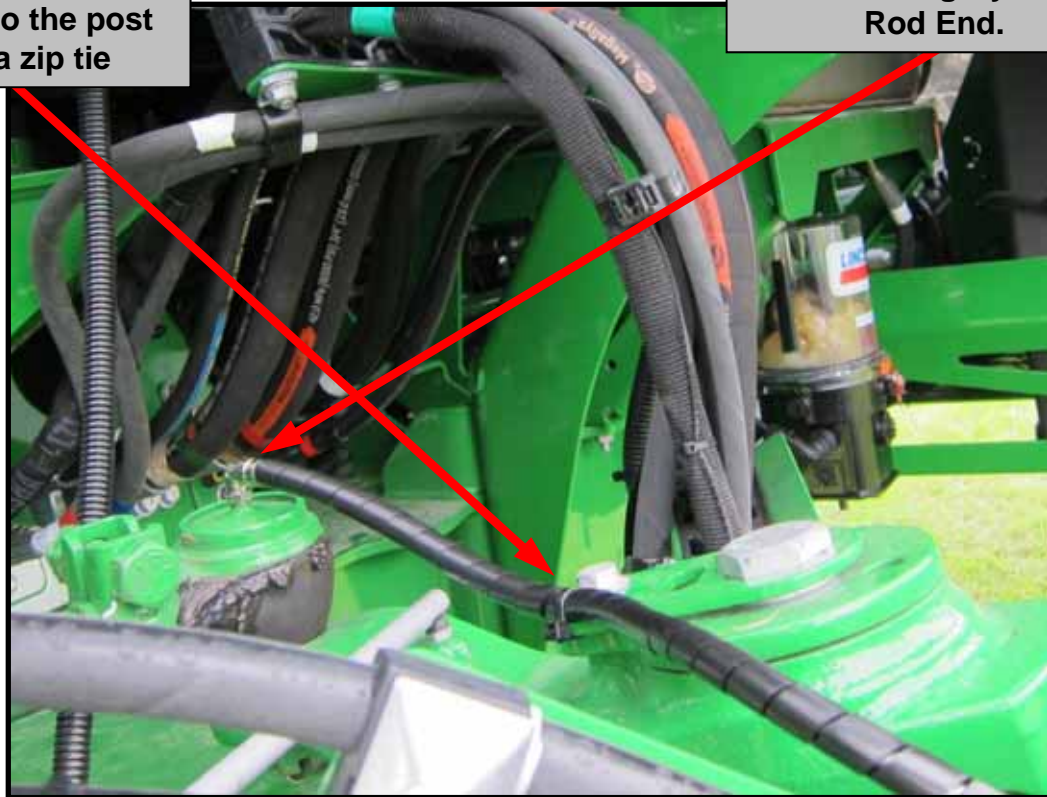
Wrap/route single line across the hose bundle and down to the Lower King Pin as shown

Left Front Chassis Secondary Valve



**NOTE:** Leave a loop (as shown) and secure to the post with a zip tie

Split off into single line and wrap/route out to the Steering Cylinder Rod End.

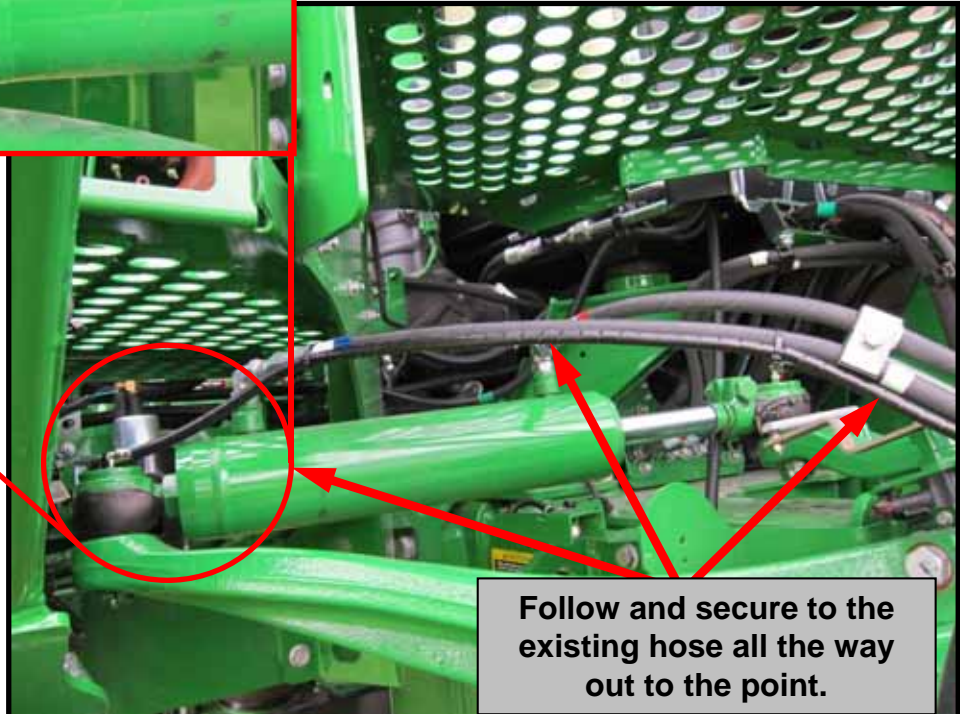
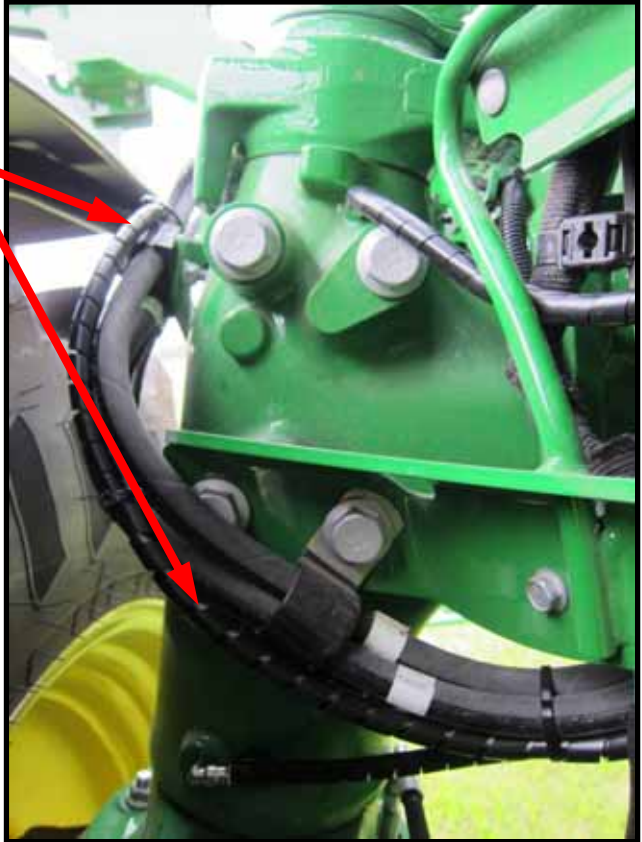




Left Front Chassis Secondary Valve



Wrap/route the Steering Cylinder Cap End along the existing hose bundle right above the Lower King Pin point.

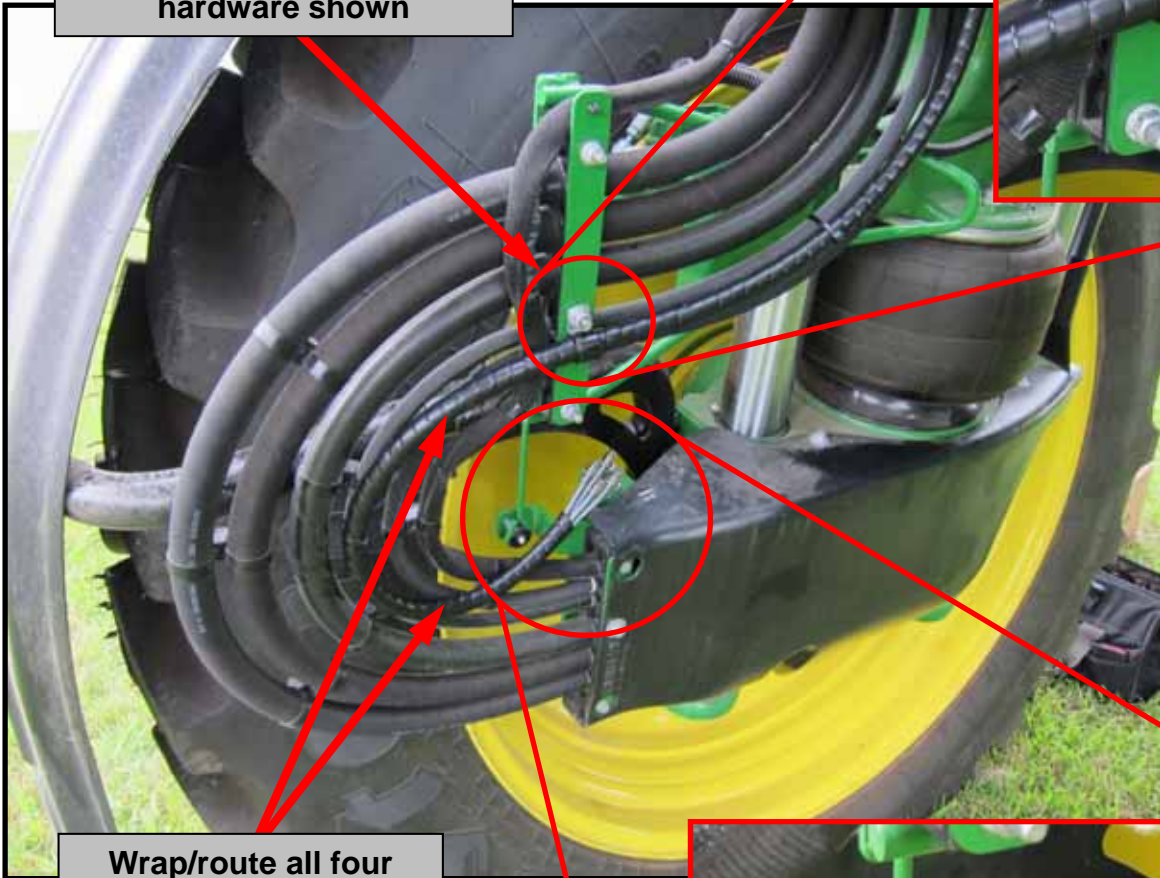


Follow and secure to the existing hose all the way out to the point.

