

Assembly and Operators Manual



\$20.00 Net.

ThurstonTM Manufacturing Company



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Design specifications and features as described are subject to change without notice. BLU-JET is a registered trademark of Thurston Manufacturing Company, Thurston NE.

/BLU-JET @BLU-JET01 /SironWorks @SironWorks

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- **W**elcome to Thurston Manufacturing Company. Our goal is to provide quality products and services to our customers. The company's BLU-JET products have a reputation for quality, excellence in design and proven durability. Energetic, resourceful and continuous improvement goals in Environmental, Safety, Quality, Production and Engineering keep our firm at the cutting edge of technology.
We hope your BLU-JET equipment will give you years of service.

Read this manual carefully. It will instruct you on how to operate and service your machine safely and correctly. Failure to do so could result in personal injury and, or equipment damage.

- **SAFETY INFORMATION**



DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. The sign will have the color combination of *red* and *white*.



WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. The sign will have the color combination of *orange* and *black*.



CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. The sign will have the color combination of *yellow* and *black*.

NOTE: *Indicates a special point of information.*

Carefully read and follow all safety signs. Reinstall safety signs that are damaged or missing.

- **R**ight-hand and left-hand sides of the implement are determined by facing in the direction the implement will travel when going forward.

INTRODUCTION

► **GENERAL INFORMATION:**

Designed and built to rugged BLU-JET standards, AT4020, 66' (20 M) Liquid Applicator is ready for your operation. Features like the 1500 gallon (5678 L) or 2000 gallon (7570 L) cone bottom tank, bottom fill plumbing for easier filling, and the 9 gallon (34 L) wash tank toolbox are standard equipment to make your job easier. Combined with BLU-JET's JetStream nozzle injection or coulter knife injection row units, the BLU-JET AT4020 ISOBUS capabilities control folding, depth, and rate. The AT4020 offers the very best in liquid injection technology.

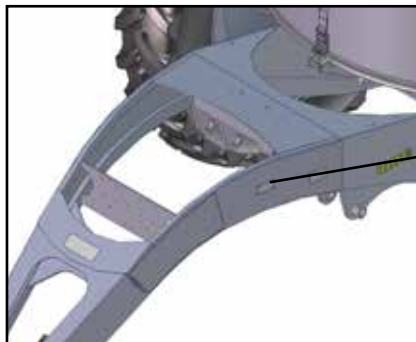
► **F**or your convenience we have four easy ways to register your warranty.

- Call our toll free number and ask for warranty registration. 1-800-658-3127
- Fax completed warranty registration form.
Fax: 402-385-3043
- Register on-line in warranty page at
www.blu-jet.com
- Complete and return registration form.

Thurston Manufacturing Company Warranty does not cover the following:

- 1) Cleaning, transporting, mailing and service call charges.
- 2) Depreciation or damage caused by normal wear, accidents, improper protection or improper use.

See complete Warranty for details.



The Serial Number is located from the rear of the tool bar on the left-hand side behind the tongue pull plate.

- Record your implement model and serial number in the space provided below. Your dealer needs this information to give you prompt, efficient service when you order parts.

MODEL NO. _____

SERIAL NO. _____

DATE PURCHASED _____

DEALER CHECKLIST**TO THE DEALER:**

Inspect the implement thoroughly after assembly to be certain it is functioning properly before delivering it to the customer. The following checklist is a reminder of points to cover. Check off each item as it is found satisfactory or after proper adjustment is made.

**PRE-DELIVERY CHECKLIST**

- ☐ 1. All hardware properly tightened
- ☐ 2. Lubrication of grease fittings
- ☐ 3. All decals properly located and readable
- ☐ 4. Other adjustments for machine level height, etc.
- ☐ 5. Overall condition (touch up any scratches, clean and polish)
- ☐ 6. Operator's manual

DATE SET UP _____

SIGNATURE _____

**DELIVERY**

Review the operator's manual with the customer. Explain the following:

- ☐ 1. Safe operation and service
- ☐ 2. Correct machine installation and operation
- ☐ 3. Daily and periodic lubrication and maintenance
- ☐ 4. Daily and periodic inspections
- ☐ 5. Trouble shooting
- ☐ 6. Storing machine
- ☐ 7. Thurston Manufacturing Company parts and service
- ☐ 8. Have the customer write the machine model and serial number in space provided in manual introduction.
- ☐ 9. Give customer the operator's manual and encourage the customer to read the manual carefully.
- ☐ 10. Completion and mailing of warranty registration form.

DATE DELIVERED _____

SIGNATURE _____

MODEL NO. _____

SERIAL NO. _____

TO THE OWNER

Thank you for your recent purchase of a new BLU-JET implement. The primary objective of Thurston Manufacturing Company is to build and provide you with a quality product. However, in the event that a problem does occur, it is imperative that your warranty registration is on file in order to accurately respond to your specific service circumstances. For your convenience we have four easy ways to register your warranty:

**Register
Warranty
One of
Four Ways**

- Call our toll free number and ask for warranty registration.
1-800-658-3127
- Fax your completed warranty registration form.
1-402-385-3043
- Register on-line at:
www.blu-jet.com
- Complete and mail the warranty registration form.

This manual has been prepared to assist you in the assembly of your new machine and contains information pertaining to safety, operations and all of its parts. Our personnel in sales and service are always available to assist you when questions arise concerning the assembly or operations of your tool bar.

When ordering parts, please refer to part numbers and descriptions as listed throughout this book. All parts and whole goods will be shipped FOB Thurston, Nebraska. Or FOB your regional distributor. Always check merchandise immediately upon receipt for damage or shortage. Note any discrepancy on carrier's bill of lading and notify Sender within 10 days. Returned goods will be subject to a 15% restocking charge. Thurston Manufacturing Company reserves the right to make improvements and modifications on equipment without obligation to change previously built equipment. All prices are subject to change without notice.

LIMITED WARRANTY



Thurston Manufacturing Company warrants each new BLU-JET machine primary framework to be free from defects in material and workmanship for a period of five (5) years, normal wear of wearing parts excepted. Thurston Manufacturing Company further warrants each new BLU-JET product to be free from defects in material and workmanship, normal wear of wearing parts excepted, for a period of one (1) year. All accessories purchased and resold by Thurston Manufacturing Company will be warranted according to their respective manufacturer. Tires on BLU-JET equipment are warranted through their respective tire manufacturers and their network of dealers in your local area.

Warranty begins from date of delivery to the original purchaser and applies to all new BLU-JET products that have not been altered and are being used for the intended purpose. Negligence, abuse or modification of equipment manufactured by or purchased and resold by Thurston Manufacturing Company will void this warranty.

The obligation of Thurston Manufacturing Company to honor this warranty is limited to the repair or replacement of defective merchandise, to the original purchaser, subject to inspection of equipment in question by an authorized Thurston Manufacturing Company sales or service technician. In the USA, freight of warranty replacement parts including main frame centers and wings will be prepaid for a period of one (1) Year by Thurston Manufacturing Company. Shipments of repaired or replaced parts including main frame centers and wings after one year will be paid by the customer.

Return of defective goods must be made within thirty (30) days of failure to Thurston Manufacturing Company, Thurston, Nebraska USA or to the nearest authorized BLU-JET Distributor or Rep Sales and service outlet.

Thurston Manufacturing Company will not be held responsible for any repair charges made by customers without prior written consent and prior equipment inspection by an authorized Thurston Manufacturing Company sales or service technician.

This warranty shall not be interpreted to render liability for injury or damages of any kind, direct, consequential or contingent to person or property. This warranty does not extend to loss of crops, economic and/or commercial loss, loss because of delay in crop production or any expense incurred for labor, supplies, substitute machinery, rental or for any other reason. This warranty is subject to any existing condition of supply, which may directly affect Thurston Manufacturing Company's ability to obtain materials of manufacture and delivery of replacement parts.

Thurston Manufacturing Company reserves the right to make improvements in design and changes in specifications at any time without incurring any obligation to owners of units previously sold.

No one is authorized to alter, modify or enlarge this warranty nor its exclusions, limitations and reservations. Thurston Manufacturing Company makes no representations or warranties, expressed or implied (including implied warranties of merchantability and fitness), except for those set forth in Thurston Manufacturing Company's current applicable published warranty policies and procedures.

Layton W. Jensen, President

022398\mgmt



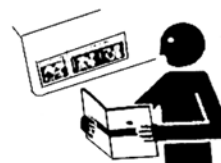
RECOGNIZE SAFETY INFORMATION

- This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury. Follow recommended precautions and safe operating practices.



FOLLOW SAFETY INSTRUCTIONS

- Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety sign.
- Learn how to operate the machine and how to use controls properly.
- Do not let anyone operate without instruction.
- Keep your machine in proper working condition.
- Unauthorized modification to the machine may impair the function and, or safety and affect machine life



PROTECT CHILDREN AND BYSTANDERS

- Before you back, LOOK CAREFULLY behind for children.
- Clear area of children, pets and bystanders.



HIGHWAY AND TRANSPORT OPERATIONS

Adopt safe driving practices:

- Keep the brake pedals latched together at all times. NEVER USE INDEPENDENT BRAKING WITH MACHINE IN TOW AS LOSS OF CONTROL AND/OR UPSET OF UNIT CAN RESULT.
- Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for a emergency stop to be safe and secure. Keep speed to a minimum.
- Reduce speed prior to turns to avoid the risk of overturning.
- Avoid sudden uphill turns on steep slopes.
- Always keep the tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.
- Do not drink and drive.
- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Use approved accessory lighting and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport.
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
- When driving the tractor and equipment on the road or highway under (20 m.p.h. max.) (40 k.p.h. max.) at night or during the day, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.



SAFETY



HIGHWAY AND TRANSPORT OPERATIONS

- Plan your route to avoid heavy traffic.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersection, etc.
- Be observant of bridge loading ratings. Do not cross bridges rated lower than the gross weight at which you are operating.
- Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping the unit, etc.



TRANSPORT SAFETY

- A safety chain will help control drawn equipment should it accidentally separate from the drawbar.
- Attach the chain to the tractor drawbar support or other anchor location. Provide only enough slack in the chain to permit turning.
- Use hydraulic cylinder transport lockup during road transportation.
- Maximum road speed is 20 mph.



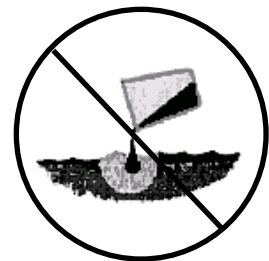
AVOID HIGH PRESSURE FLUIDS

- Escaping fluid under pressure can penetrate the skin causing serious injury.
- Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.
- Search for leaks with a piece of cardboard.
- Protect hands and body from high pressure fluids.
- If an accident occurs, see a doctor immediately.

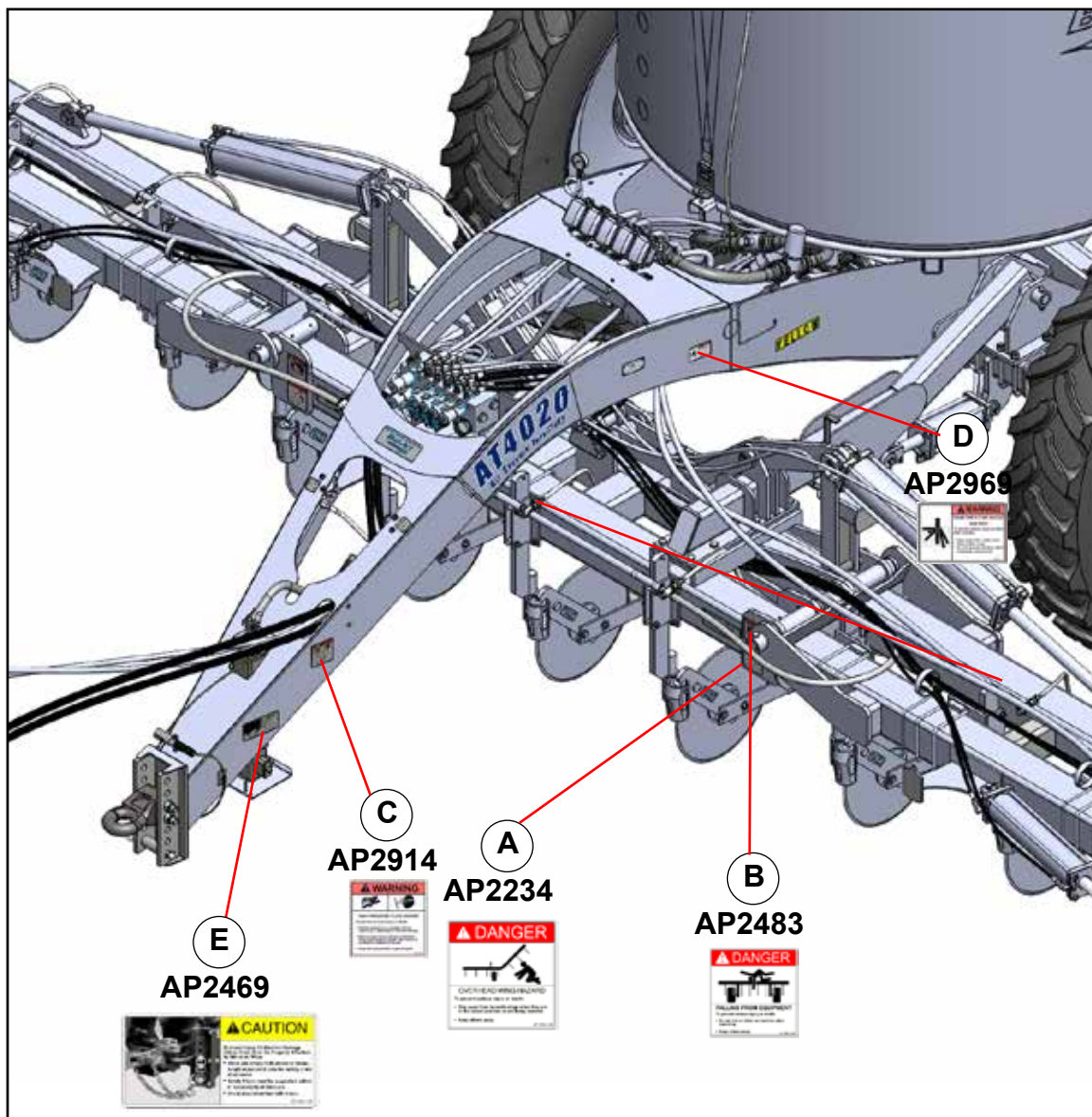


DISPOSE OF FLUIDS PROPERLY

- Improperly disposing of fluids can harm the environment and ecology. Before draining any fluids, contact your local environmental agency for the proper waste disposal methods.
- Use proper container when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.
- DO NOT pour oil into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil and other harmful waste.

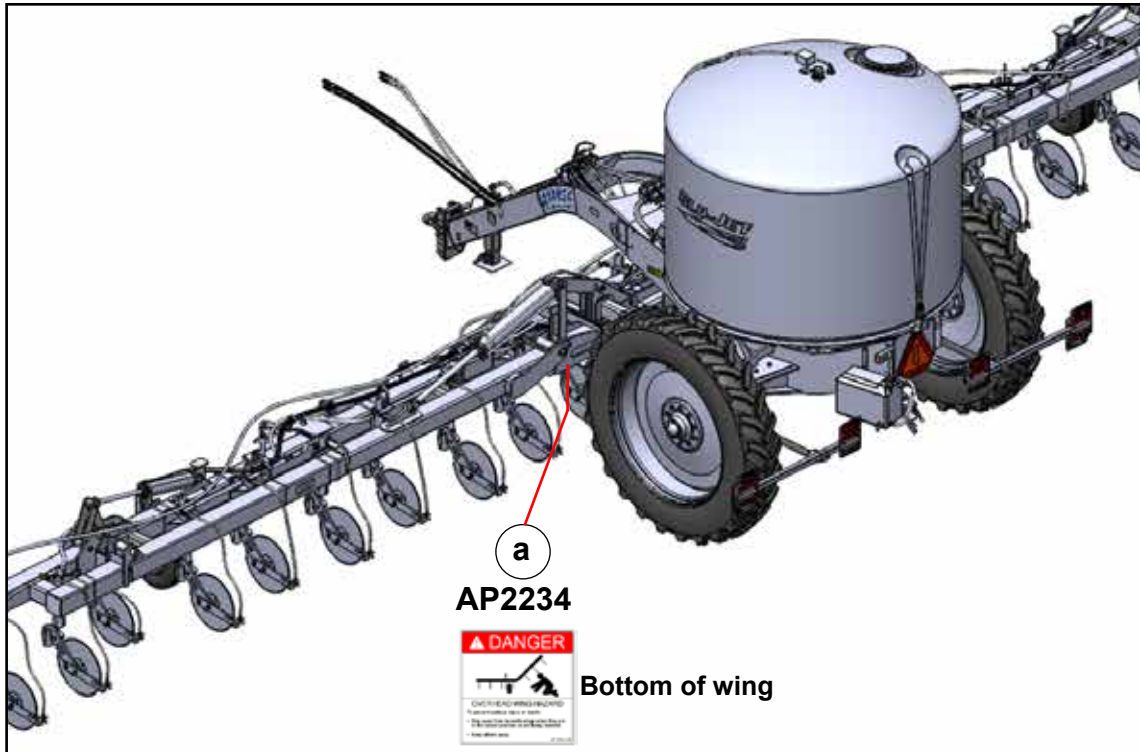


SAFETY (DECALS)

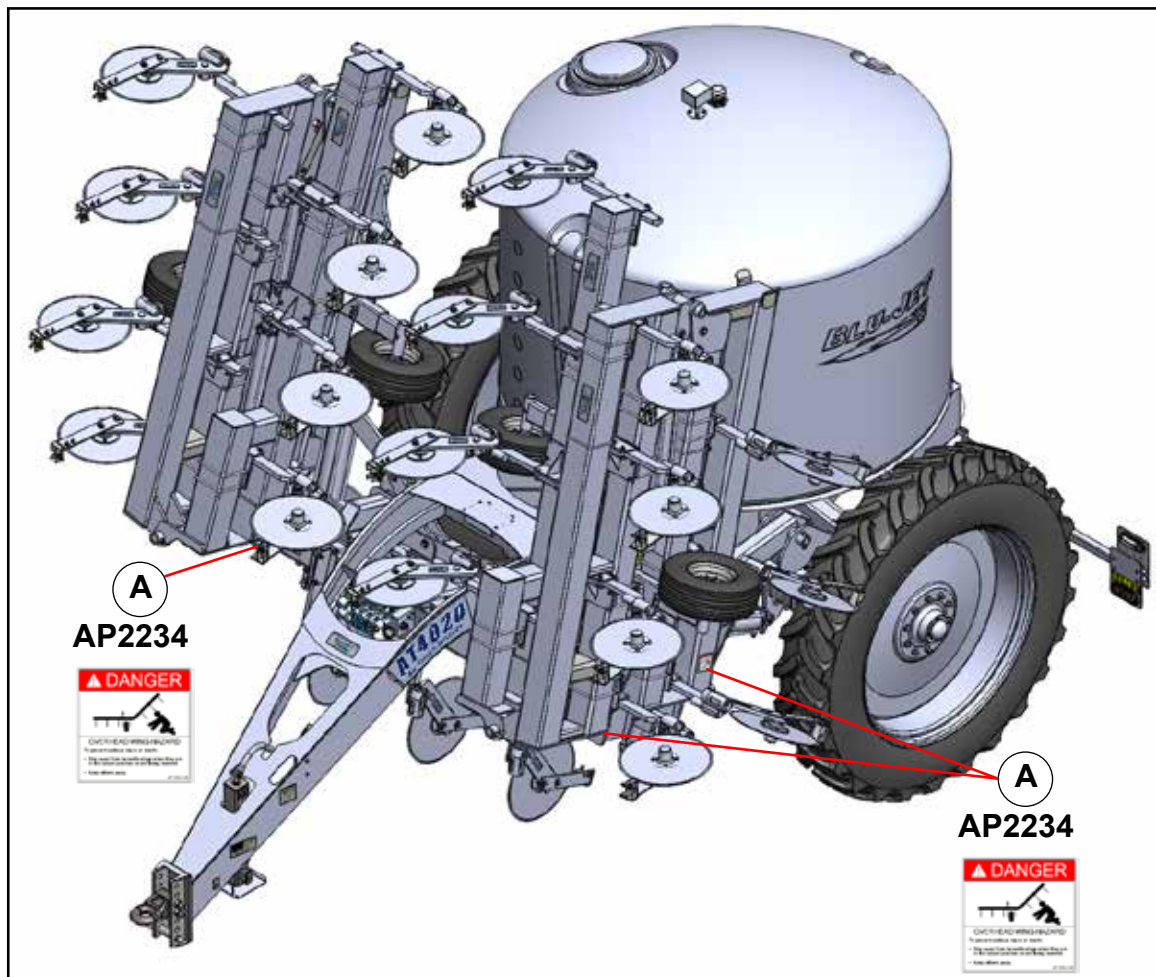


A	4	AP2234	DECAL, DANGER STAND CLEAR FALLING WING
B	1	AP2483	DECAL, DANGER, FALLING FROM EQUIPMENT
C	1	AP2914	DECAL, WARNING, HIGH PRESSURE FLUID
D	2	AP2969	DECAL, WARNING, PINCH POINT
E	1	AP2469	DECAL, SAFETY CHAIN
			(Part of Safety Chain Package)

SAFETY (DECALS)



A	4	AP2234	DECAL, DANGER STAND CLEAR FALLING WING
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OPERATING INSTRUCTIONS



Hitch



NOTE:

Implement hitch weights are designed to match tractor size ranges. Check the following chart to confirm your particular implement specifications.



Tractor to toolbar connection



Safety hitch pin



Safety chain

1. The tractor must be equipped with a drawbar and a drawbar safety chain clevis. For rigid frame tractors equipped with swinging drawbar, the drawbar must be located in a fixed position in the center of the tractor. Refer to your tractor operators manual for drawbar adjustment and drawbar operating instructions.



Category	PTO (HP)	Maximum Vertical Static Load (lbs)		
		Drawbar Position		
		Short	Regular	Extended
0	≤ 38	1,574	1,124	787
1	≤ 64	2,698	1,798	1,349
2	≤ 154	4,946	3,372	2,473
3	≤ 248	6,070	4,046	2,922
4	≤ 402	7,418	4,946	3,597
5	≤ 671	10,116	6,744	N/A

2. Before connecting the tool bar to the tractor drawbar, raise the tractor three point hitch (if equipped) to prevent interference between the implement and the tractor. Connect the tool bar to tractor drawbar **ONLY**. **DO NOT** connect the tool bar to any other part of the tractor. Connect the tool bar clevis to the tractor drawbar with hitch pin. Install the safety chain through the tractor drawbar support bracket.
3. Always use a safety hitch pin of the correct diameter. Make sure that the hitch pin is locked in place with a safety type lock pin or other locking device.
4. Always use a safety chain between the toolbar and the tractor. Install the chain to the tractor drawbar support bracket. Support the center of the chain with a clevis installed to the tractor drawbar.



WARNING In case the tractor hitch pin is lost during transporting. The safety chain must be attached between the implement and tractor to prevent separated implement from running freely and causing damage or injury.



WARNING Do not move articulated tractor steering wheel until everyone is clear of the equipment. Moving the steering wheel can swing or move attached equipment which could cause serious personal injury.



WARNING Tractor drawbar must be in a fixed position before transporting implement. Implement will sway or slam against tractor resulting in equipment damage or injury to personnel.

OPERATING INSTRUCTIONS



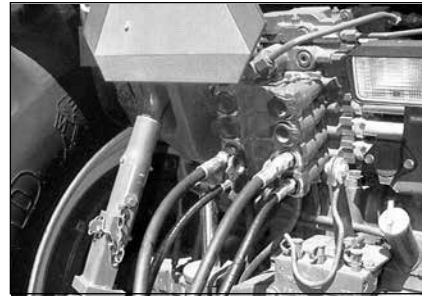
Remote hydraulic



NOTE:

Always connect the hoses so the toolbar raises when the tractor remote control lever is moved rearward and lowers when the lever is moved forward.

1. Connect the toolbar hydraulic hoses to the tractor remote couplers. The 3/8" hoses supply oil to the toolbar lift cylinders. The 1/4" hoses supply oil to the wing fold cylinders.



WARNING Hydraulic fluid escaping under pressure can have enough force to penetrate the skin. Hydraulic fluid may also infect a minor cut or opening in the skin. If injured by escaping fluid, see doctor at once. Serious infection or reaction can result if medical treatment is not given immediately. Make sure all connections are tight and that hoses and lines are in good condition before applying pressure to the system. Relieve all pressure before disconnecting the lines or performing other work on the hydraulic systems.



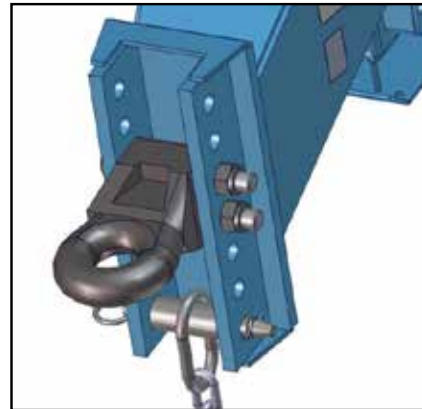
Remote hydraulic

2. It may be necessary to tie the hydraulic hoses up to keep them away from the hitch area. A tarp strap around the hoses and between the two point arms works well.



Leveling main frame

3. Before leveling the machine tire pressure should be checked. Check tire inflation before beginning operation of this machine the main frame must be level. Place toolbar on level surface. Adjust the hitch up or down in the tongue connector and connect to tractor.



Tire pressure:

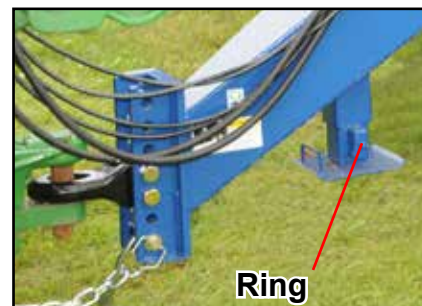
IF380/105R50 177D: Tire for **2000** gallon tank (**70** P.S.I.)

IF320/105R54 167D: Tire for **1500** gallon tank (**64** P.S.I.)



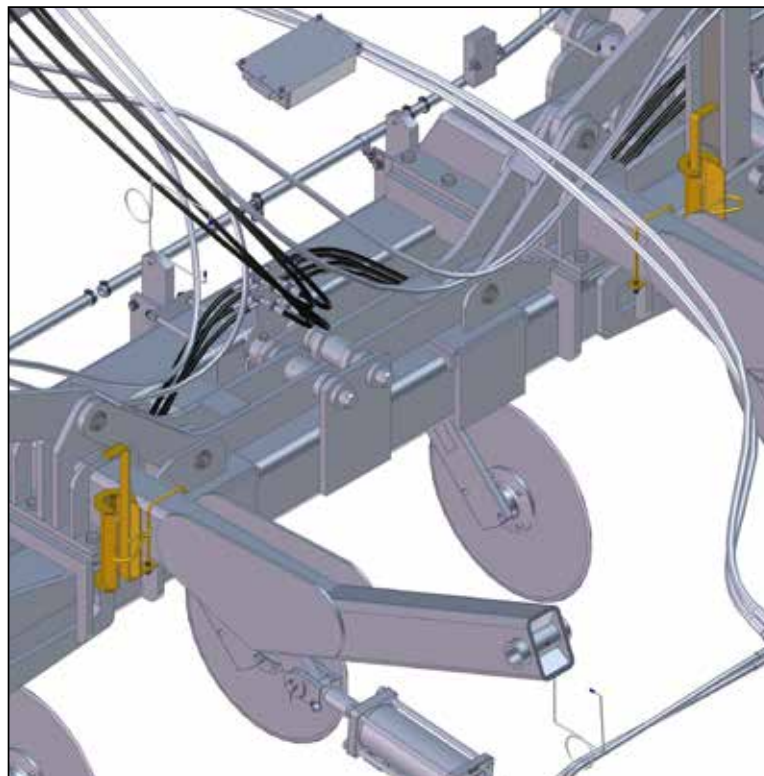
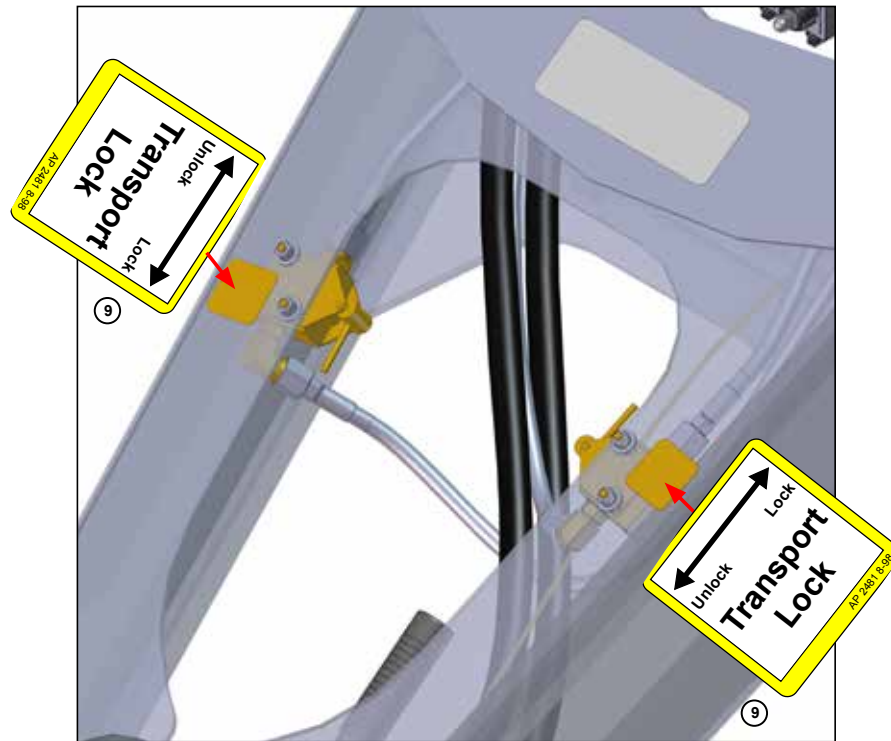
Jack stand

4. Pull ring on drop leg jack plunger to lower or raise sand pad.



► **Transport**

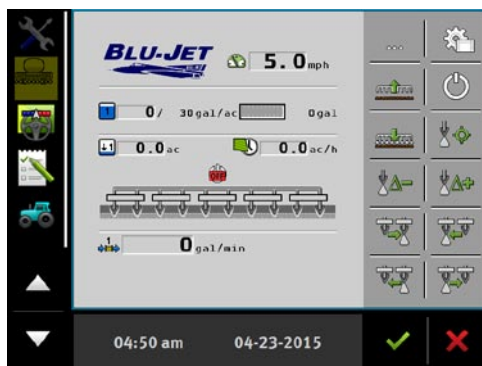
1. Lock each valve before moving the tool bar.
2. Unlock before folding and unfolding.
3. Install transport locks to lift cylinders before transport.



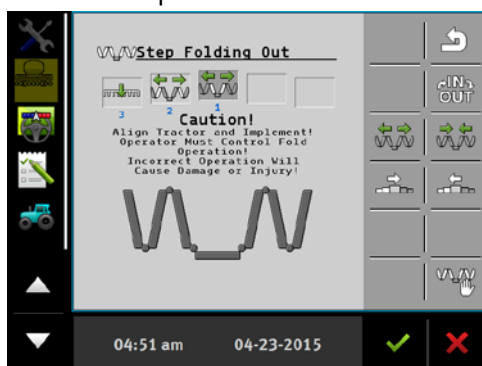


Fold Control Guide:

1. Enter BluJet Liquid Fertilizer ECU Universal Terminal (UT). On some terminals you may have to wait several minutes the first time the ECU is connected.



2. Press the Next Page and to enter the Step Fold Screens.



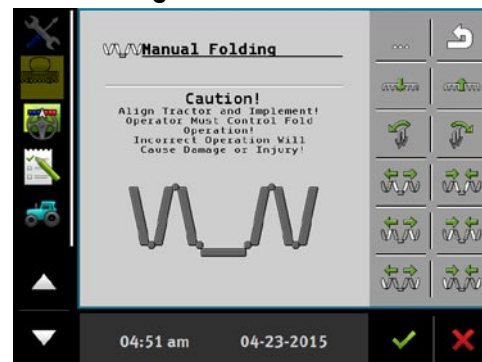
3. Press the button to switch from Fold In or Fold out. Press and hold button to cycle the cylinders out as indicated by the step function indicated.

4. Press to advance control to next section of toolbar to fold out; Continue until completed.

5. Press the to switch from Fold Out to Fold In Step Functions. Press and Hold appropriate button or with Step buttons to advance fold functions

based on Fold Out or Fold In .

6. Press the Manual Fold button to enter manual fold mode for 5 seconds. **Operator is in control of folding and ensuring that damage to toolbar and surroundings does not occur!!**



7. Press and hold the desired control to activate the hydraulic circuit. Release of button will stop motion. The icon table explains each button:

	Lift Cylinder Lower (retract)
	Lift Cylinder Raise (extend)
	Tilt Cylinder Forward (retract)
	Tilt Cylinder Rear (extend)
	Both Inner Wings Out (extend)
	Both Inner Wings In (retract)
	Both Secondary Wings Out (extend)
	Both Secondary Wings In (retract)
	Both Outer Wings Out (extend)
	Both Outer Wings In (retract)

8. Press the button to access remaining manual fold buttons:

	Left Inner Wing Out (extend)
	Left Inner Wing In (retract)
	Right Inner Wing Out (extend)
	Right Inner Wing In (retract)

9. Or Press the button to return to previous screen. And Main Screen once fold sequences are complete.

10. Reference the Operators Manual and consult your distributor for fold cylinder speed settings and Cylinder Position settings in the Implement Setting screens.



BluJet AT4020 ISO Liquid Fertilizer Fold Control Quick Reference Guide

Rev. A

5.22.2015

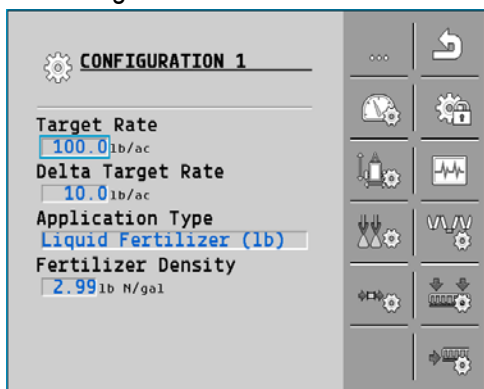


Setup Guide


1. Enter Blujet Liquid Fertilizer ECU Universal Terminal (UT). On some terminals you may have to wait several minutes the first time the ECU is connected.

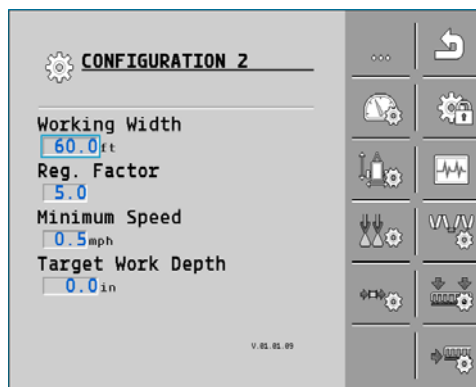



2. Press the Configuration Key  to enter the Configuration Window.

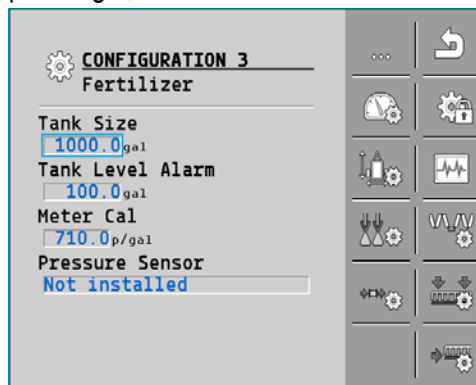


3. Enter the desired Target Rate, Delta Target Rate, Application Type and Fertilizer Density. If either "Liquid Fertilizer (lb)" be sure to enter product density used for rate control. If "Liquid Fertilizer (gal)" is selected enter the gallons/acre. _____


4. Press the Three Dots  to enter the Working Width, Reg. Factor and Minimum Speed and Target Work Depth.

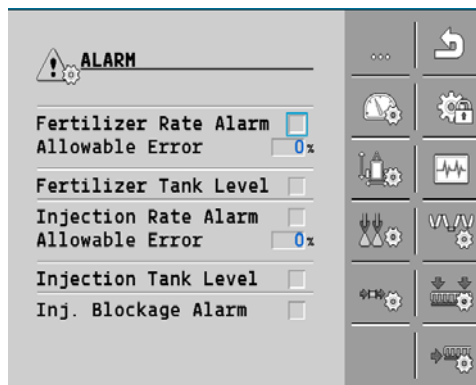


5. Press the Three Dots  to enter the tank volume, Tank Level Alarm, Flow meter pulses/gal, and Pressure Sensor Installed.



Note: Value is pulses/gal.


6. Press the Three Dots  to enable Alarms and Set Alarm levels.



7. Press the section configuration soft key



to enter the number of sections and number of knives per section. Sections can be turned on or off using the soft keys if required for identification.

8. Press the Geometry soft key  to enter the Geometry setup screen. Enter the Rear offset from the hitch pin and the left/right offset for each section. Press the arrows to change the section number.



BluJet AT4020 ISO Liquid Fertilizer Controller Quick Reference Guide

Rev. A
5.14.2015

Field Operation Guide

1. To begin field operation the minimum speed must be exceeded and the system turned on

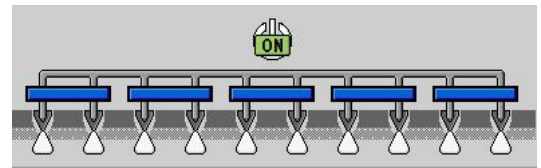




by pressing the master soft key.



and the

2. When the system is on and applying there will be blue indicators for each section.





3. Pressing the rate increase  or the rate decrease  soft keys will either increase or decrease the target rate by defined Delta Rate with each press. When the target rate changes, the area and distance until empty will change to reflect the new rate.

4. If the minimum speed is not exceeded an



icon will be displayed indicating the regulation valve is closed.

5. Sections can be turned on and off using the soft keys  and . These will sequentially turn on or off sections one at a time in the direction of the arrow. If there are less than 4 section there will be a soft key with each section number.
6. For more detailed information refer to the complete operators' manual.

BLU-JET SOFTKEY IMAGES

Blujet Softkey Images							
Icon	Name		Icon	Name		Icon	Name
	Master Apply Softkey			Section 1 Toggle ON/OFF			Right Inner Wing Fold IN Icon
	Master Apply OFF			Section 2 Toggle ON/OFF			Product 1 Actual Rate Icon
	Master Apply ON			Section 3 Toggle ON/OFF			Acres Remaining Product 1 at Current Tank Level Icon
	Settings and Feature Access			Section 4 Toggle ON/OFF			Productivity Area/Time Icon
	Ground Calibration Screen			Auto Section Control Enabled			Down Pressure Automatic Mode Icon
	Ground Calibration Icon			Section Status - Manual Shut OFF or Disabled by User			Flow Product 1 Icon
	Transport Mode			Section Status - ON Applying			Diagnostic Screen Icon
	Transport Enabled Icon			Section Status - OFF thru Section Control			Configuration - Settings Icon
	Enter Step Fold Screen			Manual Toolbar Lower			Return to Previous Screen
	Enter Manual Fold Screens			Manual Toolbar Raise			Accept a Value
	Enter Fold Cylinder Sensor Setup			Toggle Step Mode IN to OUT or OUT to IN			Cancel Current Value Setting return without change
	Save Transport Height Cylinder Setting			FOLD OUT Icon			
	Save Field Raise Height Cylinder Setting			FOLD IN Icon			



BLU-JET SOFTKEY IMAGES CONTINUED

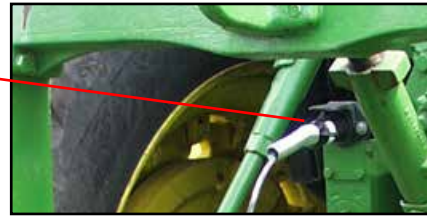
Icon	Name	Icon	Name
	Save Start Work Height Cylinder Setting		Next Step to the Left on Step Fold Functions
	Section Setup Screen		Next Step to the Right on Step Fold Functions
	Flow Meter Calibration Screen		Manual Fold Access
	Geometry Entry Screens		Field Raise
	Speed Selection and Calibration Screens		Field Lower
	Speed Icon		Level Cylinder Adjust Counterclockwise
	Radar Speed Screens		Level Cylinder Adjust Clockwise
	Radar Speed Calibration Screens		Inner Wing Manual Fold OUT Icon
	Tractor Speed Selector Screen		Inner Wing Manual Fold IN Icon
	Simulated Speed Selection Screen		Secondary Wing Manual Fold OUT Icon
	Down Pressure Mode Toggle Automatic		Secondary Wing Manual Fold IN Icon
	Information Screens		Outer Wing Manual Fold OUT Icon
	Target Rate Delta Minus		Outer Wing Manual Fold IN Icon
	Target Rate Delta Plus		Left Inner Wing Manual Fold OUT Icon
	Return to Target Rate		Left Inner Wing Manual Fold IN Icon
	Next Screen		Right Inner Wing Manual Fold OUT Icon

OPERATING INSTRUCTIONS



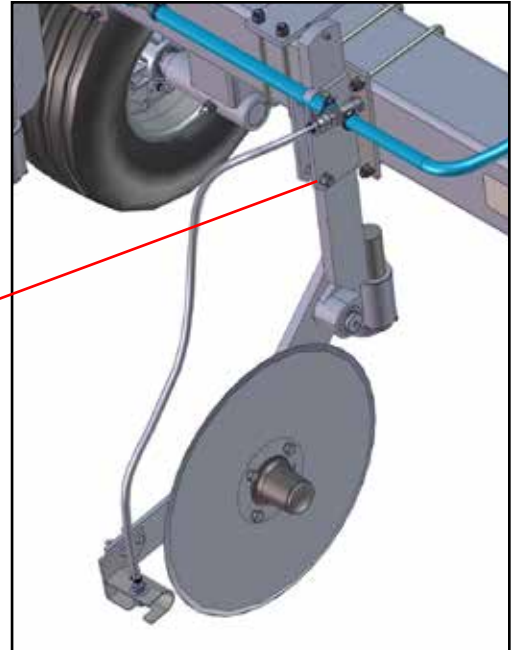
Attaching electrical harness

9. Attach 7 pin electrical harness before road transport.



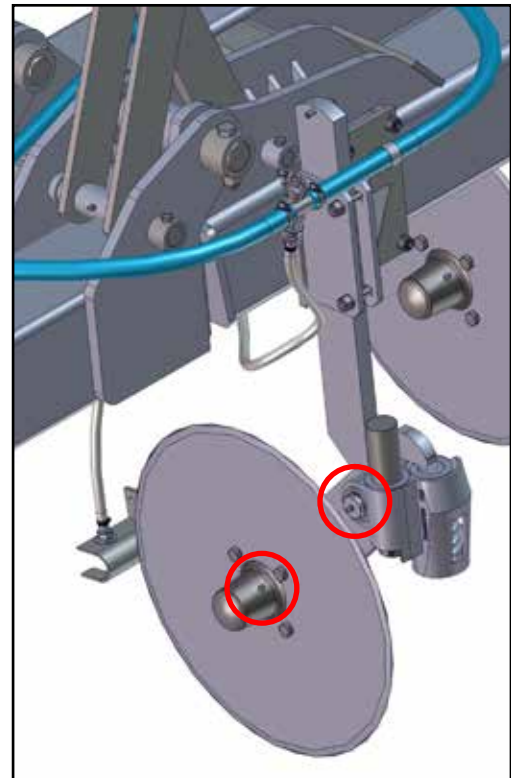
10. Loosen carriage bolts and adjust coulter shanks in flatback until the blade is running at a depth of 4 to 5 inches.