# Left Front Chassis Secondary Valve



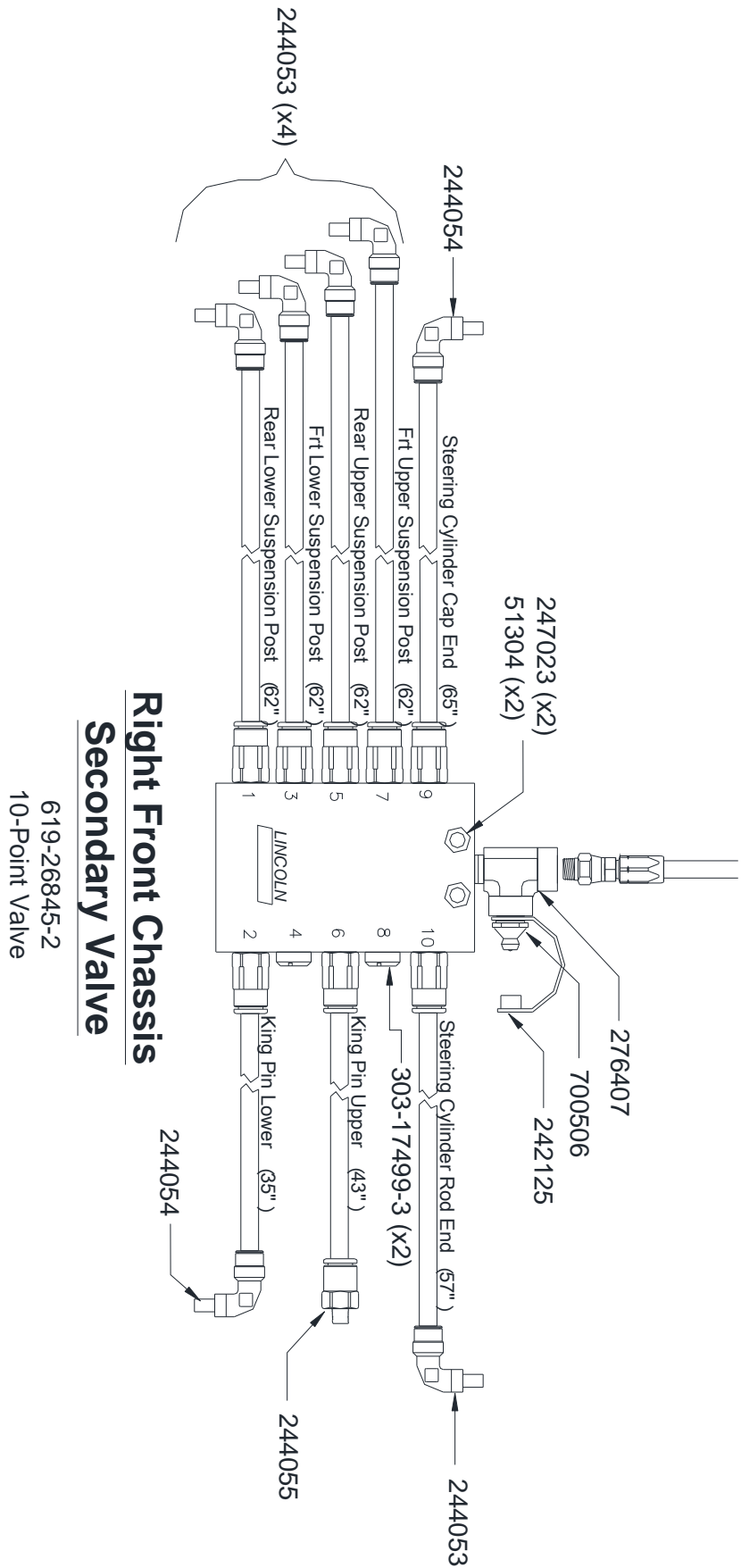
Secure bundle with P clamp using the existing hardware shown



Wrap/route all four Suspension Post lines together and along the existing loop as shown.



## Right Front Chassis Secondary Valve



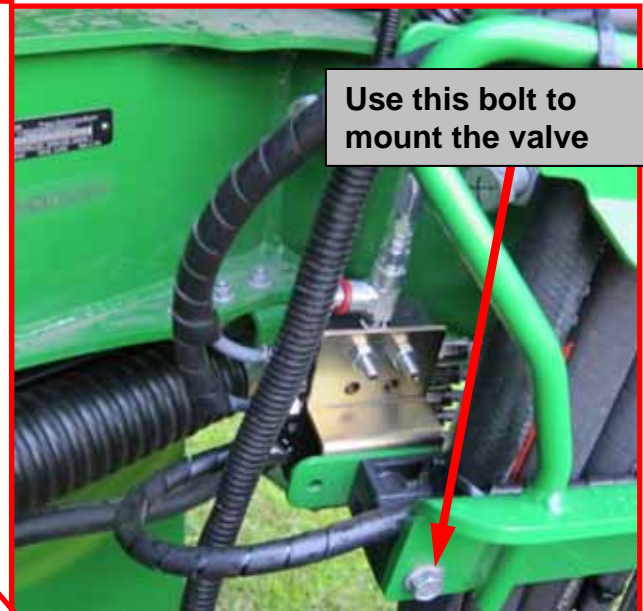


## Right Front Chassis Secondary Valve



The 10-point divider block mounted on the inside of the right wheel suspension.

Points Serviced:  
Suspension Post (4 points)  
Steering Cylinder Cap End  
Steering Cylinder Rod End  
King Pin (2 points)

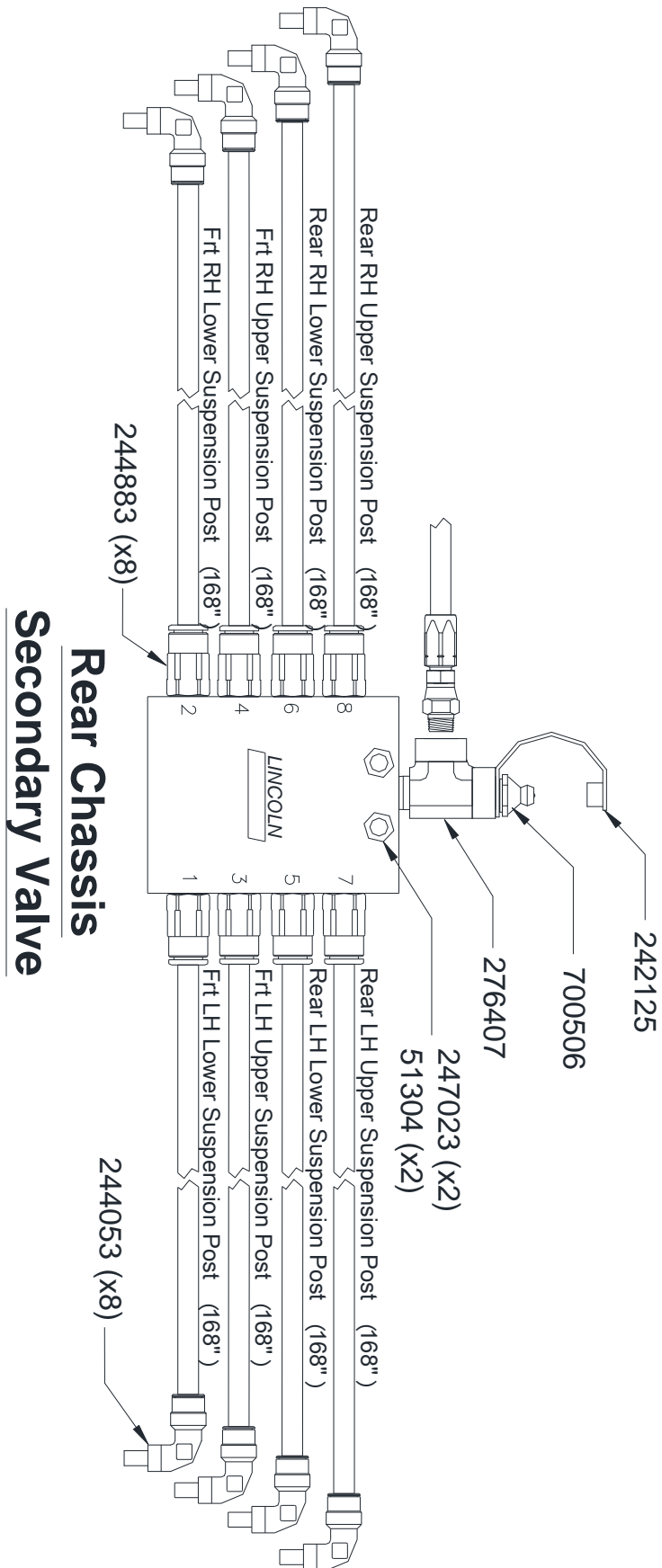


Use this bolt to mount the valve

The Right Front Chassis is identical in routing as the Left side with the exception of the King Pin Upper and Lower points which are on the back side of the King Pin.



## Rear Chassis Secondary Valve

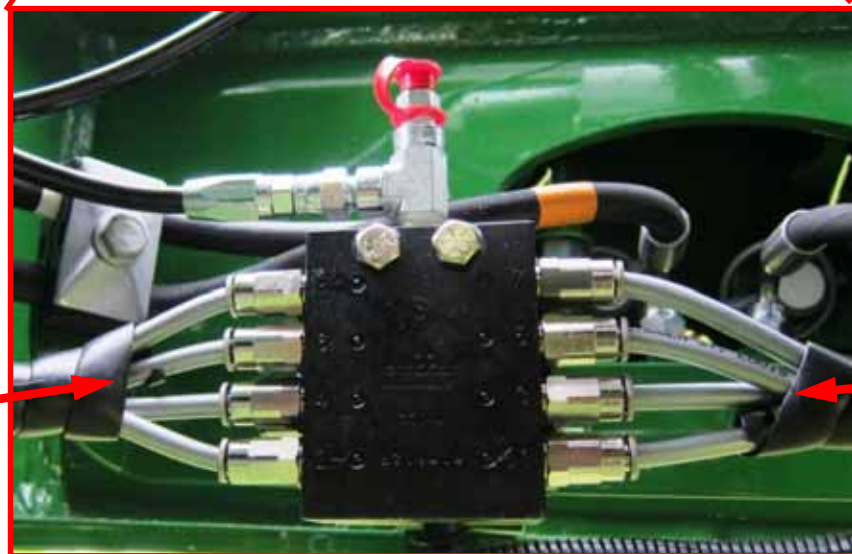
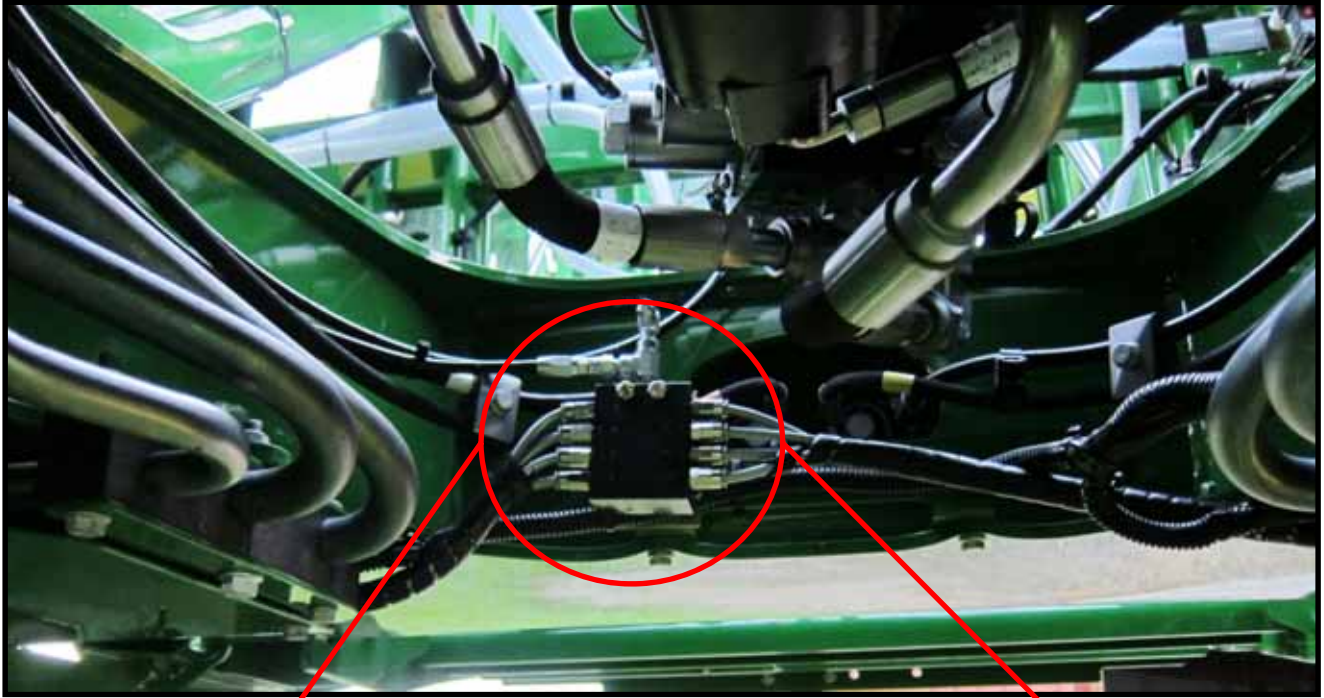


## Rear Chassis Secondary Valve



The 8-point divider block mounted underneath on the rear portion the chassis.

<u>Points Serviced (8 total):</u>	<u>Outlet #</u>
Right Hand Suspension Post (4 points)	(2,4,6,8)
Left Hand Suspension Post (4 points)	(1,3,5,7)

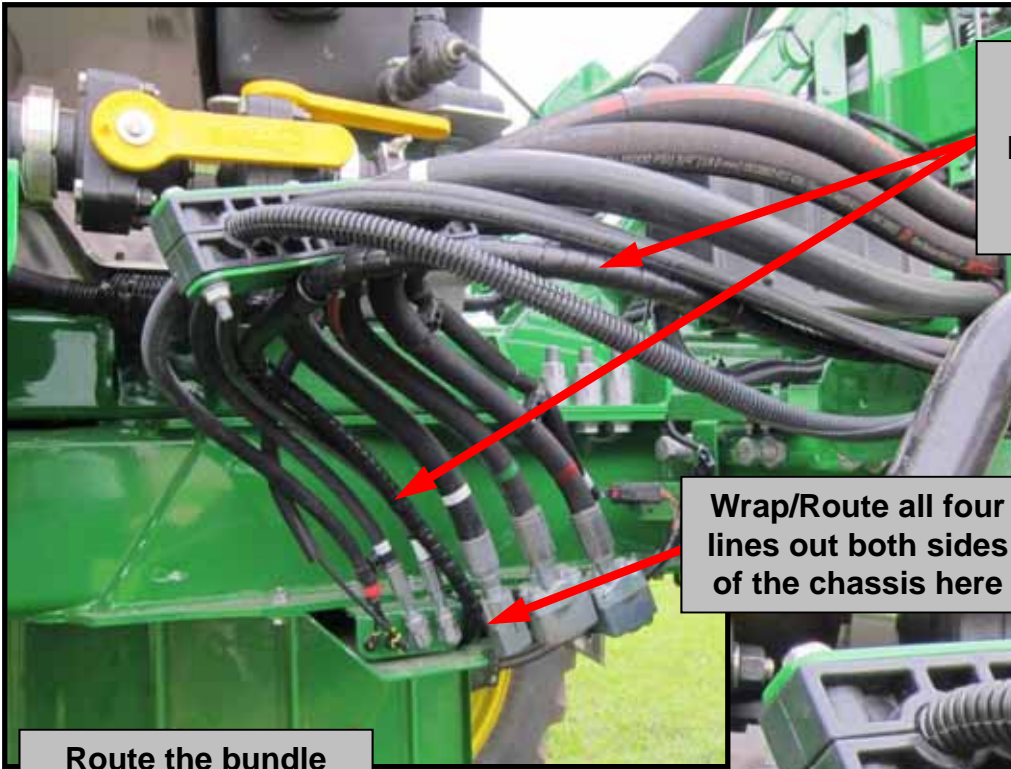


Right Hand  
Suspension  
Post

Left Hand  
Suspension  
Post

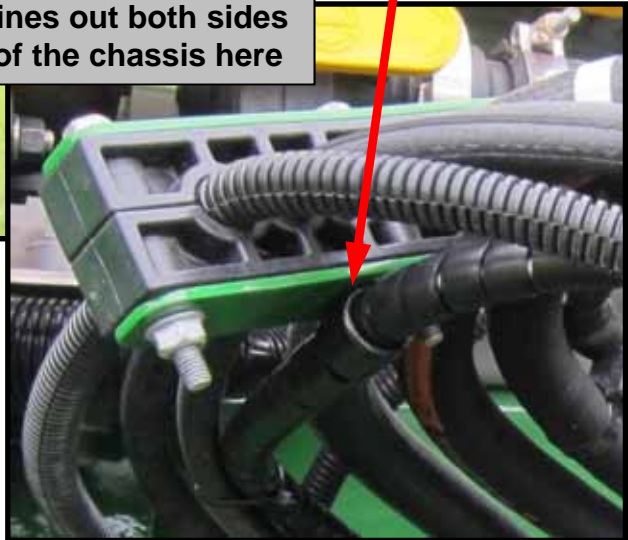


# Rear Chassis Secondary Valve

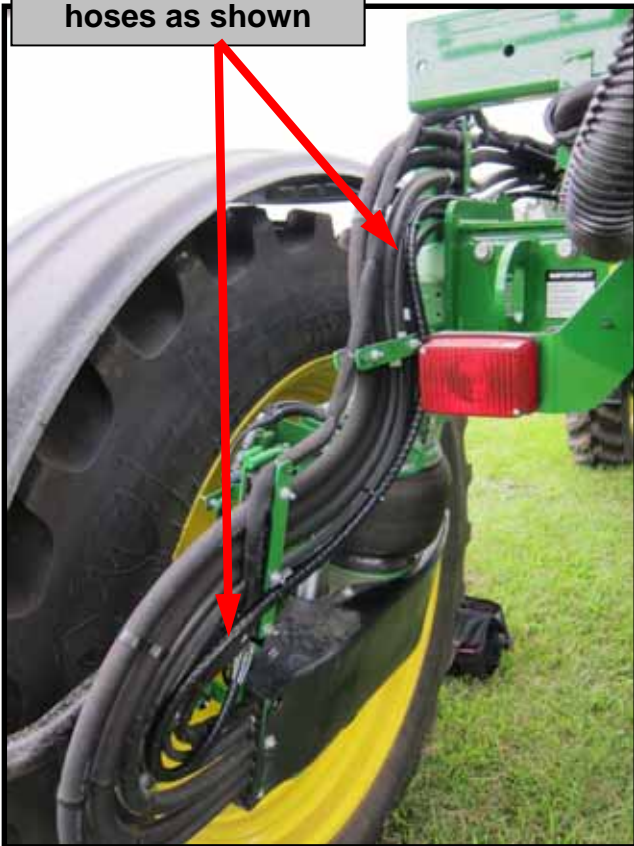


Route the bundle along the existing hoses and P clip to the bracket as shown

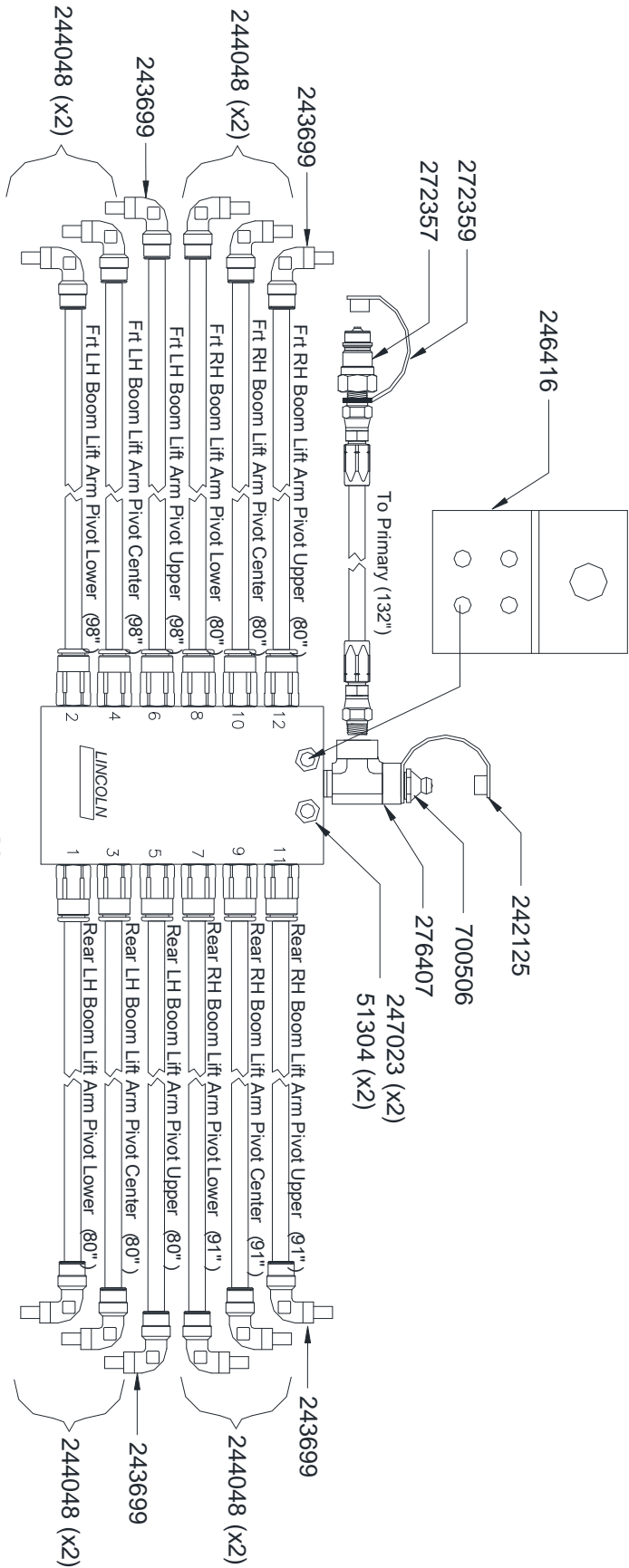
Wrap/Route all four lines out both sides of the chassis here



Route the bundle along the existing hoses as shown



# Boom Lift Secondary Valve (Sprayer)



## Boom Lift Secondary Valve

619-26648-2  
12-Point Valve



## Boom Lift Secondary Valve (Sprayer)



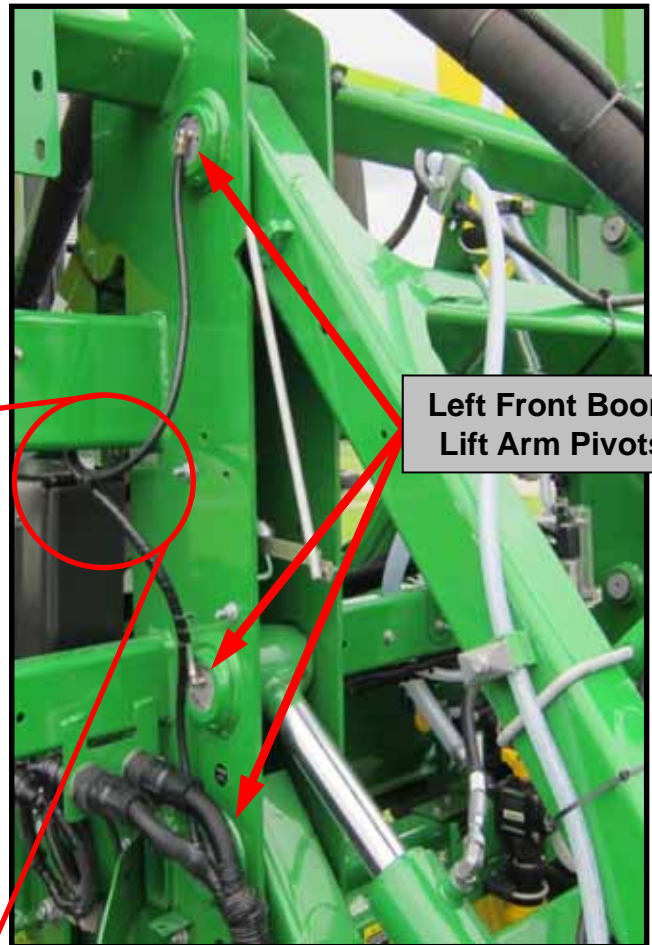
The 12-point divider block mounted to the top of the boom on the right side.