Carriage Bolts



Coulter pivot shaft lubrication


11. Grease all coulter arm pivots
The plug on the coulter hub can be removed.
A zerk can be installed.
Hub and spindle assembly should be **greased twice seasonally**.

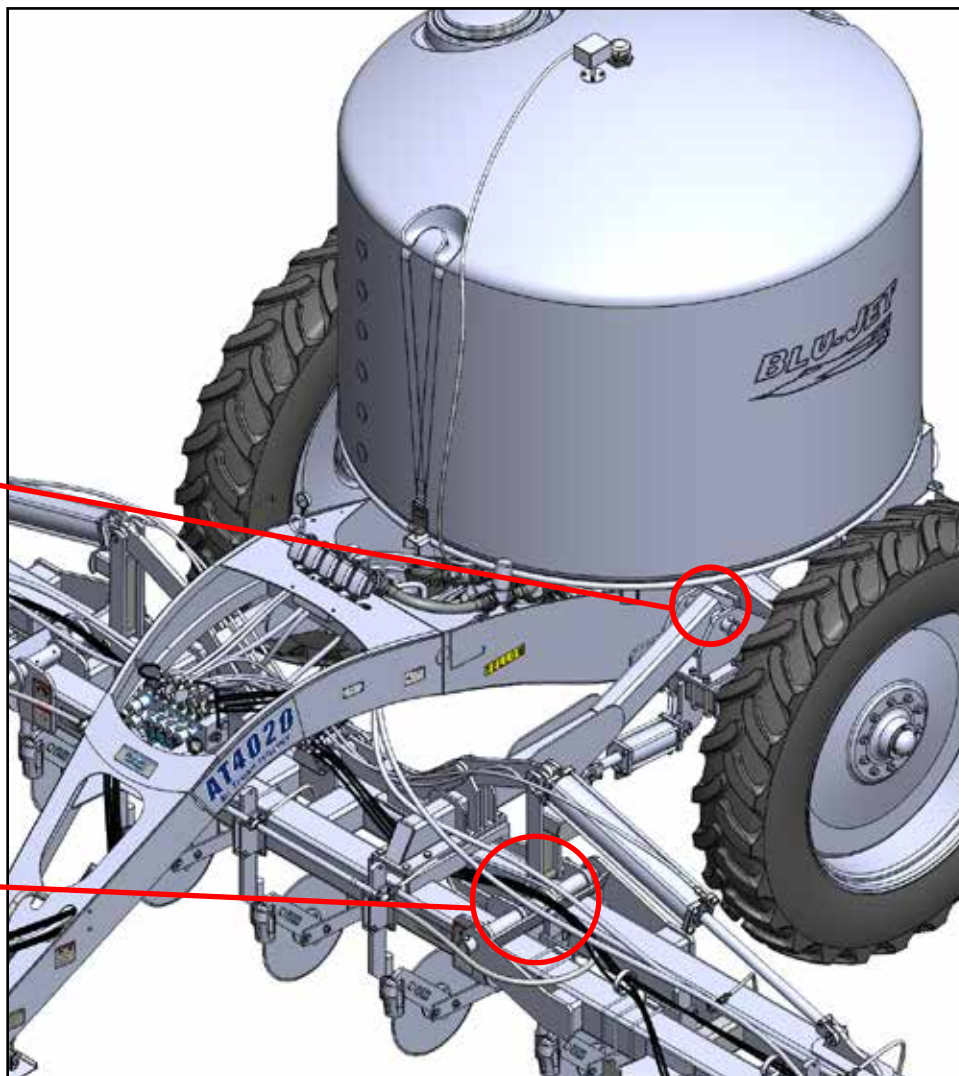



OPERATING INSTRUCTIONS

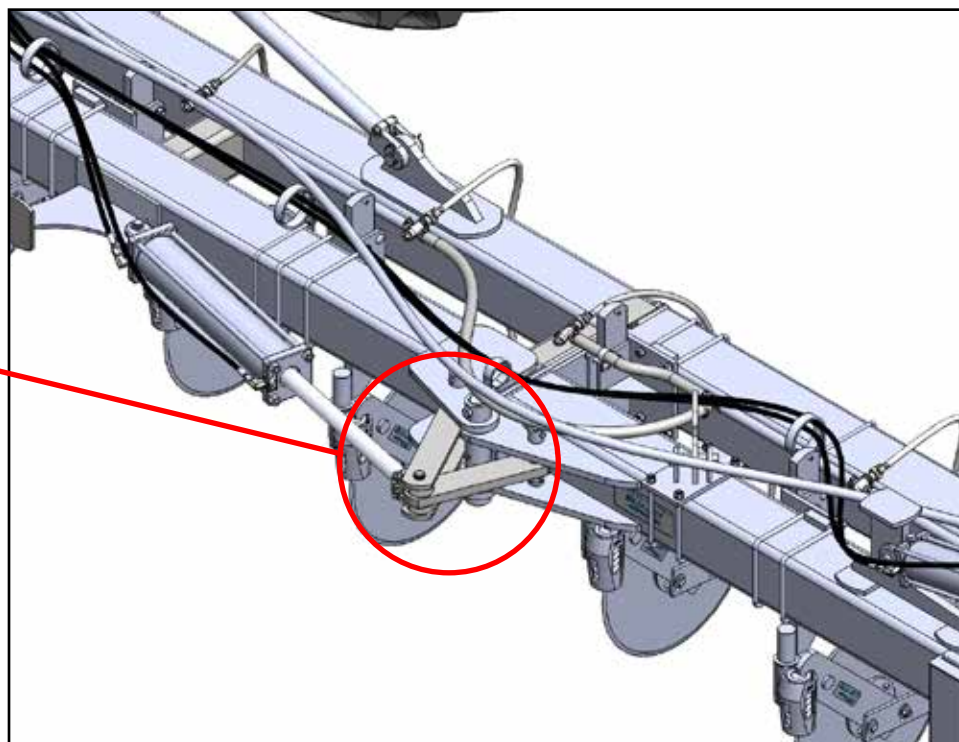
► **NOTE:**
Grease all
zerks daily.

►  Lift linkage
lubrication

►  Primary
wing and
linkage
lubrication



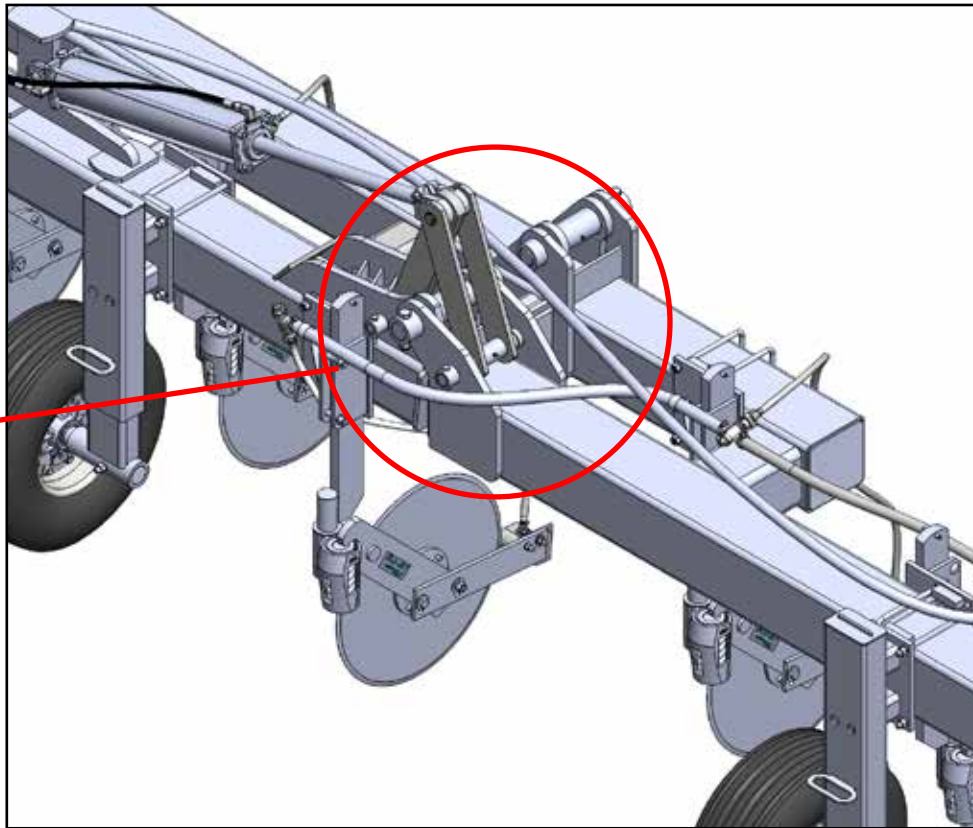
►  Secondary
wing and
linkage
lubrication



OPERATING INSTRUCTIONS

NOTE:
Grease all
zerks daily.

Third
wing and
linkage
lubrication

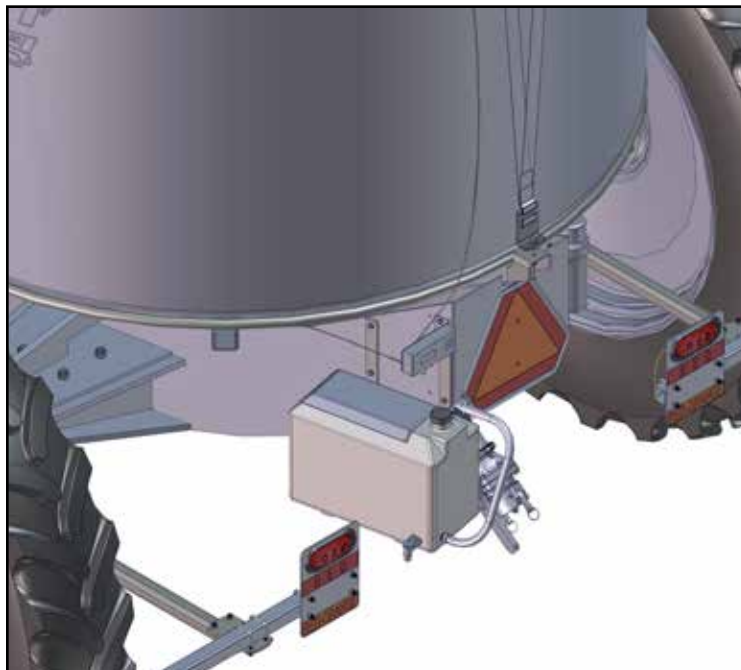


12. Location of Nine-Gallon Safety water tank/toolbox.

Change water daily to provide fresh clean water to flush exposed skin or eyes.

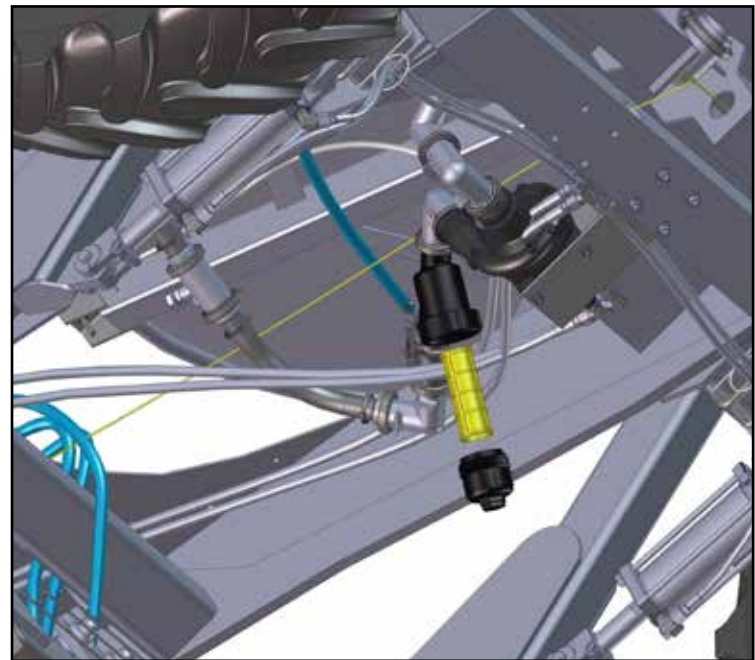
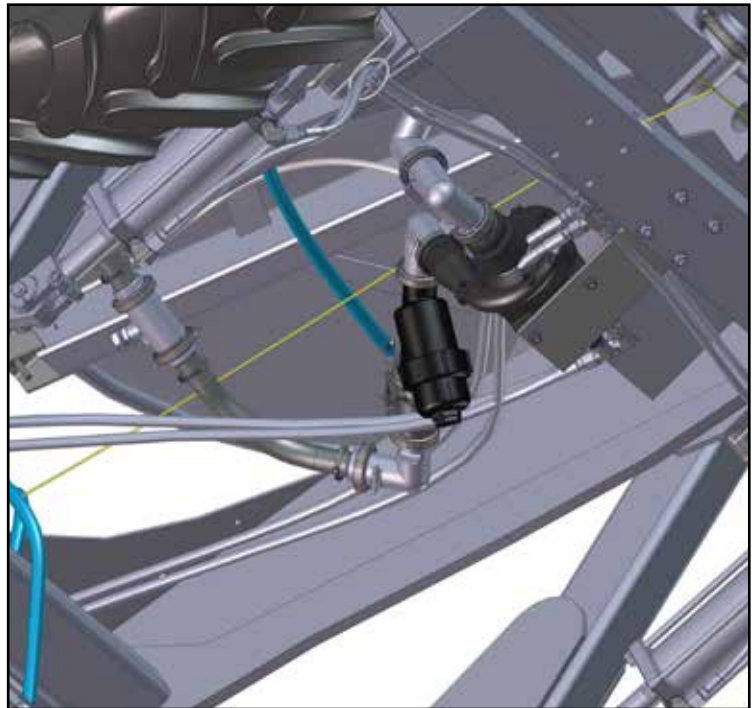
Drain water daily in cold temperatures to prevent freezing and bursting tank.

- 13. In case of exposure to fertilizer, open faucet or pull top end of hose loose to flush exposed part of body. Remove contaminated clothes as soon as possible.**

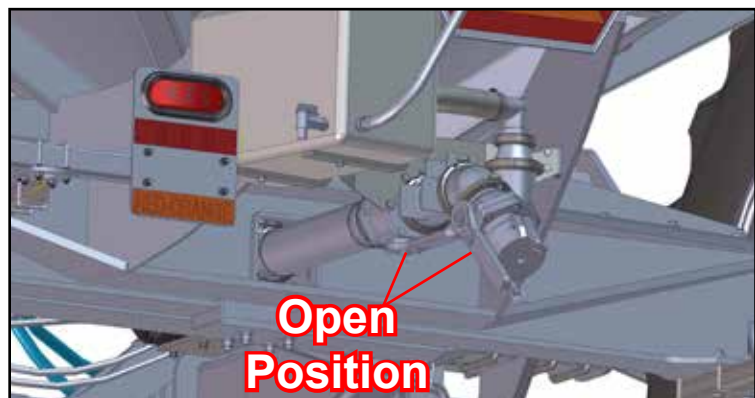


OPERATING INSTRUCTIONS

14. Screen should be checked and cleaned periodically.



15. Attach fill hose to fill port. Open fill valves. Fill tank. Close fill valves before removing the fill hose.

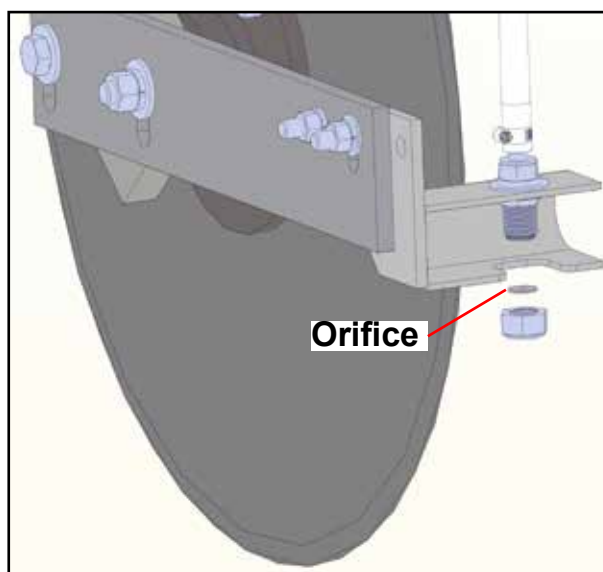


OPERATING INSTRUCTIONS RATE ORIFICE INSTALLATION



16. Consult row spacing rate chart for orifice size.

17. Remove nozzle nut and insert orifice.





Generic Photo

18. Travel a few meters and check blade depth. Adjust gauge wheels or coulters to achieve the 4" depth.
19. Check all nozzles for stream of liquid behind blade.
20. Make adjustment to nozzle assembly so stream is in line with the blade trench.

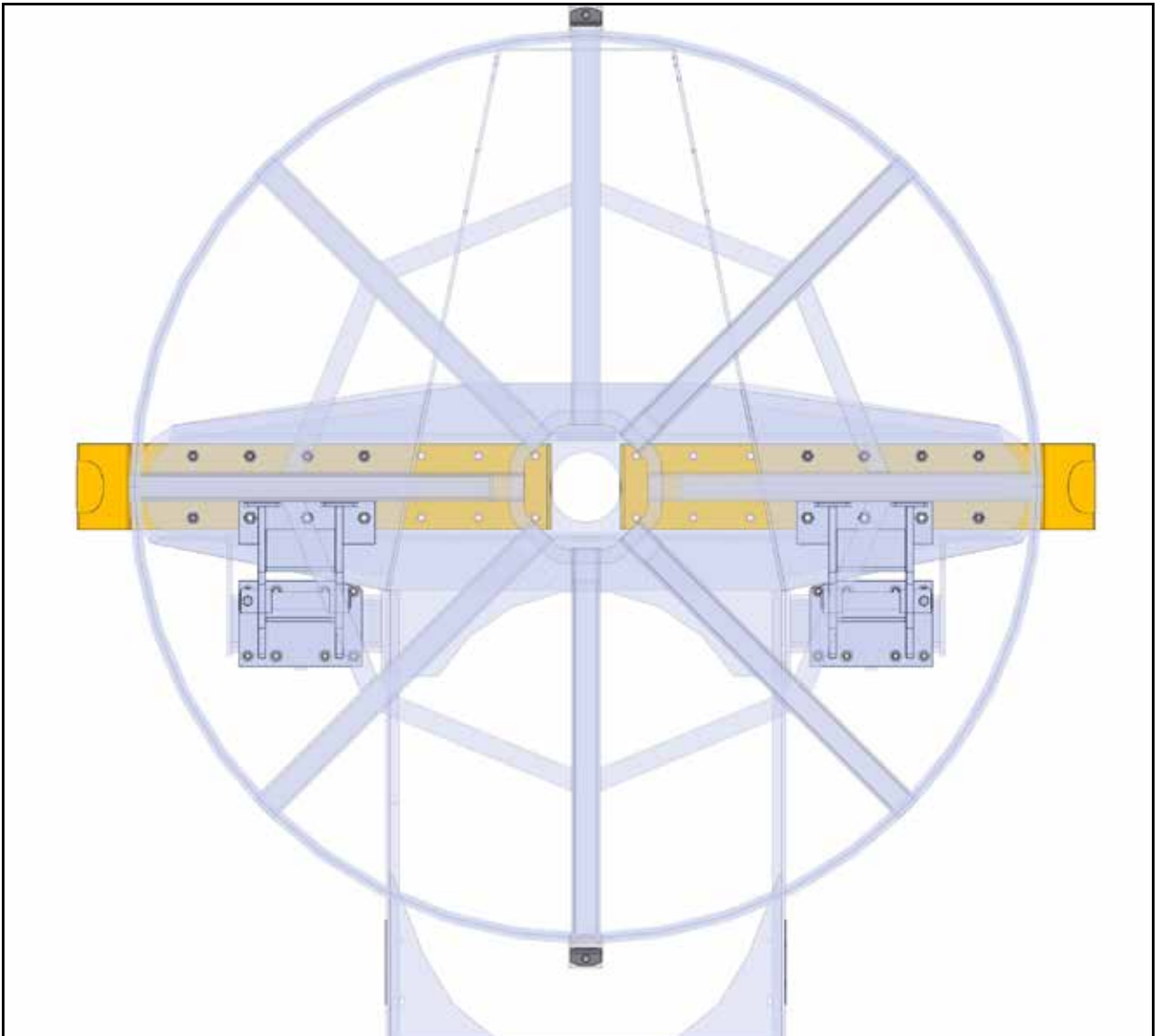


30 INCH SPACING RATE CHART

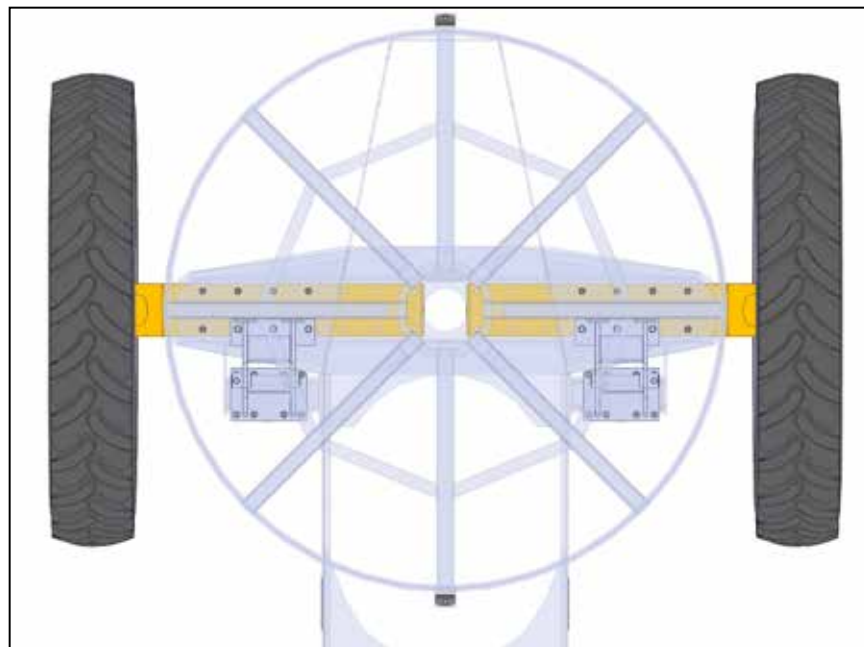
		GPM 10.65 lb./gal 28%	Gallons per Acre 30 Inch Spacing							
Orifice #	PSI		5	6	7	8	9	10	11	12
			mph	mph	mph	mph	mph	mph	mph	mph
4916 49	60	0.320	12.7	10.5	9.0	7.9	7.0	6.3	5.8	5.3
	80	0.369	14.6	12.2	10.4	9.1	8.1	7.3	6.6	6.1
	100	0.413	16.3	13.6	11.7	10.2	9.1	8.2	7.4	6.8
	120	0.452	17.9	14.9	12.8	11.2	9.9	8.9	8.1	7.5
4916 57	60	0.432	17.1	14.3	12.2	10.7	9.5	8.6	7.8	7.1
	80	0.499	19.8	16.5	14.1	12.4	11.0	9.9	9.0	8.2
	100	0.558	22.1	18.4	15.8	13.8	12.3	11.1	10.0	9.2
	120	0.612	24.2	20.2	17.3	15.1	13.5	12.1	11.0	10.1
*4916 63	60	0.528	20.9	17.4	14.9	13.1	11.6	10.5	9.5	8.7
	80	0.610	24.2	20.1	17.3	15.1	13.4	12.1	11.0	10.1
	100	0.682	27.0	22.5	19.3	16.9	15.0	13.5	12.3	11.3
	120	0.747	29.6	24.7	21.1	18.5	16.4	14.8	13.4	12.3
*4916 70	60	0.652	25.8	21.5	18.4	16.1	14.3	12.9	11.7	10.8
	80	0.753	29.8	24.9	21.3	18.6	16.6	14.9	13.6	12.4
	100	0.842	33.3	27.8	23.8	20.8	18.5	16.7	15.2	13.9
	120	0.922	36.5	30.4	26.1	22.8	20.3	18.3	16.6	15.2
*4916 78	60	0.810	32.1	26.7	22.9	20.0	17.8	16.0	14.6	13.4
	80	0.935	37.0	30.9	26.4	23.1	20.6	18.5	16.8	15.4
	100	1.045	41.4	34.5	29.6	25.9	23.0	20.7	18.8	17.2
	120	1.145	45.3	37.8	32.4	28.3	25.2	22.7	20.6	18.9
*4916 86	60	0.984	39.0	32.5	27.8	24.4	21.7	19.5	17.7	16.2
	80	1.137	45.0	37.5	32.2	28.1	25.0	22.5	20.5	18.8
	100	1.271	50.3	41.9	35.9	31.5	28.0	25.2	22.9	21.0
	120	1.392	55.1	45.9	39.4	34.5	30.6	27.6	25.1	23.0
*4916 95	60	1.201	47.6	39.6	34.0	29.7	26.4	23.8	21.6	19.8
	80	1.387	54.9	45.8	39.2	34.3	30.5	27.5	25.0	22.9
	100	1.551	61.4	51.2	43.9	38.4	34.1	30.7	27.9	25.6
	120	1.699	67.3	56.1	48.1	42.0	37.4	33.6	30.6	28.0
4916 107	60	1.524	60.3	50.3	43.1	37.7	33.5	30.2	27.4	25.1
	80	1.760	69.7	58.1	49.8	43.5	38.7	34.8	31.7	29.0
	100	1.967	77.9	64.9	55.6	48.7	43.3	39.0	35.4	32.5
	120	2.155	85.3	71.1	61.0	53.3	47.4	42.7	38.8	35.6
4916 120	60	1.917	75.9	63.2	54.2	47.4	42.2	37.9	34.5	31.6
	80	2.213	87.6	73.0	62.6	54.8	48.7	43.8	39.8	36.5
	100	2.474	98.0	81.7	70.0	61.2	54.4	49.0	44.5	40.8
	120	2.710	107.3	89.4	76.7	67.1	59.6	53.7	48.8	44.7

The 4916 series of orifices are available in many sizes falling between those listed on this chart.

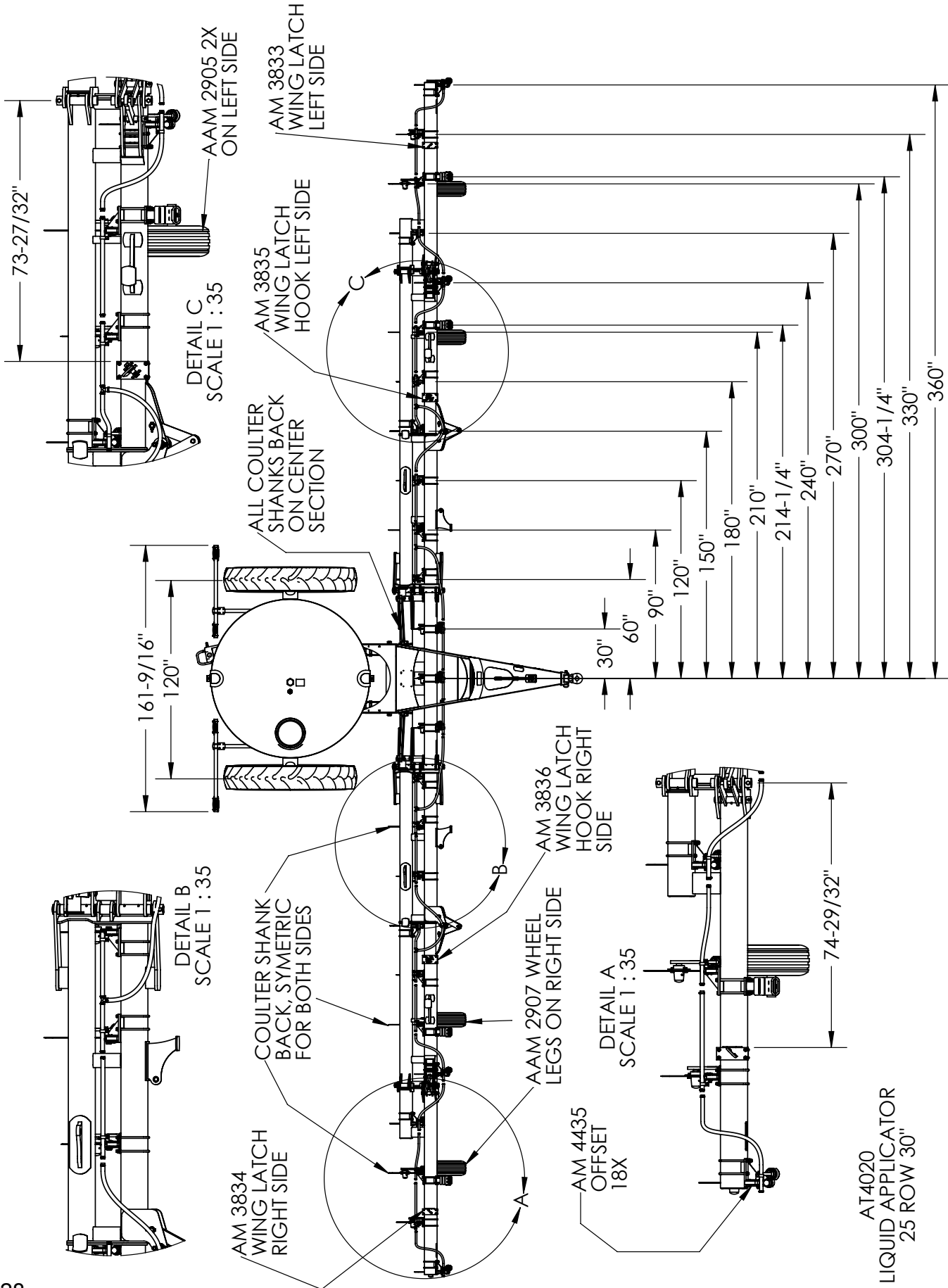
* Standard equipment sizes.



NOTE: Valve Stems to the outside



30 INCH ROW SPACING (25R30)



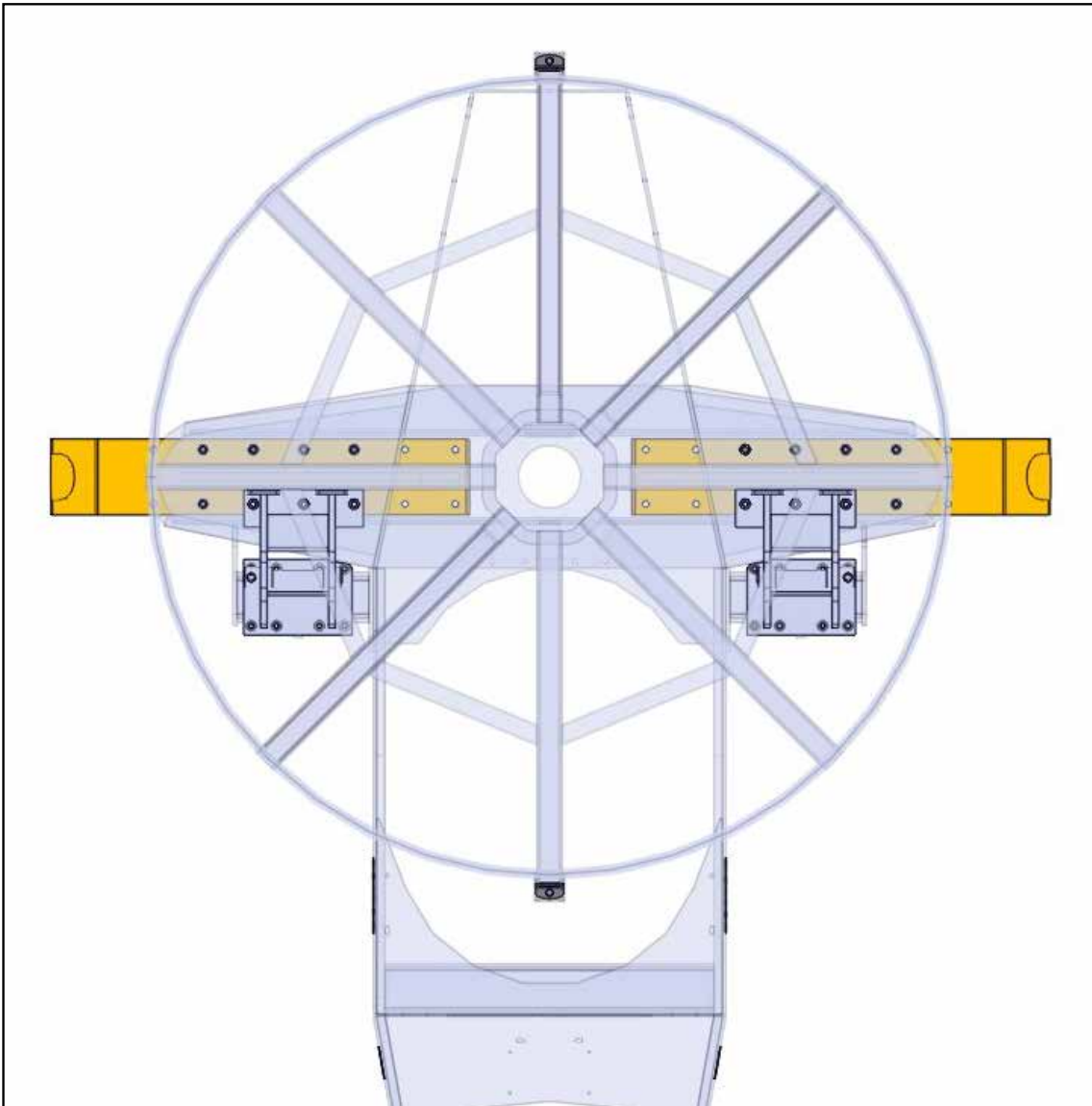
AT4020
LIQUID APPLICATOR
25 ROW 30"

22 INCH SPACING RATE CHART

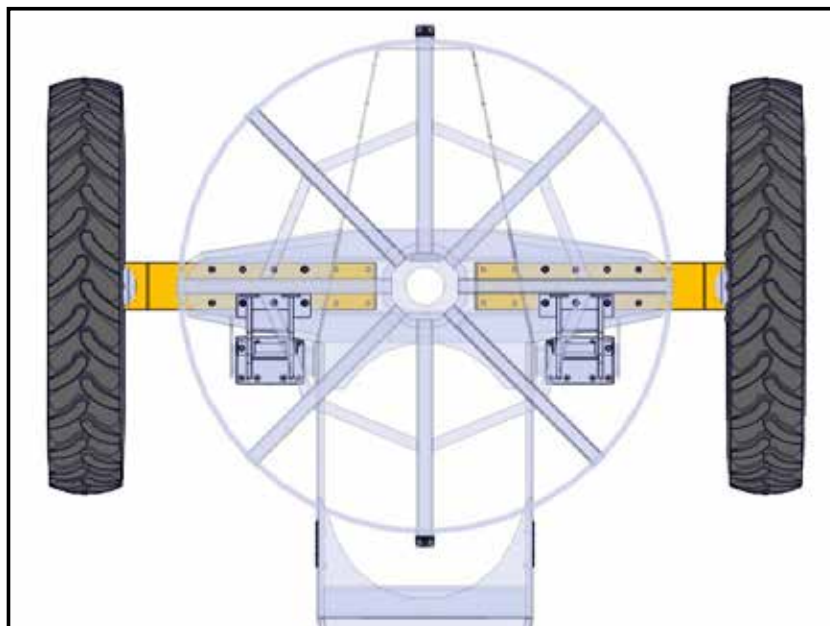
Orifice #	PSI	GPM 10.65 lb./gal 28%	Gallons per Acre 22 Inch Spacing							
			5 mph	6 mph	7 mph	8 mph	9 mph	10 mph	11 mph	12 mph
4916 49	60	0.320	17.3	14.4	12.3	10.8	9.6	8.6	7.8	7.2
	80	0.369	19.9	16.6	14.2	12.5	11.1	10.0	9.1	8.3
	100	0.413	22.3	18.6	15.9	13.9	12.4	11.1	10.1	9.3
	120	0.452	24.4	20.3	17.4	15.3	13.6	12.2	11.1	10.2
4916 57	60	0.432	23.4	19.5	16.7	14.6	13.0	11.7	10.6	9.7
	80	0.499	27.0	22.5	19.3	16.9	15.0	13.5	12.3	11.2
	100	0.558	30.1	25.1	21.5	18.8	16.7	15.1	13.7	12.6
	120	0.612	33.0	27.5	23.6	20.6	18.3	16.5	15.0	13.8
*4916 63	60	0.528	28.5	23.8	20.4	17.8	15.8	14.3	13.0	11.9
	80	0.610	32.9	27.4	23.5	20.6	18.3	16.5	15.0	13.7
	100	0.682	36.8	30.7	26.3	23.0	20.5	18.4	16.7	15.3
	120	0.747	40.3	33.6	28.8	25.2	22.4	20.2	18.3	16.8
*4916 70	60	0.652	35.2	29.3	25.2	22.0	19.6	17.6	16.0	14.7
	80	0.753	40.7	33.9	29.0	25.4	22.6	20.3	18.5	16.9
	100	0.842	45.5	37.9	32.5	28.4	25.3	22.7	20.7	18.9
	120	0.922	49.8	41.5	35.6	31.1	27.7	24.9	22.6	20.8
*4916 78	60	0.810	43.7	36.4	31.2	27.3	24.3	21.9	19.9	18.2
	80	0.935	50.5	42.1	36.1	31.6	28.1	25.2	23.0	21.0
	100	1.045	56.5	47.0	40.3	35.3	31.4	28.2	25.7	23.5
	120	1.145	61.8	51.5	44.2	38.6	34.4	30.9	28.1	25.8
*4916 86	60	0.984	53.2	44.3	38.0	33.2	29.5	26.6	24.2	22.1
	80	1.137	61.4	51.1	43.8	38.4	34.1	30.7	27.9	25.6
	100	1.271	68.6	57.2	49.0	42.9	38.1	34.3	31.2	28.6
	120	1.392	75.2	62.6	53.7	47.0	41.8	37.6	34.2	31.3
*4916 95	60	1.201	64.9	54.1	46.3	40.5	36.0	32.4	29.5	27.0
	80	1.387	74.9	62.4	53.5	46.8	41.6	37.4	34.0	31.2
	100	1.551	83.7	69.8	59.8	52.3	46.5	41.9	38.1	34.9
	120	1.699	91.7	76.4	65.5	57.3	51.0	45.9	41.7	38.2
4916 107	60	1.524	82.3	68.6	58.8	51.4	45.7	41.1	37.4	34.3
	80	1.760	95.0	79.2	67.9	59.4	52.8	47.5	43.2	39.6
	100	1.967	106.2	88.5	75.9	66.4	59.0	53.1	48.3	44.3
	120	2.155	116.4	97.0	83.1	72.7	64.7	58.2	52.9	48.5
4916 120	60	1.917	103.5	86.2	73.9	64.7	57.5	51.7	47.0	43.1
	80	2.213	119.5	99.6	85.4	74.7	66.4	59.8	54.3	49.8
	100	2.474	133.6	111.3	95.4	83.5	74.2	66.8	60.7	55.7
	120	2.710	146.4	122.0	104.5	91.5	81.3	73.2	66.5	61.0

The 4916 series of orifices are available in many sizes falling between those listed on this chart.

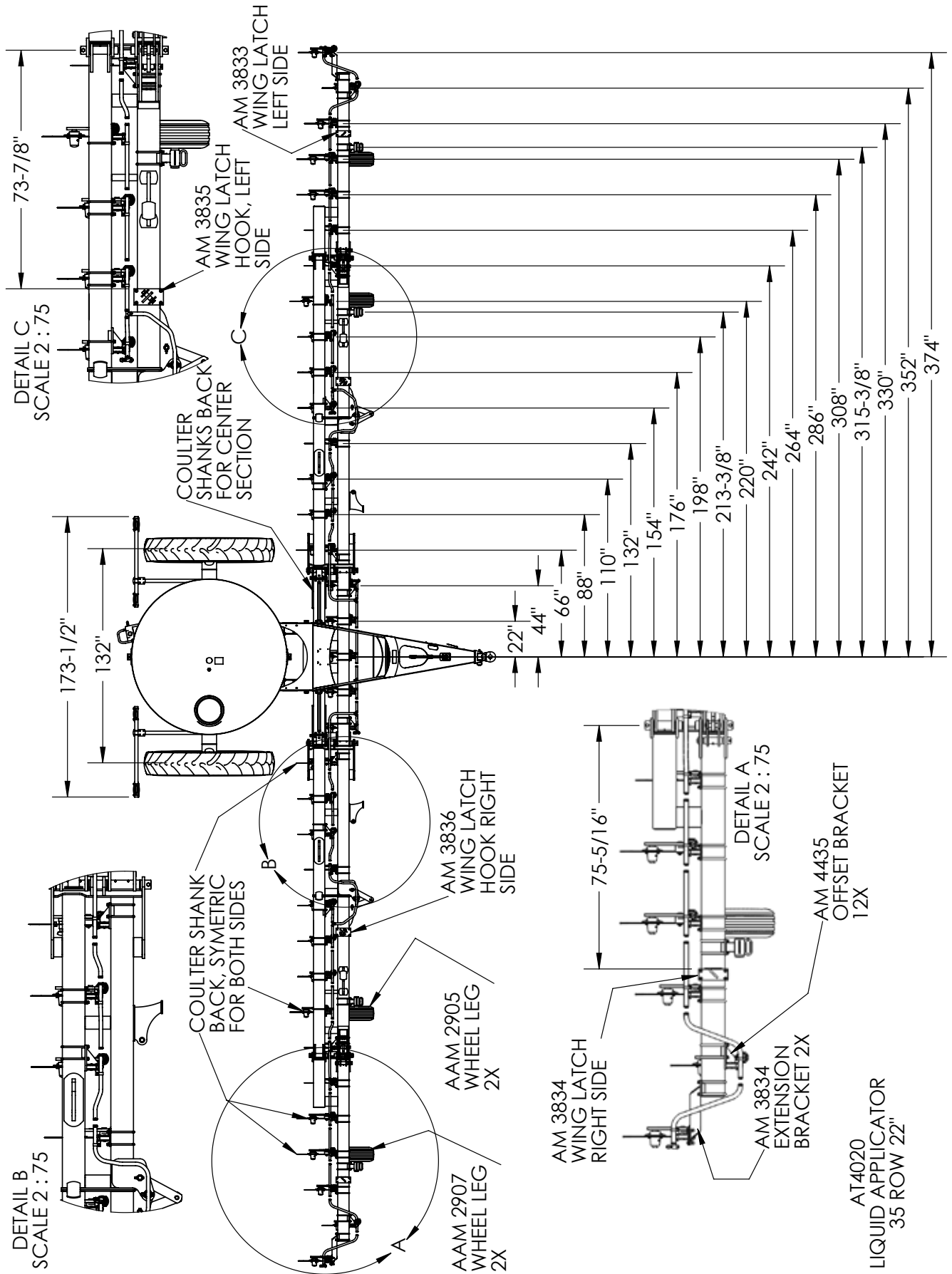
* Standard equipment sizes.