<u>Points Serviced (12 total):</u>	<u>Outlet #</u>
Rear LH Pivot (3 points)	(1,3,5)
Front LH Pivot (3 points)	(2,4,6)
Rear RH Pivot (3 points)	(7,9,11)
Front RH Pivot (3points)	(8,10,12)



# Boom Lift Secondary Valve (Sprayer)

(Left Front Boom Pivots)



Left Front Boom Lift Arm Pivots



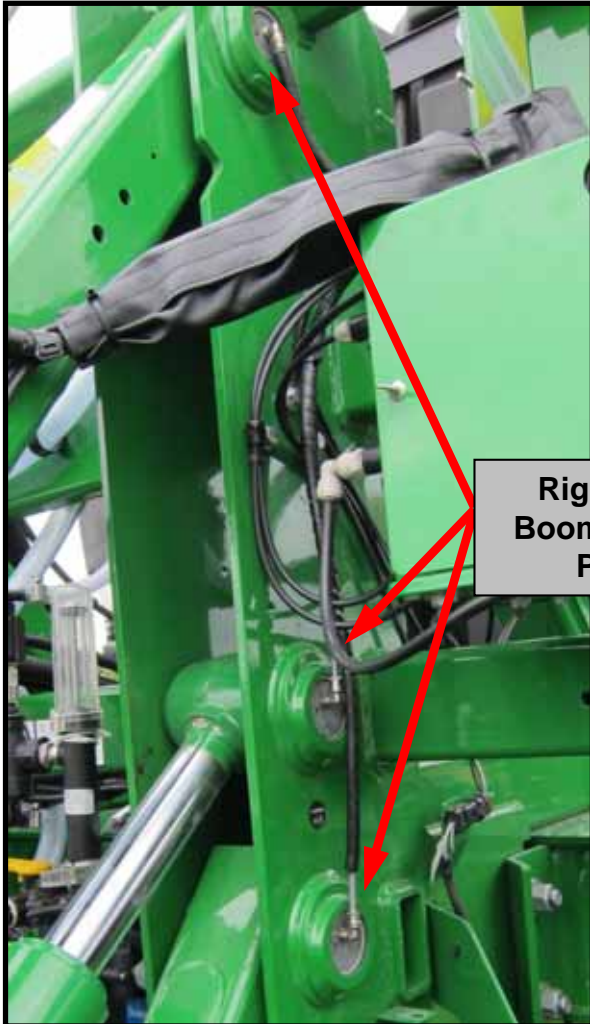


# Boom Lift Secondary Valve (Sprayer)

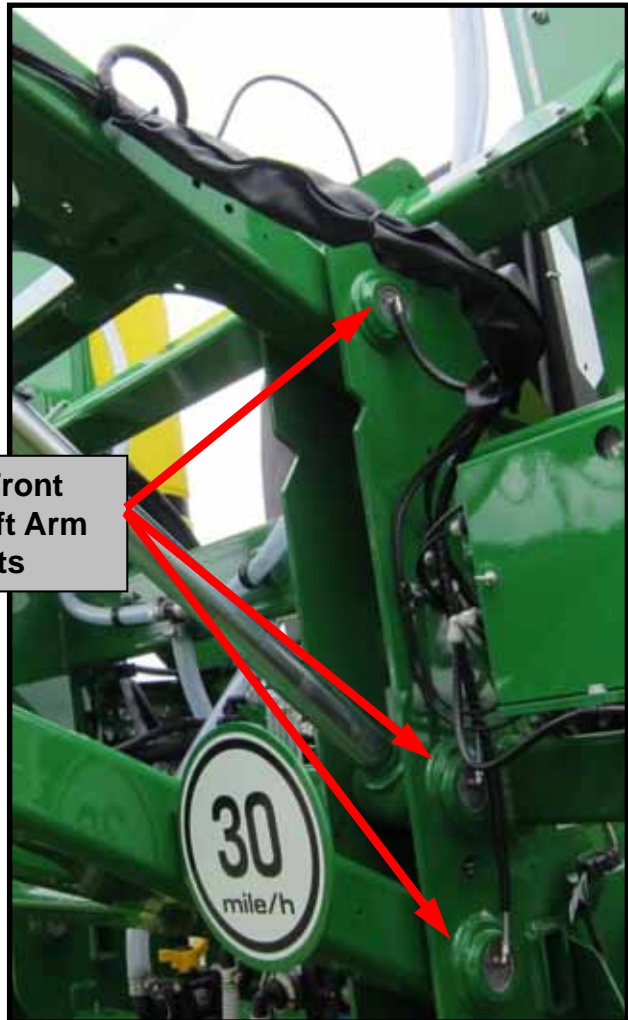
(Right Front Boom Pivots)



Route bundle through existing sleeve



Right Front Boom Lift Arm Pivots



**Boom Lift Secondary Valve (Sprayer)**

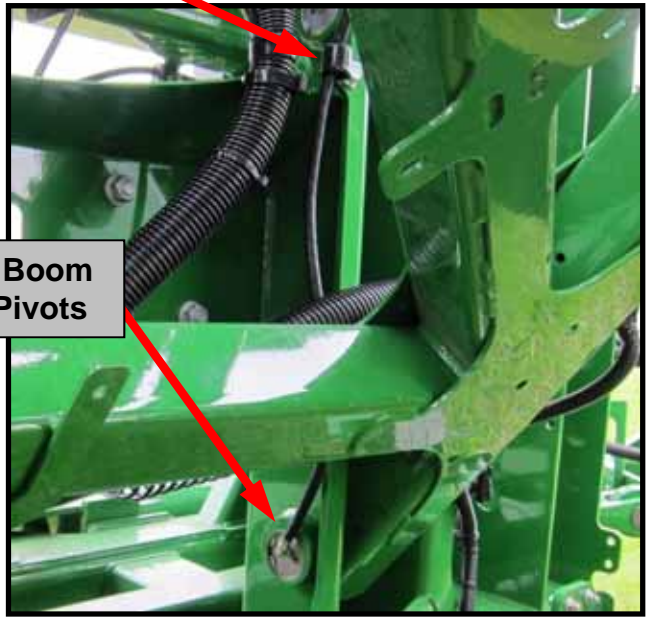
(Left Rear Boom Pivots)



**P clip**



**Left Rear Boom  
Lift Arm Pivots**





# Boom Lift Secondary Valve (Sprayer)

(Right Rear Boom Pivots)

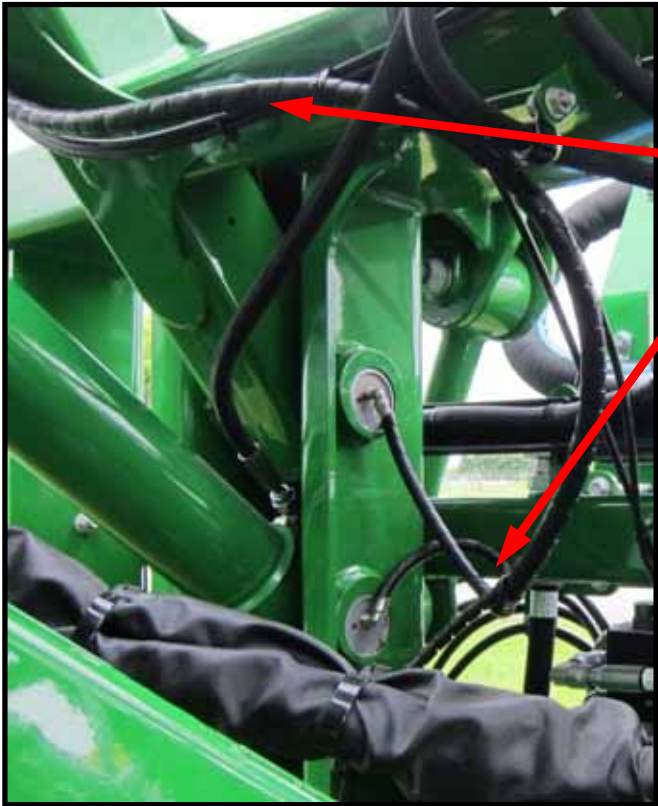


Route bundle underneath strut and attach to existing bundle as shown

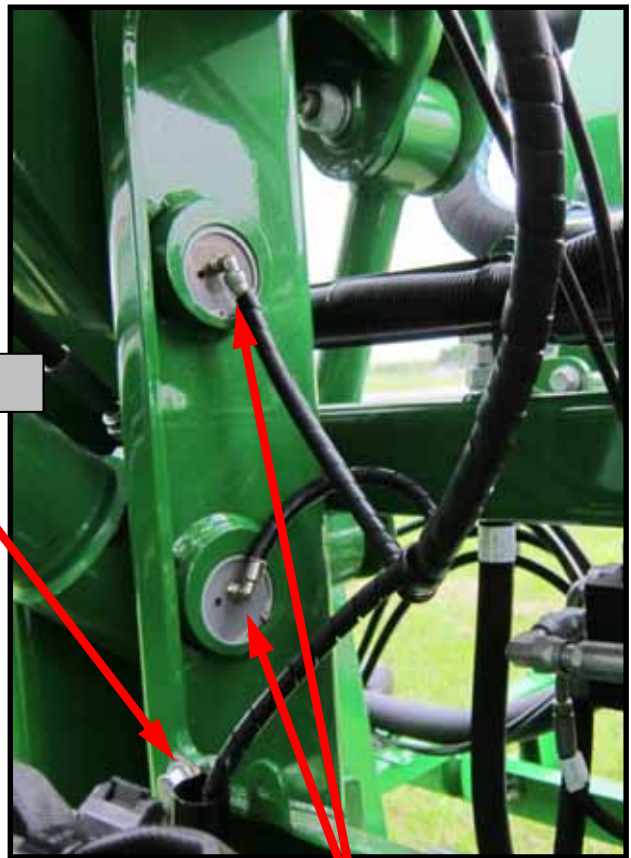


# Boom Lift Secondary Valve (Sprayer)

(Right Rear Boom Pivots)



Continue routing bundle along existing lines and split off to the pivots



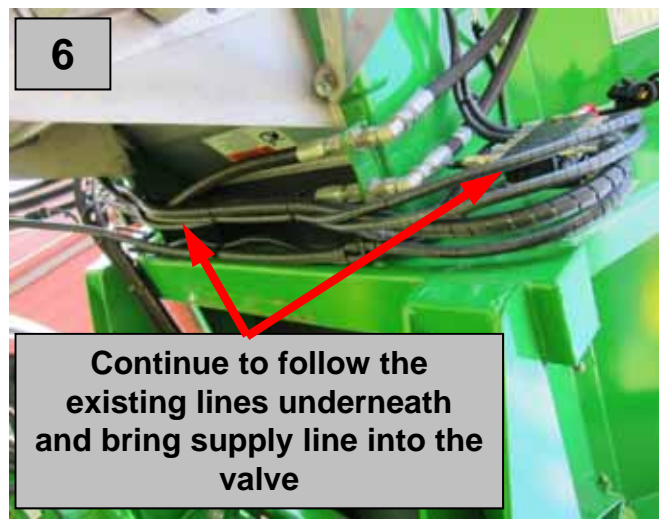
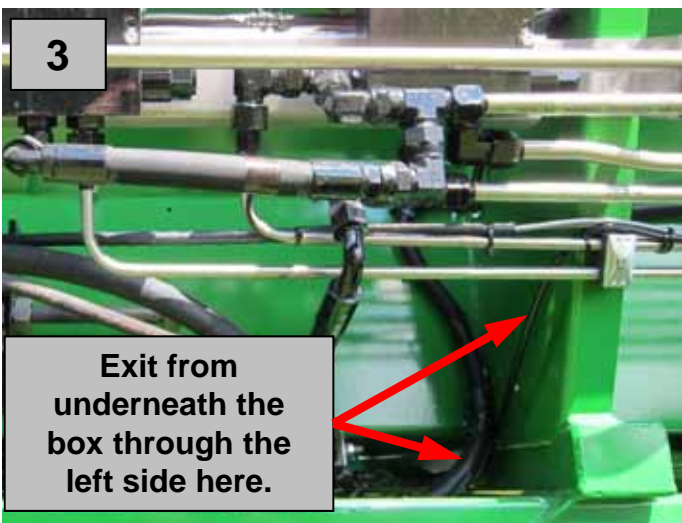
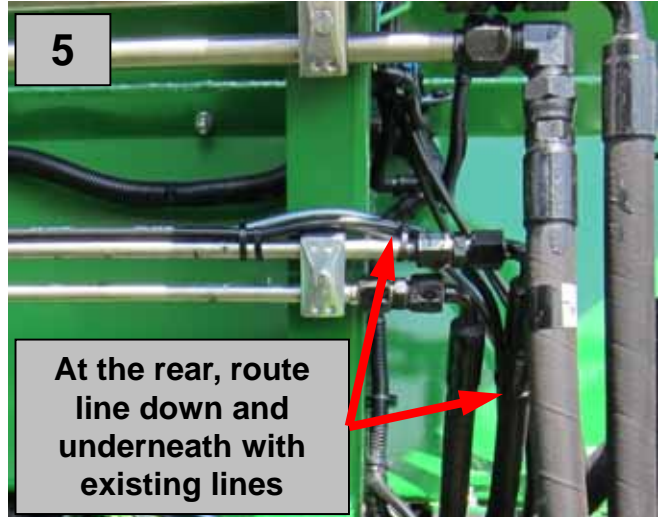
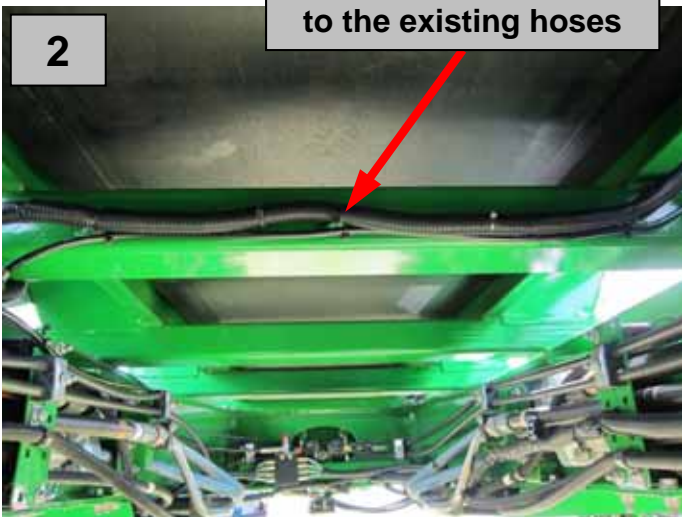
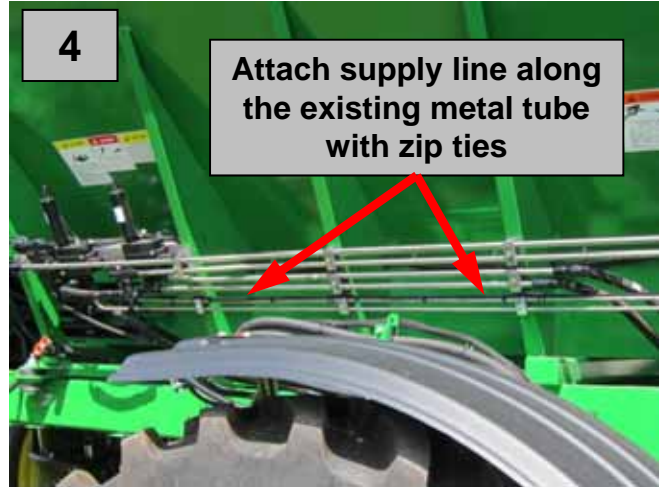
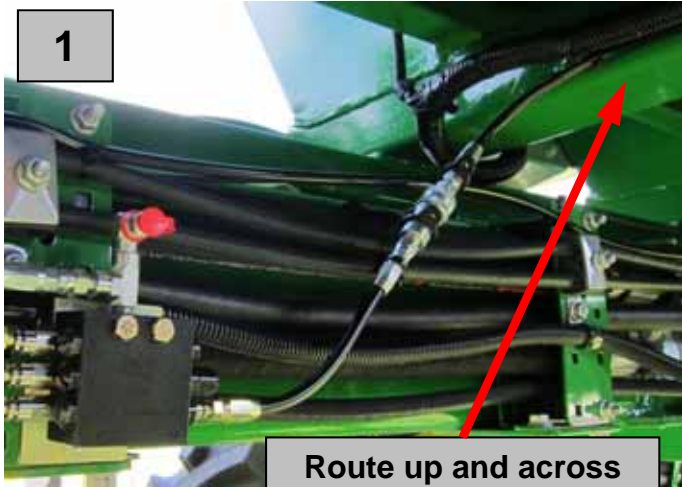
P clip



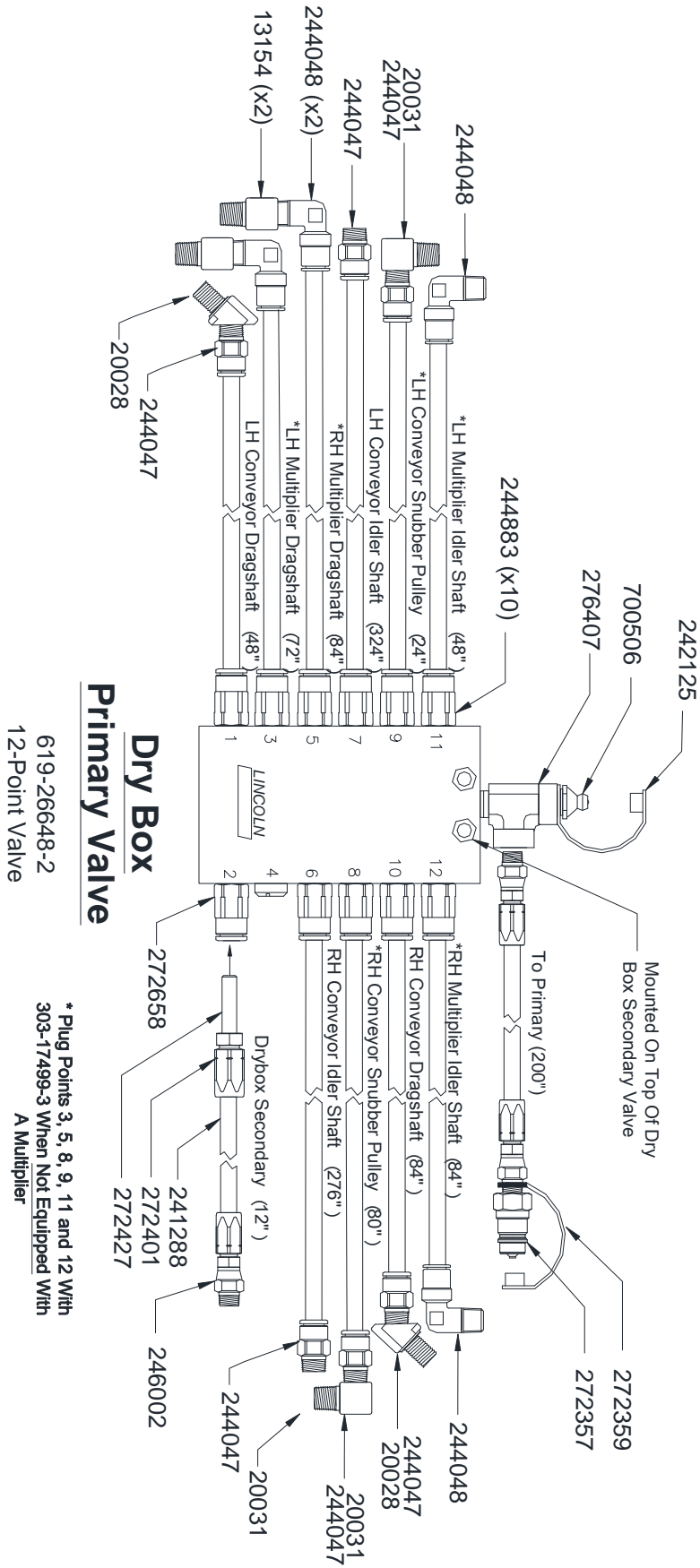
Right Rear Boom Lift Arm Pivots



# System Primary to Dry Box Primary Routing



# Dry Box Primary Valve (Dry Box)





## Dry Box Primary Valve (Dry Box)

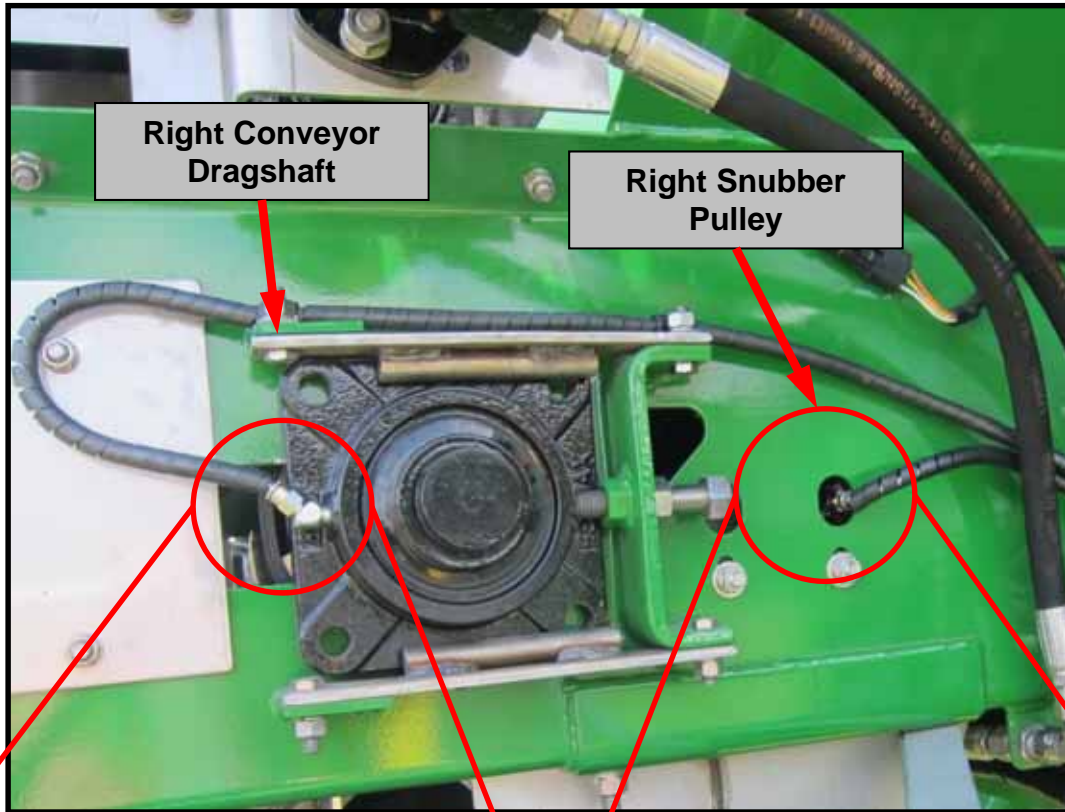


The 12-point divider block stacked on top of the 6-point secondary block on the rear right side of the box.