NOTE: Valve Stems to the outside



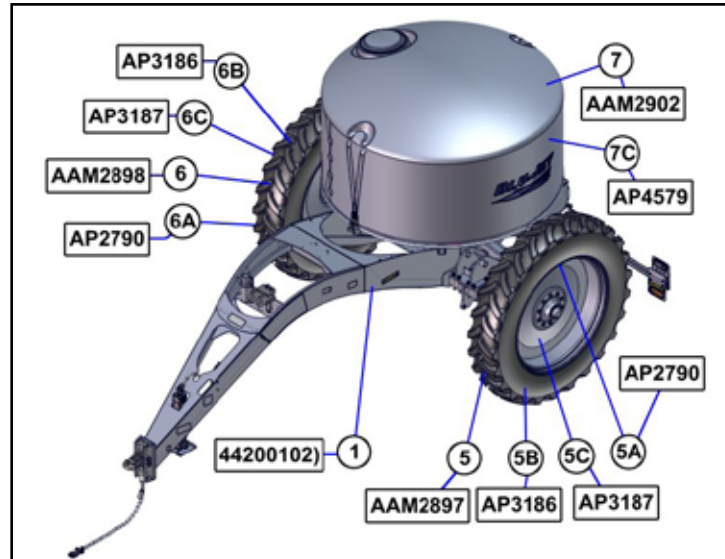
22 INCH ROW SPACING (35R22)



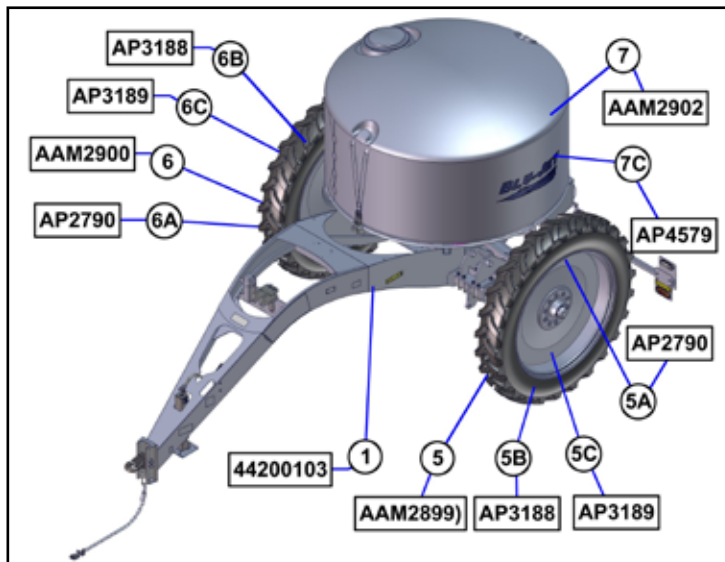
1500 GALLON TANK WHEEL OPTIONS 44200102 AND 44200103

1500 GALLON TANK

1. **NOTE:** The only part changes from 44200101 on page 24 are the 1500 gallon tank and tires.



BOM ID	Qty	Item No	Description
1	1	44200102	AT4020, BASE FRAME, 1500 GALLON TANK, IF380/105R50 TIRES
5	1	AAM2897	WHEEL, IF380/105R50 177D, LEFT-HAND
5A	1	AP2790	VALVE STEM, METAL
5B	1	AP3186	TIRE, IF380/105R50 177D, FUSDDTGY
5C	1	AP3187	RIM, 50 X 13 X 10, WHITE, ZERO OFFSET, 13.189" BC
6	1	AAM2898	WHEEL, IF380/105R50 177D, RH
6A	1	AP2790	VALVE STEM, METAL
6B	1	AP3186	TIRE, IF380/105R50 177D, FUSDDTGY
6C	1	AP3187	RIM, 50 X 13 X 10, WHITE, ZERO OFFSET, 13.189" BC
7	1	AAM2902	ASSEMBLY, AT4020, CART FRAME WITH 1500 GALLON TANK
7C	1	AP4579	TANK, AT4020, 1500 GALLON



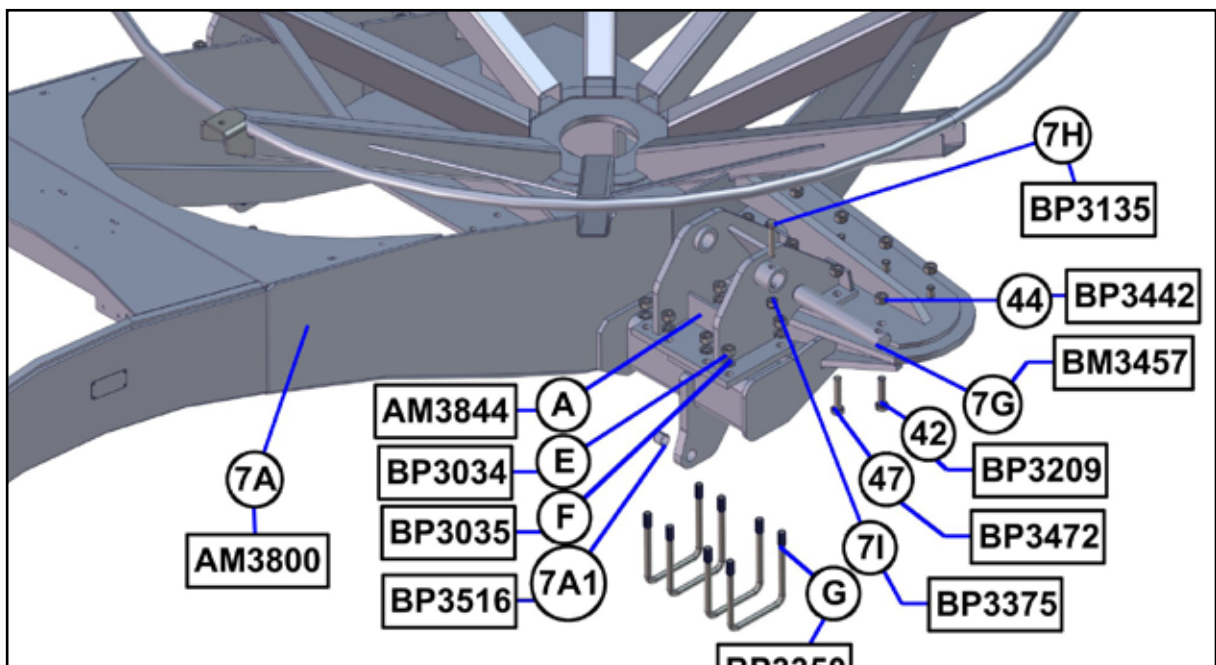
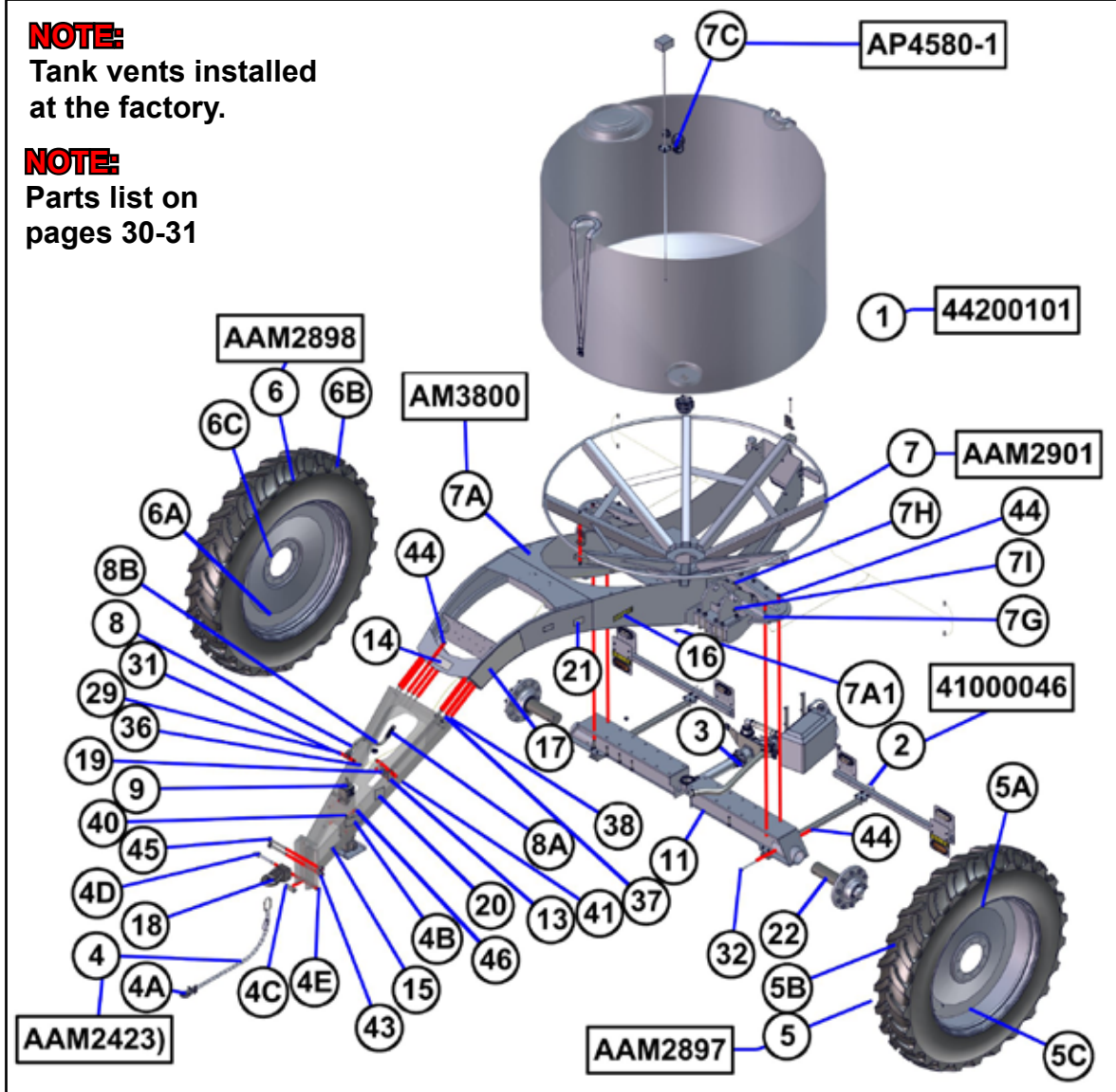
BOM ID	Qty	Item No	Description
1	1	44200103	AT4020, BASE FRAME, 1500 GALLON TANK, IF320/105R54 TIRES
5	1	AAM2899	WHEEL, IF320/105R54 167D, LEFT-HAND
5A	1	AP2790	VALVE STEM, METAL
5B	1	AP3188	TIRE, IF320/105R54 167D, ULTRA SPRAY TL
5C	1	AP3189	RIM, 54 X 11 X 10, WHITE, ZERO OFFSET, 13.189" BC
6	1	AAM2900	WHEEL, IF320/105R54 167D RIGHT-HAND
6A	1	AP2790	VALVE STEM, METAL
6B	1	AP3188	TIRE, IF320/105R54 167D, ULTRA SPRAY TL
6C		AP3189	RIM, 54 X 11 X 10, WHITE, ZERO OFFSET, 13.189" BC
7	1	AAM2902	ASSEMBLY, AT4020, CART FRAME WITH 1500 GALLON TANK
7C	1	AP4579	TANK, AT4020, 1500 GALLON

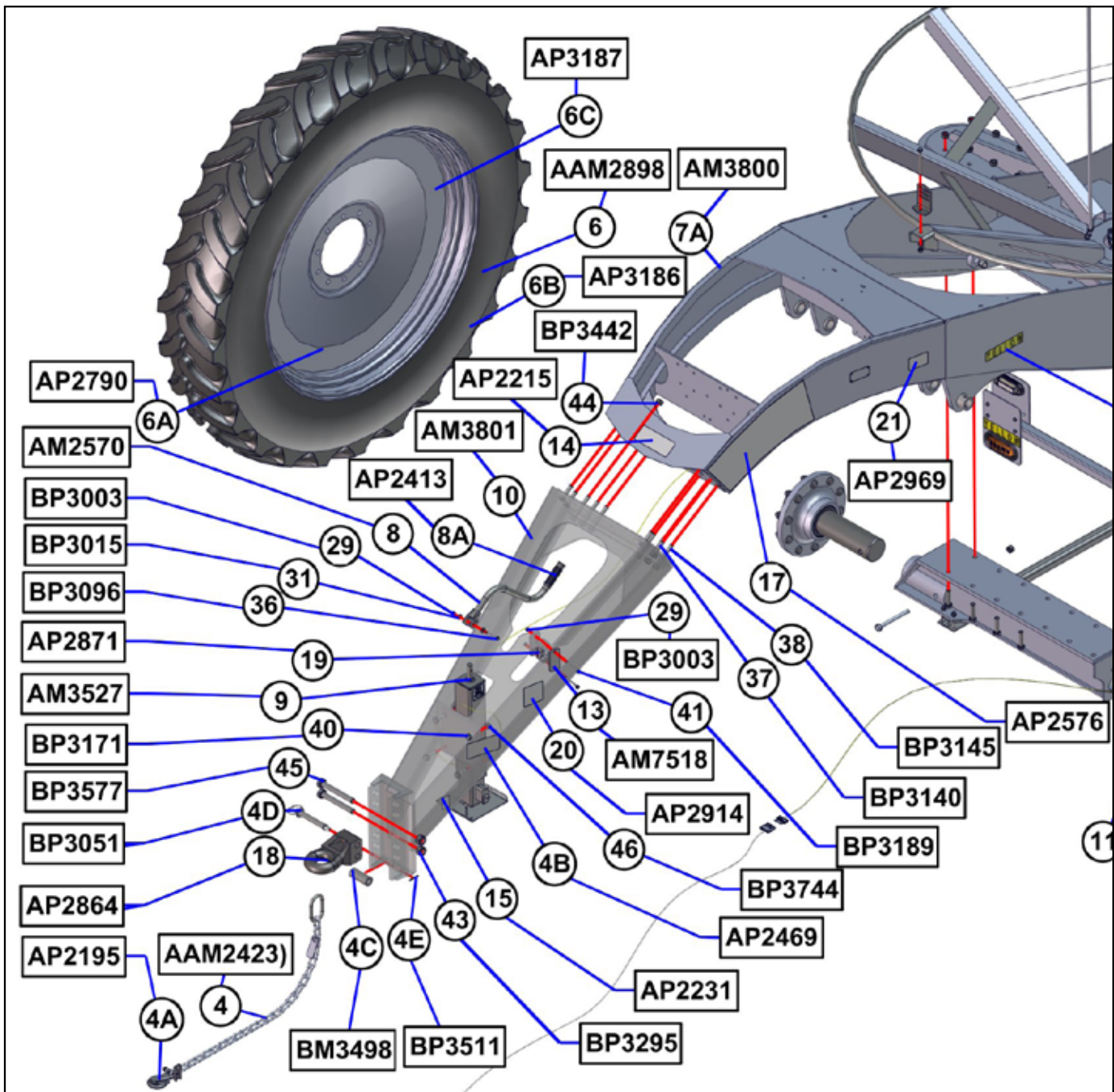
NOTE:

Tank vents installed
at the factory.

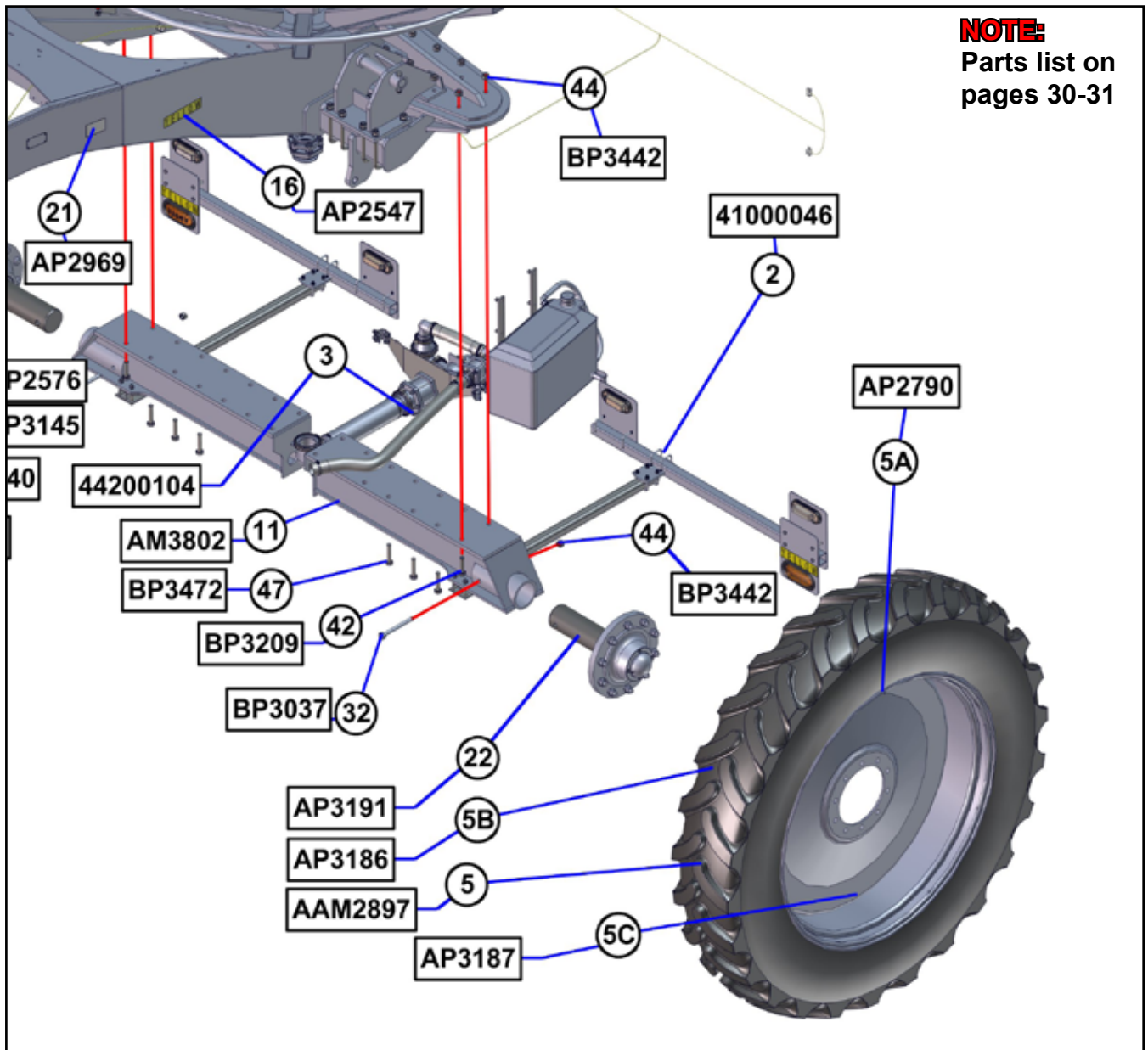
NOTE:

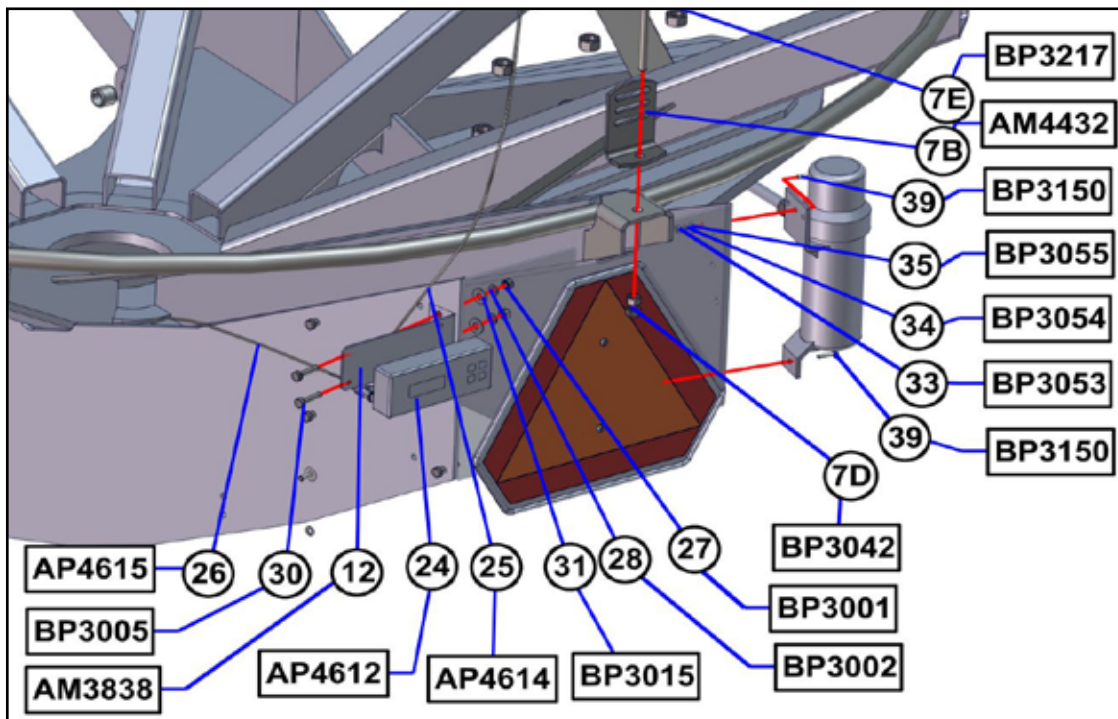
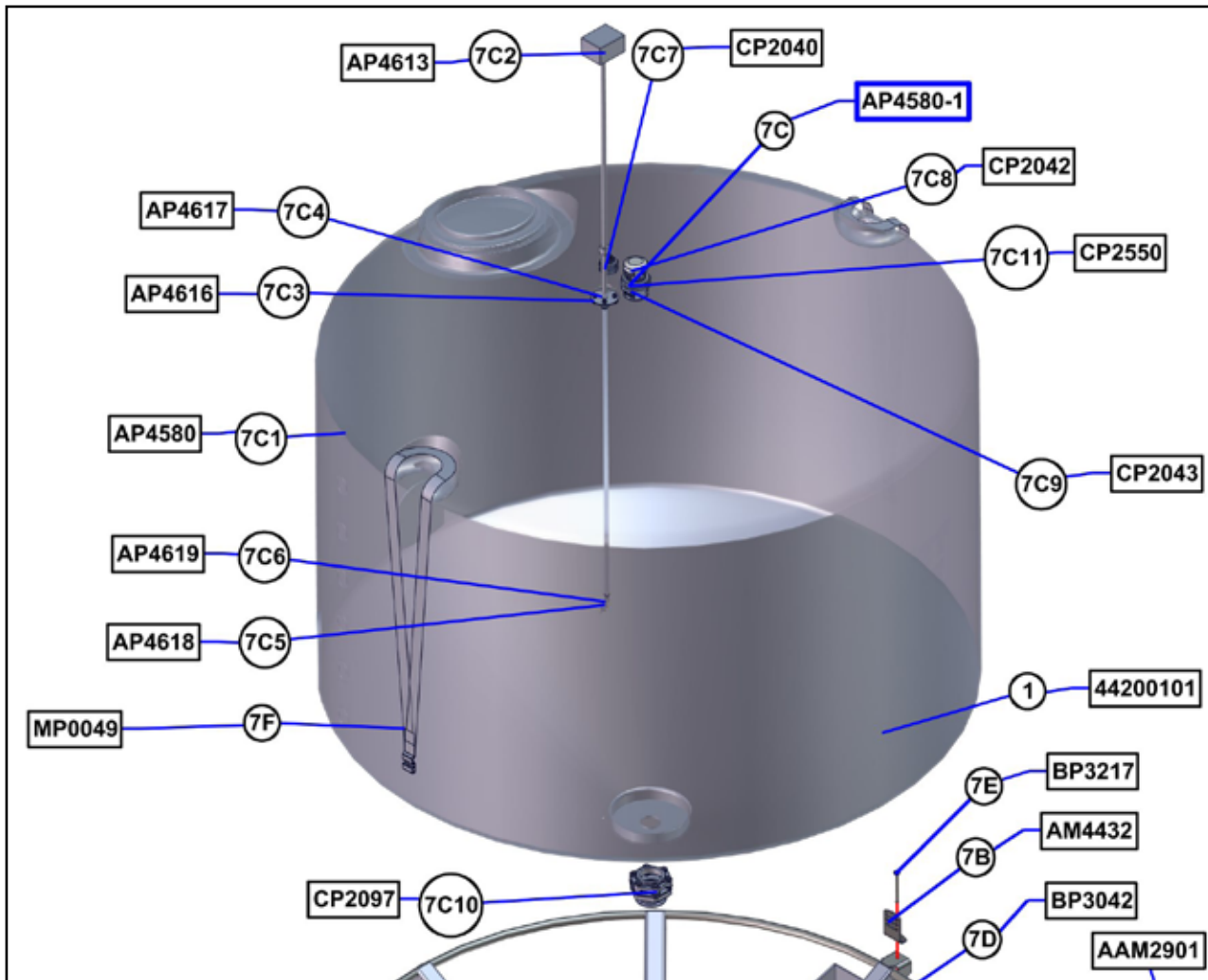
Parts list on
pages 30-31





NOTE:
Parts list on
pages 30-31





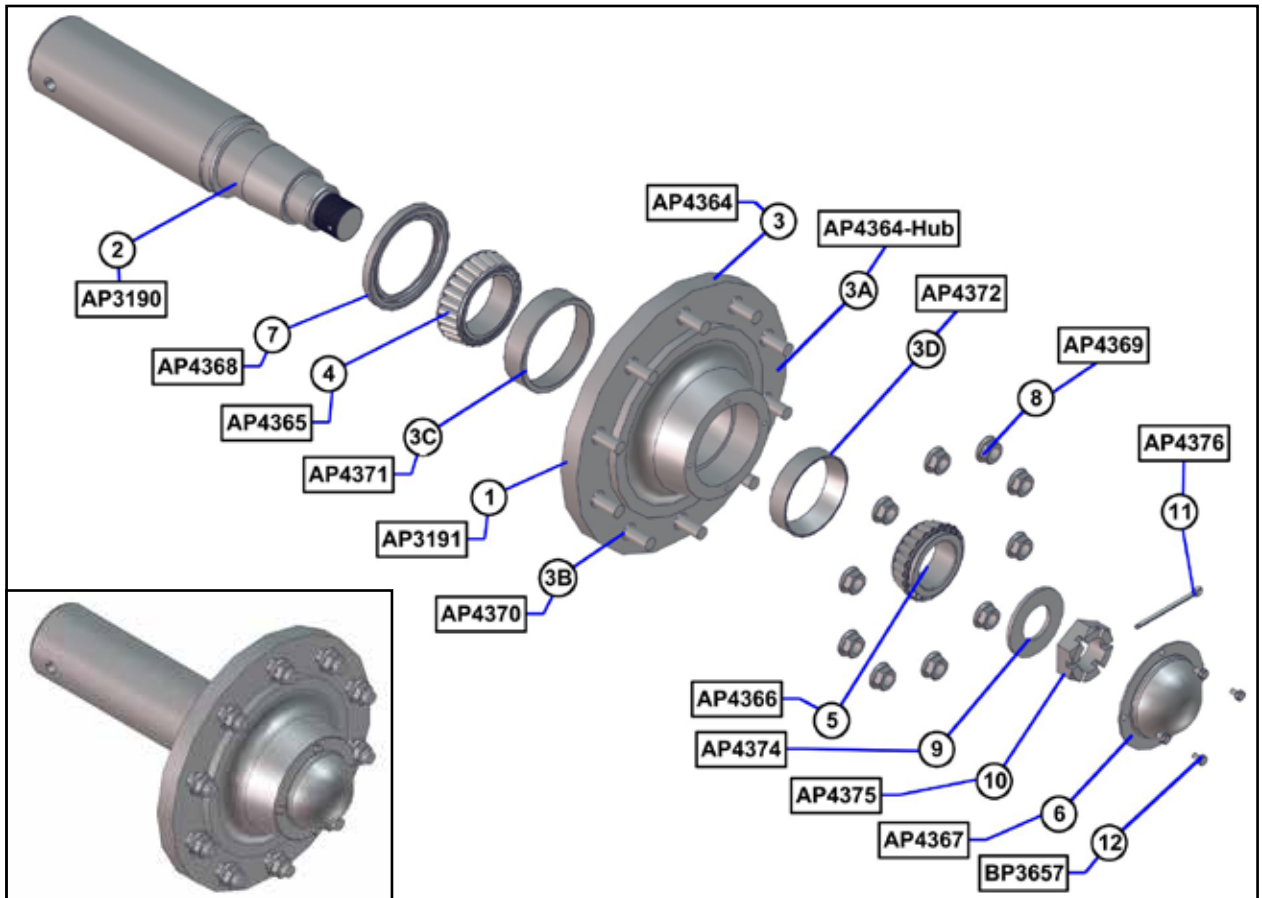
AT4020 BASE FRAME, 2000 GALLON TANK (44200101)

BOM ID	Qty	Item No	Description
1	1	44200101	AT4020, BASE FRAME, 2000 GALLON TANK, IF380/105R50 TIRES
2	1	41000046	LIGHTING KIT, AT4020
3	1	44200104	BOTTOM FILL PLUMBING KIT, AT4020, 3" FILL
4	1	AAM2423	TRANSPORT CHAIN KIT, 30,000 #
4A	1	AP2195	TRANSPORT CHAIN, 30000#, 7/16"
4B	1	AP2469	DECAL, SAFETY CHAIN
4C	1	BM3498	BUSHING, SAFETY CHAIN
4D	1	BP3051	PIN, 1" X 6", HITCH, PLATED
4E	1	BP3511	PIN, COTTER, 3/16" X 1-3/4"
5	1	AAM2897	WHEEL, IF380/105R50 177D, LEFT-HAND
5A	1	AP2790	VALVE STEM, METAL
5B	1	AP3186	TIRE, IF380/105R50 177D, FUSDDTGY
5C	1	AP3187	RIM, 50 X 13 X 10, WHITE, ZERO OFFSET, 13.189" BC
6	1	AAM2898	WHEEL, IF380/105R50 177D, RIGHT-HAND
6A	1	AP2790	VALVE STEM, METAL
6B	1	AP3186	TIRE, IF380/105R50 177D, FUSDDTGY
6C	1	AP3187	RIM, 50 X 13 X 10, WHITE, ZERO OFFSET, 13.189" BC
7	1	AAM2901	ASSEMBLY, AT4020, CART FRAME W/ 2000 GALLON TANK
7A	1	AM3800	FRAME, AT4020
7A1	2	BP3516	TENSION BUSHING, 1-1/4" X 1" X 1" OAL
7A2	1	EM0113	WELDMENT, TANK SADDLE, AT4020
7A3	1	EM0123	WELDMENT, MAIN FRAME, AT4020
7B	2	AM4432	BRACKET, TANK STRAP ADJUSTMENT, 2" STRAP
7C	1	AP4580-1	TANK, AT4020, 2000 GALLONS, W/ VENTS
7C1	1	AP4580	TANK, AT4020, 2000 GALLONS
7C10	1	CP2097	MANIFOLD BOTTOM DRAIN FITTING, 3" FLANGE, MBF300BD
7C11	1	CP2550	TANK OUTLET FITTING, 2" FITS 3" HOLE
7C2	1	AP4613	TANK LEVEL SENSING ROD
7C3	1	AP4616	TANK CONTROL FLANGE HARDWARE
7C4	1	AP4617	TANK CONTROL FLANGE KIT
7C5	1	AP4618	FLANGE CONTROL HOLE HARDWARE
7C6	1	AP4619	TANK CONTROL ANGLE BASE
7C7	1	CP2040	TANK OUTLET FITTING 1/2" FPT, FITS 1-3/8" HOLE
7C8	1	CP2042	HOODED VENT, 2" MPT POLY W/SCREEN
7C9	1	CP2043	HOODED VENT, 2" MPT POLY WO/SCREEN
7D	4	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
7E	2	BP3217	HEX CAP SCREW, 1/2"-13 X 5", FULL THREAD, GRADE 8, PLTD
7F	2	MP0049	TANK STRAP, 2" BULK, POLYESTER WEBBING, BLUE
7G	2	BM3457	PIN, 1-3/4" X 11-5/8" OAL, WITH 21/32" HOLE, PLATED
7H	2	BP3135	HEX CAP SCREW, 5/8"-11 X 3-1/2", GRADE 5, PLATED
7I	2	BP3375	NUT, HEX LOCK, 5/8"-11, NYLOCK
8	1	AM2570	CRANK WITH GRIP, 80 DEGREE, TMC BLUE
8A	1	AP2413	GRIP, JACK HANDLE
8B	1	EM3139	WELDMENT, JACK HANDLE, 80
9	1	AM3527	JACK, 9TWDL, WITH MOUNTING PLATE, AT3000

AT4020 BASE FRAME, 2000 GALLON TANK (44200101)

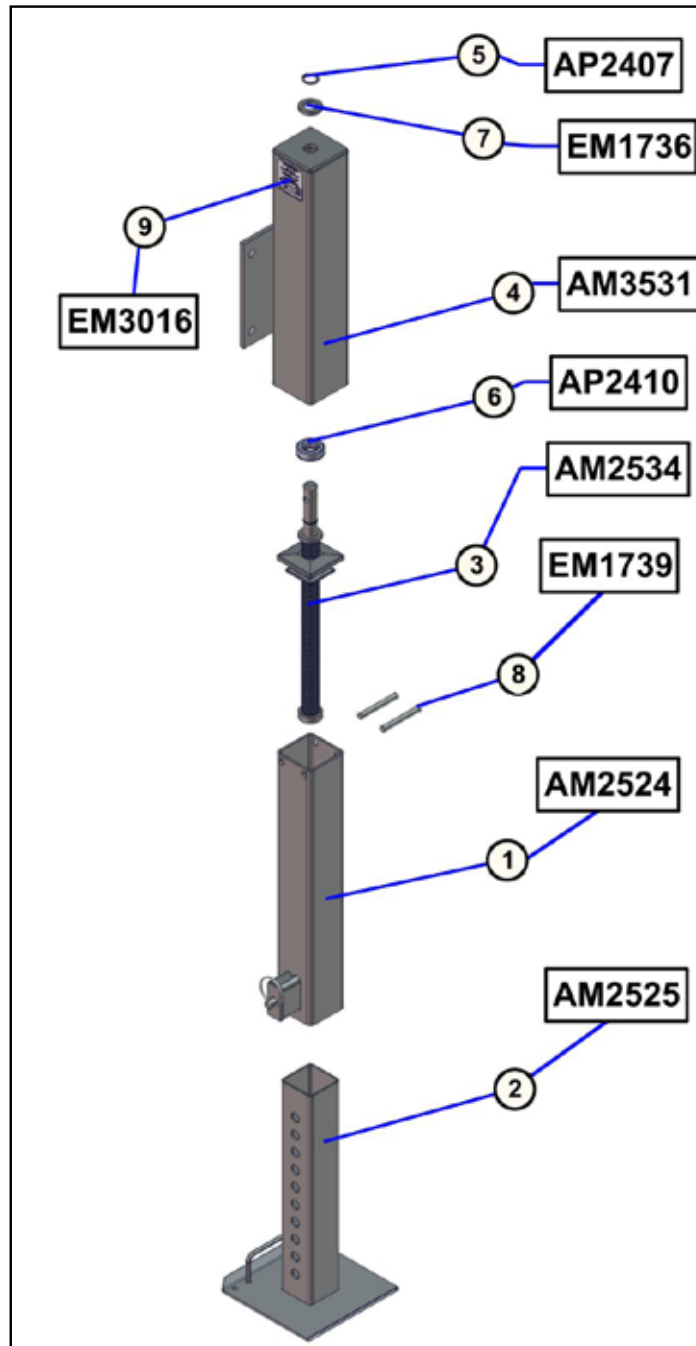
10	1	AM3801	TONGUE, AT4020
11	2	AM3802	AXLE, AT4020
12	1	AM3838	REAR TANK DISPLAY MOUNT
13	2	AM7518	HOSE HOLDER RETAINER
14	1	AP2215	DECAL, BLU-JET, 3" X 8"
15	1	AP2231	DECAL, FEMA, 2-1/2" X 1-1/2"
16	2	AP2547	DECAL, REFLECTOR, YELLOW, 2" X 9"
17	2	AP2576	DECAL, AT4020, ALL-TERRAIN INJECTION
18	1	AP2864	PERFECT HITCH, CAT IV, BLACK
19	1	AP2871	HOSE RETAINER
20	1	AP2914	DECAL, WARNING, HIGH-PRESSURE FLUID
21	2	AP2969	DECAL, WARNING, PINCH POINT, 2-1/2" X 4"
22	2	AP3191	881 HUB AND 4-1/2" SPINDLE ASSEMBLY
23	1	AP4254	MANUAL HOLDER, BLACK
24	1	AP4612	REAR TANK DISPLAY, AT4020
25	1	AP4614	HARNESS, DISPLAY TO SENSING ROD, AT45020
26	1	AP4615	HARNESS, EXTENSION CABLE, AT4020
27	2	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
28	2	BP3002	WASHER, LOCK, 3/8", PLATED
29	3	BP3003	NUT, HEX LOCK, 3/8"-16, GRADE 2, PLATED
30	2	BP3005	HEX CAP SCREW, 3/8"-16 X 1-1/2", GRADE 5, PLATED
31	4	BP3015	WASHER, FLAT, 3/8", PLATED
32	2	BP3037	HEX CAP SCREW, 3/4"-10 X 7", GRADE 5, PLATED
33	2	BP3053	NUT, HEX, 1/4"-20, GRADE 2
34	2	BP3054	WASHER, LOCK, 1/4", PLATED
35	2	BP3055	WASHER, FLAT, 1/4", PLATED
36	1	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
37	4	BP3140	HEX CAP SCREW, 3/4"-10 X 2-1/2, GRADE 5, PLATED
38	6	BP3145	HEX CAP SCREW, 3/4"-10 X 4-1/2", GRADE 5, ZP
39	2	BP3150	HEX CAP SCREW, 1/4"-20 X 1", GRADE 5, PLATED
40	4	BP3171	HEX CAP SCREW, 5/8"-11 X 2", GRADE 5, PLATED
41	2	BP3189	HEX CAP SCREW, 3/8"-16 X 3-1/2, GRADE 5, PLATED
42	10	BP3209	HEX CAP SCREW, 3/4"-10 X 3, GRADE 8, PLATED
43	2	BP3295	NUT, HEX LOCK, 1"-8, NYLOCK
44	28	BP3442	NUT, HEX LOCK, 3/4"-10, TOP LOCK, GRADE C, PLATED
45	2	BP3577	HEX CAP SCREW, 1"-8 X 7-1/2", GRADE 8, PLATED
46	4	BP3744	NUT, HEX LOCK, 5/8"-11, GRADE 5, PLATED, TOPLOCK
47	6	BP3472	HEX CAP SCREW, 3/4"-10 X 3-1/2", GRADE 8, PLATED
A	1	AM3844	BOLT-ON LIFT PIVOT, AT4020, LEFT-HAND
B	1	AM3845	BOLT-ON LIFT PIVOT, AT4020, RIGHT-HAND
C	1	AP2759	SERIAL NUMBER PLATE, BLU-JET EQUIPMENT
D	4	AP2763	TACK, SERIAL NUMBER PLATE
E	16	BP3034	NUT, HEX, 3/4"-10, GRADE 2, PLATED
F	16	BP3035	WASHER, LOCK, 3/4", PLATED
G	8	BP3350	U-BOLT, 3/4"-10 X 6"W X 7-11/16"L, PLATED

AT4020 BASE FRAME, 2000 GALLON TANK (AP3191 881 HUB AND 4-1/2" SPINDLE)

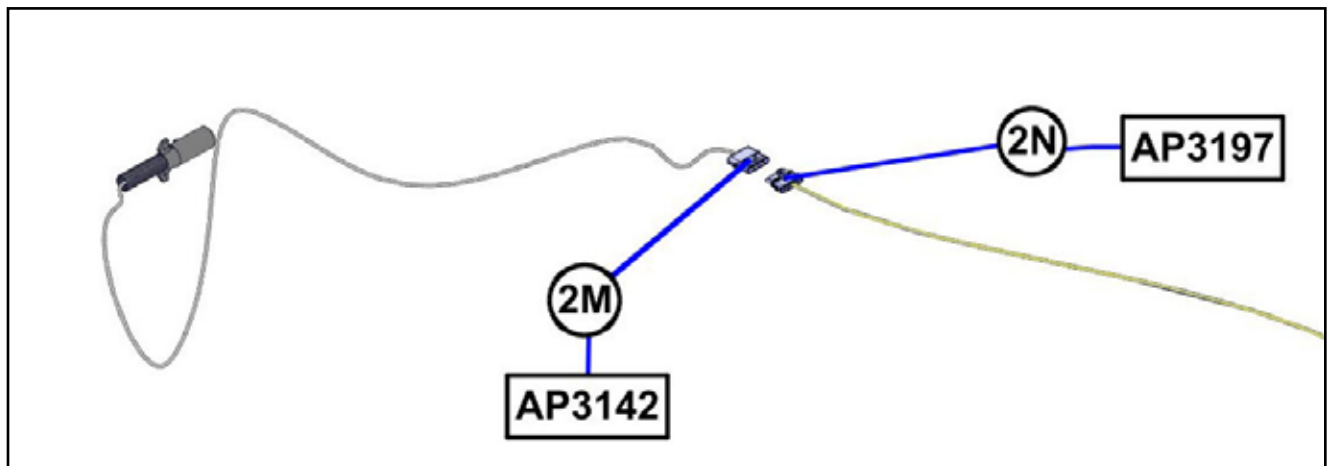
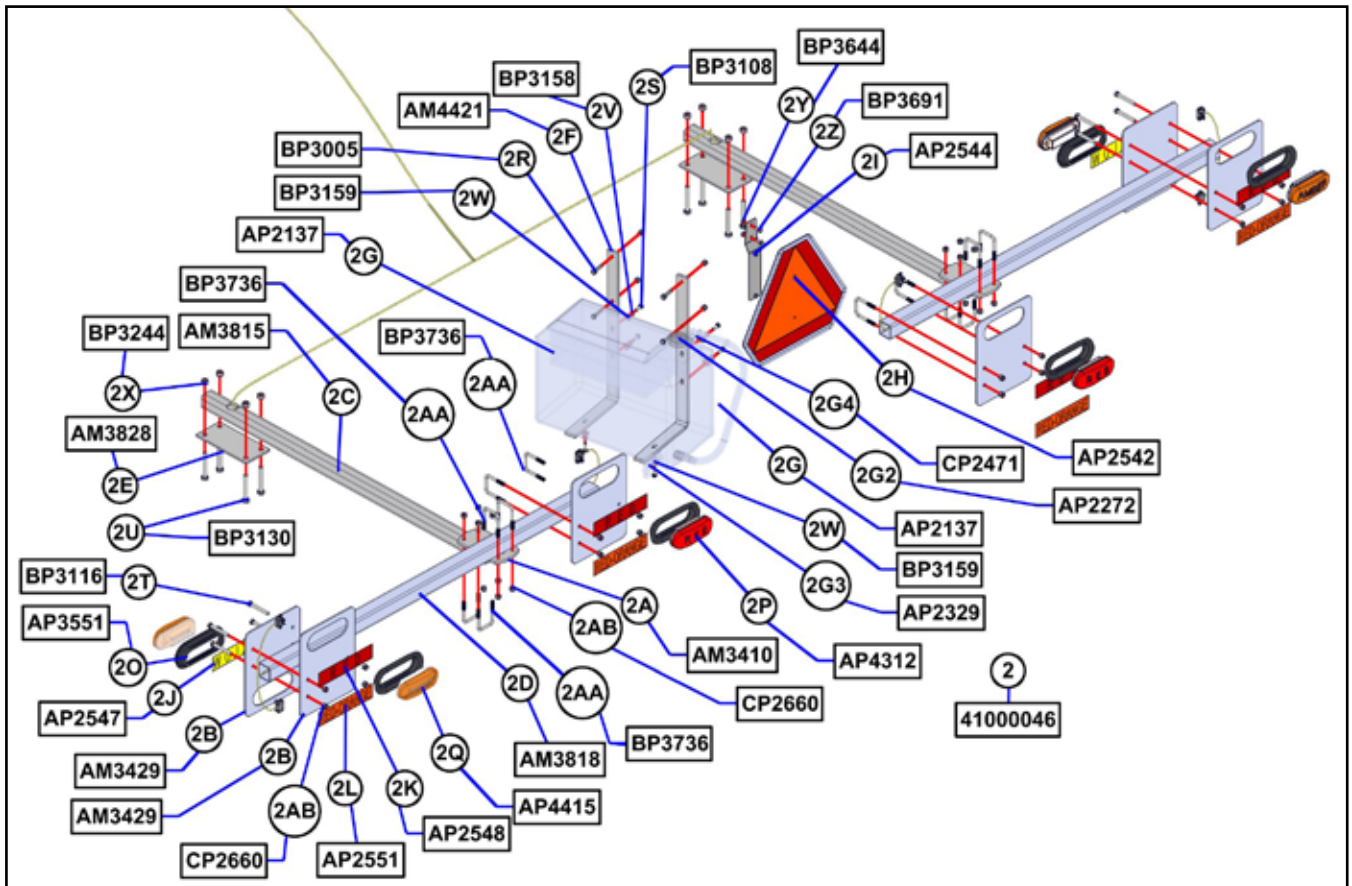


BOM ID	QTY	ITEM NO	Description
1	1	AP3191	881 HUB AND 4-1/2" SPINDLE ASSEMBLY
2	1	AP3190	SPINDLE, 4-1/2" X 21-1/2"
3	1	AP4364	HUB WITH CUPS, 13.187" BOLT CIRCLE, 11.03" PILOT, 881
3A	1	AP4364-HUB	HUB, 10 BOLT, 13.187" BOLT CIRCLE, 11.03" PILOT, 881
3B	10	AP4370	BOLT, WHEEL STUD, 3/4"-16 X 2-3/4"
3C	1	AP4371	BEARING CUP
3D	1	AP4372	BEARING CUP
4	1	AP4365	BEARING CONE, HM212049
5	1	AP4366	BEARING CONE, HM212049
6	1	AP4367	HUB CAP DC-28
7	1	AP4368	GREASE SEAL, 4.375" SHAFT X 6.001" OD X 0.5000"
8	10	AP4369	NUT, HEX FLANGE, 3/4"-16, GRADE 5, ZINC PLATED
9	1	AP4374	WASHER, SPINDLE, 4" X 2-1/16" X .250"
10	1	AP4375	NUT, SPINDLE 2-12"
11	1	AP4376	PIN, COTTER, 5/16" X 4"
12	4	BP3657	HEX CAP SCREW, 5/16"-18 X 1/2", GRADE 5, PLATED

**AT4020 BASE FRAME, 2000 GALLON TANK (44200101)
JACK ASSEMBLY, 9TW25DL, (AM3527)**



BOM ID	Qty	Item No	Description
1	1	AM2524	INTERMEDIATE TUBE WITH PLUNGER ASSEMBLY
2	1	AM2525	DROP LEG WITH PAD & HANDLE
3	1	AM2534	SCREW ASSEMBLY, 4" 9TW13 (TOP WIND)
4	1	AM3531	JACK, TOP TUBE
5	1	AP2407	SNAP RING, 1" EXTERNAL, HEAVY DUTY
6	1	AP2410	THRUST BEARING, NICE 609
7	1	EM1736	BEARING SEAT
8	2	EM1739	ROD
9	1	EM3016	9000# LABEL



**AT4020 BASE FRAME, 2000 GALLON TANK (44200101)
 (41000046 LIGHTING KIT)**

BOM ID	Qty	Item No	Description
1	1	44200101	AT4020, BASE FRAME, 2000 GALLON TANK, IF380/105R50 TIRES
2	1	41000046	LIGHTING KIT, AT4020
2A	2	AM3410	MOUNTING PLATE, LIGHT POST
2AA	12	BP3736	U-BOLT, 3/8"-16 X 2"W X 3"L, PLATED
2AB	36	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK
2B	6	AM3429	LIGHT MOUNT
2C	2	AM3815	TUBE, LIGHT BRACKET (4')
2D	2	AM3818	TUBE, LIGHT BRACKET (4'-8")
2E	2	AM3828	FLAT WITH 4 HOLES
2F	2	AM4421	BRACKET, TANK MOUNTING, 9 GALLON, AT4000
2G	1	AP2137	SAFETY TANK, 9 GALLON
2G1	1	AP2137HOSE	3/4" CLEAR HOSE - CP2069 - 24" LENGTH
2G2	1	AP2272	2" FILL CAP
2G3	1	AP2329	SPIGOT
2G4	1	CP2471	ELBOW, 90°, 3/4"MP X 3/4" HB POLY
2G5	1	CP2577	HOSE BARB, 3/4"MP X 3/4" HB, POLY
2H	1	AP2542	SMV SIGN
2I	1	AP2544	SMV MOUNTING SPADE
2J	2	AP2547	DECAL, REFLECTOR, YELLOW, 2" X 9"
2K	4	AP2548	DECAL, REFLECTOR, RED, 2" X 9"
2L	4	AP2551	DECAL, FLUORESCENT, RED-ORANGE, 2" X 9", NON-REFLECTIVE
2M	1	AP3142	ELECTRICAL HARNESS, 10' MAIN 5-WIRE, 7 PIN
2N	1	AP3197	ELECTRICAL HARNESS, 17' 2 POST, 5 WIRE
2O	6	AP3551	GROMMET, OVAL, MODEL 60
2P	2	AP4312	LAMP, LED, OVAL, STOP TURN & TAIL, RED
2Q	4	AP4415	LAMP, LED, OVAL, TURN SIGNAL, AMBER, LED
2R	4	BP3005	HEX CAP SCREW, 3/8"-16 X 1-1/2", GRADE 5, PLATED
2T	8	BP3116	HEX CAP SCREW, 3/8"-16 X 3", GRADE 5, PLATED
2U	8	BP3130	HEX CAP SCREW, 1/2"-13 X 3-1/2", GRADE 5, PLATED
2V	6	BP3158	WASHER, LOCK, 5/16", PLATED
2W	6	BP3159	WASHER, FLAT, 5/16", PLATED
2X	8	BP3244	NUT, HEX LOCK, 1/2"-13, PLATED
2Y	2	BP3644	NUT, HEX LOCK, 5/16"-18, TOP LOCK
2Z	2	BP3691	HEX CAP SCREW, 5/16"-18 X 3/4", GRADE 5, PLATED

**AT4020 BASE FRAME, 2000 GALLON TANK (44200101)
 (44200104 BOTTOM FILL PLUMBING KIT)**

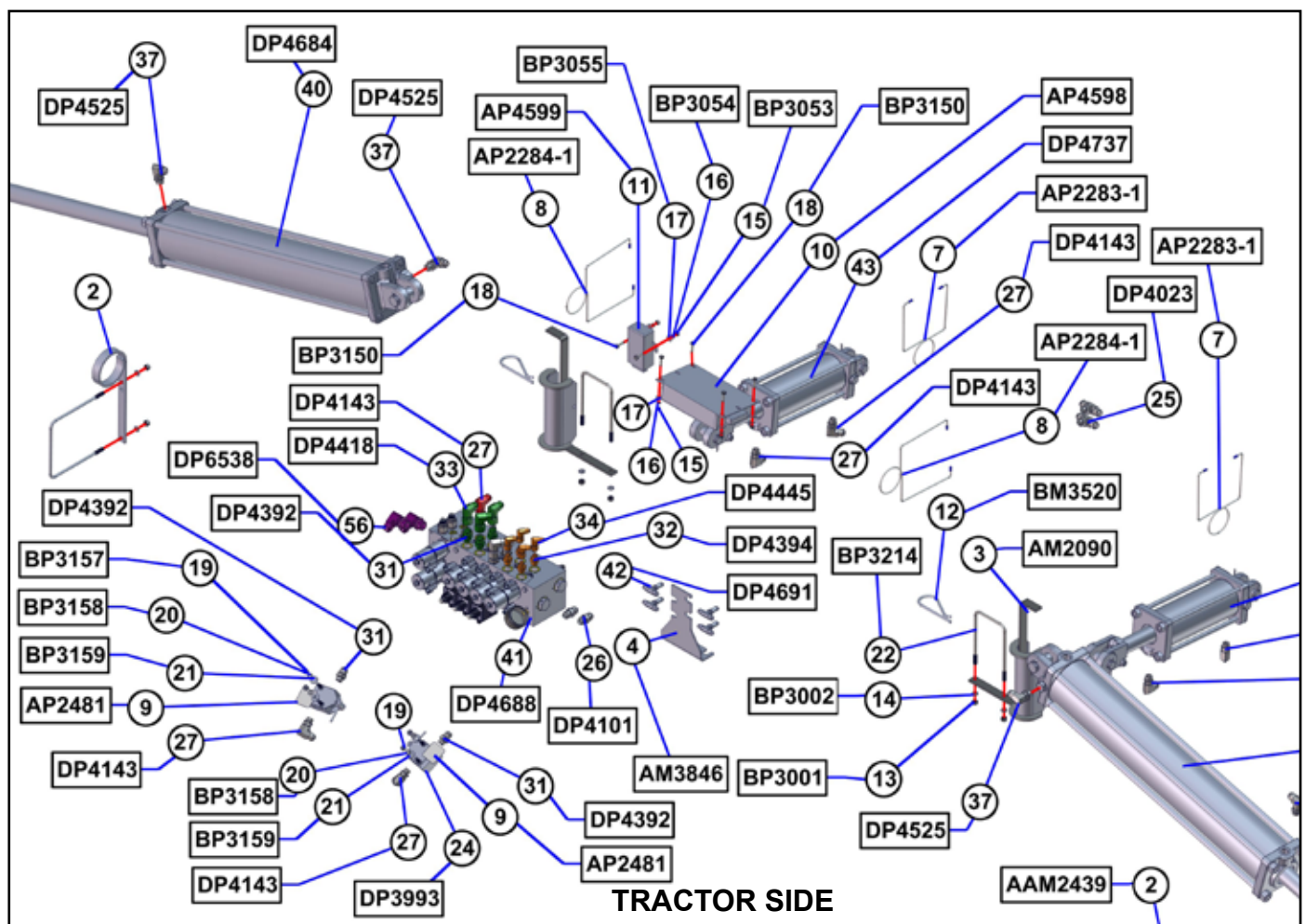
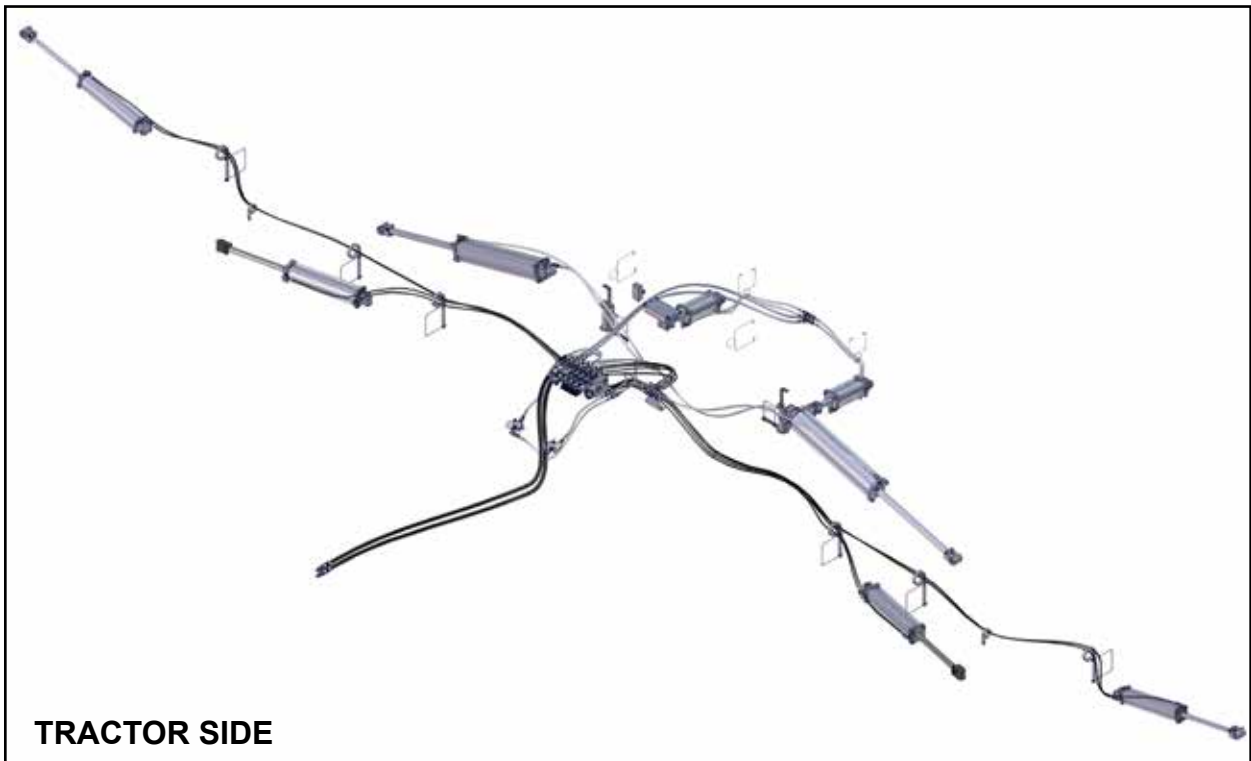
BOM ID	Qty	Item No	Description
3	1	44200104	BOTTOM FILL PLUMBING KIT, AT4020, 3" FILL
3A	1	AM3819	BOTTOM FILL PLATE
3AA	2	CP2591	HOSE CLAMP, WORM GEAR, 3" TUBING, STAINLESS STEEL
3AB	7	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK
3B	2	AM3820	BRACKET, SLOTTED
3C	4	BP3005	HEX CAP SCREW, 3/8"-16 X 1-1/2", GRADE 5, PLATED
3D	3	BP3006	HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED
3E	7	BP3015	WASHER, FLAT, 3/8", PLATED
3F	4	BP3299	HEX CAP SCREW, 3/8"-16 X 5-1/2", GRADE 5, PLATED
3G	2	BP3401	HEX CAP SCREW, 3/8"-16 X 4-1/2", GRADE 5, PLATED
3H	3	CP2044	CLAMP, 2" WORM SCREW, FLANGE
3I	3	CP2045	GASKET, EPDM, 2" FLANGE, 3/4" BULKHEAD, 150G
3J	1	CP2049	VALVE, BALL, 2" - 1-1/2" PORT
3K	1	CP2056	HOSE BARB, 2" FLANGE X 2" HOSE
3L	2	CP2057	ELBOW, 90 DEGREE, 2" FLANGE X 2" HOSE BARB
3M	1	CP2058	TEE, 3" FLANGE
3N	1	CP2059	REDUCER, 3" FLANGE X 2" FLANGE, STANDARD PORT
3O	2	CP2060	HOSE BARB, 3" FLANGE X 3" HOSE
3P	8	CP2062	CLAMP, 3" WORM SCREW, FLANGE
3Q	8	CP2063	GASKET, EPDM, 3" FLANGE, 300G
3R	1	CP2064	VALVE, BALL, 3" FLANGE X 3" MALE ADAPTER
3S	1	CP2068	CAP, 3" 300 CAP
3T	1	CP2074	ELBOW, 45 DEGREE, 3" FLANGE X 3" FLANGE, POLY
3U	1	CP2076	VALVE BALL, 3" FLANGE POLY
3V	1	CP2097	MANIFOLD BOTTOM DRAIN FITTING, 3" FLANGE, MBF300BD
3W	2	CP2098	ELBOW, 90 DEGREE, 3" FLANGE X 3" FLANGE, POLY, SM300CPG90
3X	3	CP2408	HOSE CLAMP, WORM GEAR, 2" - 2-1/2" TUBING, STAINLESS STEEL
3Y	1	CP2574	HOSE, EPDM RUBBER, REINFORCED, 85#
3Z	1	CP2590	HOSE, EPDM RUBBER, 2", REINFORCED, 100#

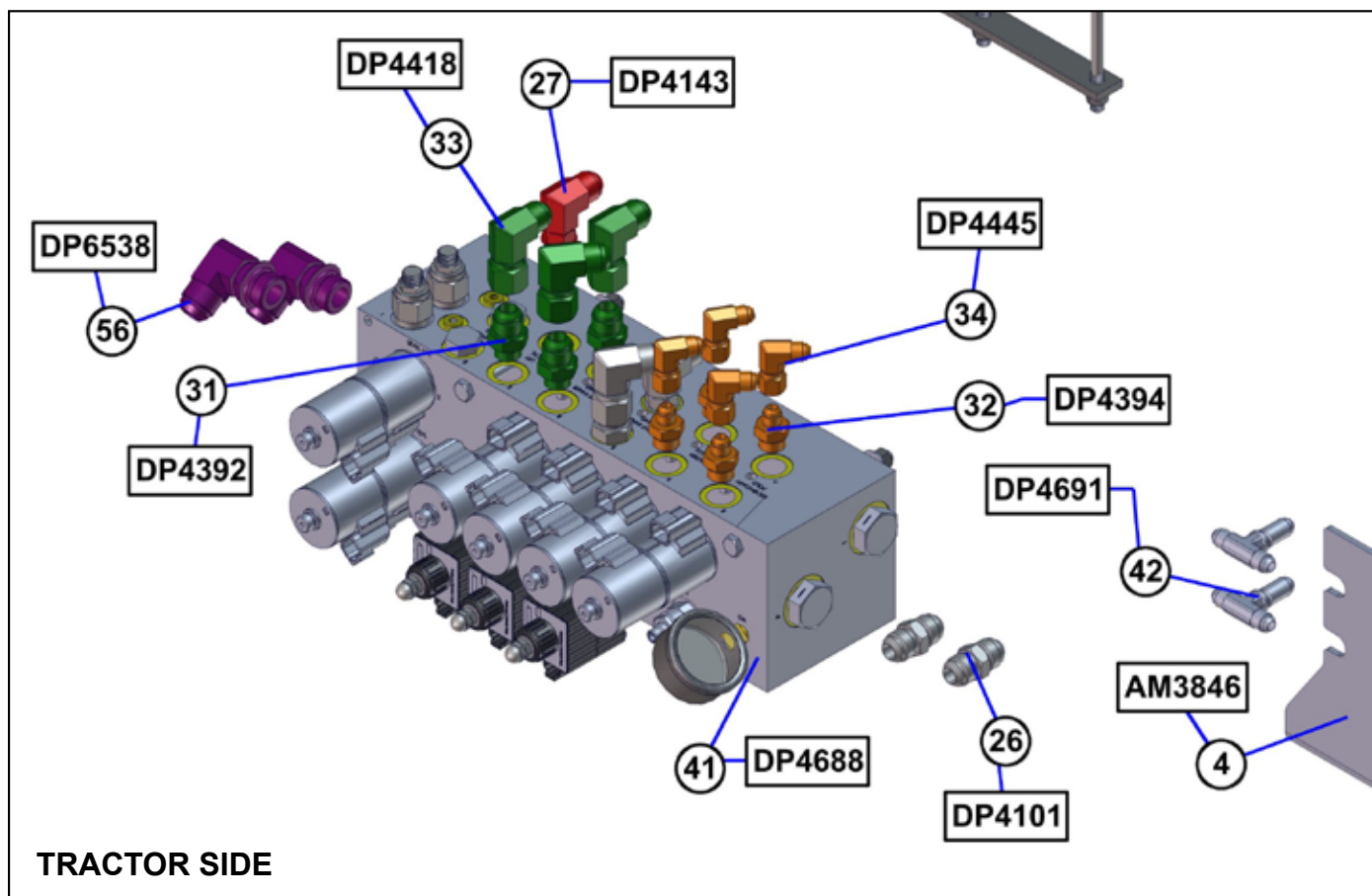
AT4020 HYDRAULIC CONTROLLED (44200105)

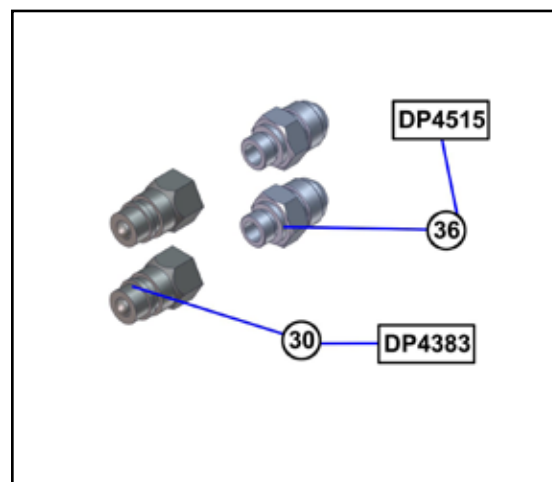
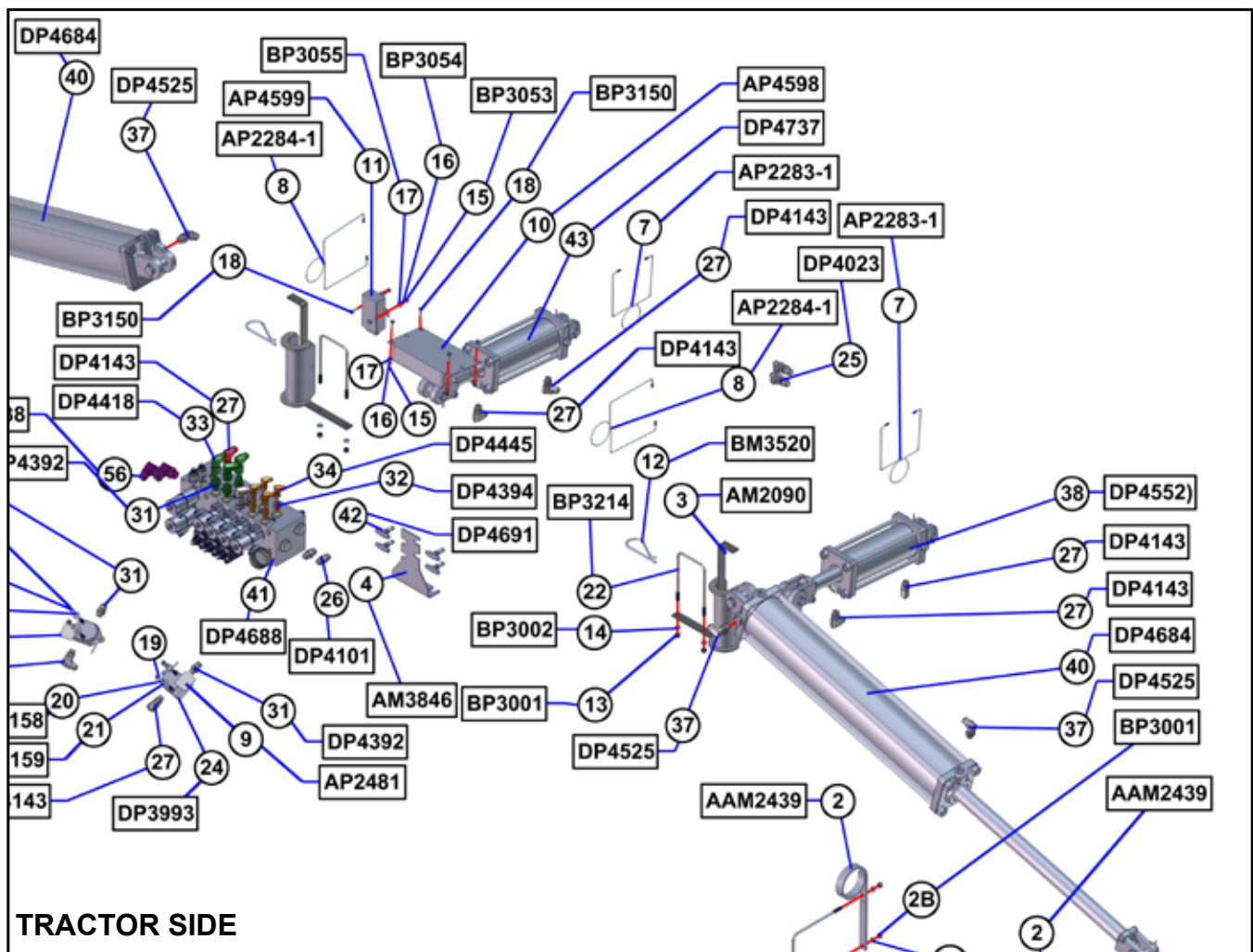
BOM ID	Qty	Item No	Description
1	1	44200105	HYDRAULICS KIT AT4020, CONTROLLED
2	6	AAM2439	HOSE RETAINER ASSEMBLY, CLOSED LOOP, 7" X 7" TUBE
2A	6	AM4015	HOSE RETAINER, CLOSED LOOP, 6" & 7" MOUNTING
2B	12	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
2C	12	BP3002	WASHER, LOCK, 3/8", PLATED
2D	6	BP3335	U-BOLT, 3/8"-16 X 7" W X 8"L, PLATED
3	2	AM2090	BRACKET, DEPTH COLLAR & LOCKUP STORAGE
4	1	AM3846	HYDRAULIC HOSE MOUNT
5	2	AM4442	HOSE RETAINER, CLOSED LOOP
6	2	AM4721	TRANSPORT LOCK, HD 1-3/4" & 2" CYLINDER. ROD
7	2	AP2283-1	HOSE RETAINER, 6" X 6", WITH PLASTIC CAPS
8	2	AP2284-1	HOSE RETAINER, 7" X 7", WITH PLASTIC CAPS
9	2	AP2481	DECAL, TRANSPORT LOCK
10	1	AP4598	ECU, PS6_VAR 19, MULLER ECU
11	1	AP4599	MICRO CAN IO, MULLER MICRO ECU
12	2	BM3520	CLIP PIN, TRANSPORT LOCK
13	8	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
14	8	BP3002	WASHER, LOCK, 3/8", PLATED
15	6	BP3053	NUT, HEX, 1/4"-20, GRADE 2
16	6	BP3054	WASHER, LOCK, 1/4", PLATED
17	6	BP3055	WASHER, FLAT, 1/4", PLATED
18	6	BP3150	HEX CAP SCREW, 1/4"-20 X 1", GRADE 5, PLATED
19	4	BP3157	NUT, HEX, 5/16"-18, GRADE 2, PLATED
20	4	BP3158	WASHER, LOCK, 5/16", PLATED
21	4	BP3159	WASHER, FLAT, 5/16", PLATED
22	2	BP3214	U-BOLT, 3/8"-16 X 4"W X 7"L
23	4	BP3452	WASHER, FLAT, 3/8", 7/8" OD, 18-8 STAINLESS STEEL
24	2	DP3993	HYDRAULIC CHECK VALVE, WITH MANUAL RELEASE
25	2	DP4023	TEE, 10MJ-10MJ-10MJ
26	2	DP4101	ADAPTER, 10MJ-10MJ
27	8	DP4143	ADAPTER, 10MJIC-8MSAE, 90 DEGREE

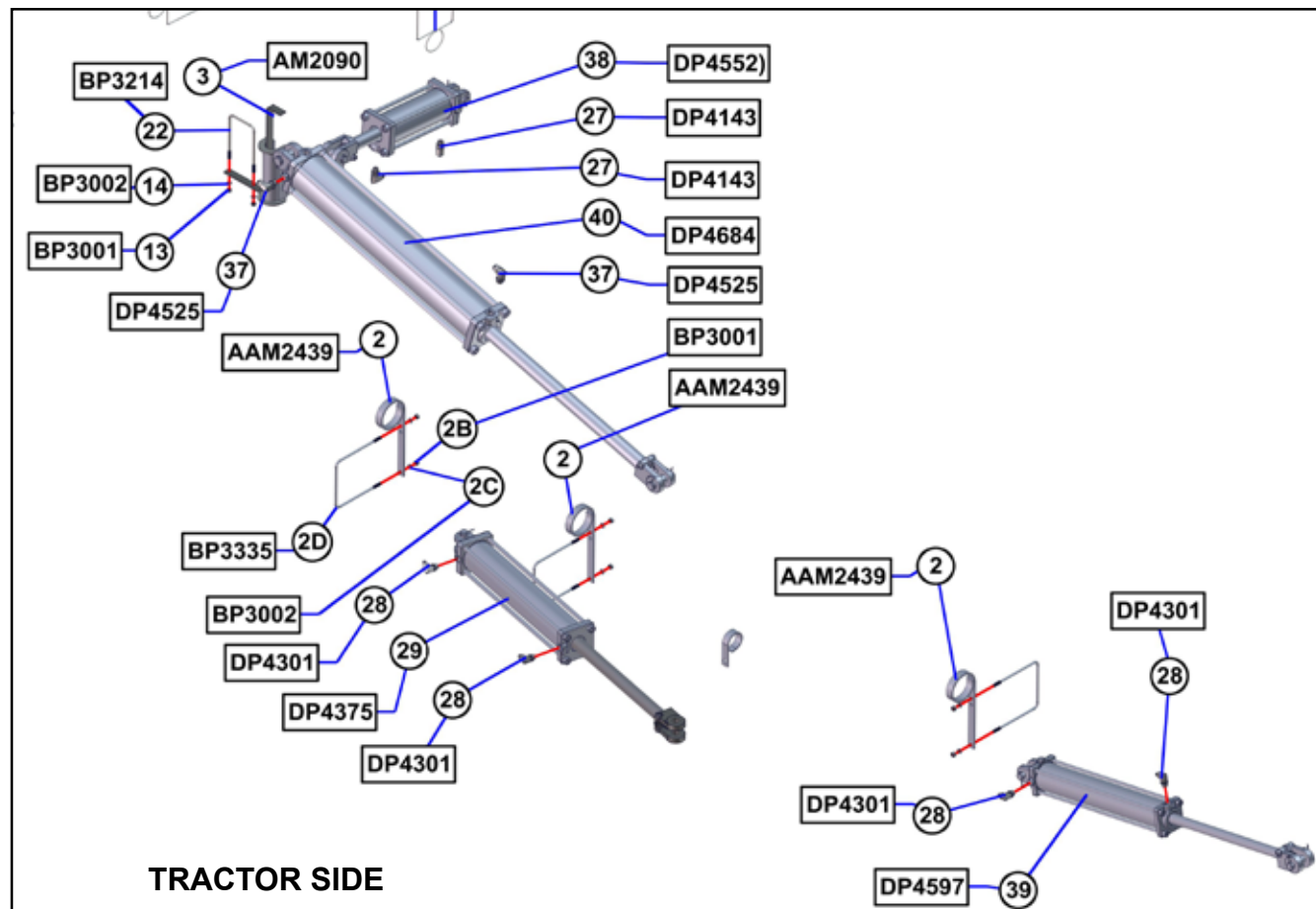
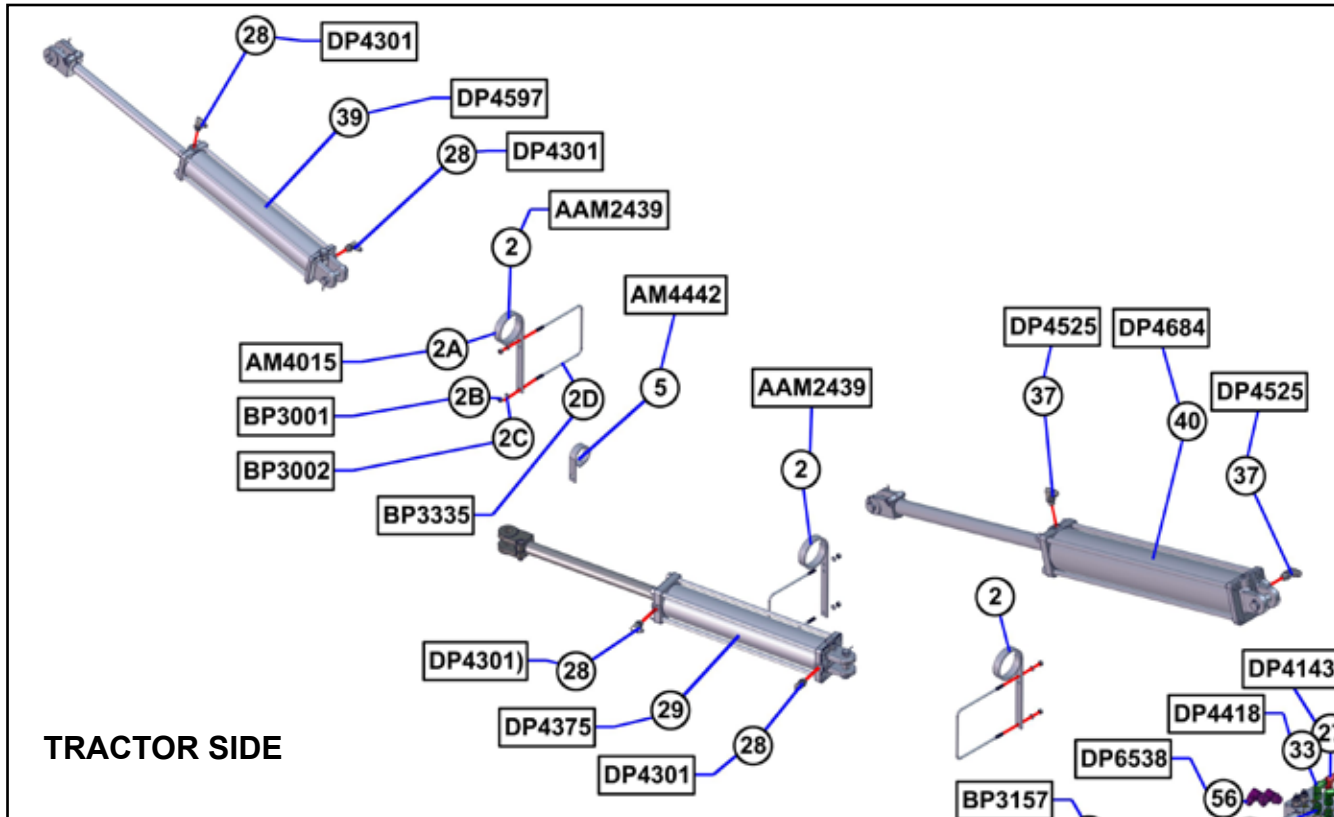
AT4020 HYDRAULIC CONTROLLED (44200105)

28	8	DP4301	ADAPTER, 6MJ-8MSAE, 90 DEGREE
29	2	DP4375	CYLINDER, HYD, 4" X 20", 3000 PSI, B400200ABACB07E
30	2	DP4383	COUPLER, PIONEER, 8MQBA-8FSAE
31	6	DP4392	ADAPTER, 8MSAE-10MJIC, STRAIGHT, 6400-10-8
32	4	DP4394	ADAPTER, 8MSAE-6MJIC, 6400-6-8
33	4	DP4418	ELBOW, 90 DEGREE, 10MJIC-10FJX, 6500-10
34	4	DP4445	ELBOW, 90 DEGREE, 6MJIC-6FJX, 6500-6
35	2	DP4501	HOSE, HYDRAULIC, 3/8" X 138" 10FJX-10FJX
36	2	DP4515	ADAPTER, 12MJIC-8MSAE, STRAIGHT
37	4	DP4525	ADAPTER, 10MSAE-10MJIC, 90 DEGREE, 6801-10
38	1	DP4552	CYLINDER, HYDRAULIC, 4" X 8", A400080ABACB07E
39	2	DP4597	CYLINDER, HYDRAULIC, 3-1/2" X 20", 3000 PSI
40	2	DP4684	CYLINDER, HYDRAULIC, 5" X 30", 3000 PSI, WITH INTERNAL SENSOR
41	1	DP4688	HYDRAULIC VALVE, AT4020
42	4	DP4691	TEE, 6MJ-6MJ-6MJ, BULKHEAD
43	1	DP4737	CYLINDER, HYDRAULIC, 4 X 8, A400080ABACB07E
44	1	DP5027	HOSE, HYDRAULIC, 3/8" X 56" 10FJX-10FJX
45	2	DP5028	HOSE, HYDRAULIC, 3/8" X 36", 10FJX-10FJX
46	2	DP5045	HOSE, HYDRAULIC, 3/8" X 102" 10FJX-10FJX
47	2	DP5136	HOSE, HYDRAULIC, 1/2" X 117", 10FJX-10FJX
48	3	DP5214	HOSE, HYDRAULIC, 3/8" x 46" 10 FJX-10FJX
49	2	DP5254	HOSE, HYDRAULIC, 1/4" X 13", 6FJX-6FJX
50	2	DP5276	HOSE, HYDRAULIC, 1/4" X 114", 6FJX-6FJX
51	4	DP5303	HOSE, HYDRAULIC, 1/4" X 57", 6FJX-6FJX
52	2	DP5329	HOSE, HYDRAULIC, 1/4" X 213", 6FJX-6FJX
53	2	DP5330	HOSE, HYDRAULIC, 1/4" X 237", 6FJX-6FJX
54	1	DP5334	HOSE, HYDRAULIC, 3/8" X 19" 10FJX-10FJX
55	1	DP5335	HOSE, HYDRAULIC, 3/8" X 39" 10FJX-10FJX
56	2	DP6538	ADAPTER, 12MJ-12MSAE 90 DEGREE, 6801-12
57	2	DP6543	HOSE, HYDRAULIC, 3/4" X 121", 12FJX-12FJX
58	2	DP6564	PLUG, 8MSAE, HEX, 6408-8
59	2	DP6622	PLUG, 12 MSAE, HEX