<u>Points Serviced (12 total):</u>	<u>Outlet #</u>
Rear LH Pivot (3 points)	(1,3,5)
Front LH Pivot (3 points)	(2,4,6)
Rear RH Pivot (3 points)	(7,9,11)
Front RH Pivot (3points)	(8,10,12)



# Dry Box Primary Valve (Dry Box)

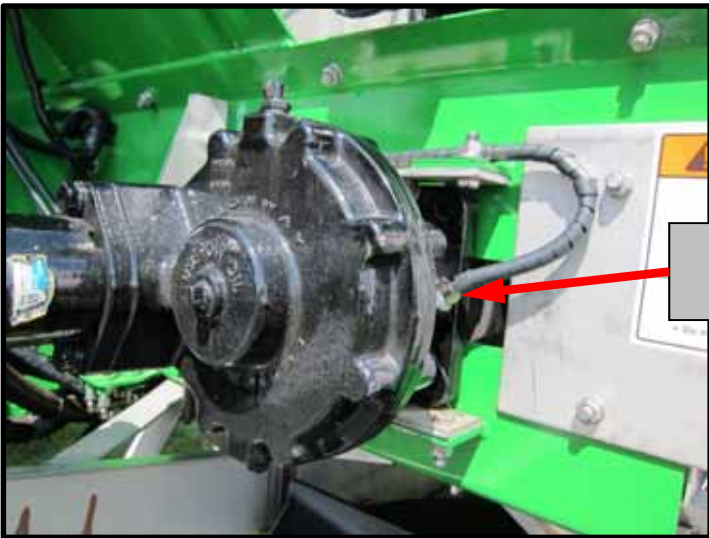
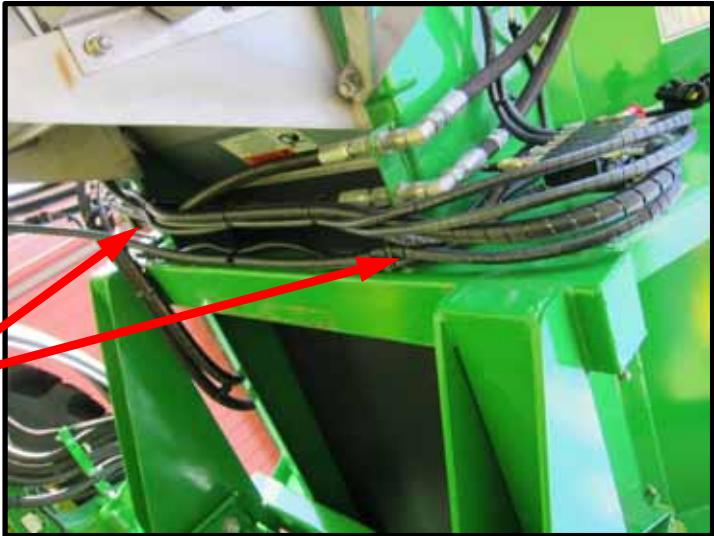




# Dry Box Primary Valve (Dry Box)

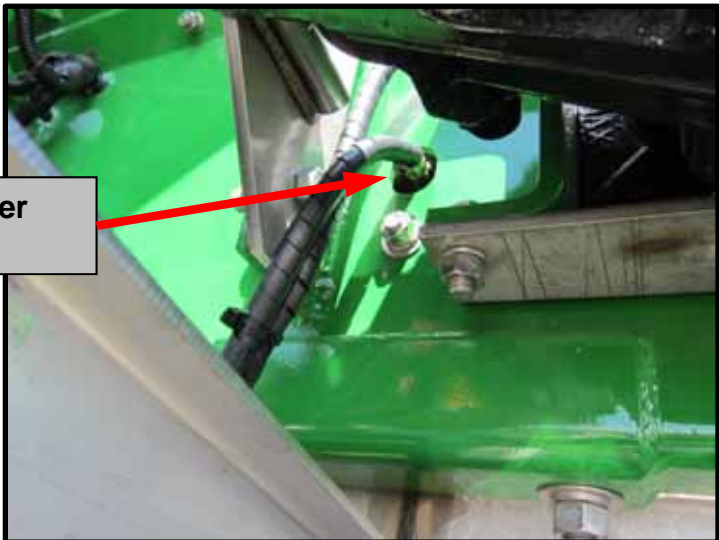


Route lines for LH  
Conveyor Dragshaft and  
Snubber Pulley  
underneath and across

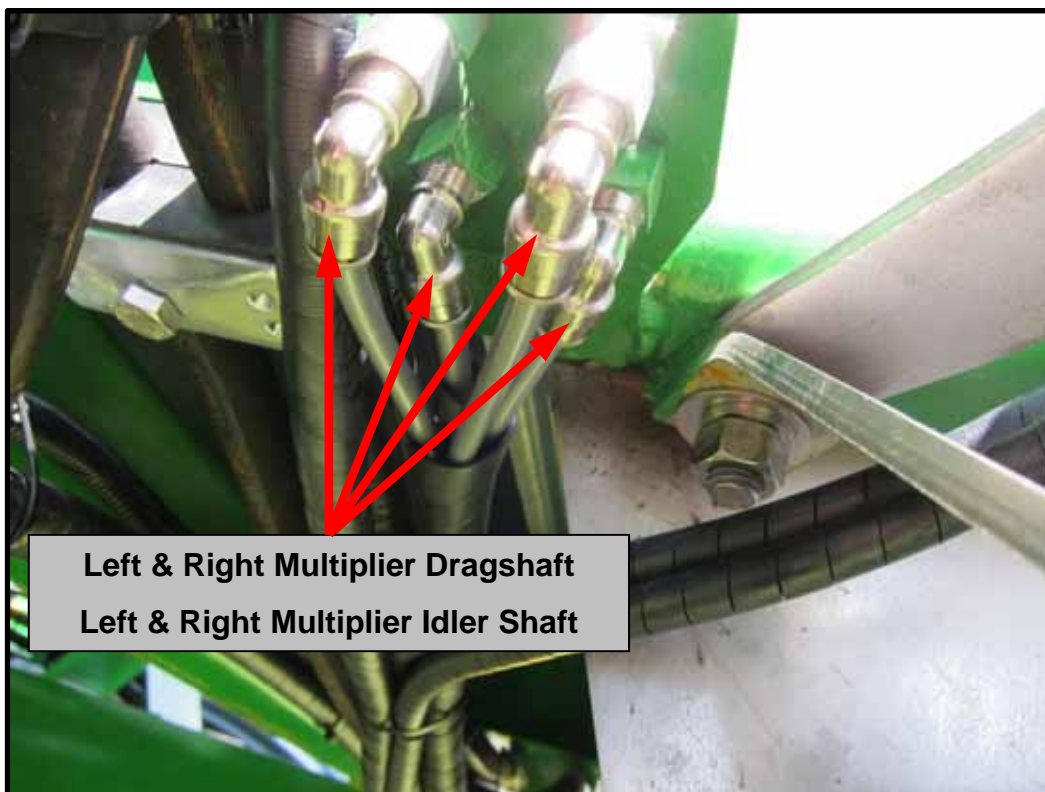
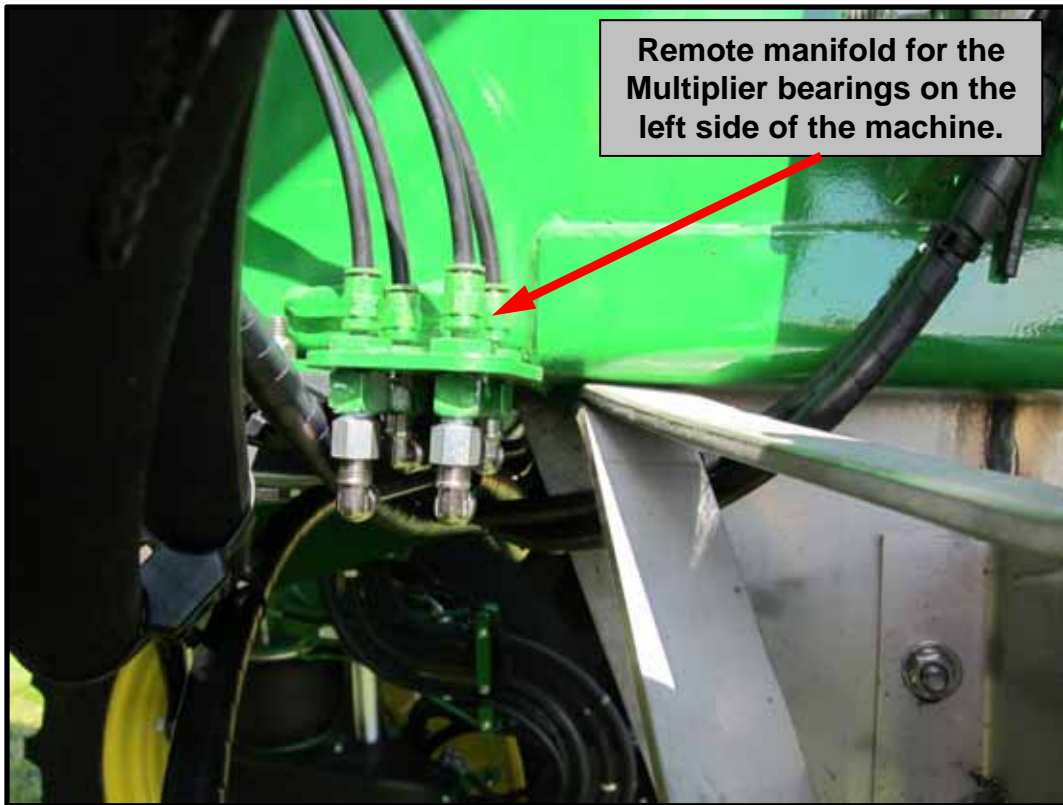