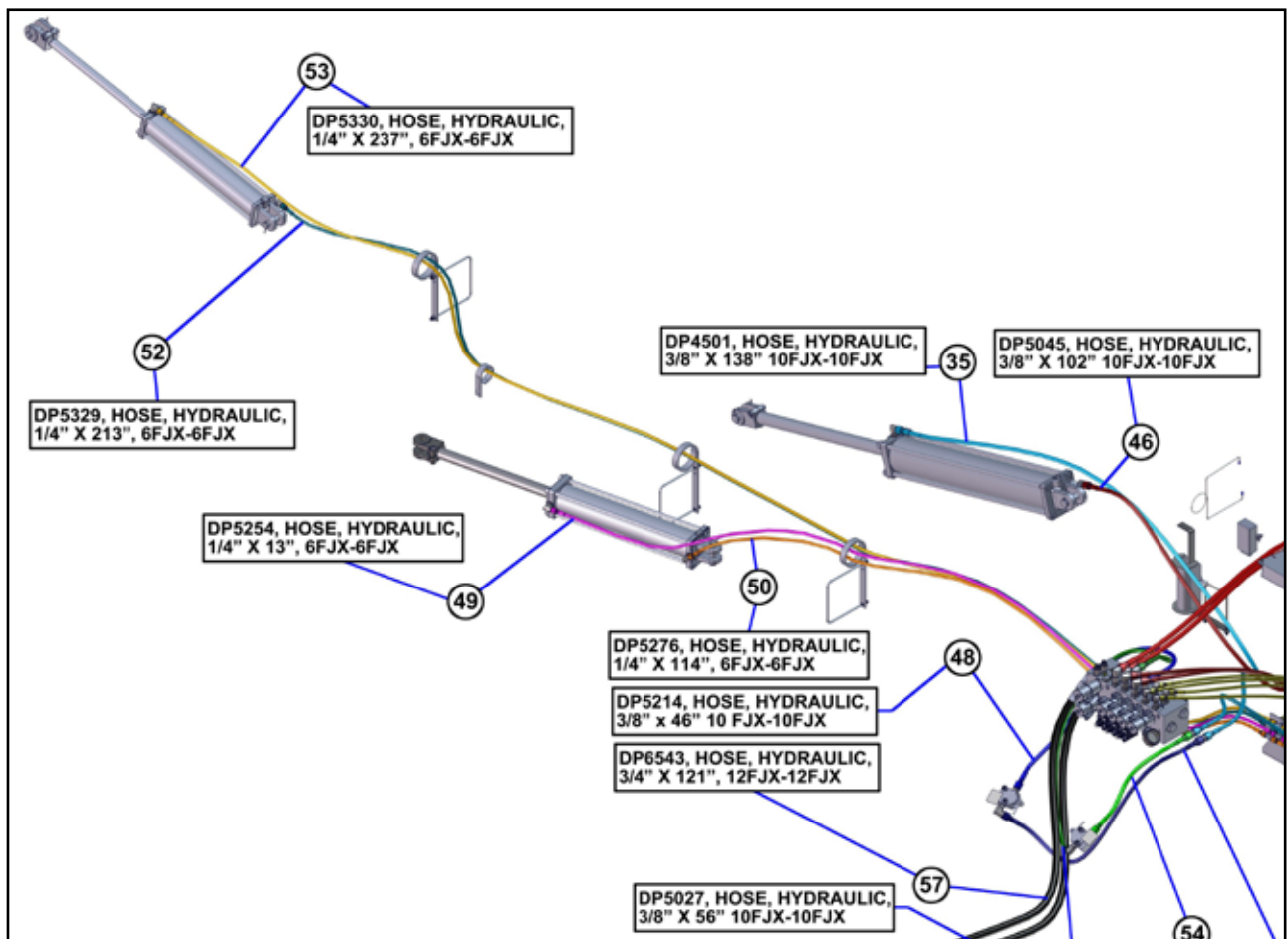
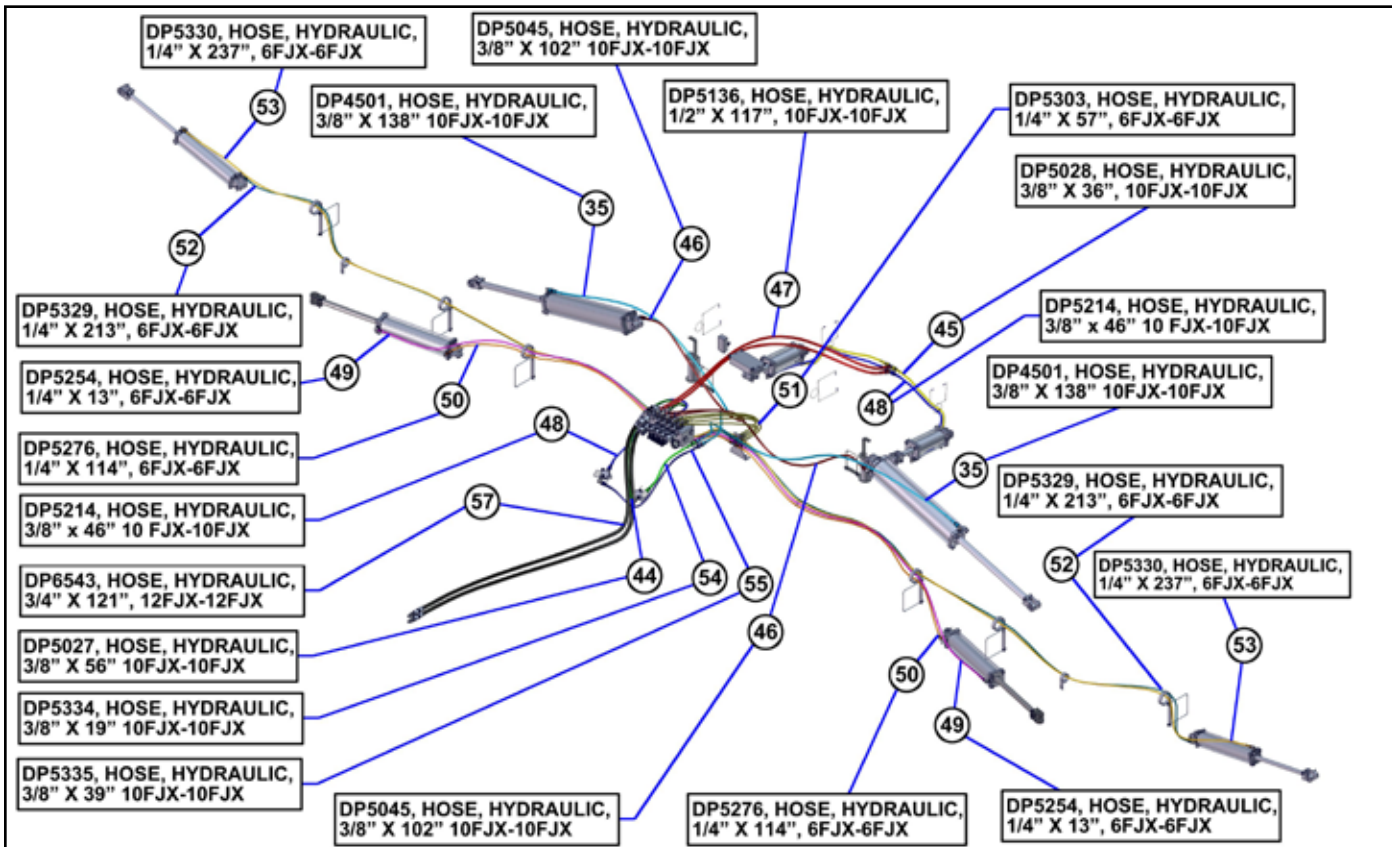




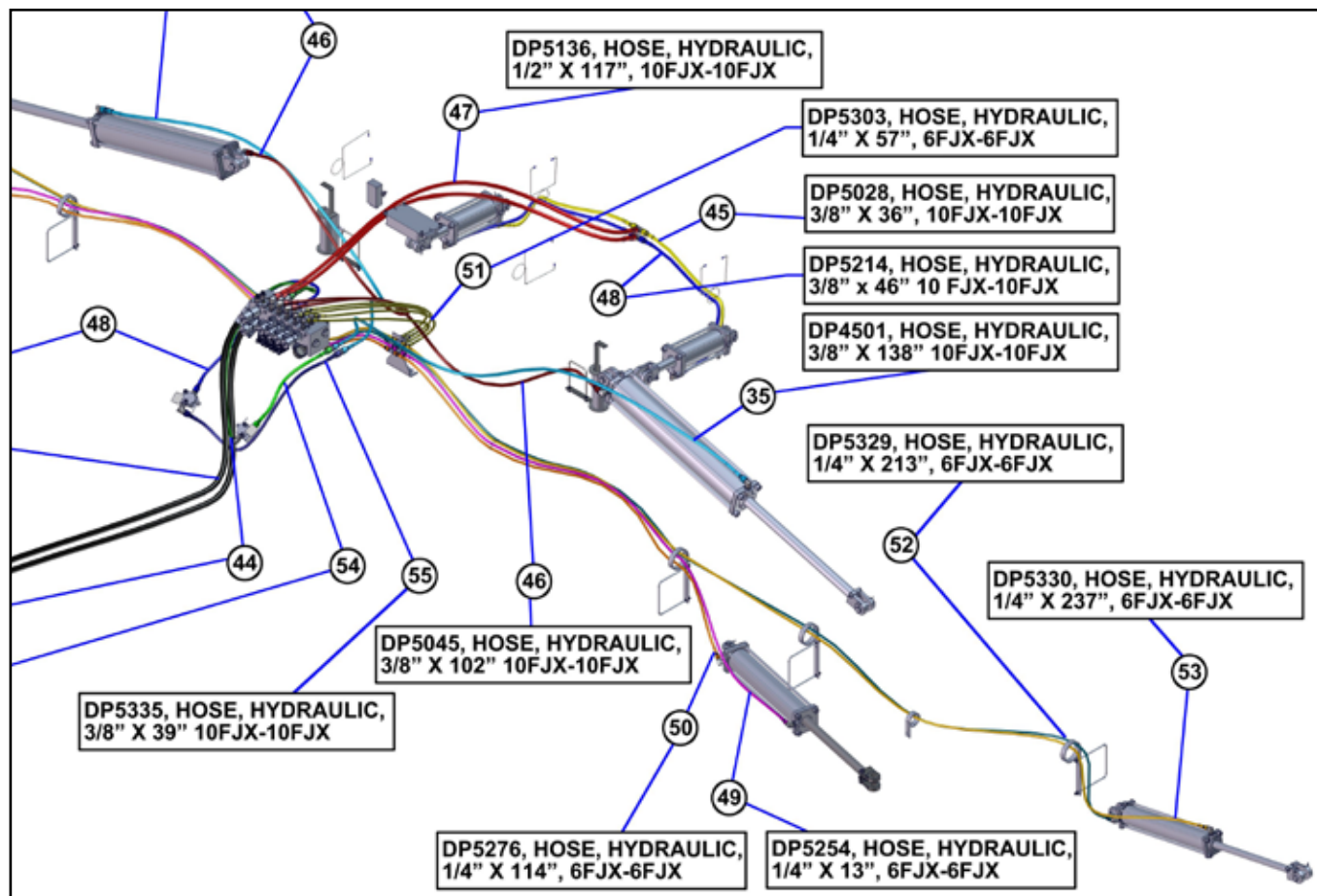
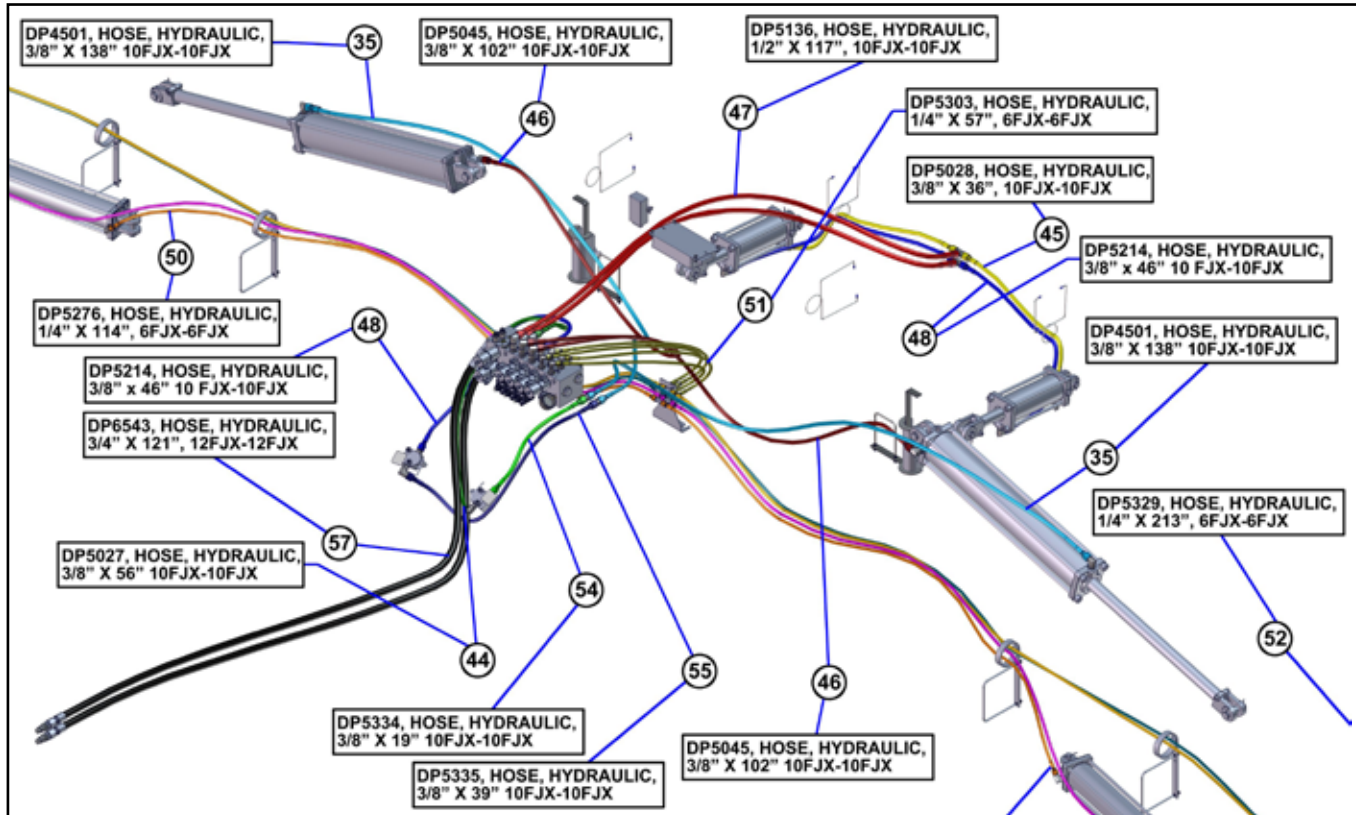


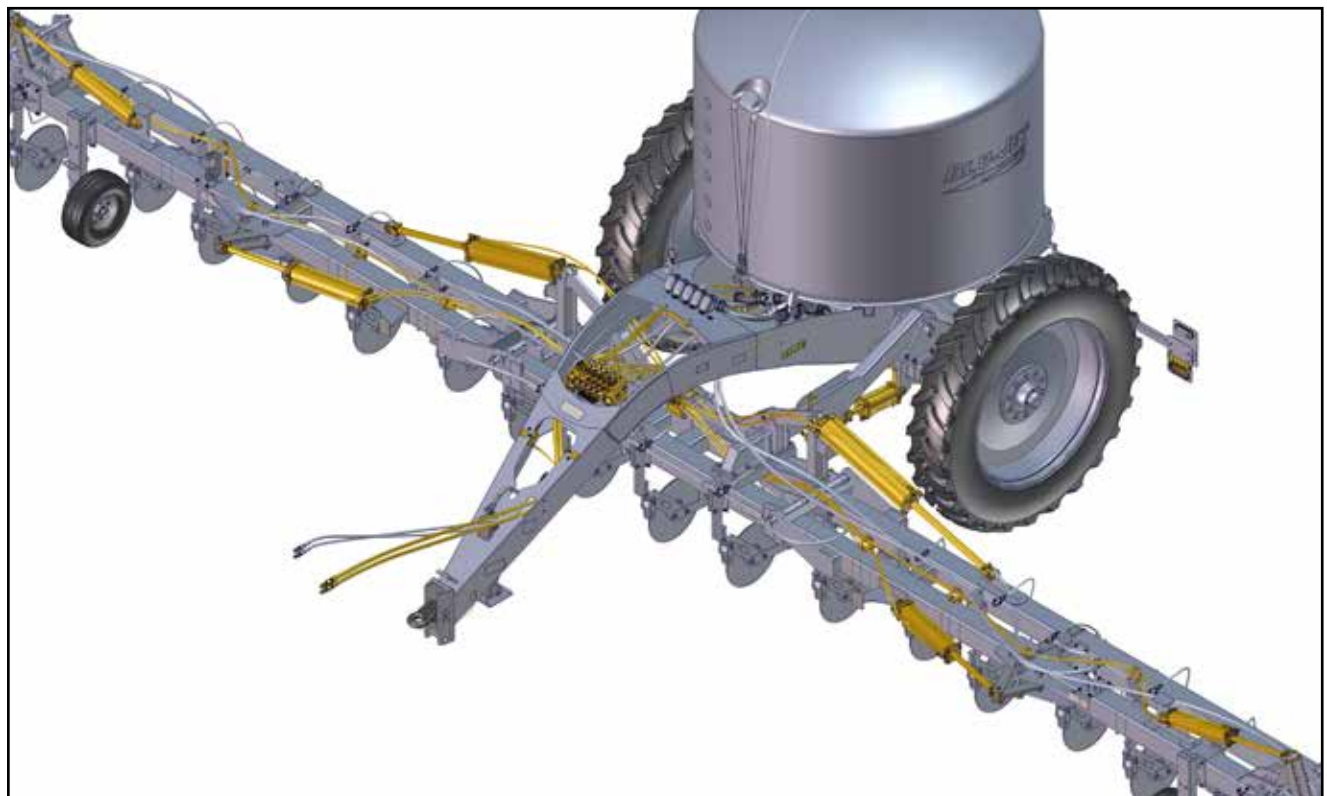
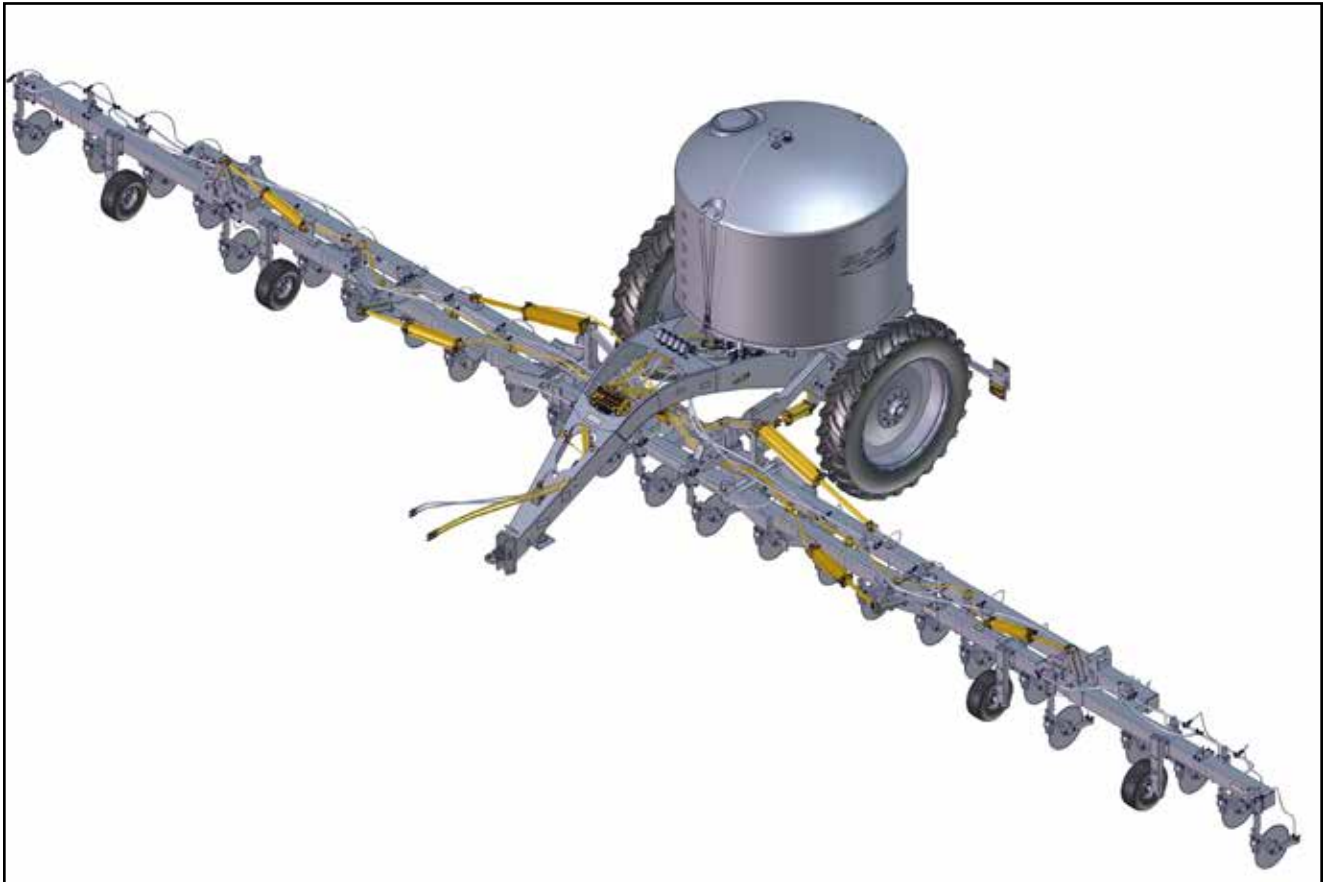


AT4020 HYDRAULIC CONTROLLED (44200105)

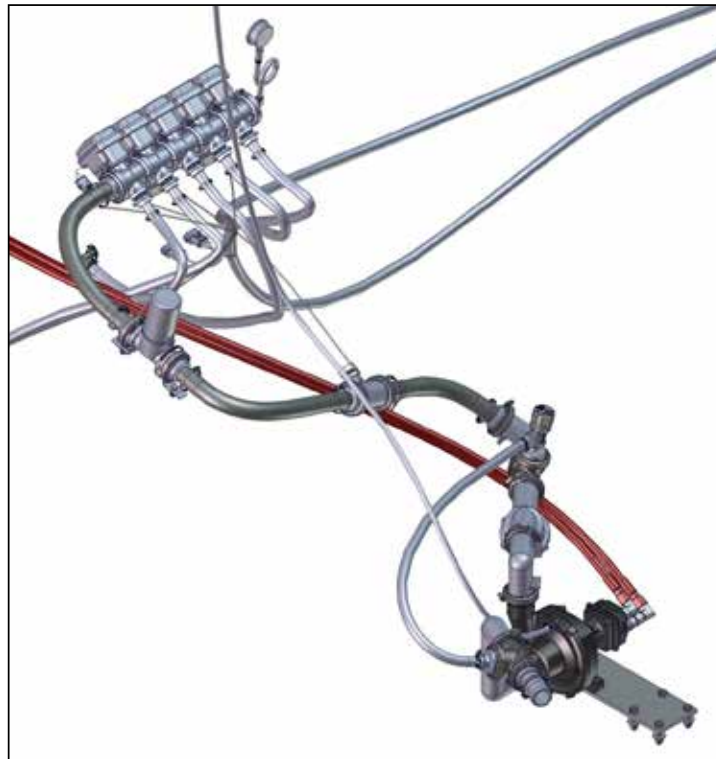
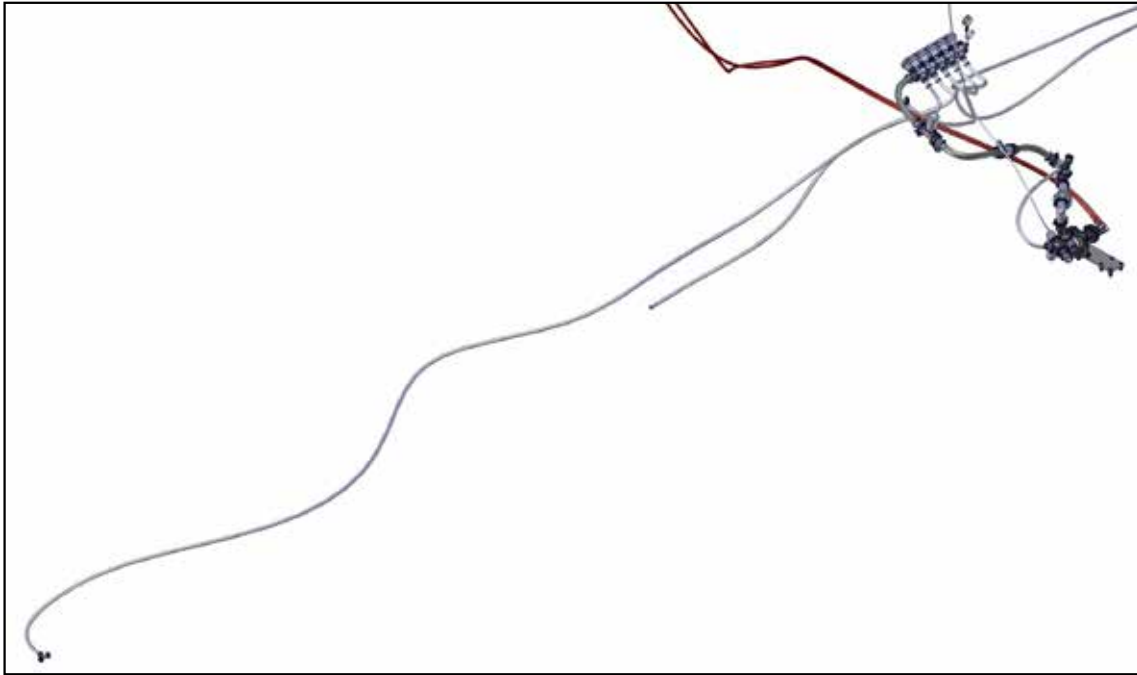


AT4020 HYDRAULIC CONTROLLED (44200105)





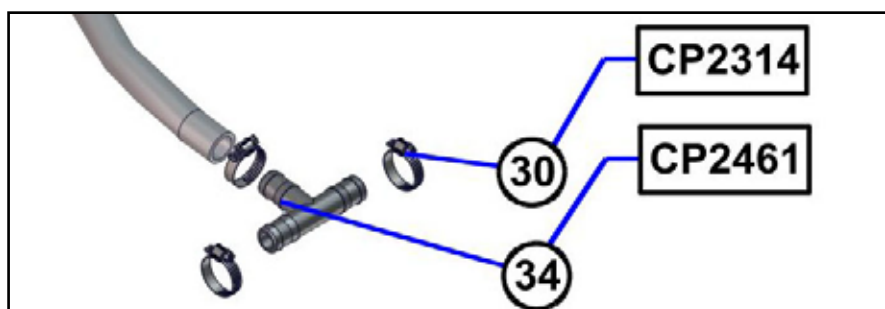
CENTRIFUGAL PUMP PACKAGE (44200107)



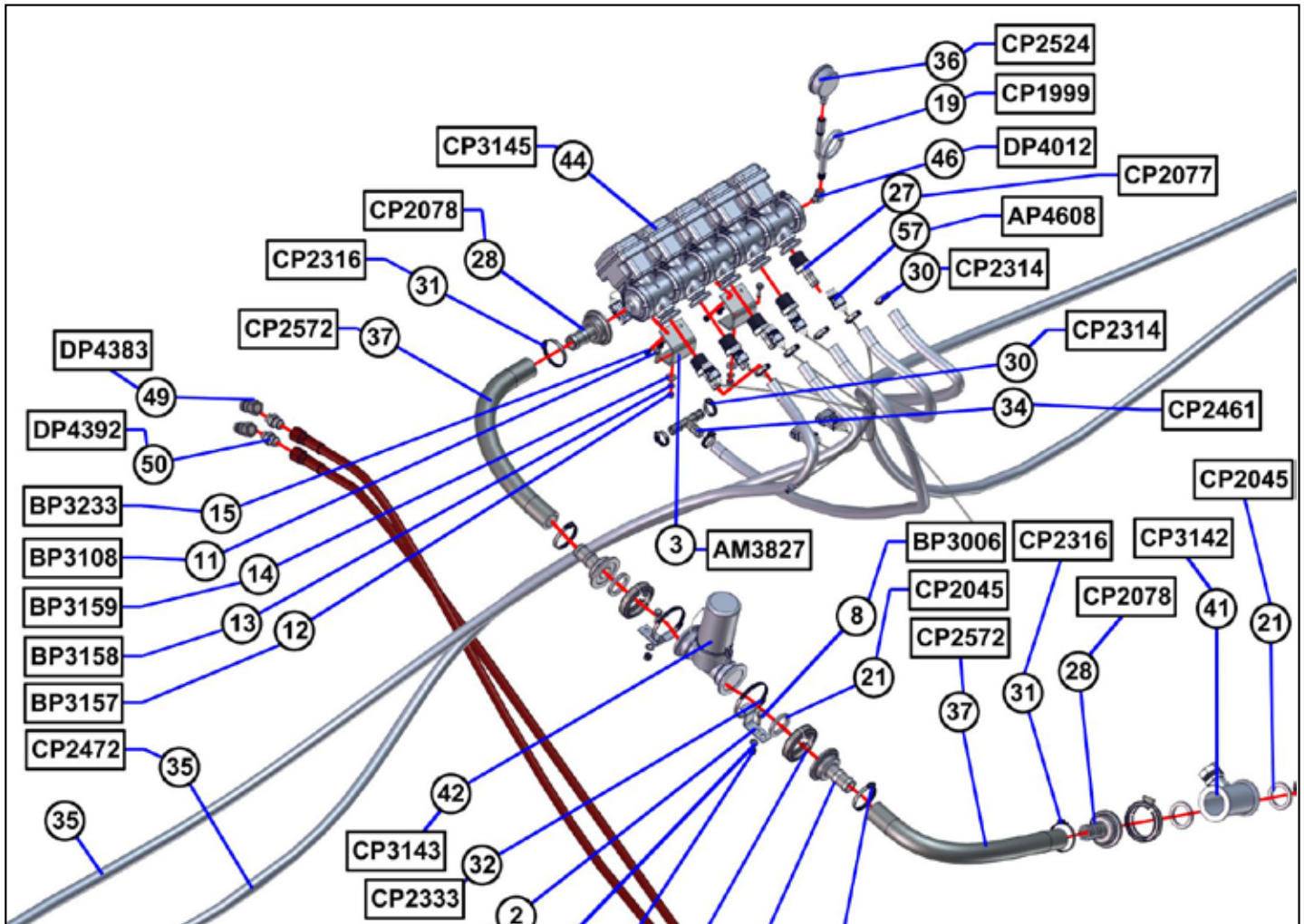
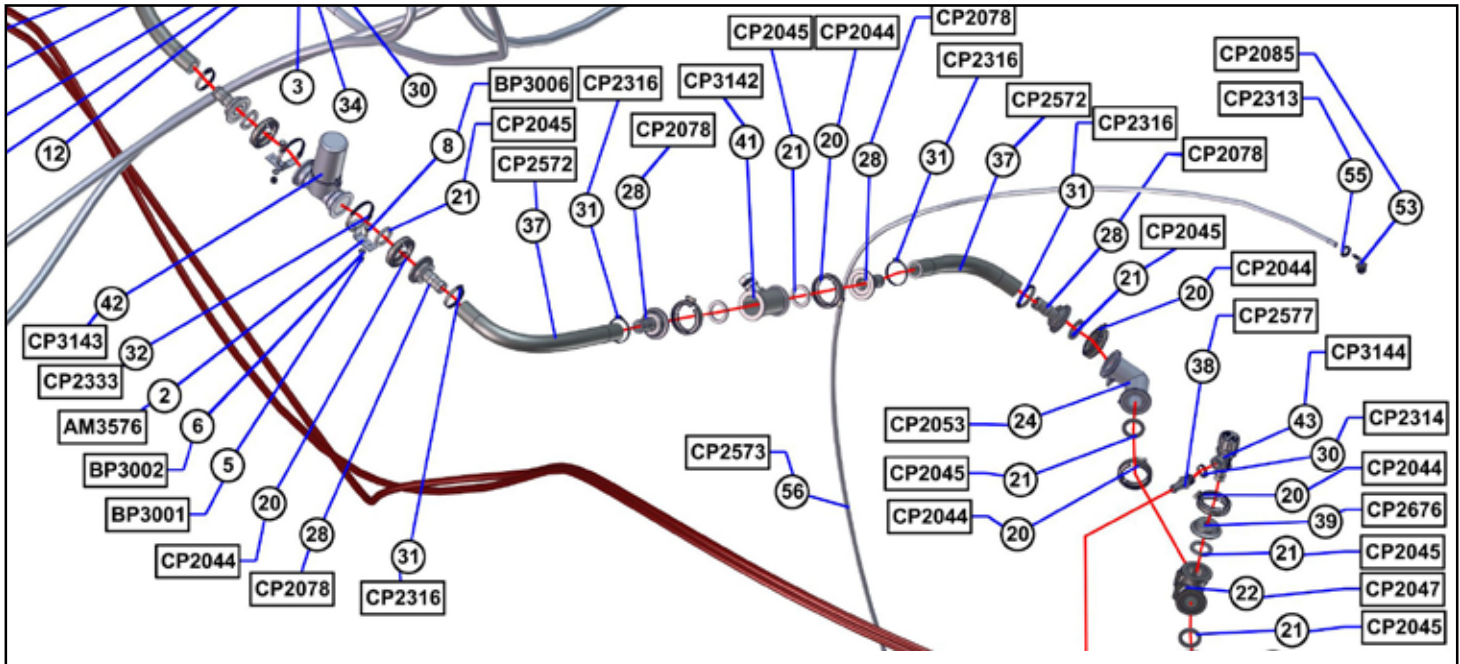
BOM ID	Qty	Item No	Description
1	1	44200107	CENTRIFUGAL PUMP PACKAGE, AT4020, 5 SECTION
2	2	AM3576	BRACKET, MOUNTING, VALVES & FLOWMETER
3	2	AM3827	BENT FLAT
4	1	AM3829	FLAT WITH HOLES
5	4	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
6	4	BP3002	WASHER, LOCK, 3/8", PLATED
7	2	BP3005	HEX CAP SCREW, 3/8"-16 X 1-1/2", GRADE 5, PLATED
8	2	BP3006	HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED
9	4	BP3041	HEX CAP SCREW, 1/2"-13 X 2", GRADE 5, PLATED

CENTRIFUGAL PUMP PACKAGE (44200107)

BOM ID	Qty	Item No	Description
10	4	BP3043	WASHER, LOCK, 1/2", PLATED
11	2	BP3108	HEX CAP SCREW, 5/16"-18 X 1", GRADE 5, PLATED
12	2	BP3157	NUT, HEX, 5/16"-18, GRADE 2, PLATED
13	2	BP3158	WASHER, LOCK, 5/16", PLATED
14	2	BP3159	WASHER, FLAT, 5/16", PLATED
15	4	BP3233	HEX CAP SCREW, 1/4"-20 X 3/4", GRADE 2, PLATED
16	4	BP3417	NUT, HEX, 1/2"-13, GRADE 5, PLATED
17	2	BP3452	WASHER, FLAT, 3/8", 7/8" OD, 18-8 STAINLESS STEEL
18	4	BP3457	WASHER, FLAT, 1/2", 1-1/4" OD, 18-8 STAINLESS STEEL
19	1	CP1999	GAUGE PROTECTOR, PIGTAIL
20	15	CP2044	CLAMP, 2" WORM SCREW, FLANGE
21	15	CP2045	GASKET, EPDM, 2 FLANGE, 3/4" BULKHEAD, 150G
22	2	CP2047	TEE, 2" FLANGE
23	1	CP2050	STRAINER, 2" FLANGE, LINE
24	4	CP2053	ELBOW, 90 DEGREE, 2" FLANGE
25	1	CP2055	STRAINER SCREEN, 30 MESH, LS230
26	1	CP2056	HOSE BARB, 2" FLANGE X 2" HOSE
27	5	CP2077	HOSE BARB, 1" MP X 3/4" HOSE, POLY
28	6	CP2078	HOSE BARB, 2" FLANGE X 1-1/4" HOSE
29	1	CP2081	ADAPTER, 1-1/4" MPT X 2" FLANGE
30	16	CP2314	HOSE CLAMP, WORM GEAR, 1/2" - 1" TUBING, STAINLESS STEEL
31	6	CP2316	HOSE CLAMP, WORM GEAR, 1-1/4" - 2" TUBING, STAINLESS STEEL
32	2	CP2333	HOSE CLAMP, WORM GEAR, 2-1/2" - 3" TUBING, STAINLESS STEEL
33	1	CP2408	HOSE CLAMP, WORM GEAR, 2" - 2-1/2" TUBING, STAINLESS STEEL
34	3	CP2461	TEE, 3/4"HB-3/4"HB-3/4"HB, POLY TT9121212PP
35	6	CP2472	HOSE, EPDM RUBBER, 3/4", 200#
36	1	CP2524	GAUGE, 0-160 PSI, GLYCERIN FILLED
37	3	CP2572	HOSE 1.25" DIAMETER.
38	2	CP2577	HOSE BARB, 3/4"MP X 3/4"HB, POLY
39	2	CP2676	FLANGE PLUG 2" MANIFOLD X 3/4" FP, MF32PL-12
40	1	CP3110	PUMP, CENTRIFUGAL, <76 GPM, HYDRAULIC DRIVE 11-13 GPM
41	1	CP3142	FLOWMETER, RAVEN (1-60GPM) 1-063-0171-793
42	1	CP3143	VALVE, REGULATING, 1-1/2" FPT RAVEN
43	1	CP3144	VALVE, RELIEF 3/4" SPRAY SYSTEMS 23120-PP
44	1	CP3145	VALVE, MANIFOLD SHUTOFF
45	1	DP4000	REDUCER BUSHING, 12MP-8FP, 5406-12-8
46	1	DP4012	STREET ELBOW, 4MP-4FP, 90°
47	1	DP4016	ADAPTER, 10MJ-8MP, 90°
48	1	DP4029	ADAPTER, 10MJ-8MP
49	2	DP4383	COUPLER, PIONEER, 8MQBA-8FSAE
50	2	DP4392	ADAPTER, 8MSAE-10MJIC, STRAIGHT, 6400-10-8
51	1	DP4418	ELBOW, 90°, 10MJIC-10FJX, 6500-10
52	2	DP5277	HOSE, HYDRAULIC, 5/8" X 240"
53	1	CP2085	ELBOW, 90°, 1/2" MP X 1/4" HB, POLY
54	1	CP2086	HOSE BARB, 1/8"MP X 1/4"HOSE, POLY
55	2	CP2313	HOSE CLAMP, WORM GEAR, 1/4" - 5/8" TUBING, STAINLESS STEEL
56	1	CP2573	HOSE, EVA, 1/4" REINFORCED, BULK, 250#
57	1	AP4608	HARNESS, RATE CONTROL, AT4020
	25	DP4086	CABLE TIE 11-3/8" STANDARD
	16	DP4296	CABLE TIE 33"



CENTRIFUGAL PUMP PACKAGE (44200107)

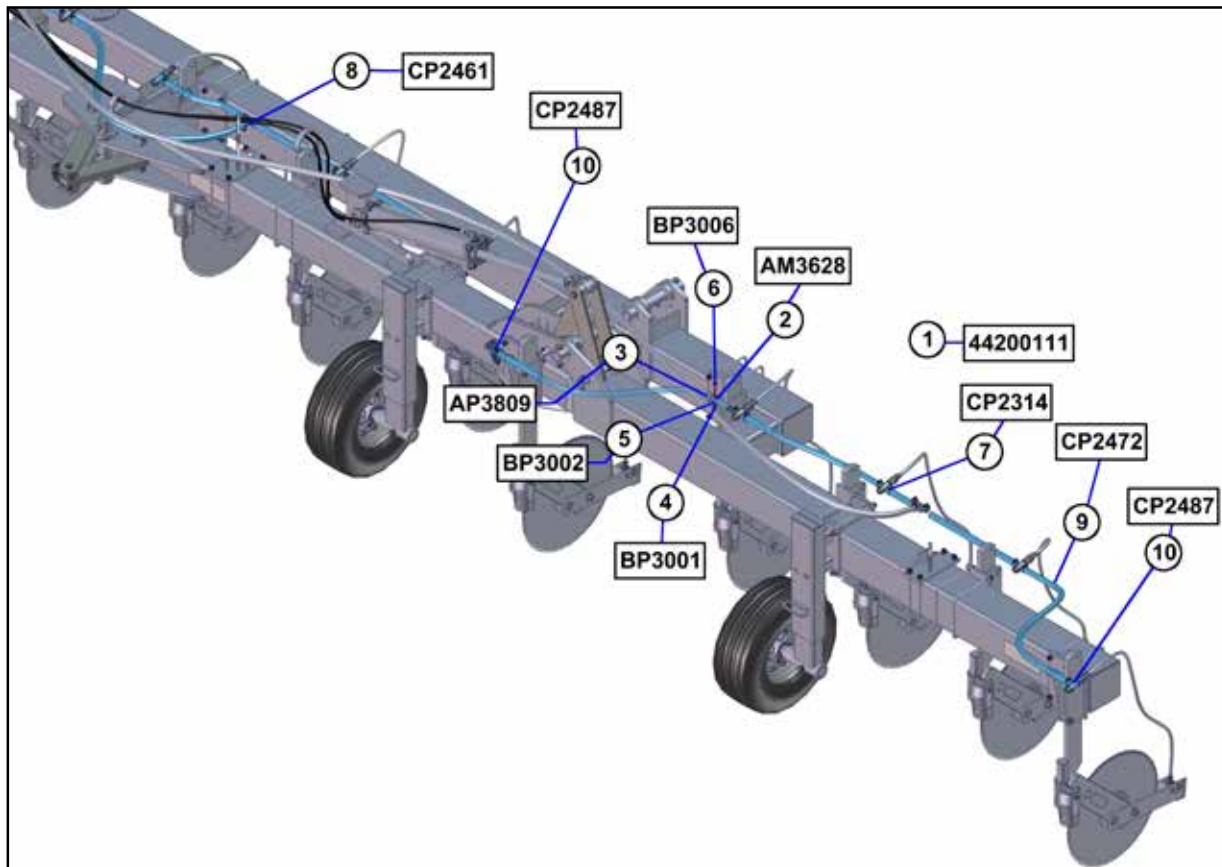


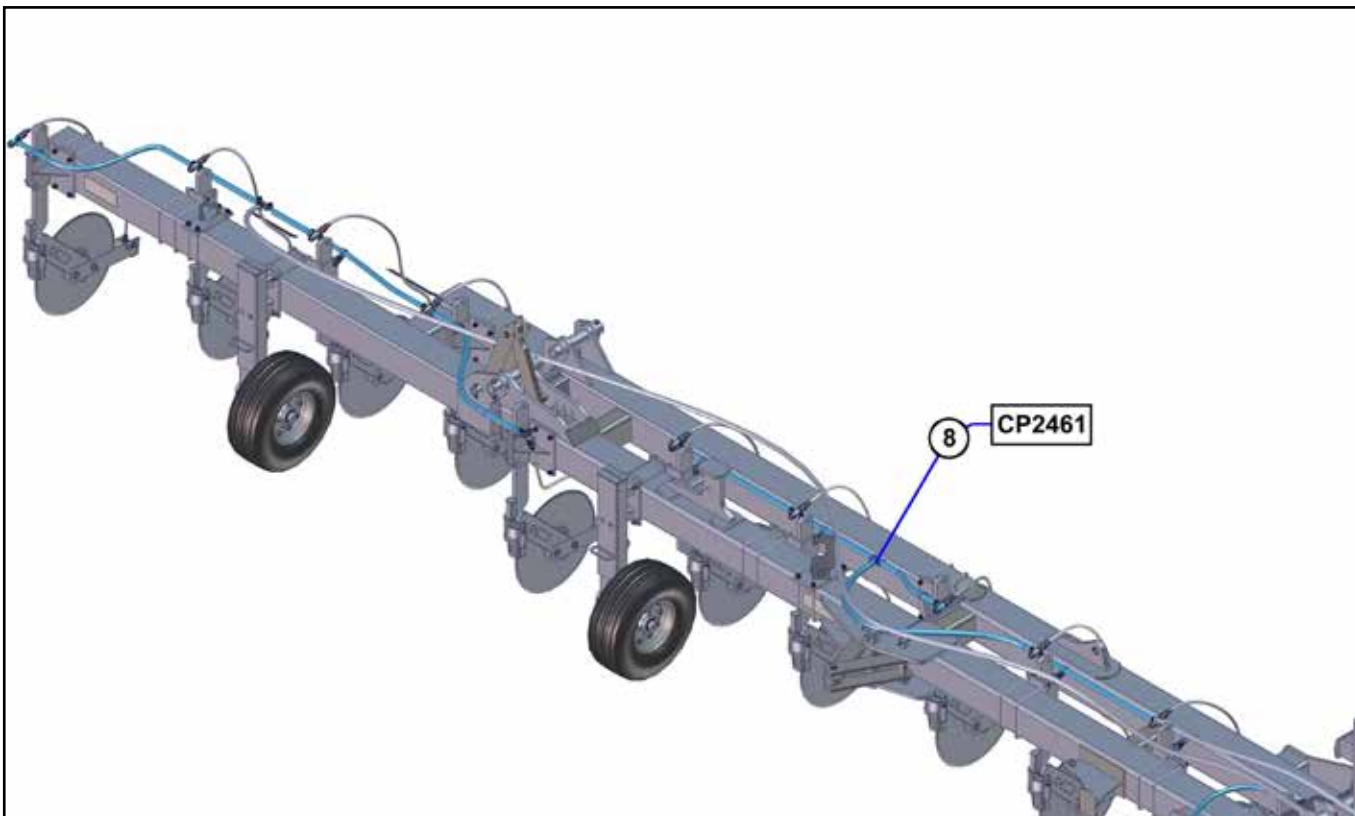
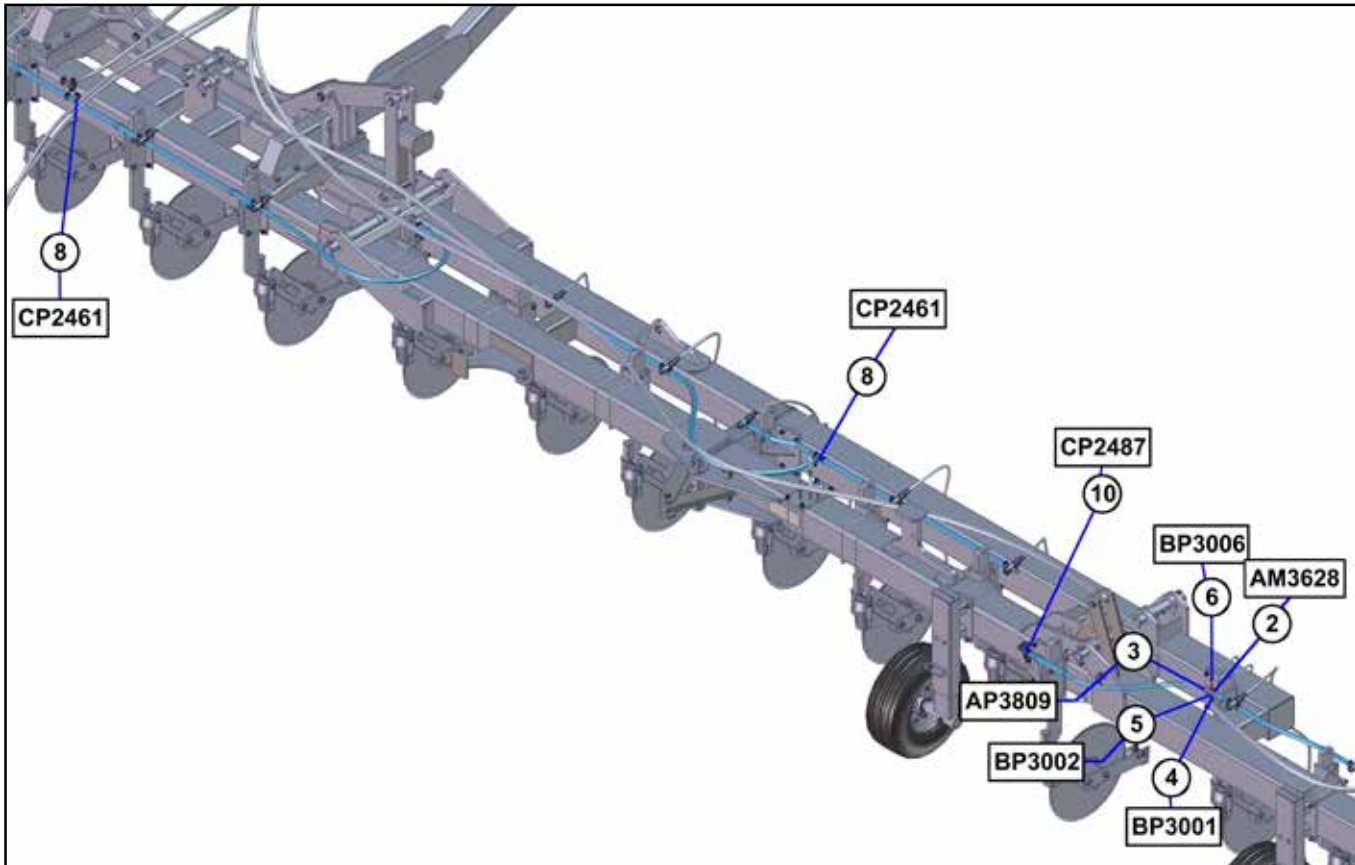
AT4020, 60' TOOLBAR WITH COULTERS (44200201)

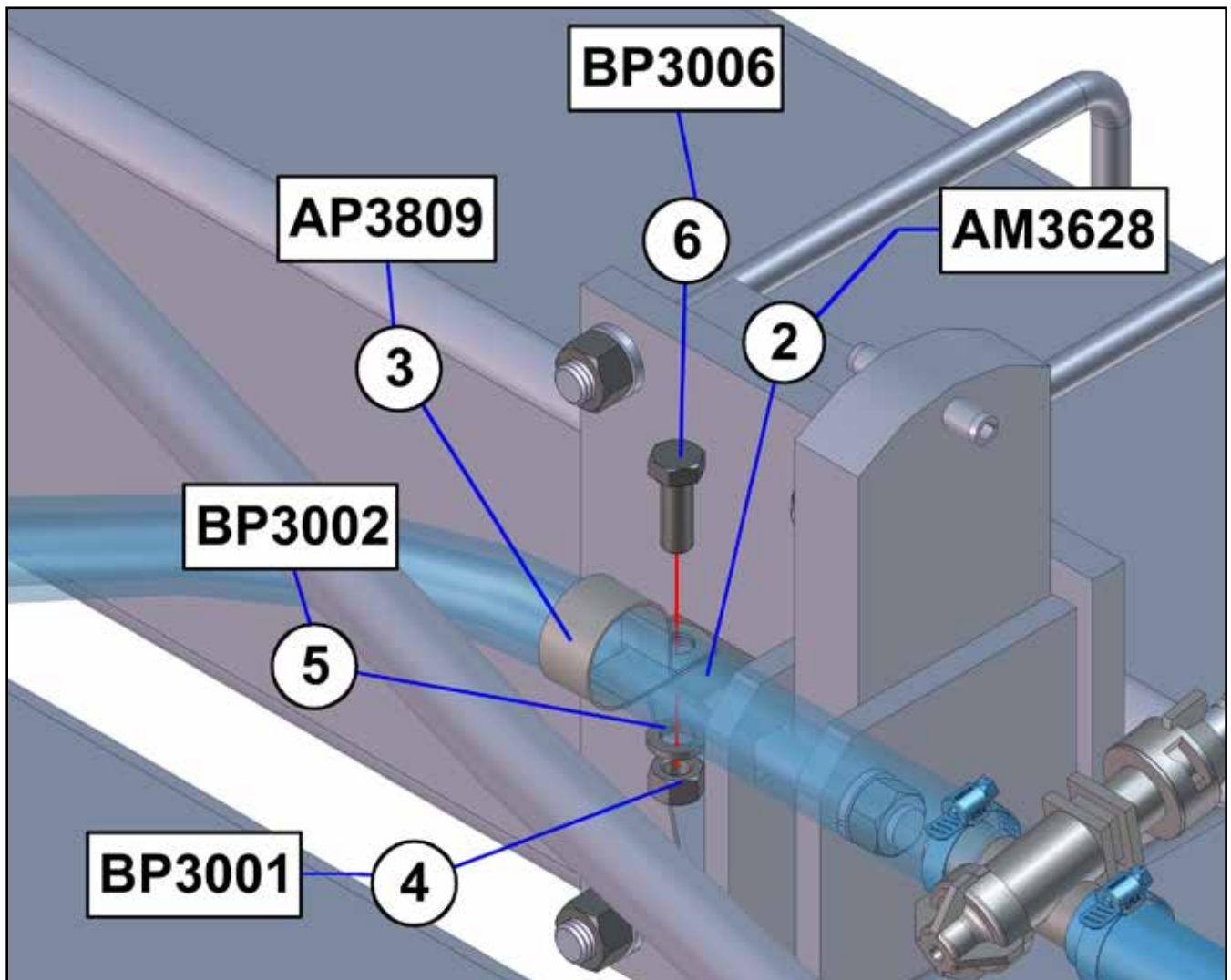
BOM ID	Qty	Item No	Description
1	1	44200201	AT4020, 60' TOOLBAR W/ COULTERS
2	1	44200111	TRUNK LINES
3	25	AAM2730	COULTER, SUPER 1200, 23, 1 Row
4	7	AAM2821	COULTER, FLATBACK CENTERED ASSEMBLY, 7 X 7
5	18	AAM2822	COULTER, FLATBACK OFFSET ASSEMBLY, 7 X 7
6	2	AAM2905	LEFT SLIDE GAUGE WHEEL, AT4020
7	2	AAM2907	RIGHT SLIDE GAUGE WHEEL, AT4020
8	1	AM3803	CENTER SECTION, TOOLBAR, AT4020
8A	8	BP3072	GREASE ZERK, 1/4"-28
9	2	AM3812	LINKAGE, OFFSET, DOUBLE (20-1/2")
10	1	AM3833	WING LATCH, LEFT-HAND, AT4020
11	1	AM3834	WING LATCH, RIGHT-HAND, AT4020
12	1	AM3835	WING LATCH MOUNT, LEFT-HAND AT4020
13	1	AM3836	WING LATCH MOUNT, RIGHT-HAND, AT4020
14	2	AM3837	WING LATCH HOOK, THIRD WING, AT4020
15	2	AM3841	LIFT ARM, AT4020
15A	2	BP3072	GREASE ZERK, 1/4"-28
15B	2	BP3516	TENSION BUSHING, 1-1/4" X 1" X 1" OAL
16	2	AM3842	CURVED LINKAGE
17	2	AM3843	LINKAGE
17A	2	BP3560	TENSION BUSHING, 1-1/2" X 1-1/4" X 1" OAL
18	10	AP2215	DECAL, BLU-JET, 3" X 8"
19	4	AP2234	DECAL, DANGER STAND CLEAR FALLING WING
20	2	AP2483	DECAL, DANGER, FALLING FROM EQUIPMENT
21	12	AP2711	SNAP RING, 1-1/4" EXTERNAL, HEAVY DUTY
22	25	AP2840	COULTER BLADE 20", SMOOTH
23	2	BM3456	PIN, 1-1/4" X 5-1/8" USEABLE, DOUBLE GROOVED, PLATED
24	2	BM3459	PIN, 1-1/2" X 11-5/8" OAL WITH 17/32 HOLE, PLATED
25	2	BM3486	PIN, 1-1/4" X 10-7/16" OAL, WITH 13/32" HOLE, PLATED
26	2	BM3547	PIN, 1-1/4" X 5-3/4" USEABLE
27	2	BM3548	PIN, 1-1/4" X 4-3/4" USEABLE, DOUBLE GROOVED, PLATED
28	2	BP3027	NUT, HEX LOCK, 3/4"-10, GRADE 2, PLATED
29	16	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
30	16	BP3043	WASHER, LOCK, 1/2", PLATED
31	2	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
32	2	BP3130	HEX CAP SCREW, 1/2"-13 X 3-1/2", GRADE 5, PLATED
33	2	BP3143	HEX CAP SCREW, 3/4"-10 X 4, GRADE 5, PLATED
34	8	BP3192	MACHINERY BUSHING, 1-7/8" OD X 1-1/4" ID X 10GA, PLATED
35	16	BP3197	HEX CAP SCREW, 3/4"-10 X 2-1/2", GRADE 8, PLATED
36	8	BP3356	U-BOLT, 1/2"-13 X 7"W X 8-1/4"L, GLOSS BLACK
37	16	BP3442	NUT, HEX LOCK, 3/4"-10, TOP LOCK, GRADE C, PLATED
38	2	BP3704	NUT, LOCK, NYLON INSERT, 1/2"-13
39	2	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK
40	1	PKG00256	WINGS, PRIMARY, AT4020, WITH HARDWARE
41	2	PKG00257	WINGS, SECONDARY, AT4020, WITH HARDWARE
42	2	PKG00258	WINGS, TERTIARY, AT4020, WITH HARDWARE

AT4020 60' TOOLBAR WITH COULTERS (44200201) (44200111 TRUNK LINE)

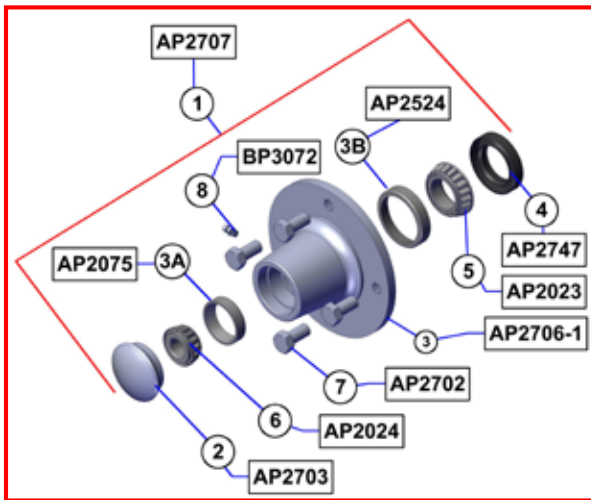
BOM ID	Qty	Item No	Description
1	1	44200111	TRUNK LINES
2	24	AM3628	BRACKET, MOUNTING, LIQUID TRUNK LINE
3	25	AP3809	1-1/4" HOSE SUPPORT CLAMP, 3/8" BOLT
4	25	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
5	25	BP3002	WASHER, LOCK, 3/8", PLATED
6	25	BP3006	HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED
7	53	CP2314	HOSE CLAMP, WORM GEAR, 1/2" - 1" TUBING, SS
8	3	CP2461	TEE, 3/4"HB-3/4"HB-3/4"HB, POLY TT9121212PP
9	23	CP2472	HOSE, EPDM RUBBER, 3/4", 200#
10	8	CM2487	DIAPHRAM CHECK VALVE, SINGLE SHANK 3/4 HOSE





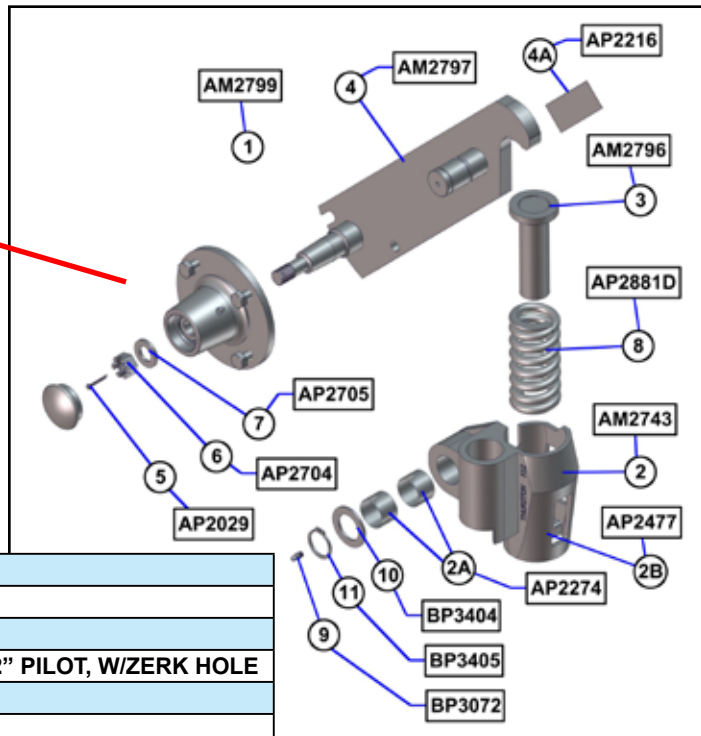


Super 1200 Coulter and Shank Parts



AP2707, HUB ASSEMBLY, 4 BOLT

BOM ID	Qty	Item No	Description
1	1	AP2707	HUB ASSEMBLY, 4 BOLT
2	1	AP2703	HUB CAP, 1610
3	1	AP2706-1	HUB W/ CUPS, 4 BOLT, 5" BC, 3.62" PILOT, W/ZERK HOLE
3A	1	AP2075	BEARING CUP, LM 11910
3B	1	AP2524	BEARING CUP, LM 67010
4	1	AP2747	GREASE SEAL, 15235TB
5	1	AP2023	BEARING CONE, LM 67048
6	1	AP2024	BEARING CONE, LM 11949
7	4	AP2702	HEX CAP SCREW, 1/2"-20 X 1", GRADE 5, PLATED
8	1	BP3072	GREASE ZERK, 1/4"-28

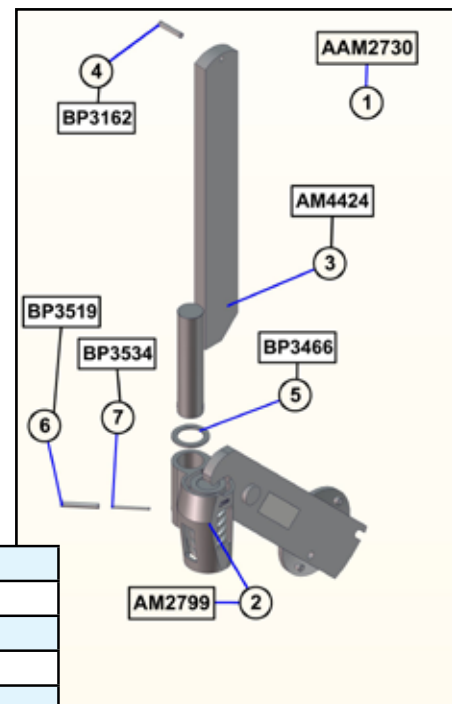


AM2799, ASSEMBLY, COULTER ARM WITH HUB & KNEE CASTING, HD

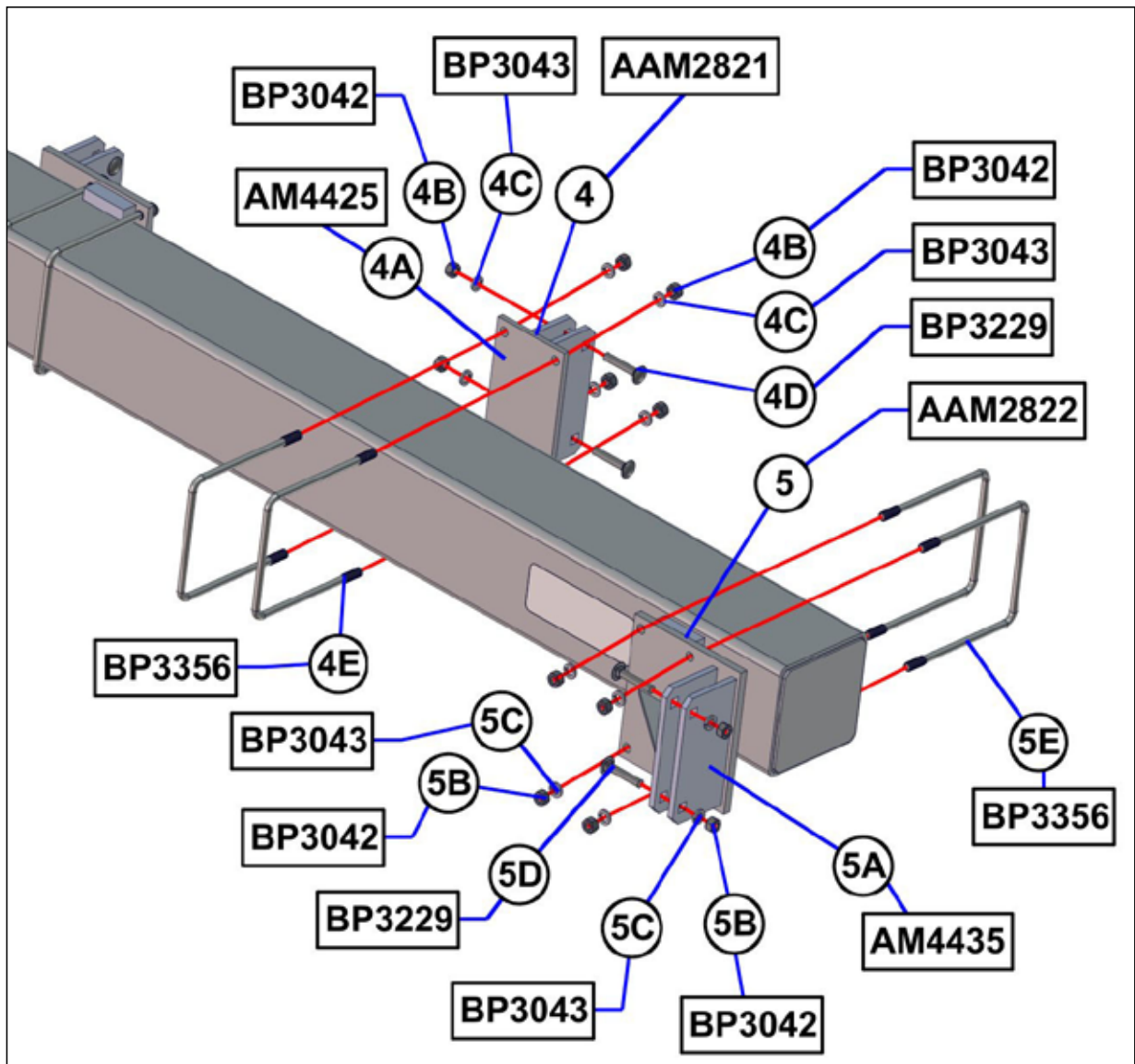
BOM ID	Qty	Item No	Description
1	1	AM2799	ASSEMBLY, COULTER ARM WITH HUB & KNEE CASTING, HD
2	1	AM2743	CASTING, COULTER KNEE, HD, MACHINED WITH BUSHINGS
2A	2	AP2274	BUSHING, 1-17/32" OD X 1-3/8" ID" X 1" OAL
2B	1	AP2477-1	CASTING, COULTER KNEE, MACHINED
3	1	AM2796	SPRING CAP & GUIDE, HD COULTER
4	1	AM2797	COULTER ARM, HD
4A	1	AP2216	DECAL, BLU-JET, SMALL, 1-1/2" X 4"
5	1	AP2029	PIN, COTTER, 5/32" X 1-1/2"
6	1	AP2704	NUT, SPINDLE, 3/4"-16
7	1	AP2705	WASHER, SPINDLE, 1-1/2" X 13/16" X .134"
8	1	AP2881D	SPRING, 2.472" OD X 5.875" OAL, .468 WIRE DIAMETER
9	1	BP3072	GREASE ZERK, 1/4"-28
10	1	BP3404	MACHINERY BUSHING, 2-1/8" OD X 1-3/8" ID X 10 GAUGE, PLATED
11	1	BP3405	SNAP RING, 1-3/8" EXTERNAL, 5160-137

AAM2730 COULTER, SUPER 1200, 23, 1 ROW

BOM ID	Qty	Item No	Description
1	1	AAM2730	COULTER, SUPER 1200, 23" SHANK, 1 ROW
2	1	AM2799	COULTER ARM WITH HUB & KNEE CASTING, HEAVY DUTY
3	1	AM4424	COULTER SHANK, 23"
4	1	BP3162	PIN, ROLL, 3/8" X 2", PLATED
5	1	BP3466	MACHINERY BUSHING, 2-1/2" X 1-3/4" X 10 GAUGE, STAINLESS STEEL
6	1	BP3519	PIN, ROLL, 3/8" X 2-1/2"
7	1	BP3534	PIN, ROLL, 7/32" X 2-1/2"

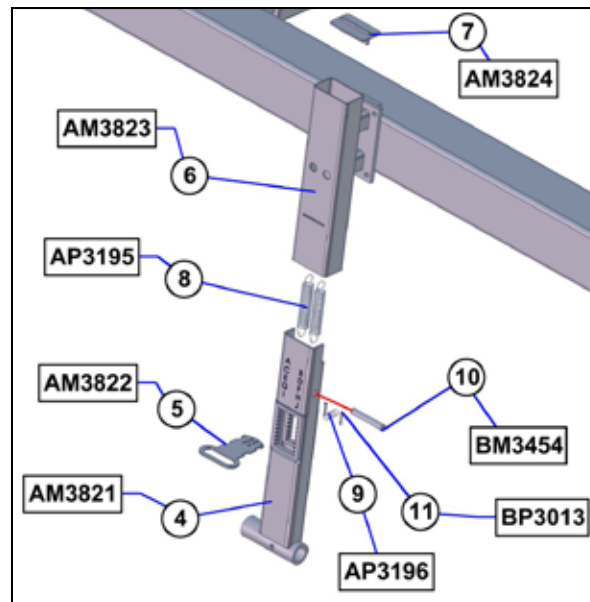
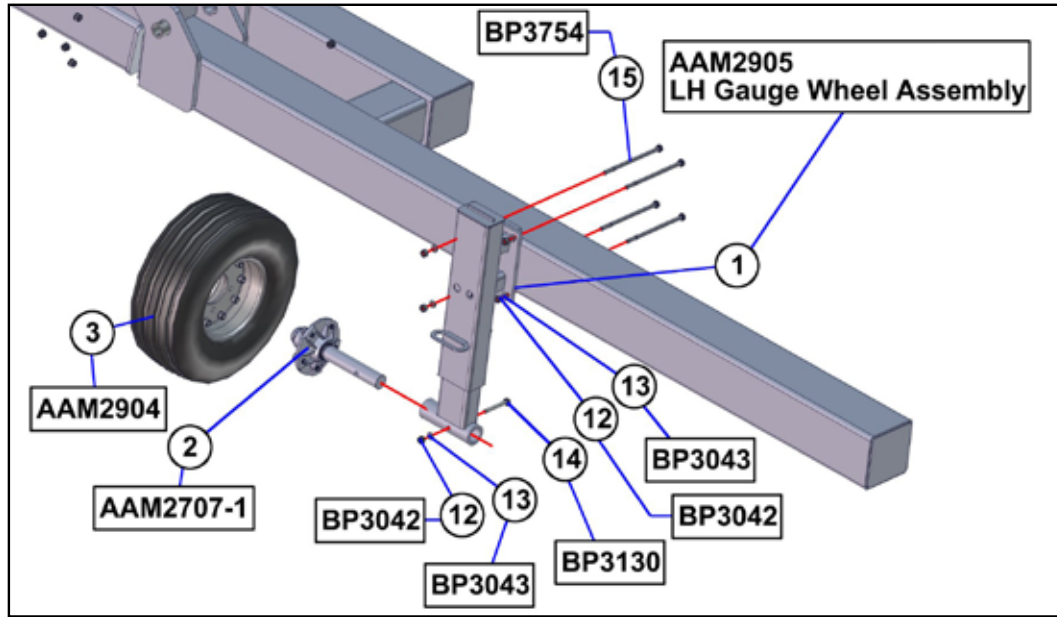


AT4020 60' TOOLBAR WITH COULTERS (44200201) (COULTER FLATBACKS)



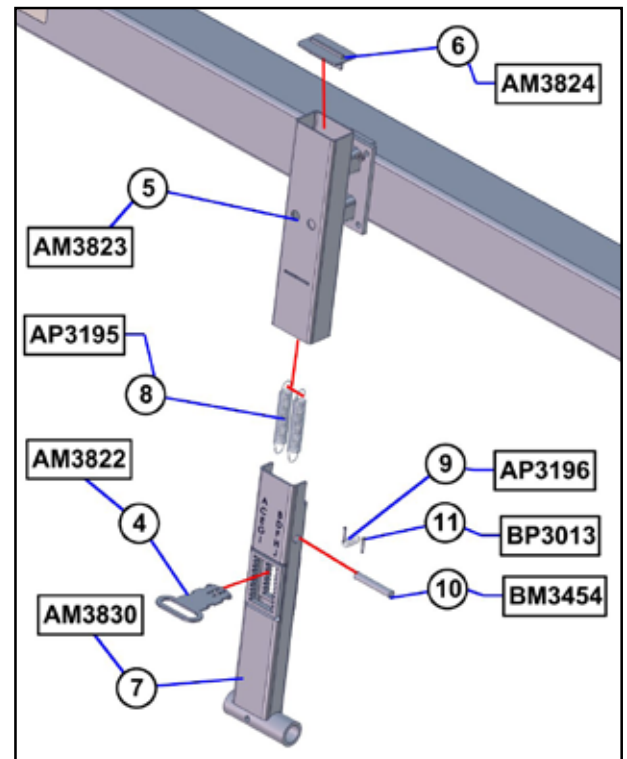
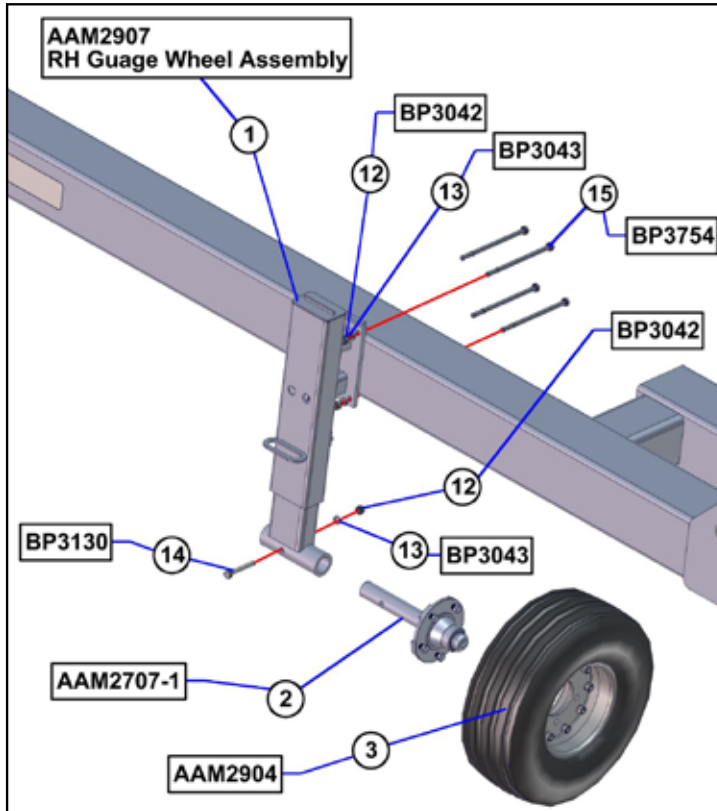
BOM ID	Qty	Item No	Description
4	7	AAM2821	COULTER, FLATBACK CENTERED ASSEMBLY, 7" X 7"
4A	7	AM4425	BRACKET, FLATBACK, 7" X 7", CENTERED
4B	42	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
4C	42	BP3043	WASHER, LOCK, 1/2", PLATED
4D	14	BP3229	BOLT, CARRIAGE, 1/2"-13 X 2-1/2", GRADE 5, PLATED
4E	14	BP3356	U-BOLT, 1/2"-13 X 7"W X 8-1/4"L, GLOSS BLACK
5	18	AAM2822	COULTER, FLATBACK OFFSET ASSEMBLY, 7" X 7"
5A	18	AM4435	BRACKET, FLATBACK, 7" X 7" OFFSET
5B	108	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
5C	108	BP3043	WASHER, LOCK, 1/2", PLATED
5D	36	BP3229	BOLT, CARRIAGE, 1/2"-13 X 2-1/2", GRADE 5, PLATED
5E	36	BP3356	U-BOLT, 1/2"-13 X 7"W X 8-1/4"L, GLOSS BLACK

AT4020 60' TOOLBAR WITH COULTERS (44200201) **(AAM2905 LEFT-HAND GAUGE WHEEL)**



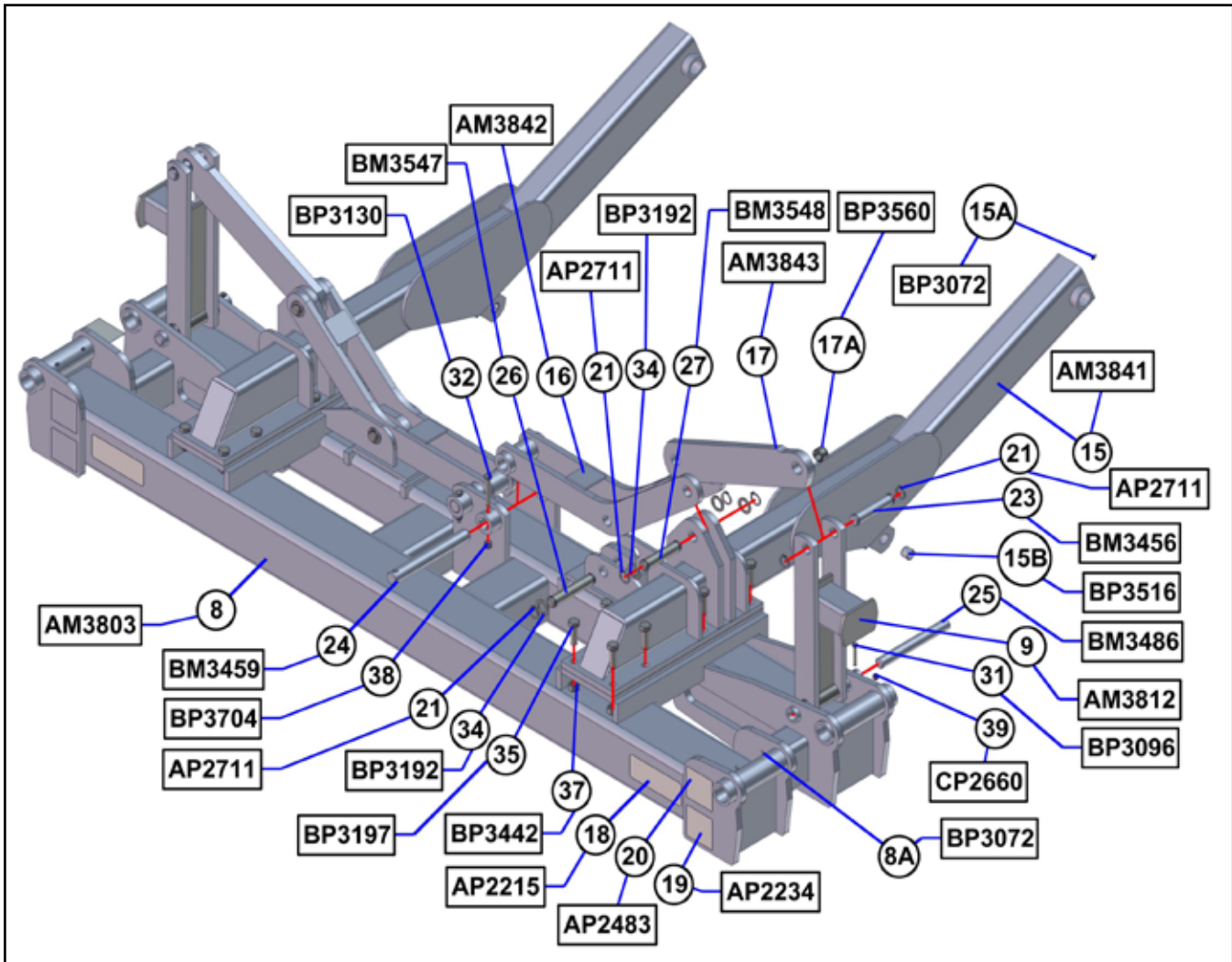
BOM ID	Qty	Item No	Description
1	2	AAM2905	LEFT SLIDE GAUGE WHEEL, AT4020
2	4	AAM2707-1	ASSEMBLY, HUB & SPINDLE, 511 HUB, 1-3/4 X 13
3	4	AAM2904	ASSEMBLY, GAUGE WHEEL, AT4020
4	2	AM3821	LEFT GAUGE WHEEL LEG, INNER TUBE
5	4	AM3822	SLIDE PLATE, GAUGE WHEEL, PLATED
6	4	AM3823	GAUGE WHEEL LEG, OUTER TUBE WITH MOUNTING PLATE
7	4	AM3824	CAP, WHEEL LEG
8	8	AP3195	SPRING, EXTENSION, 5-1/2"
9	4	AP3196	SPRING, .808 OD X .692 ID X 2.50
10	2	BM3454	PIN, PLATED
11	8	BP3013	PIN, ROLL, 1/4" X 1-1/2", PLATED
12	10	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
13	10	BP3043	WASHER, LOCK, 1/2", PLATED
14	2	BP3130	HEX CAP SCREW, 1/2"-13 X 3-1/2", GRADE 5, PLATED
15	8	BP3754	HEX CAP SCREW, 1/2"-13 X 9", GRADE 5, PLATED

AT4020 60' TOOLBAR WITH COULTERS (44200201) (AAM2907 RIGHT-HAND GAUGE WHEEL)



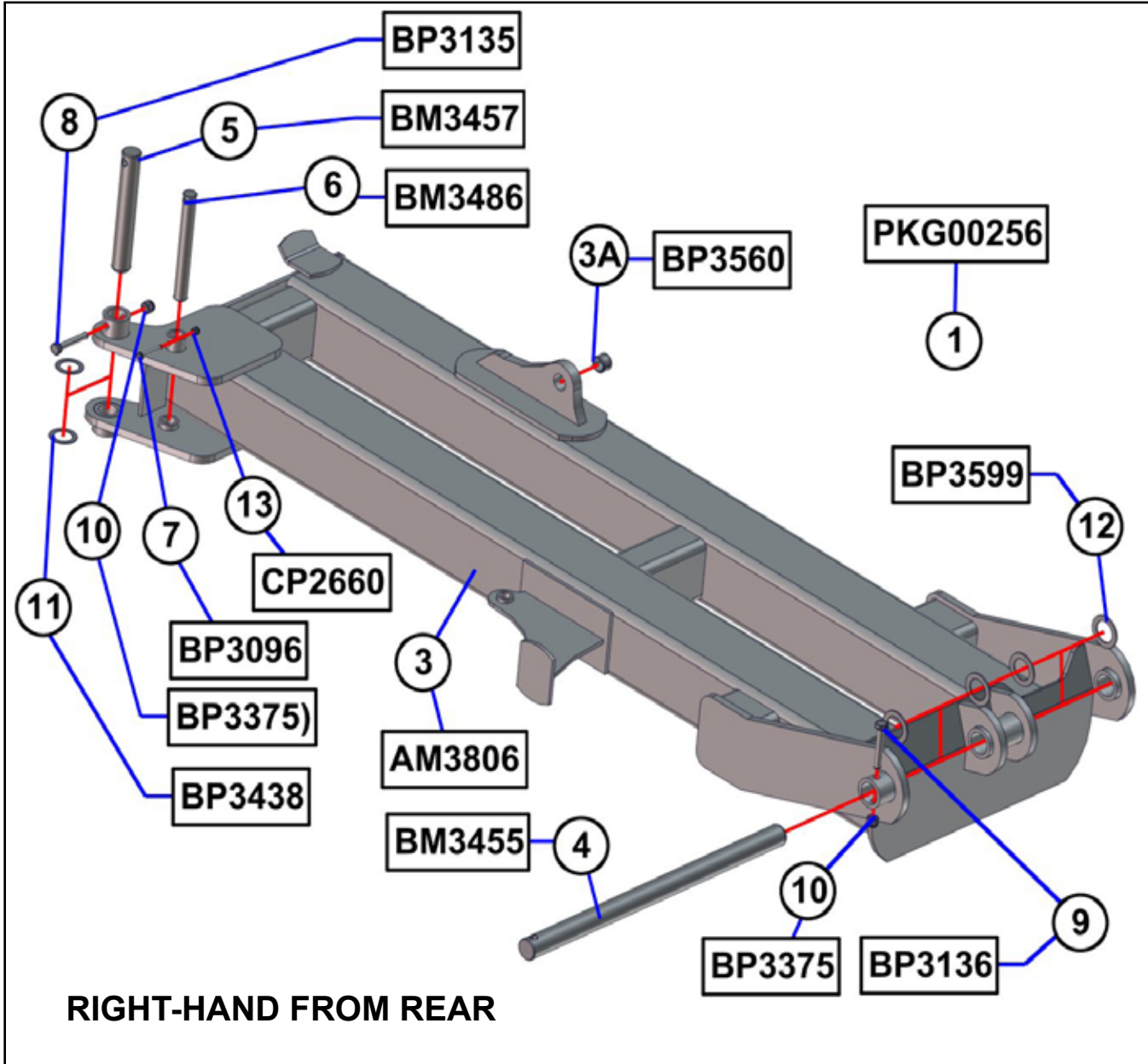
BOM ID	Qty	Item No	Description
1	2	AAM2907	RIGHT SLIDE GAUGE WHEEL, AT4020
2	2	AAM2707-1	ASSEMBLY, HUB & SPINDLE, 511 HUB, 1-3/4 X 13
3	2	AAM2904	ASSEMBLY, GAUGE WHEEL, AT4020
4	2	AM3822	SLIDE PLATE, GAUGE WHEEL, PLATED
5	2	AM3823	GAUGE WHEEL LEG, OUTER TUBE W/ MOUNTING PLATE
6	2	AM3824	CAP, WHEEL LEG
7	2	AM3830	RIGHT GAUGE WHEEL LEG, INNER TUBE
8	4	AP3195	SPRING, EXTENSION, 5-1/2"
9	2	AP3196	SPRING, .808 OD X .692 ID X 2.50
10	2	BM3454	PIN, PLATED
11	4	BP3013	PIN, ROLL, 1/4" X 1-1/2", PLATED
12	10	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
13	10	BP3043	WASHER, LOCK, 1/2", PLATED
14	2	BP3130	HEX CAP SCREW, 1/2"-13 X 3-1/2", GRADE 5, PLATED
15	8	BP3754	HEX CAP SCREW, 1/2"-13 X 9", GRADE 5, PLATED

AT4020 60' TOOLBAR WITH COULTERS (44200201) (CENTER SECTION)