Left Conveyor  
Dragshaft

Left Snubber  
Pulley

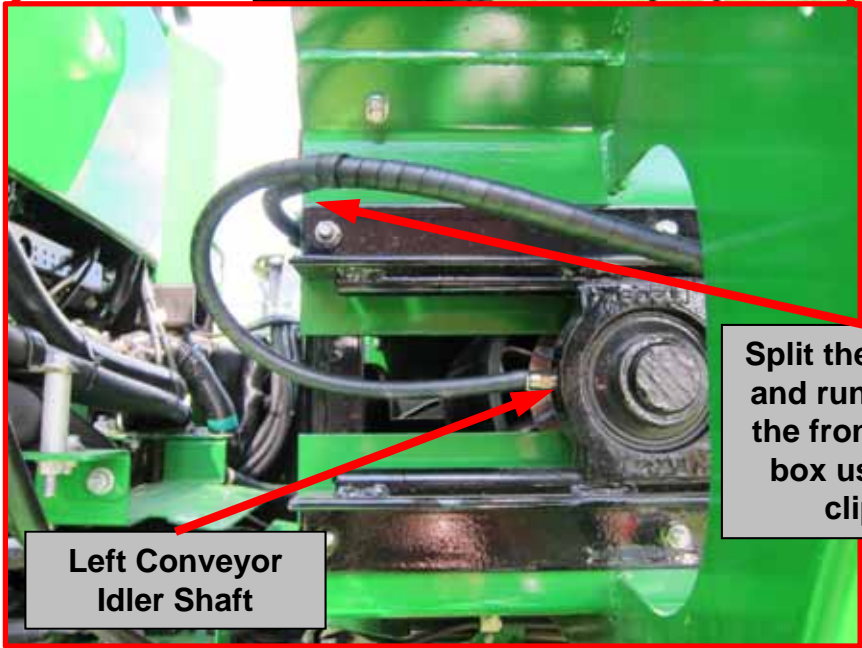


## Dry Box Primary Valve (Dry Box)





# Dry Box Primary Valve (Dry Box)



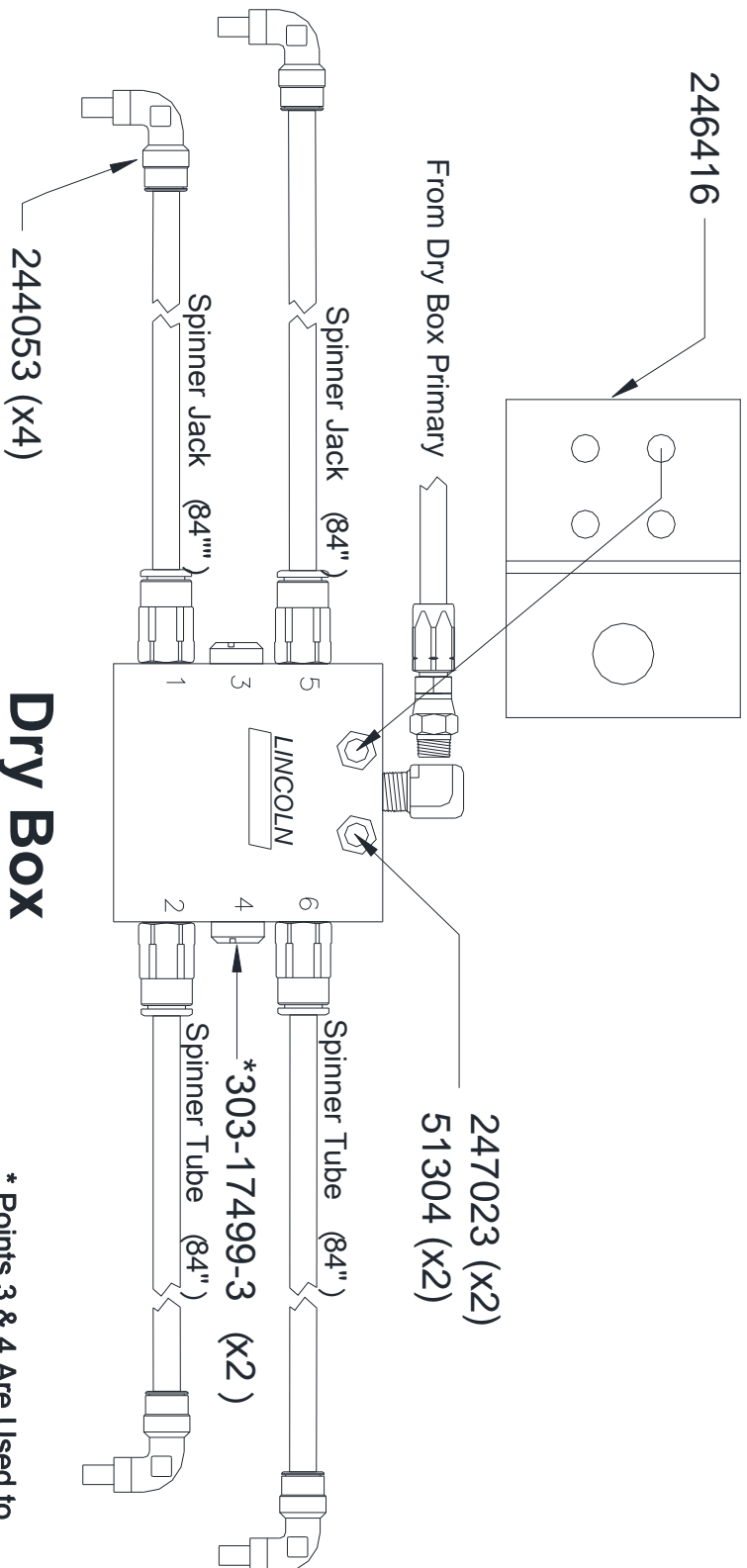
Left Conveyor Idler Shaft



Right Conveyor Idler Shaft

Split the line off and run across the front of the box using p-clips.

# Dry Box Secondary Valve (Dry Box)

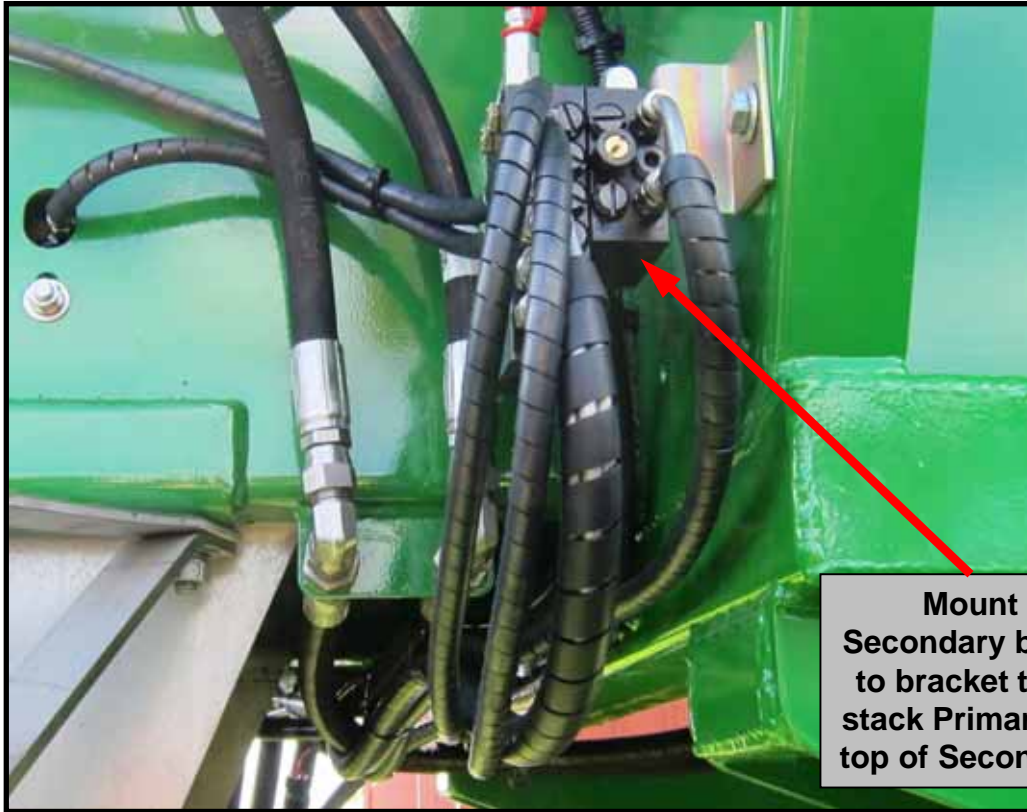


## Dry Box Secondary Valve

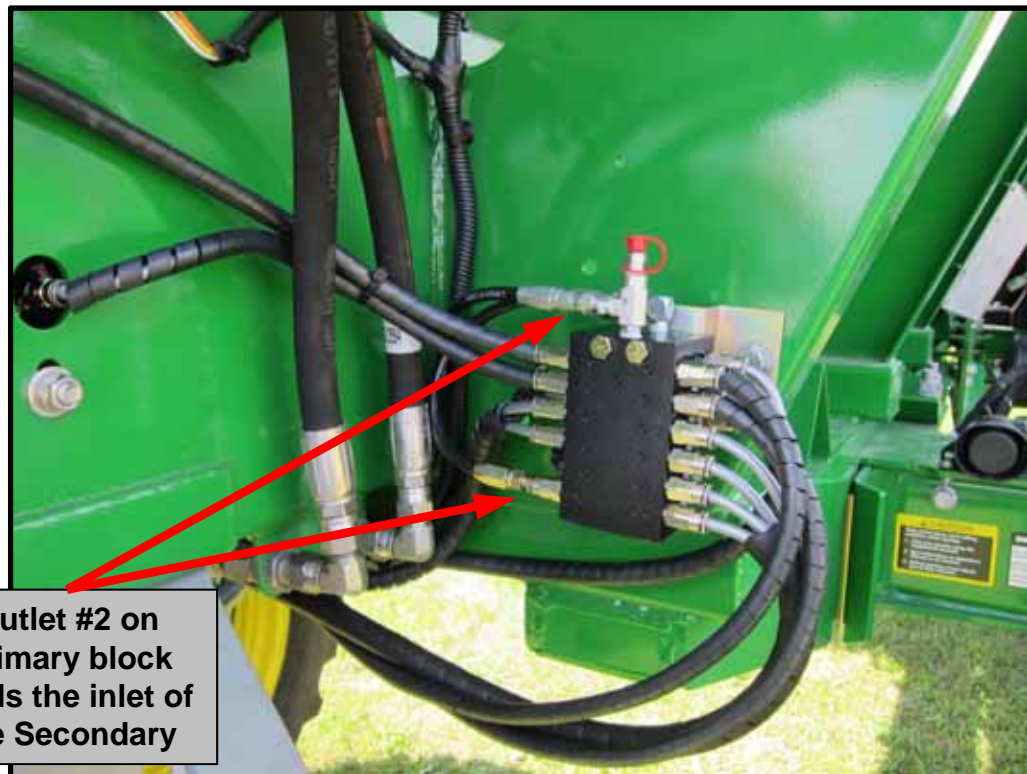
619-27122-1  
6-Point Valve

\* Points 3 & 4 Are Used to  
Lubricate the Jackshaft Gears  
& Tube When Not Equipped  
With A Multiplier