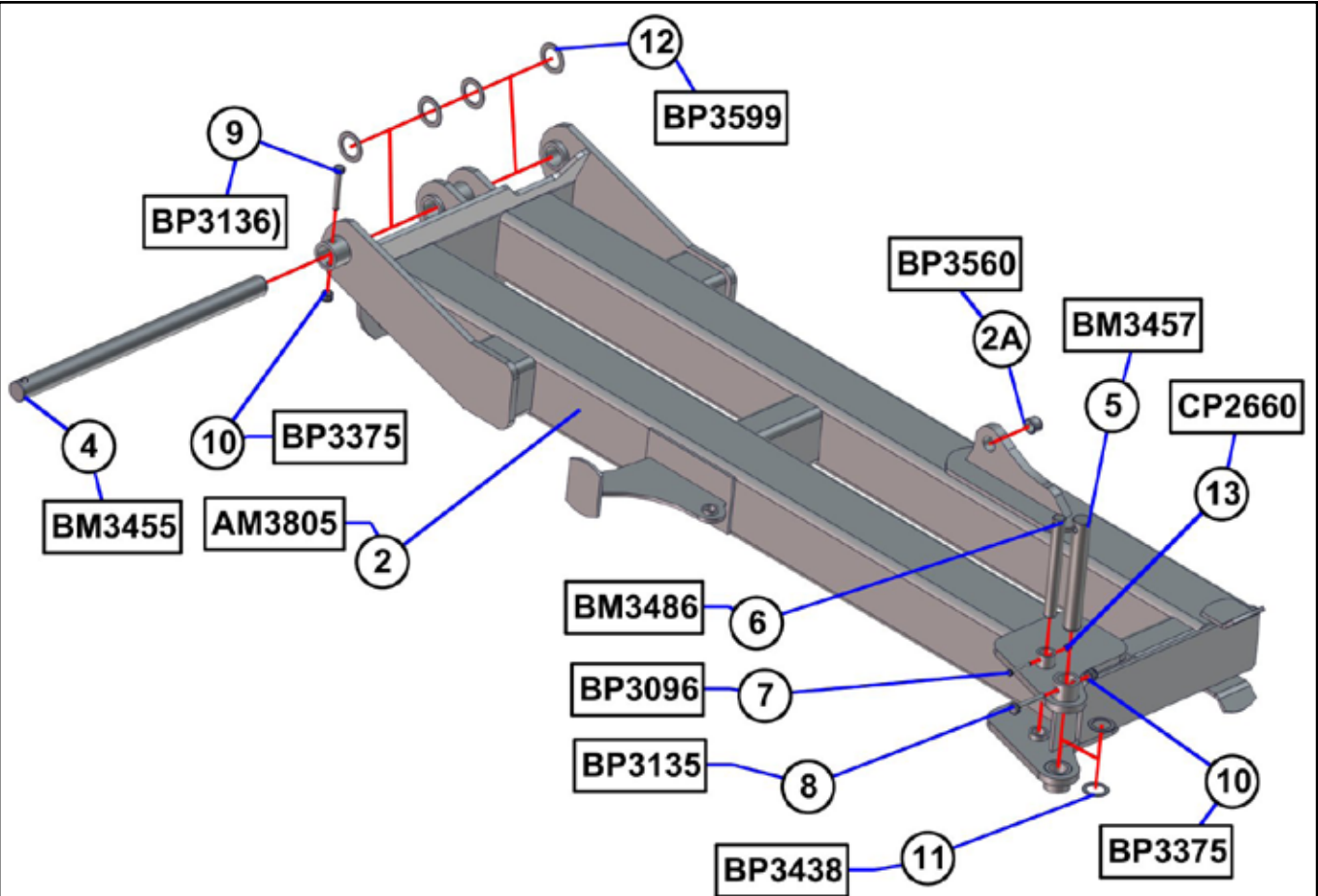
AT4020 60' TOOLBAR WITH COULTERS (44200201) (CENTER SECTION)

BOM ID	Qty	Item No	Description
8	1	AM3803	CENTER SECTION, TOOLBAR, AT4020
8A	8	BP3072	GREASE ZERK, 1/4"-28
9	2	AM3812	LINKAGE, OFFSET, DOUBLE (20-1/2")
15	2	AM3841	LIFT ARM, AT4020
15A	2	BP3072	GREASE ZERK, 1/4"-28
15B	2	BP3516	TENSION BUSHING, 1-1/4" X 1" X 1" OAL
16	2	AM3842	CURVED LINKAGE
17	2	AM3843	LINKAGE
17A	2	BP3560	TENSION BUSHING, 1-1/2" X 1-1/4" X 1" OAL
18	10	AP2215	DECAL, BLU-JET, 3" X 8"
19	4	AP2234	DECAL, DANGER STAND CLEAR FALLING WING
20	2	AP2483	DECAL, DANGER, FALLING FROM EQUIPMENT
21	12	AP2711	SNAP RING, 1-1/4" EXTERNAL, HEAVY DUTY
23	2	BM3456	PIN, 1-1/4" X 5-1/8" USEABLE, DOUBLE GROOVED, PLATED
24	2	BM3459	PIN, 1-1/2" X 11-5/8" OAL WITH 17/32 HOLE, PLATED
25	2	BM3486	PIN, 1-1/4" X 10-7/16" OAL, WITH 13/32" HOLE, PLATED
26	2	BM3547	PIN, 1-1/4" X 5-3/4" USEABLE
27	2	BM3548	PIN, 1-1/4" X 4-3/4" USEABLE, DOUBLE GROOVED, PLATED
31	2	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
32	2	BP3130	HEX CAP SCREW, 1/2"-13 X 3-1/2", GRADE 5, PLATED
34	8	BP3192	MACHINERY BUSHING, 1-7/8" OD X 1-1/4" ID X 10GA, PLATED
35	16	BP3197	HEX CAP SCREW, 3/4"-10 X 2-1/2", GRADE 8, PLATED
37	16	BP3442	NUT, HEX LOCK, 3/4"-10, TOP LOCK, GRADE C, PLATED
38	2	BP3704	NUT, LOCK, NYLON INSERT, 1/2"-13
39	2	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK



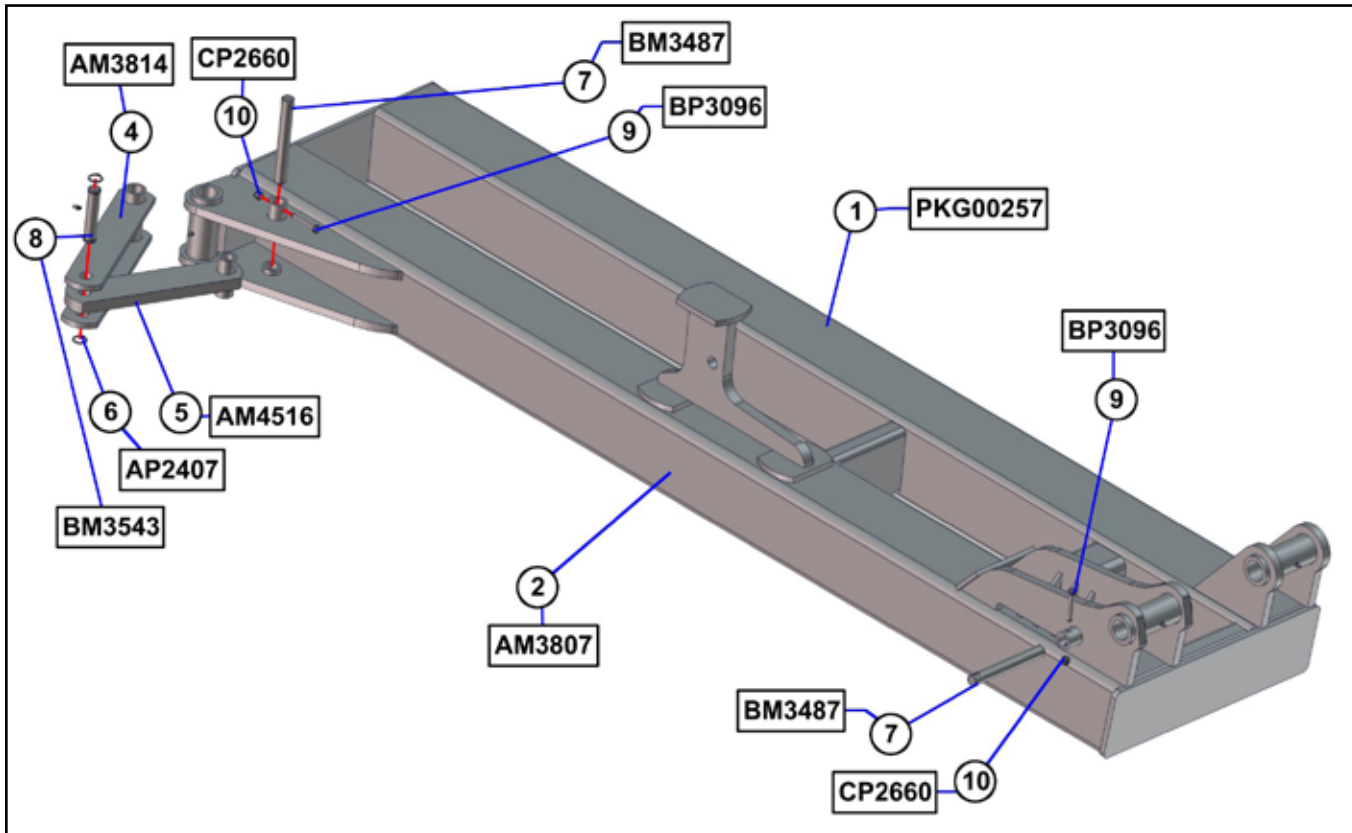
**AT4020 60' TOOLBAR WITH COULTERS (44200201)
(PKG00256 PRIMARY WINGS LEFT-HAND)**

BOM ID	Qty	Item No	Description
1	1	PKG00256	WINGS, PRIMARY, AT4020, WITH HARDWARE
2	1	AM3805	PRIMARY WING, LEFT-HAND, AT4020
2A	1	BP3560	TENSION BUSHING, 1-1/2" X 1-1/4" X 1" OAL
3	1	AM3806	PRIMARY WING, RIGHT-HAND, AT4020
3A	1	BP3560	TENSION BUSHING, 1-1/2" X 1-1/4" X 1" OAL
4	2	BM3455	PIN, 2" X 31-5/8" OAL, WITH 21/32" HOLE
5	2	BM3457	PIN, 1-3/4" X 11-5/8" OAL, WITH 21/32" HOLE, PLATED
6	2	BM3486	PIN, 1-1/4" X 10-7/16" OAL, WITH 13/32" HOLE, PLATED
7	2	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
8	2	BP3135	HEX CAP SCREW, 5/8"-11 X 3-1/2", GRADE 5, PLATED
9	2	BP3136	HEX CAP SCREW, 5/8"-11 X 4", GRADE 5, PLATED
10	4	BP3375	NUT, HEX LOCK, 5/8"-11, NYLOCK
11	4	BP3438	MACHINERY BUSHING, 2-1/2" OD X 1-3/4" ID X 14 GAUGE, PLATED
12	8	BP3599	MACHINERY BUSHING, 3" OD X 2" ID X 10 GAUGE
13	2	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK

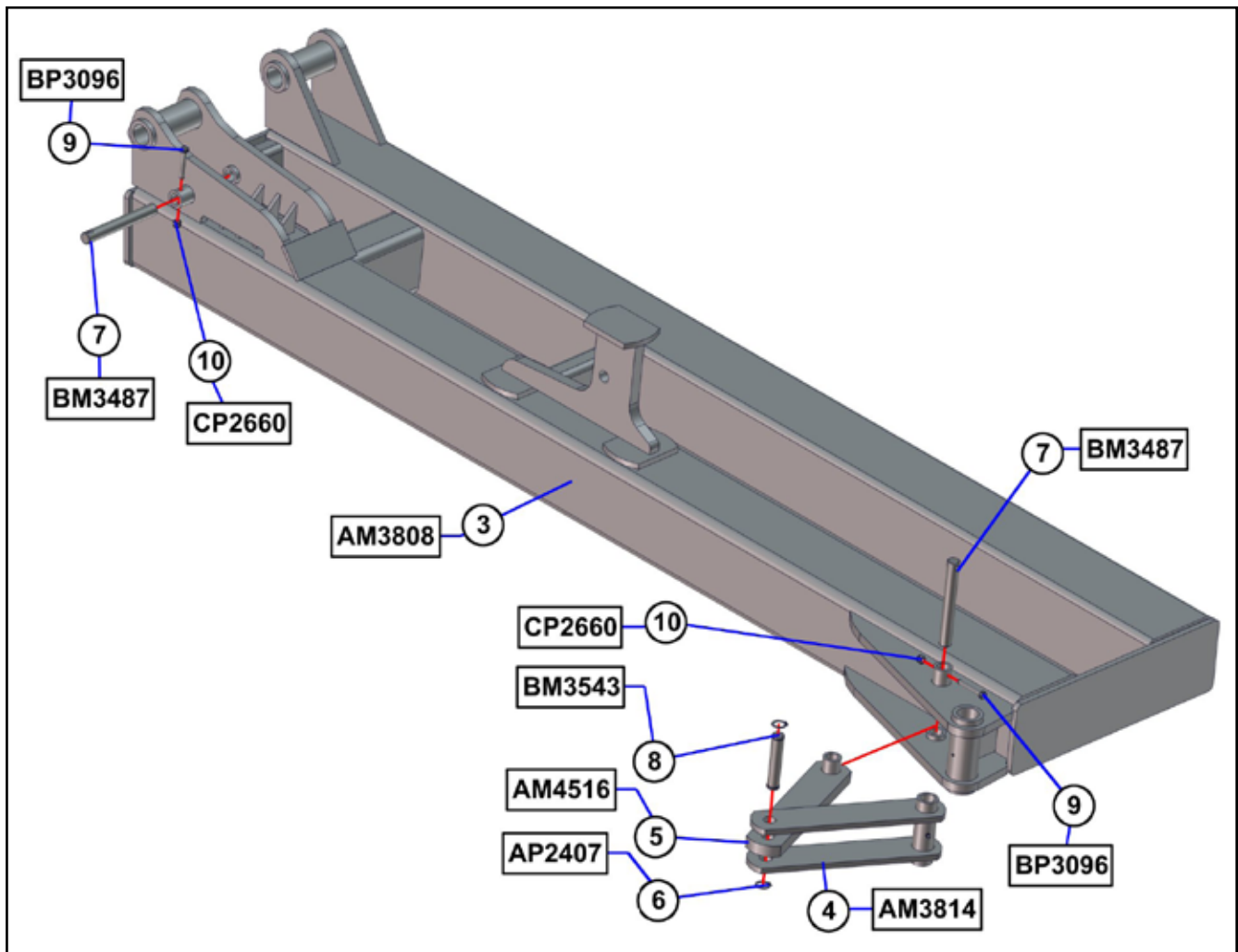


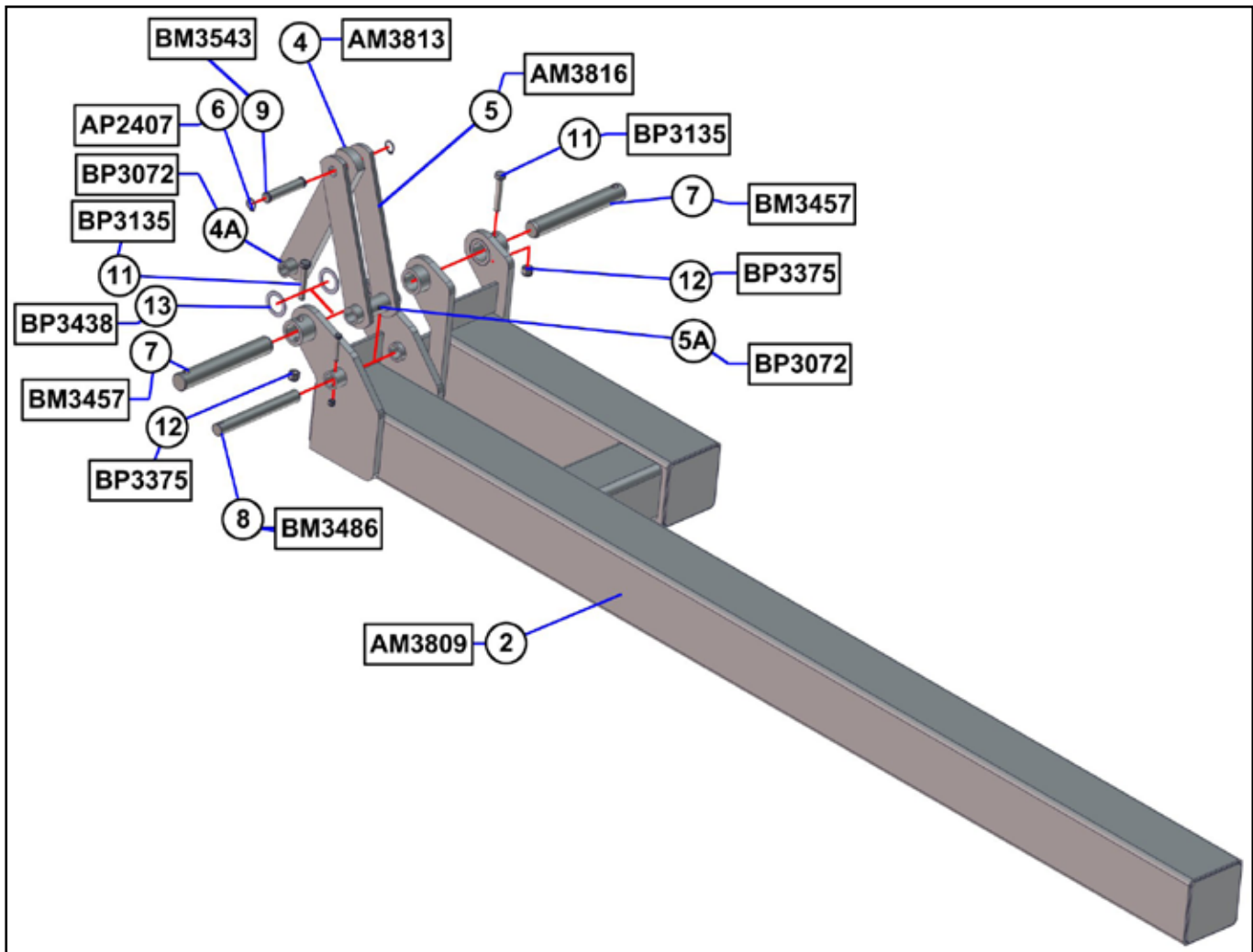
LEFT-HAND FROM REAR

AT4020 60' TOOLBAR WITH COULTERS (44200201) (PKG00257 SECONDARY WINGS LEFT-HAND)

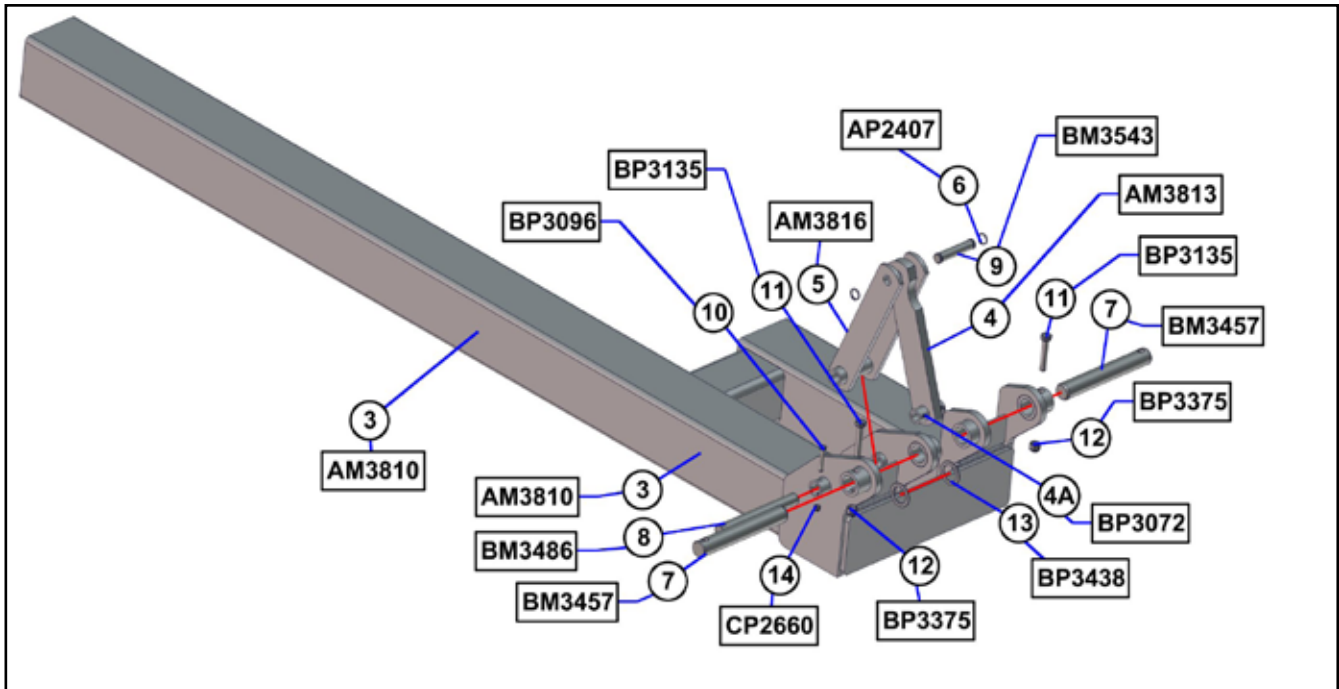


BOM ID	Qty	Item No	Description
1	1	PKG00257	WINGS, SECONDARY, AT4020, WITH HARDWARE
2	1	AM3807	SECONDARY WING, AT4020, LEFT-HAND
3	1	AM3808	SECONDARY WING, AT4020, RIGHT-HAND
4	2	AM3814	WING LINKAGE, DOUBLE, 13", WITH HOLE FOR 1" PIN
5	2	AM4516	LINKAGE, SECONDARY WING CYLINDER, #2
6	4	AP2407	SNAP RING, 1" EXTERNAL, HEAVY DUTY
7	4	BM3487	PIN, 1" X 7-3/4" OAL, WITH 13/32" HOLE, PLATED
8	2	BM3543	PIN, 1" X 4-5/16" USEABLE DOUBLE GROOVED, PLATED
9	4	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
10	4	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK



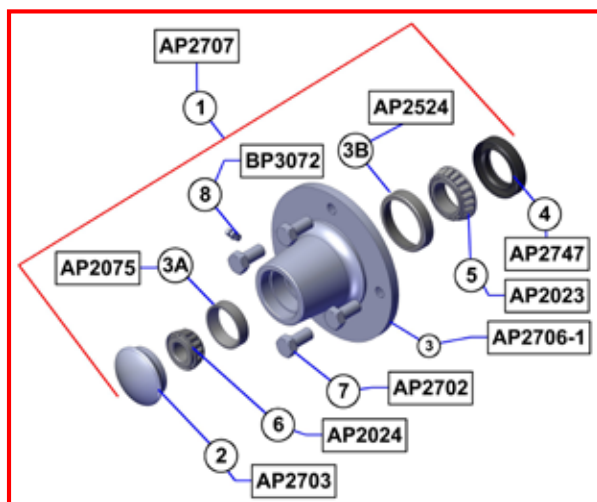


AT4020 60' TOOLBAR WITH COULTERS (44200201) (PKG00258 THIRD WINGS RIGHT-HAND)



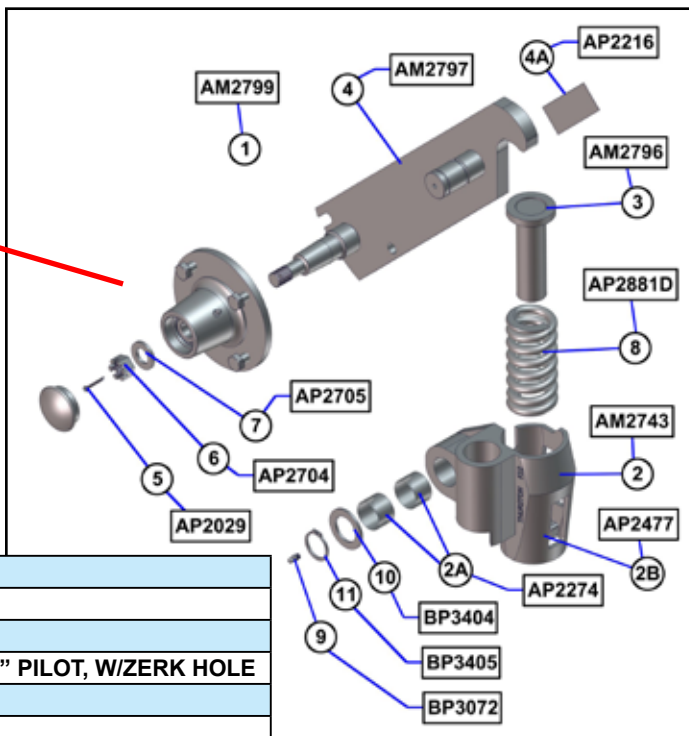
BOM ID	Qty	Item No	Description
1	2	PKG00258	WINGS, TERTIARY, AT4020, WITH HARDWARE
2	1	AM3809	THIRD WING, LEFT-HAND, AT4020
3	1	AM3810	THIRD WING, RIGHT-HAND, AT4020
4	2	AM3813	WING LINKAGE, 14", NOTCHED WITH HOLE FOR 1" PIN
4A	4	BP3072	GREASE ZERK, 1/4"-28
5	2	AM3816	WING LINKAGE, DOUBLE, 13-3/4" WITH HOLE FOR 1" PIN
5A	2	BP3072	GREASE ZERK, 1/4"-28
6	4	AP2407	SNAP RING, 1" EXTERNAL, HEAVY DUTY
7	4	BM3457	PIN, 1-3/4" X 11-5/8" OAL, WITH 21/32" HOLE, PLATED
8	2	BM3486	PIN, 1-1/4" X 10-7/16" OAL, WITH 13/32" HOLE, PLATED
9	2	BM3543	PIN, 1 X 4-5/16 USEABLE DOUBLE GROOVED, PLATED
10	2	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
11	4	BP3135	HEX CAP SCREW, 5/8"-11 X 3-1/2", GRADE 5, PLATED
12	4	BP3375	NUT, HEX LOCK, 5/8"-11, NYLOCK
13	4	BP3438	MACHINERY BUSHING, 2-1/2" OD X 1-3/4" ID X 14 GAUGE, PLATED
14	2	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK

Super 1200 Coulter and Shank Parts



AP2707, HUB ASSEMBLY, 4 BOLT

BOM ID	Qty	Item No	Description
1	1	AP2707	HUB ASSEMBLY, 4 BOLT
2	1	AP2703	HUB CAP, 1610
3	1	AP2706-1	HUB W/ CUPS, 4 BOLT, 5" BC, 3.62" PILOT, W/ZERK HOLE
3A	1	AP2075	BEARING CUP, LM 11910
3B	1	AP2524	BEARING CUP, LM 67010
4	1	AP2747	GREASE SEAL, 15235TB
5	1	AP2023	BEARING CONE, LM 67048
6	1	AP2024	BEARING CONE, LM 11949
7	4	AP2702	HEX CAP SCREW, 1/2"-20 X 1", GRADE 5, PLATED
8	1	BP3072	GREASE ZERK, 1/4"-28

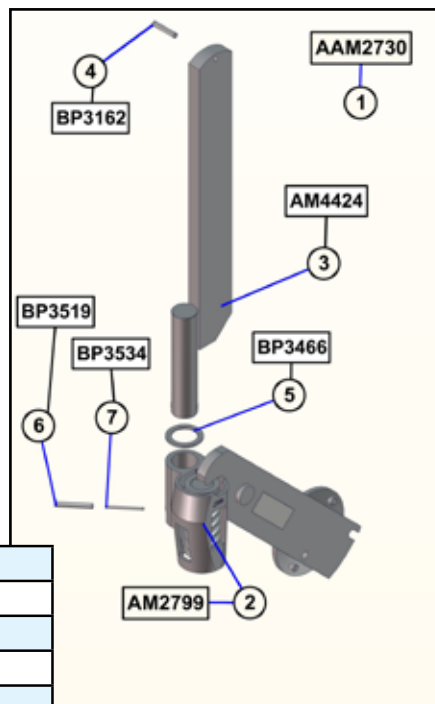


AM2799, ASSEMBLY, COULTER ARM WITH HUB & KNEE CASTING, HD

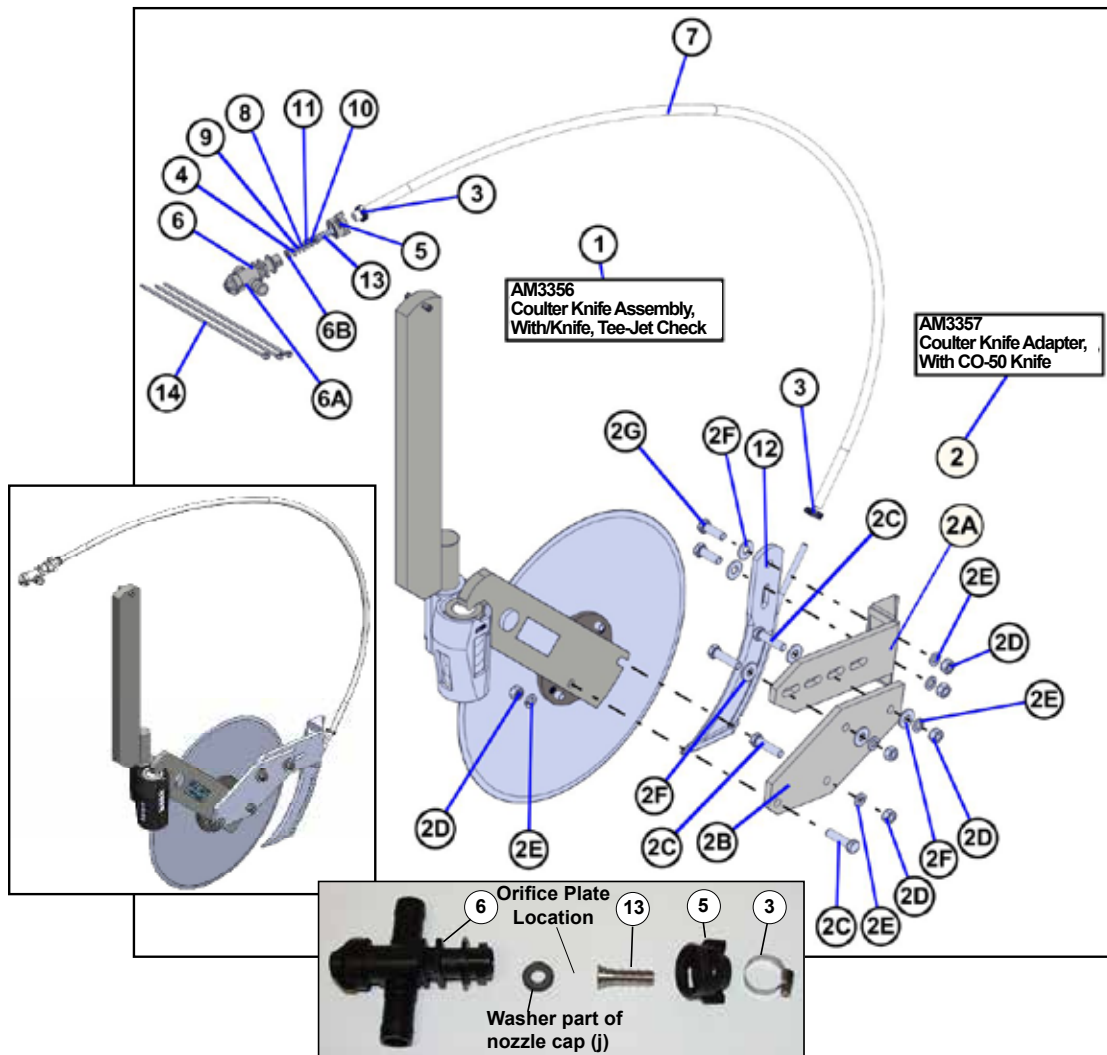
BOM ID	Qty	Item No	Description
1	1	AM2799	ASSEMBLY, COULTER ARM WITH HUB & KNEE CASTING, HD
2	1	AM2743	CASTING, COULTER KNEE, HD, MACHINED WITH BUSHINGS
2A	2	AP2274	BUSHING, 1-17/32" OD X 1-3/8" ID" X 1" OAL
2B	1	AP2477-1	CASTING, COULTER KNEE, MACHINED
3	1	AM2796	SPRING CAP & GUIDE, HD COULTER
4	1	AM2797	COULTER ARM, HD
4A	1	AP2216	DECAL, BLU-JET, SMALL, 1-1/2" X 4"
5	1	AP2029	PIN, COTTER, 5/32" X 1-1/2"
6	1	AP2704	NUT, SPINDLE, 3/4"-16
7	1	AP2705	WASHER, SPINDLE, 1-1/2" X 13/16" X .134"
8	1	AP2881D	SPRING, 2.472" OD X 5.875" OAL, .468 WIRE DIAMETER
9	1	BP3072	GREASE ZERK, 1/4"-28
10	1	BP3404	MACHINERY BUSHING, 2-1/8" OD X 1-3/8" ID X 10 GAUGE, PLATED
11	1	BP3405	SNAP RING, 1-3/8" EXTERNAL, 5160-137

AAM2730 COULTER, SUPER 1200, 23, 1 ROW

BOM ID	Qty	Item No	Description
1	1	AAM2730	COULTER, SUPER 1200, 23" SHANK, 1 ROW
2	1	AM2799	COULTER ARM WITH HUB & KNEE CASTING, HEAVY DUTY
3	1	AM4424	COULTER SHANK, 23"
4	1	BP3162	PIN, ROLL, 3/8" X 2", PLATED
5	1	BP3466	MACHINERY BUSHING, 2-1/2" X 1-3/4" X 10 GAUGE, STAINLESS STEEL
6	1	BP3519	PIN, ROLL, 3/8" X 2-1/2"
7	1	BP3534	PIN, ROLL, 7/32" X 2-1/2"



JET STREAM COULTER KNIFE ASSEMBLY (AAM3356)

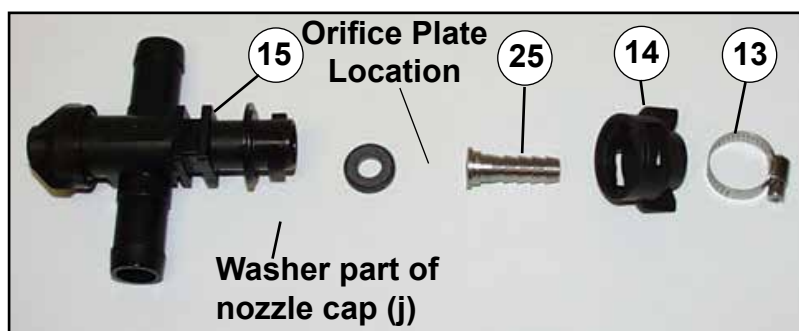
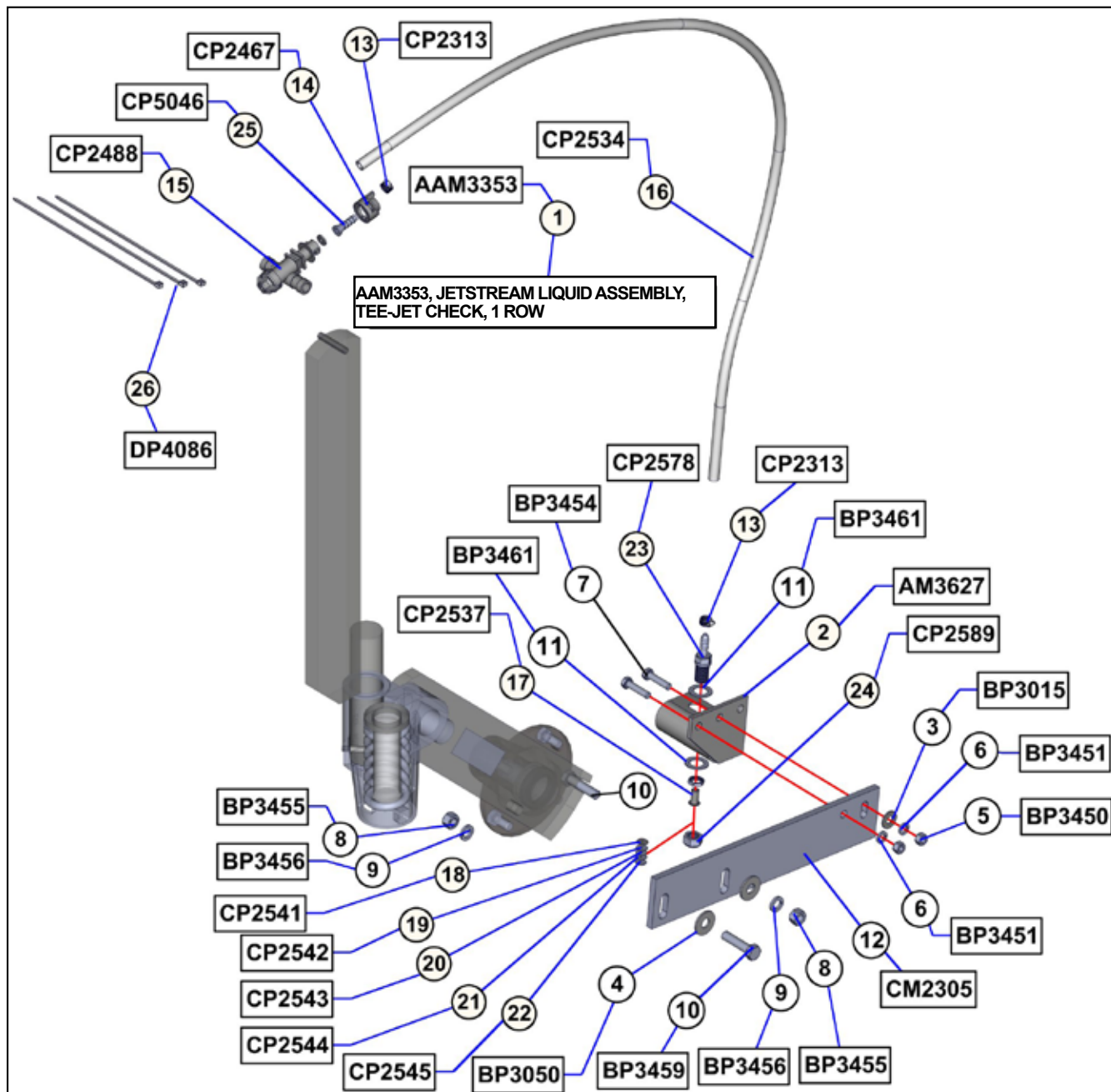


► AAM3356 COULTER KNIFE ASSEMBLY, WITH/KNIFE, TEE-JET CHECK

BOM ID	Qty	Item No	Description
1	1	AAM3356	COULTER KNIFE ASSEMBLY, WITH KNIFE, TEE-JET CHECK
2	1	AM3320	COULTER KNIFE ADAPTER, STANDARD, LESS KNIFE
2A	1	AM3313	KNIFE HOLDER / MOUNTING ARM
2B	1	AM3324	ADAPTER PLATE, COULTER KNIFE
2C	4	BP3041	HEX CAP SCREW, 1/2"-13 X 2", GRADE 5 PLATED
2D	6	BP3042	NUT, HEX, 1/2"-13, GRADE 2 PLATED
2E	6	BP3043	WASHER, LOCK, 1/2", PLATED
2F	6	BP3050	WASHER, FLAT, 1/2", PLATED
2G	2	BP3126	HEX CAP SCREW, 1/2"-13 X 1-1/2", GRADE 5 PLATED
3	2	CP2313	HOSE CLAMP, WORM GEAR, 1/4" - 5/8" TUBING, STAINLESS STEEL
4	1	CP2325	ORIFICE PLATE #4916-110 JET STREAM
5	1	CP2467	NOZZLE CAP, 25608-1-NYR
6	1	CP2488	DIAPHRAGM CHECK VALVE, DOUBLE SHANK, 3/4" HOSE
6A	1	CP2488-BODY	DIAPHRAGM CHECK VALVE BODY, DOUBLE SHANK, 3/4" HOSE
6B	1	CP2488-WASHER	DIAPHRAGM CHECK VALVE WASHER
7	1	CP2534	HOSE, EVA,N 3/8" BRAID JET STREAM
8	1	CP2544	ORIFICE PLATE #4916-86 JET STREAM
9	1	CP2545	ORIFICE PLATE #4916-95 JET STREAM
10	1	CP2570	ORIFICE PLATE #4916-120 JET STREAM
11	1	CP2571	ORIFICE PLATE #4916-136 JET STREAM
12	1	CP5038	CO-50 3/8" LIQUID KNIFE EXTRA THIN
13	1	CP5046	HOSE BARB INSERT, 3/8", STAINLESS STEEL
14	3	DP4086	CABLE TIE 11-3/8" STANDARD

JET STREAM LIQUID ASSEMBLY (AAM3353)

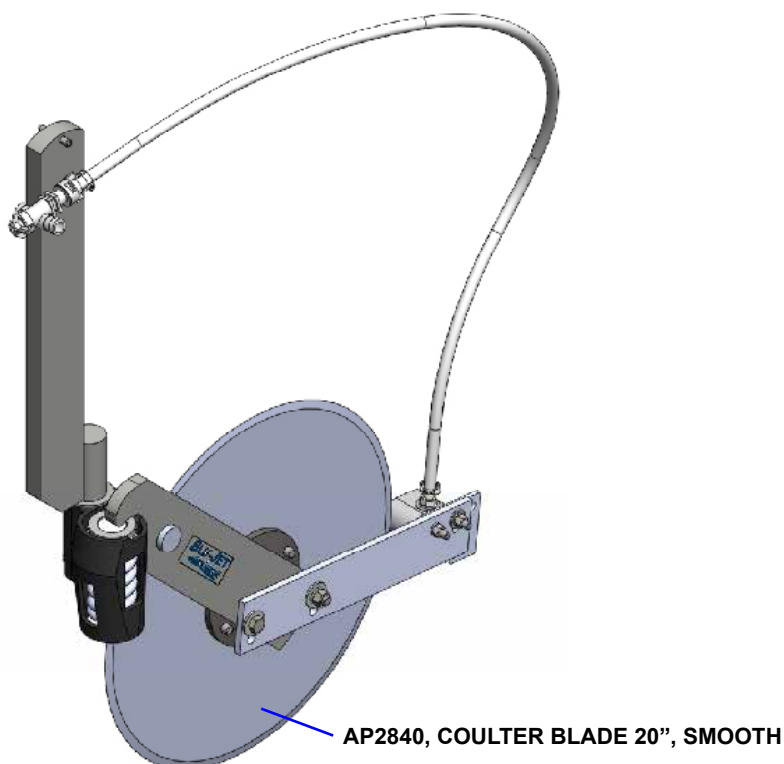
► **AAM3353 JETSTREAM LIQUID ASSEMBLY, TEE-JET CHECK, 1 ROW**



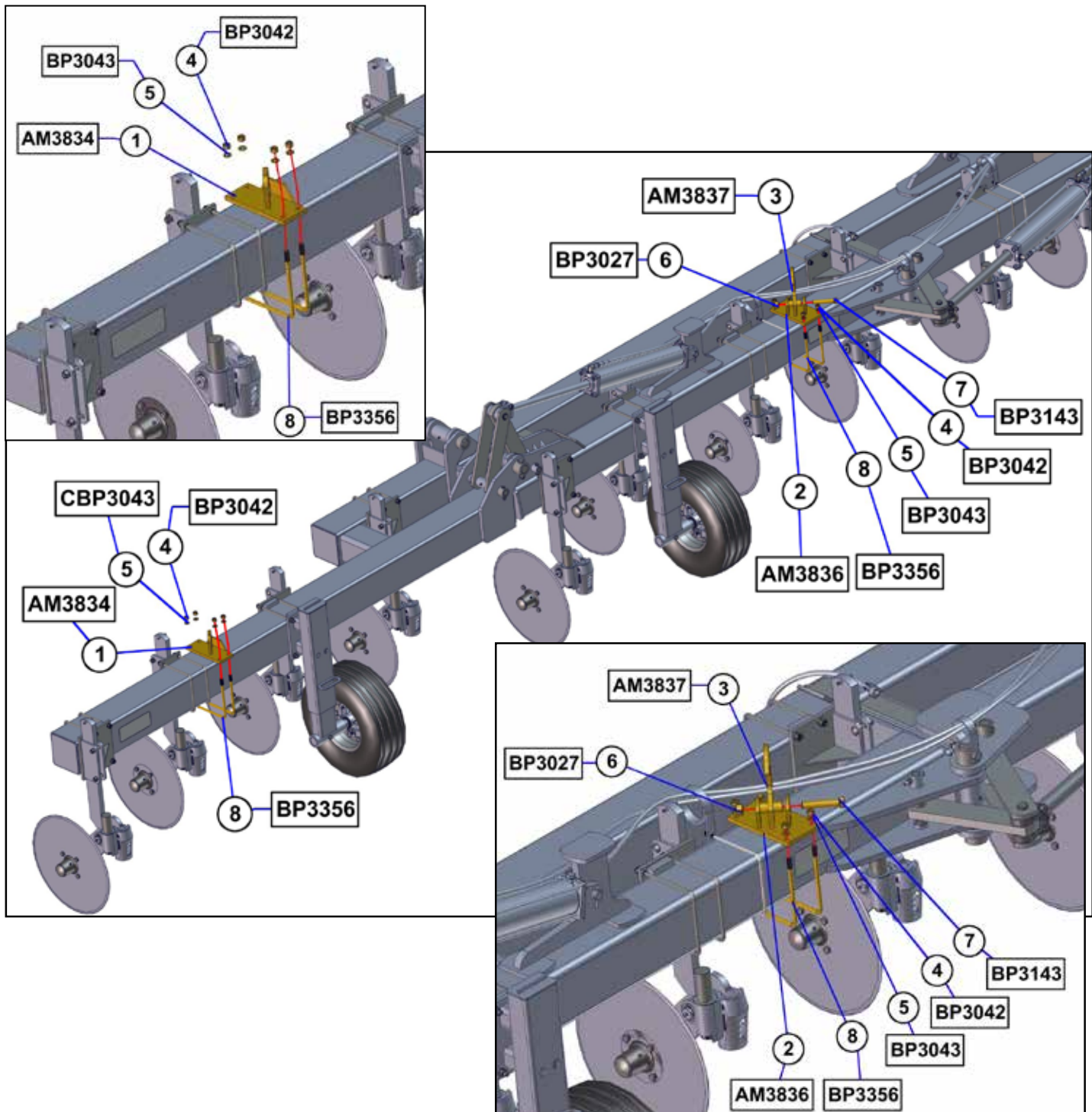
JET STREAM LIQUID ASSEMBLY (AAM3353)