# Dry Box Secondary Valve (Dry Box)



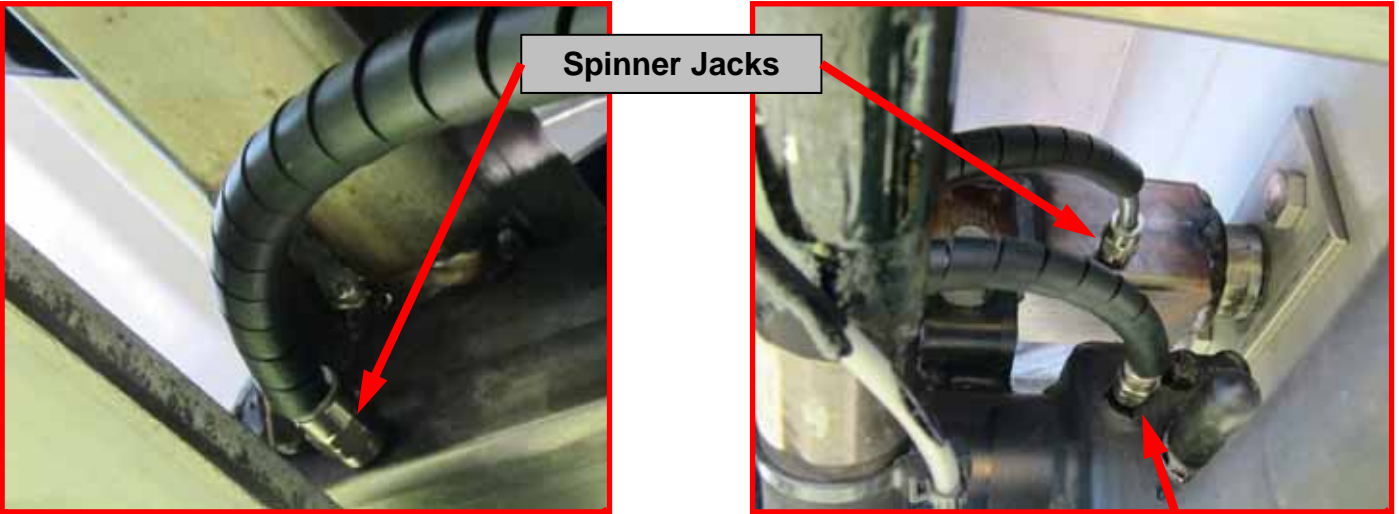
**Mount  
Secondary block  
to bracket then  
stack Primary on  
top of Secondary**



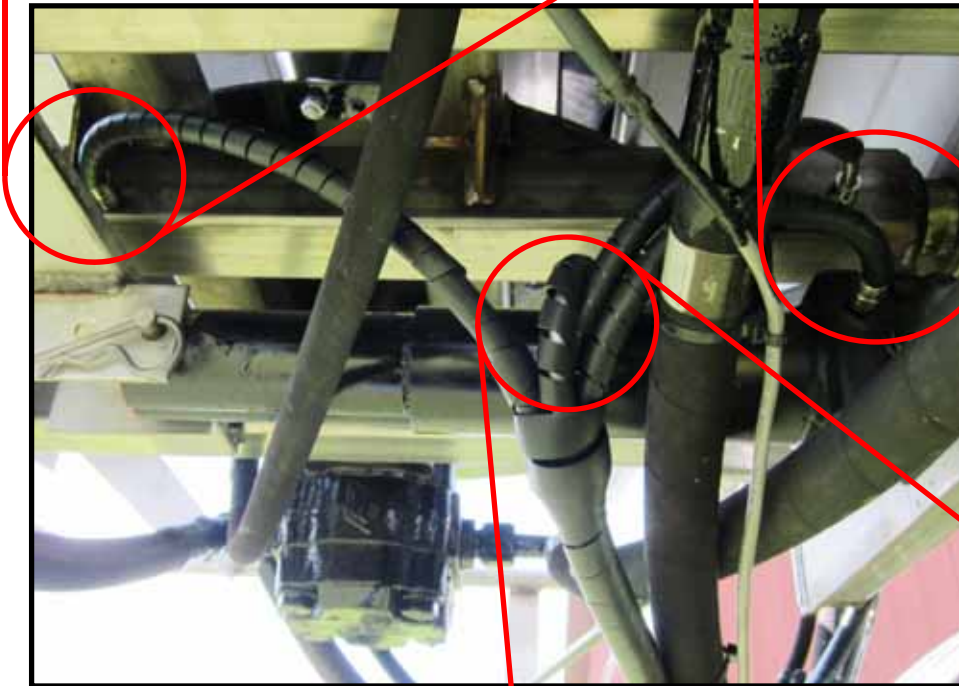
**Outlet #2 on  
Primary block  
feeds the inlet of  
the Secondary**



**Dry Box Secondary Valve (Dry Box)**



**Spinner Jacks**



**Spinner Tubes**





## Daily Walk-Around Inspection

- The Lincoln Industrial Quicklub automated lube system components are designed, engineered, manufactured and assembled to the highest or quality standards. This lube system requires little or nor maintenance, however, to ensure maximum reliability and to realize maximum service life of all components, it is highly recommended that a **daily walk-around inspection** be performed.
- The daily walk-around inspection should include the following:
- Observe lubricant level in reservoir. Fill reservoir if it is low.
- Inspect high pressure relief at pump element, noting any lubricant buildup. If buildup is observed, correct this problem by determining cause of blockage.
- Inspect all valve and lube point connections to verify that no leaks are occurring.
- Inspect supply/feed lines to insure that no breaks or leaks have occurred.
- Inspect lube points to ensure that all lube points have a “**fresh grease appearance.**”
- Check pump operation by depressing push-button located in base of pump for two seconds to initiate a manual lube event. This will verify that pump is working (ignition switch must be on).
- Report or repair any problems found in this walk-around inspection immediately.
  
- **NOTE:** Operator to confirm operation of electric pump while machine is in service.
  
- **NOTE:** Report or repair any problem detected from daily inspection.



Note: Dirt and foreign material are the worst enemies of any lubricating system.  
Procedure

1. Use a manual pump with a gauge. Fill the pump with clean, filtered lubricant common to the system. Connect the manual pump into the inlet of the primary divider valve and slowly operate pump. If system will not cycle freely below 1,500 PSI, see Step 2.
2. With pressure on the primary as outlined in step 1, remove one at a time each supply line (if the supply lines cannot be removed, remove outlet fittings starting from the bottom and working towards the valve inlet) and attempt to operate manual pump after each line is removed. Do not exceed 2,000 PSI. If pressure drops and primary cycles freely after a line is removed then blockage is downstream in the area that is being served from that outlet. See Step 3. If all feed lines are removed and primary will not cycle, blockage is in this divider valve. Note: When a feed line of a blocked area is removed a small shot of trapped lubricant will usually surge out of this outlet as the inlet pressure on the divider valve drops. If testing in Step 2 indicates a blockage in the primary divider valve, this divider valve must be replaced.
3. Testing accomplished in Step 2 has indicated the blockage is downstream of the primary divider valve. Reinstall the feed line into the primary valve and proceed to downstream secondary divider valve and repeat step 2 on the secondary valve. If lubricant can be discharged freely through the secondary valve, the blockage is in the supply line between the primary and the secondary valve.
4. If high pressure exists on one of the secondary outlets, blockage has been located. Look for crushed line, tight bearing, improperly drilled fittings and/or lube inlet port. Correct as necessary.

### **Contamination**

If dirt, foreign material or any other form of contamination is found as the source of the blockage, clearing the blockage will only temporarily solve contamination blockage problems. The source of the contamination must be eliminated for satisfactory service. The reservoir must be inspected and cleaned if necessary. The reservoir filling method should be reviewed to eliminate any chance of foreign material entering the reservoir during filling. All lubricating systems require filtered lubricant.

### **Grease Separation Blockage**

If a hard wax or soap like material is found in the valve outlets, grease separation is occurring. This means that the oil is being squeezed from the grease at normal system operating pressure and the grease thickener is being deposited in the divider valve. Cleaning the divider valve will usually result in only temporarily solving the problem. Consult your lubricant supplier for recommendations on alternate lubricants and your local Lincoln Distributor to verify compatibility with centralized lubricating systems



### TROUBLE SHOOTING GUIDE:

SYMPTOM	PROBABLE CAUSE	SOLUTION
1. Pump will not operate.	Not receiving voltage.	Check fuses, timer and electrical supply. Check the electrical supply to the pump. If the pump receives no current, trace to the electrical source and repair.
	Blocked pump cam.	Replace the pump motor if no blockage is identified.
2. The pump motor is running but there is no grease being discharged.	Air pocket at pump element inlet.	Disconnect the main delivery hose from the pump outlet. Run the pump until solid grease (no bubbles) flows from the outlet. If solid grease does not discharge after 20 minutes of operation, the pump inlet is blocked with a contaminant. <b>NOTE:</b> Depending on operating temperatures and types of grease, it may require 10 minutes to achieve full volume at the outlet.
	Blocked Pump inlet.	Remove the pump element from the pump body and inspect the suction inlet port for foreign particles. Remove any particles found. Reassemble the pump and element and cycle the pump. If the pump element does not discharge grease, replace the pump element.
3. Pump was operated with an empty reservoir.	No grease	Fill the reservoir to the "max" level and press the manual reset button. Disconnect the main delivery hose from the pump and watch grease flow until solid grease (no air bubbles) is discharged. Reconnect the main delivery hose to the pump outlet.
4. Grease is discharged at the relief valve.	Blockage in the metering valves, hose, tube or connected component.	Switch the pump on and loosen each outlet in the primary valve one at a time. The blocked outlet will start discharging grease and the indicator pin will index. Retighten all of the outlets on the primary valve. Trace the hose that discharged grease to its secondary valve. Repeat the process of loosening each outlet one at a time until the blocked feed line is detected. Retighten all outlets. Repair the component blockage if found. If a metering valve is creating the blockage, replace the metering valve.
5. Indicator pin on the primary valve does not move.	Refer to #4.	Refer to #4.
6. Lube point not receiving grease.	Hose or tubing is cut or has chaffed through.	Replace the complete hose or tube. Or: If <u>Tube</u> is broken, cut tube at break and repair using tube union (part number 244058). If <u>Hose</u> is broken, cut ends at the break and install new reusable hose ends (part number 246002) and screw into a 1/8" NPT female connector (part number 67063).



## **Limited Warranty**

Lincoln warrants the equipment manufactured and supplied by Lincoln to be free from defects in material and workmanship for a period of one (1) year following the date of purchase, excluding therefrom any special, extended, or limited warranty published by Lincoln. If equipment is determined to be defective during this warranty period, it will be repaired or replaced, within Lincoln's sole discretion, without charge.

This warranty is conditioned upon the determination of a Lincoln authorized representative that the equipment is defective. To obtain repair or replacement, you must ship the equipment, transportation charges prepaid, with proof of purchase to a Lincoln Authorized Warranty and Service Center within the warranty period.

This warranty is extended to the original retail purchaser only. This warranty does not apply to equipment damaged from accident, overload, abuse, misuse, negligence, faulty installation or abrasive or corrosive material, equipment that has been altered, or equipment repaired by anyone not authorized by Lincoln. This warranty applies only to equipment installed, operated and maintained in strict accordance with the written specifications and recommendations provided by Lincoln or its authorized field personnel.

**THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

In no event shall Lincoln be liable for incidental or consequential damages. Lincoln's liability for any claim for loss or damages arising out of the sale, resale or use of any Lincoln equipment shall in no event exceed the purchase price. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, therefore the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights. You may also have other rights that vary by jurisdiction.

Customers not located in the Western Hemisphere or East Asia: Please contact Lincoln GmbH & Co. KG, Walldorf, Germany.

Please refer to this manual for detailed information on operations, maintenance, trouble shooting and technical data. If you need additional information, please contact Lincoln Technical Services at 1-314-679-4200 ext. 4782# or fax 1-314-679-4357.

To locate an authorized distributor, please visit the Lincoln distributor website at the following link:

<http://www.lincolnindustrial.com/asp/distributorlocator/distributors.asp?country=United+States>