► AAM3353 JETSTREAM LIQUID ASSEMBLY, TEE-JET CHECK, 1 ROW

BOM ID	Qty	Item No	Description
1	1	AAM3353	JETSTREAM LIQUID ASSEMBLY TEE-JET CHECK, 1 ROW
2	1	AM3627	NOZZLE MOUNT, JETSTREAM, AT3000/ AT4000/ AT4600
3	1	BP3015	WASHER, FLAT, 3/8", PLATED
4	2	BP3050	WASHER, FLAT, 1/2", PLATED
5	2	BP3450	NUT, HEX, 3/8"-16, F594 GRADE 1
6	2	BP3451	WASHER, LOCK, 3/8", 18-8 STAINLESS STEEL
7	2	BP3454	HEX CAP SCREW, 3/8"-16 X 1-1/2", F593 GRADE 1
8	2	BP3455	NUT, HEX, 1/2"-13, F594 GRADE 1
9	2	BP3456	WASHER, LOCK, 1/2", 18-8 STAINLESS STEEL
10	2	BP3459	HEX CAP SCREW, 1/2"-13 X 2", F593 GRADE 1
11	2	BP3461	WASHER, FLAT, 5/8", 1-1/2" OD, 0.078", 18-8 STAINLESS STEEL
12	1	CM2305	JET STREAM MOUNTING ARM
13	2	CP2313	HOSE CLAMP, WORM GEAR, 1/4" - 5/8" TUBING, STAINLESS STEEL
14	1	CP2467	NOZZLE CAP, 25608-1-NYR
15	1	CP2488	DIAPHRAGM CHECK VALVE, DOUBLE SHANK, 3/4 HOSE
16	1	CP2534	HOSE, EVA, N 3/8" BRAID JET STREAM
17	1	CP2537	STREAM STABILIZER-STAINLESS STEEL JET STREAM
18	1	CP2541	ORIFICE PLATE #4916-63 JET STREAM
19	1	CP2542	ORIFICE PLATE #4916-70 JET STREAM
20	1	CP2543	ORIFICE PLATE #4916-78 JET STREAM
21	1	CP2544	ORIFICE PLATE #4916-86 JET STREAM
22	1	CP2545	ORIFICE PLATE #4916-95 JET STREAM
23	1	CP2578	NOZZLE BODY, STRAIGHT WITH NUT, 3/8" HOSE, STAINLESS STEEL
24	1	CP2589	NOZZLE CAP, STAINLESS STEEL
25	1	CP5046	HOSE BARB INSERT, 3/8", STAINLESS STEEL
26	3	DP4086	CABLE TIE 11-3/8" STANDARD

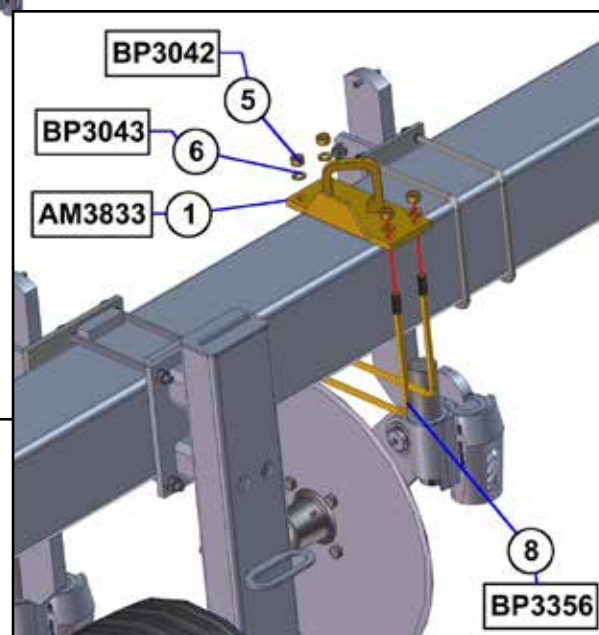
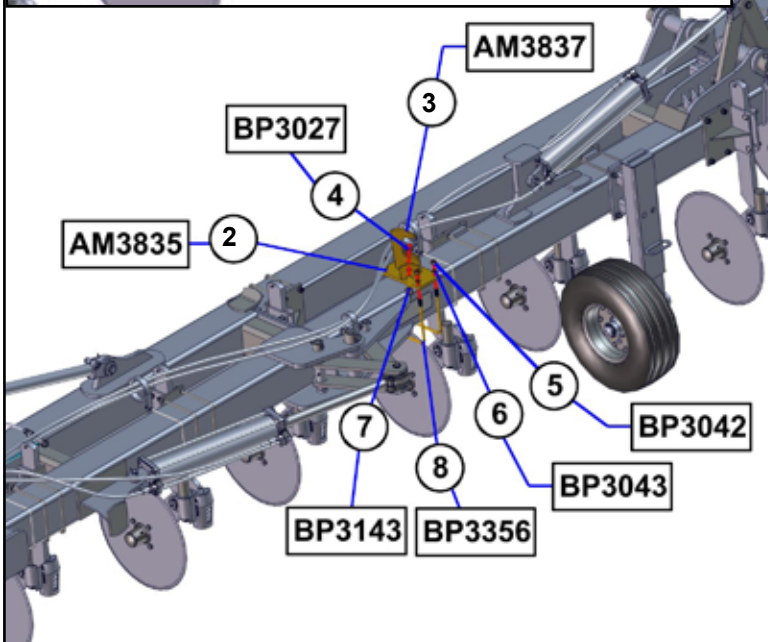
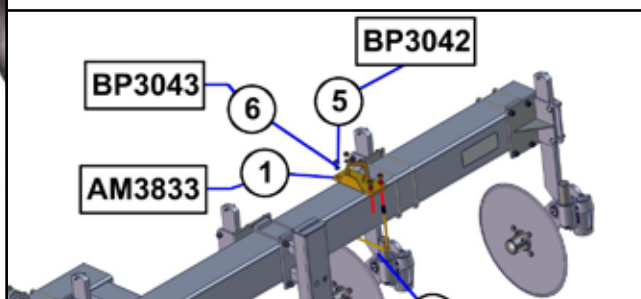
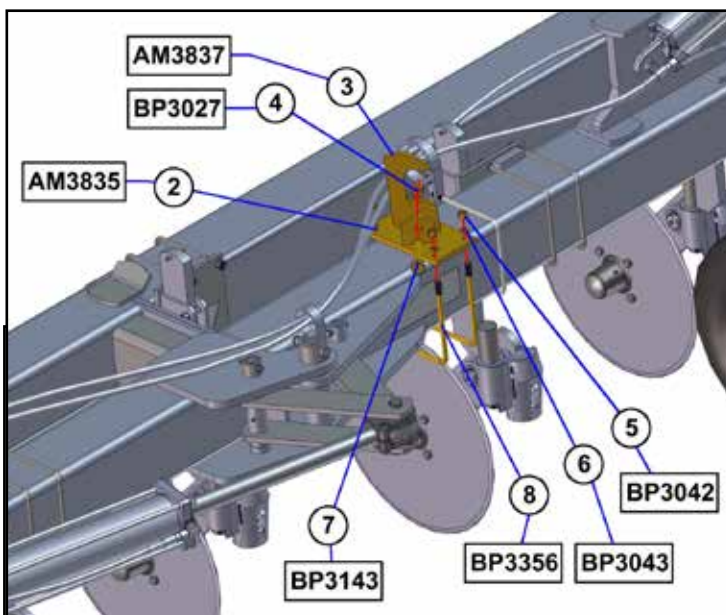


WING LATCHES RIGHT-HAND



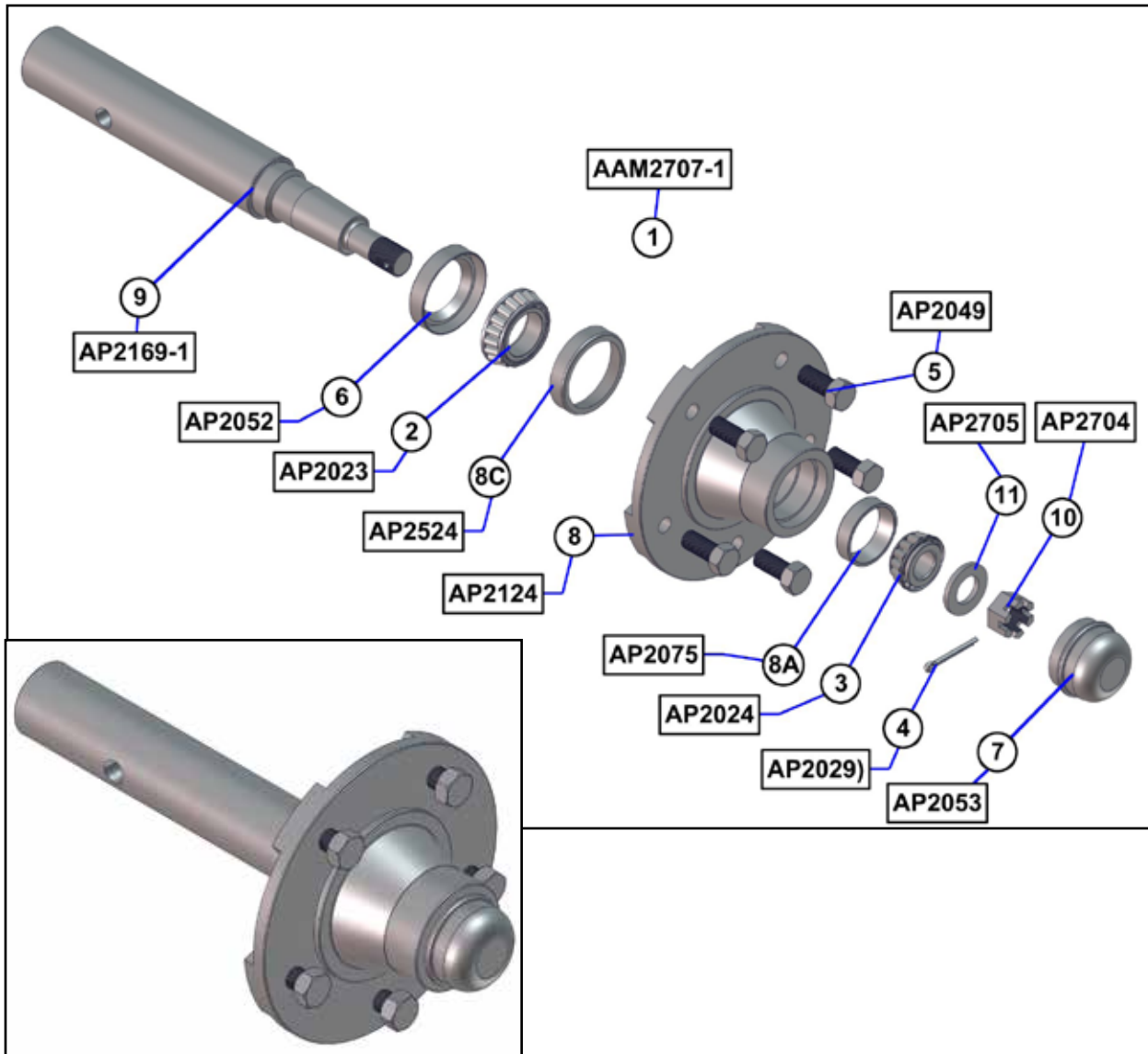
BOM ID	Qty	Item No	Description
1	1	AM3634	WING LATCH, RIGHT-HAND, AT4020
2	1	AM3836	WING LATCH MOUNT, RIGHT-HAND, AT4020
3	1	AM3837	WING LATCH HOOK, THIRD WING, AT4020
4	8	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
5	8	BP3043	WASHER, LOCK, 1/2", PLATED
6	1	BP3027	NUT, HEX LOCK, 3/4"-10, GRADE 2, PLATED
7	1	BP3143	HEX CAP SCREW, 3/4"-10 X 4", GRADE 5, PLATED
8	4	BP3356	U-BOLT, 1/2"-13 X 7"W X 8-1/4"L, GLOSS BLACK

WING LATCHES LEFT-HAND



BOM ID	Qty	Item No	Description
1	1	AM3833	WING LATCH, LEFT-HAND, AT4020
2	1	AM3835	WING LATCH MOUNT, LEFT-HAND, AT4020
3	1	AM3837	WING LATCH HOOK, THIRD WING, AT4020
4	1	BP3027	NUT, HEX LOCK, 3/4"-10, GRADE 2, PLATED
5	8	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
6	8	BP3043	WASHER, LOCK, 1/2", PLATED
7	1	BP3143	HEX CAP SCREW, 3/4"-10 X 4", GRADE 5, PLATED
8	4	BP3356	U-BOLT, 1/2"-13 X 7"W X 8-1/4"L, GLOSS BLACK

AAM2707-1 HUB AND SPINDLE ASSEMBLY 511 HUB, 1-3/4" X 13" SPINDLE



BOM ID	Qty	Item No	Description
1	1	AAM2707-1	ASSEMBLY, HUB & SPINDLE, 511 HUB, 1-3/4" X 13"
2	1	AP2023	BEARING CONE, LM 67048
3	1	AP2024	BEARING CONE, LM 11949
4	1	AP2029	PIN, COTTER, 5/32" X 1-1/2"
5	5	AP2049	WHEEL BOLT, 1/2"-20 X 1"
6	1	AP2052	GREASE SEAL, CR 14974
7	1	AP2053	HUB CAP, 1524
8A	1	AP2075	BEARING CUP, LM 11910
8	1	AP2124	HUB W/ CUPS, 5 BOLT, 511300-5
8B	1	AP2124-HUB	HUB, 5 BOLT, 5.5" BC, 4" PILOT
9	1	AP2169-1	SPINDLE, 1-3/4H X 13, S7151-H-00
8C	1	AP2524	BEARING CUP, LM 67010
10	1	AP2704	NUT, SPINDLE, 3/4"-16
11	1	AP2705	WASHER, SPINDLE, 1-1/2" X 13/16" X .134"

With cylinder removed from machine, clean, drained of oil and fully retracted, proceed as follows:

Disassembly:

1. Secure cylinder in vice or other method to prevent rotation. With the immediate area clean of dirt so parts can be laid out.
2. Remove tie-rod nuts, item (1).
3. Pull rod assembly from cylinder. Remove tube item (3).
4. Loosen nut, item (4), and remove clevis, item (5), from rod assembly.
5. Place rod assembly in vice with copper or brass jaws so as not to damage.
6. Remove all seals from items (6), (8), and (9) for replacement. Clean and inspect all parts, for damage (nicks, scratches, cracks and etc.) replace as necessary. If you have any question please contact Prince Hydraulics (712) 235-1220.

Reassembly:

1. Replace all seals in items (6), (8), and (9). Do not replace small O-ring on ID of piston item, (8) until ready to attach rod, item (2).
2. Place small ID O-ring seal for piston over rod turndown and apply light coat of grease to seal. Slip piston, item (8) onto turndown with ID counter bore towards rod shoulder. Take care not to pinch O-ring between piston and rod shoulder. Replace nut, item (7), and secure.
3. Apply light coat of grease to seals in gland, item (6), and slip gland over rod end, carefully so as not to damage seals. Slip entire assembly into lightly oiled tube, item (3), piston first. Insure tube slips up over OD seals of gland.
4. Take total assembly in step 3 and slip tube over OD seal on butt, item (9). Align ports in butt and gland and apply nuts, item (1), to tie-rods and torque uniformly.

Tierod

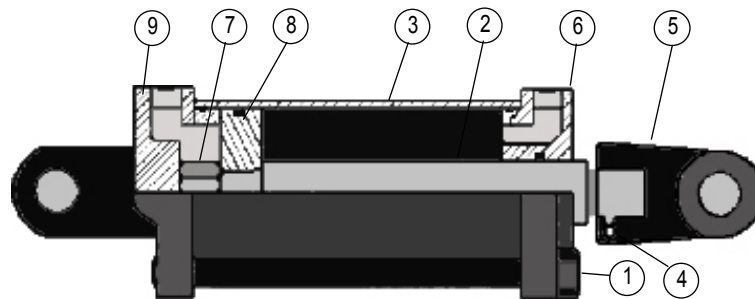
3/8" tierods 20-23 ft./lbs. (27-31 Nm)

1/2" tierods 45-52 ft./lbs. (61-70 Nm)

5/8" tierods 95-105 ft./lbs. (129-142 Nm)

3/4" tierods 150-165 ft./lbs (203-224 Nm)

5. Test for leaks and reinstall in machine. If you have any problems contact Prince Hydraulics (712) 235-1220.



WARNING Make sure you perform the required service and adjustments correctly. Failure will damage machine or injure operator.

6. The hydraulic system **MUST** have the air removed from the system after initial machine set-up or following the repair or replacement of any part of the system.
7. Connect implement to the tractor drawbar correctly before operating or making any adjustments.

HYDRAULIC CYLINDERS AND PARTS

	SAE-34020	DP4375	BU-0132	DP4684
Repair Kit	PMCK-SAE-34000	DP4310	PMCK-BU-0132	DP4715
Clevis	100000328	DP4548	100000362	DP4114
Butt	141900037	DP4270	1421A07SGS	DP4699
Gland	081900354	DP4326	01821ECESG	DP4700
Piston	071900260	DP4328	072100406	DP4701
Piston Rod	011000323	DP4357	011200139	DP4702
Barrel	051900014	DP4353	052132930A	DP4703
Tierod	170301252	DP4354	170401356	DP4704
Clevis Pin	190400035	BP3497	190600024	BP3498
Cotter Pin	220001504	BP3511	220001504	BP3511
Sensor	NONE		280100247	DP4705

	B350200ABAAA07B	DP4597	B350200ABAAA07B	DP4552
Repair Kit	PMCK-SAE-33500/33600	DP4309	PMCK-SAE-33400	DP4310
Clevis	100000577	DP3996	100000326	DP4115
Butt	1417005SF	DP4612	1419005SF	DP4270
Gland	0817BBGSF	DP4623	0819BBNSF	DP4326
Piston	71700174	DP4327	071900260	DP4328
Piston Rod	010725750B	DP4633	011000318	DP4448
Barrel	051722063A	DP4640	051900008	DP4449
Tierod	170201243	DP4643	170301132	DP4450
Clevis Pin	190400004	BP3514	1 X 3-1/4"	BP3497
Cotter Pin	220001504	BP3511	220001504	BP3511
Sensor	NONE	NONE	NONE	NONE








NOTE: REPAIR PARTS FOR DP4737 4 X 8 CYLINDER WITH SENSOR NOT AVAILABLE AT TIME OF MANUAL PRINTING.

SPECIFICATIONS

Row Spacings	25R30, 35R22
Mainframe/A-frame Hitch	Heavy Duty Integrated Welded Design
Cat IV Pintle Hitch	Standard
Heavy Duty 7 Section Toolbar	3 Section Double 7" x 7" Tubular Plus
	4 Sections Single 7" x 7"
Automatic Hydraulic Gull Wing During Turns	Standard
Wheels and Tires 120" Tread (2,000 Gallon Tank)	IF380/105R50 177D
Tire Pressure	70 P.S.I. Max.
Wheel and Tires 120" Tread (1,500 Gallon Tank)	IF320/105R54 167D
Tire Pressure	64 P.S.I. Max.
Wheel Bolt Torque	250 to 265 ft/lbs.
Gauge Wheel Tires	22 x 8 NHS
Tire Pressure	85 P.S.I. Max.
Cone Bottom Tank	2,000 Gallon with 3" Bottom Fill
Cone Bottom Tank	1,500 Gallon with 3" Bottom Fill
Plumbing	Full Length 3/4" Parallel Manifold
Coulters	Super 1200 Coulters with 20" Smooth Blades
Overall Length	18'-10"
Transport Width	15'-9"
Transport Height	13'-2.25"
Empty Weight	14,500 lb. Standard 25R30
Empty Weight	15,500 lb. 35R22
Hitch Weight in Transport	4,250 lb.
Water Tank/Toolbox	Standard
Transport Chain	30,400 lb.
Top Wind Jack	9,000 lb. Capacity
Two Hydraulic Remotes Required	1,800 PSI
Electrical System	12 volt, with 7 Pin Connector
Blade Size	20 inch Smooth (AP2840)
Lighting Kit	Standard

TORQUE SPECIFICATIONS

NOTE: Use these torque's unless special torque's are specified. Values are for UNC and UNF thread fasteners, plated or un-plated, as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, moly-disulphide or other extreme pressure lubricant is used.

SAE Grade No.	2				5				*8			
Bolt head identification (see Note 1)					  				  			
Bolt Size	LB FT		Nm		LB FT		Nm		LB FT		Nm	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	5	6	7	8	9	11	12	15	12	15	16	20
5/16	10	12	14	16	17	20.5	23	28	24	29	33	39
3/8	20	23	27	31	35	42	48	57	45	54	61	73
7/16	30	35	41	47	54	64	73	87	70	84	95	114
1/2	45	52	61	70	80	96	109	130	110	132	149	179
9/16	65	75	88	102	110	132	149	179	160	192	217	260
5/8	95	105	129	142	150	180	203	244	220	264	298	358
3/4	150	185	203	251	270	324	366	439	380	456	515	618
7/8	160	200	217	271	400	480	542	651	600	720	814	976
1	250	300	339	406	580	696	787	944	900	1080	1220	1464
1 1/8					800	880	1085	1193	1280	1440	1736	1953
1 1/4					1120	1240	1519	1681	1820	2000	2468	2712
1 3/8					1460	1680	1980	2278	2380	2720	3227	3688
1 1/2					1940	2200	2631	2983	3160	3560	4285	4827

NOTE 1: Bolt head identification mark as per grade. Manufacturing marks will vary.

STANDARD TORQUE DATA HYDRAULIC TUBES AND FITTINGS

O-ring boss Plugs, Adjustable Fitting
Lock nuts, Swivel JIC-37 degree Seats

SIZE	LB FT		Nm	
	Min.	Max.	Min.	Max.
4	6	10	8	14
5	10	15	14	20
6	15	20	20	27
8	25	30	34	41
10	35	40	47	54
12	60	70	81	95
14	70	80	95	109
16	80	90	108	122
20	95	115	129	156
24	120	140	163	190
32	250	300	339	407

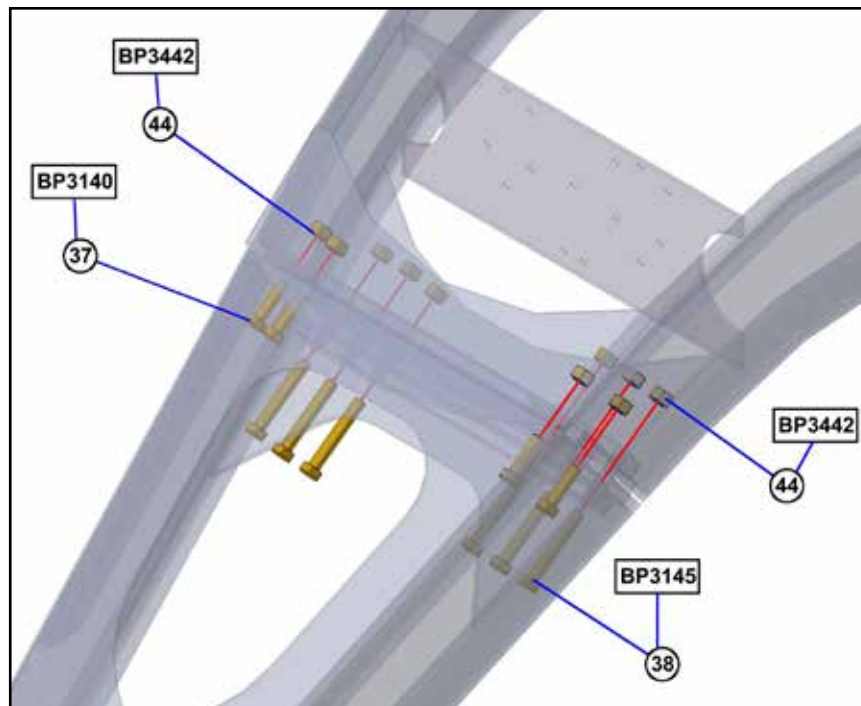
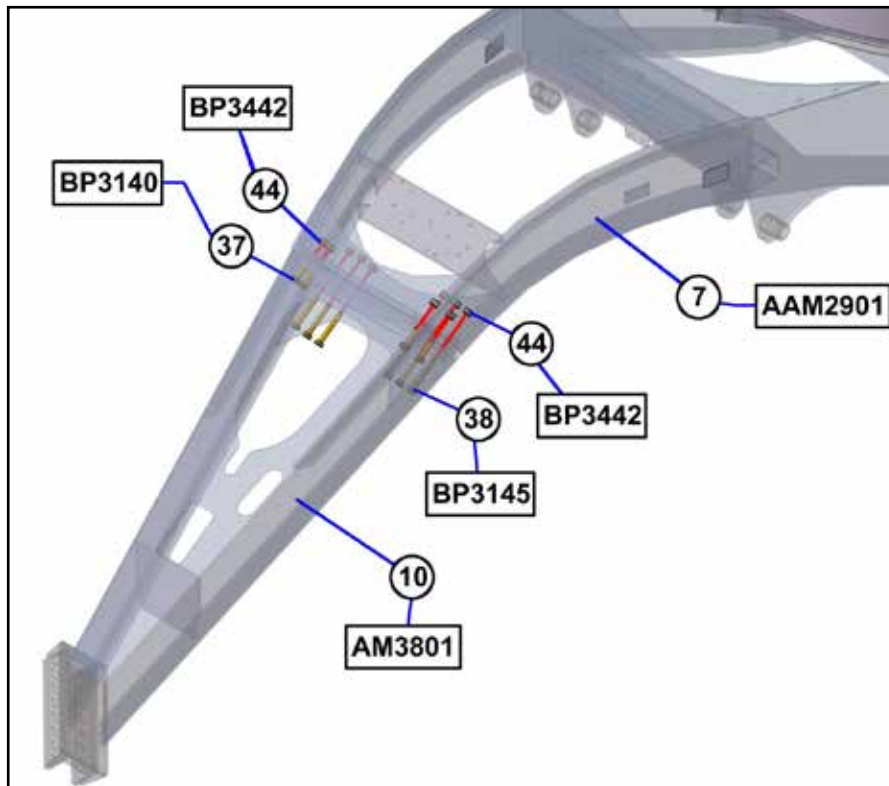
Above torque figures are recommended for plain, cadmium or zinc plated fittings, dry or wet installation and swivel nuts either swaged or brazed.

ASSEMBLY (TONGUE)



WARNING

Keep bystanders away during assembly



BOM ID	Qty	Item No	Description
		44200101	AT4020, BASE FRAME, 2000 GALLON TANK, IF380/105R50 TIRES
7	1	AAM2901	ASSEMBLY, AT4020, CART FRAME W/ 2000 GALLON TANK
10	1	AM3801	TONGUE, AT4020
37	4	BP3140	HEX CAP SCREW, 3/4"-10 X 2-1/2", GRADE 5, PLATED
38	6	BP3145	HEX CAP SCREW, 3/4"-10 X 4-1/2", GRADE 5, ZP
44	28	BP3442	NUT, HEX LOCK, 3/4"-10, TOP LOCK, GRADE C, PLATED

ASSEMBLY (TONGUE)

TONGUE MOUNTING

1. Raise and place a support under (7) (AAM2901) cart frame assembly
2. Position (10) (AM3801) tongue in front of (7) so tongue is under the lip of the cart frame weldment.
3. Place a strap around both parts and slowly raise until the holes align.
4. Align holes with a punch and insert six (38) (BP3145) 3/4" x 4-1/2" hex cap screws in the **bottom** six holes. Place (44) (BP3442) 3/4" hex top locks on each bolt.
5. Insert four (37) (BP3140) 3/4" x 2-1/2" hex cap screws in **top** holes. Place (44) (BP3442) 3/4" hex top locks on each bolt.
6. Secure all hex top locks evenly.



TOP

BOTTOM

ASSEMBLY (AXLES)

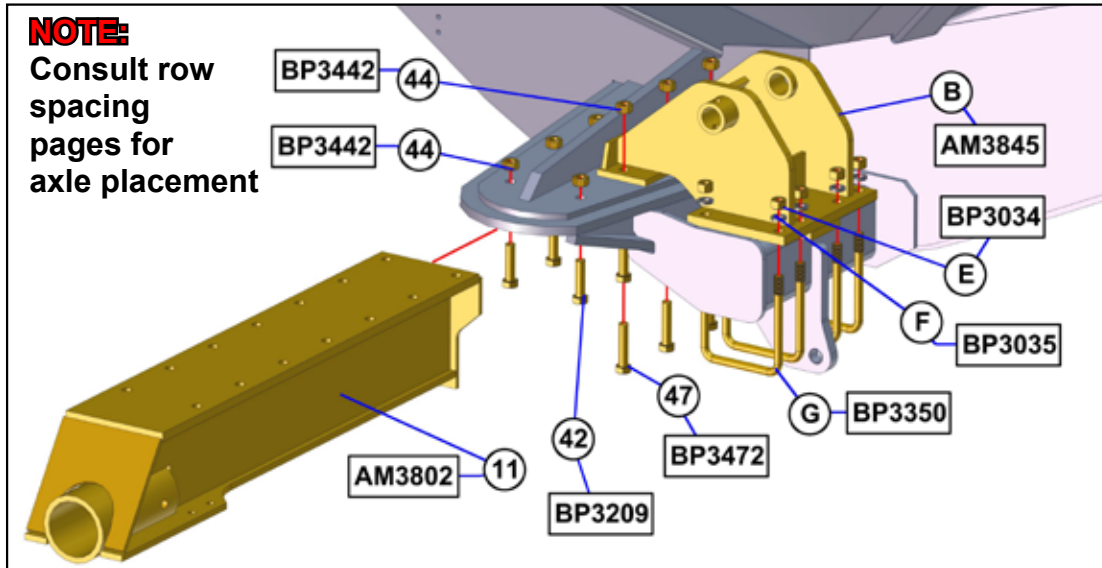
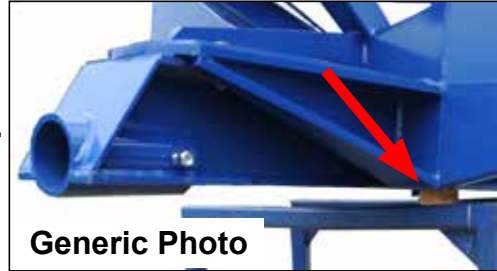
AXLE MOUNTING

1. Place a block between frame and stand to allow enough space to insert axle.
2. Align holes and secure with hardware listed below.



WARNING

Keep bystanders away during assembly

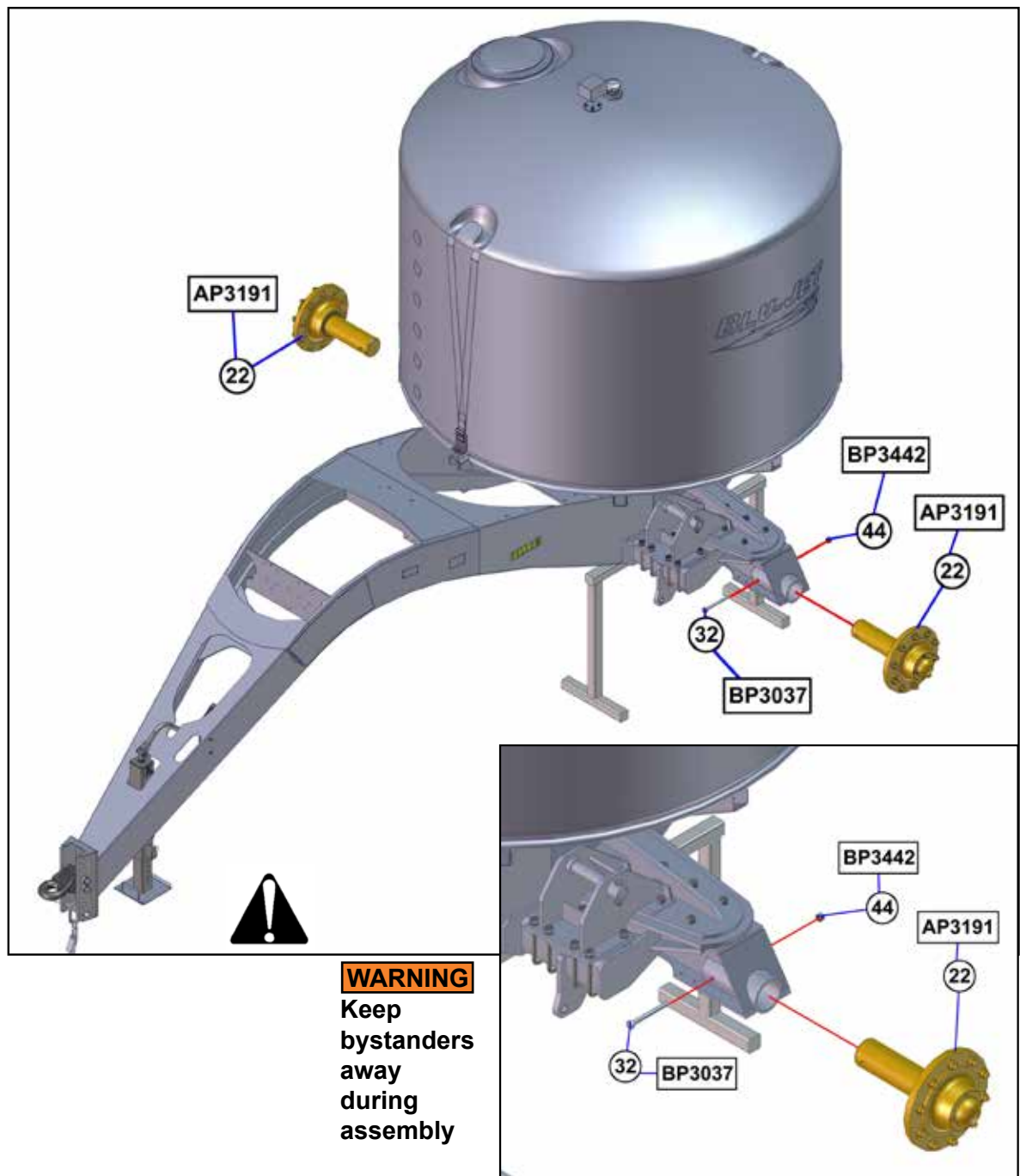


ATTACHING AXLES AND LIFT PIVOTS

1. Place (B) (AM3845) bolt-on lift pivot right-hand and (A) (AM3844) bolt-on lift pivot left-hand on main frame weldments. Insert (G) (BP3350) 3/4" x 6"W x 7-11/16" L plated u-bolts into (B). Install (F) (BP3035) 3/4" lock washers and (E) (BP3034) 3/4" hex nuts on each u-bolt. **Do not tighten.**
2. Consult row spacing pages for axle placement. Insert (11) (AM3802) AT4020 axle. Align bolt-on pivot bracket holes with axle and insert three (47) (BP3472) 3/4" x 3-1/2" hex cap screws. Install (44) (BP3442) 3/4" hex lock nuts.
3. Insert remaining (42) (BP3209) 3/4" x 3" hex cap screws and install (44) (BP3442) 3/4" hex lock nuts. Tighten all hex cap screws.

BOM ID	Qty	Item No	Description
11	2	AM3802	AXLE, AT4020
42	10	BP3209	HEX CAP SCREW, 3/4"-10 X 3", GRADE 8, PLATED
44	28	BP3442	NUT, HEX LOCK, 3/4"-10, TOP LOCK, GRADE C, PLATED
47	6	BP3472	HEX CAP SCREW, 3/4"-10 X 3-1/2", GRADE 8, PLATED
B	1	AM3845	BOLT-ON LIFT PIVOT, AT4020, RIGHT-HAND
E	16	BP3034	NUT, HEX, 3/4"-10, GRADE 2, PLATED
F	16	BP3035	WASHER, LOCK, 3/4", PLATED
G	8	BP3350	U-BOLT, 3/4"-10 X 6"W X 7-11/16"L, PLATED

ASSEMBLY (SPINDLES)



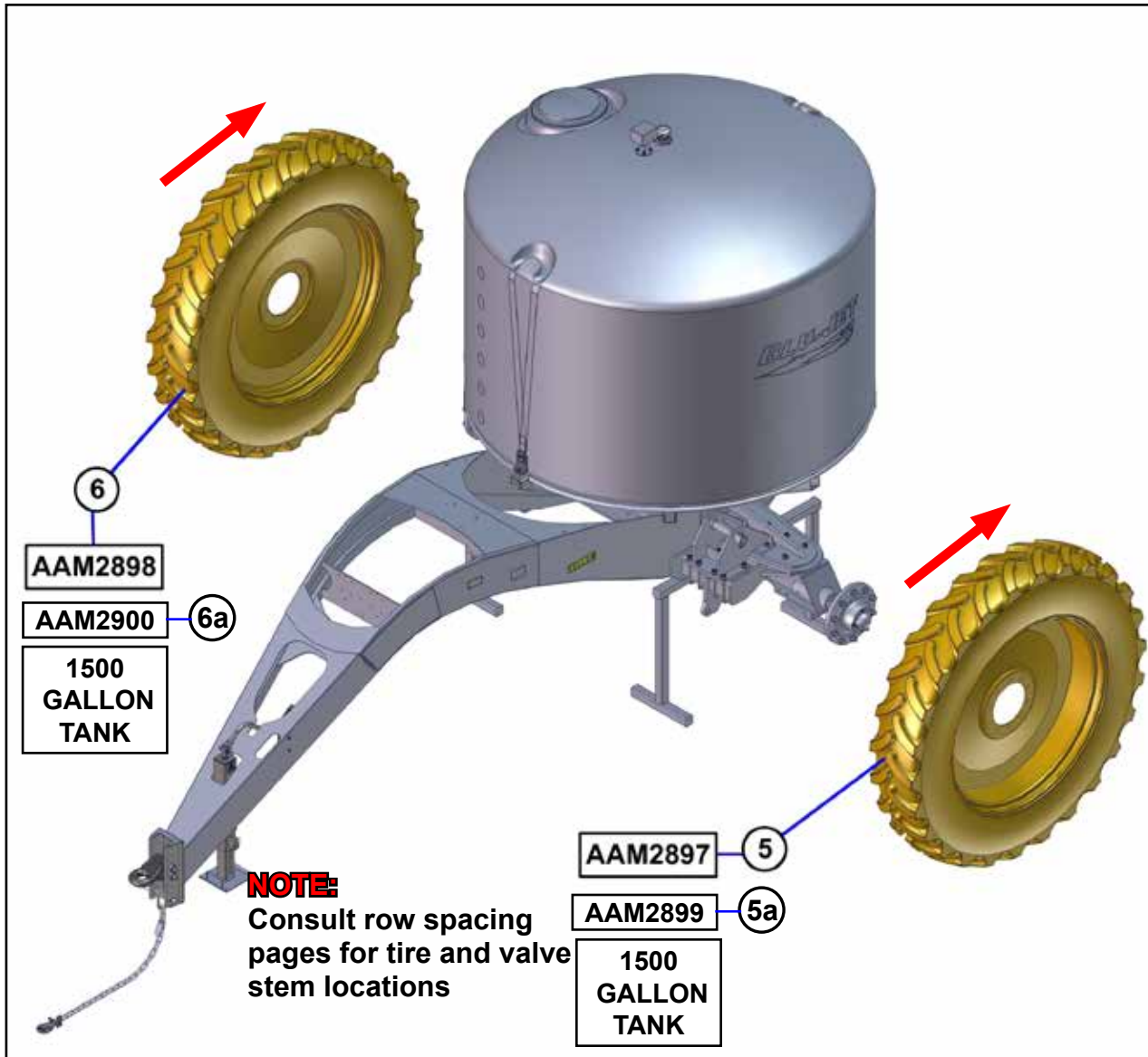
BOM ID	Qty	Item No	Description
		44200101	AT4020, BASE FRAME, 2000 GALLON TANK, IF380/105R50 TIRES
22	2	AP3191	881 HUB AND 4-1/2" SPINDLE ASSEMBLY
32	2	BP3037	HEX, CAP SCREW, 3/4"-10 X 7", GRADE 5, PLATED
44	28	BP3442	NUT, HEX LOCK, 3/4"-10, TOP LOCK, GRADE C, PLATED

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (TIRES)

Tire Mounting

1. **NOTE:** Tread must run to the rear.
2. Tighten lug nuts evenly and torque to **250-265** ft. lbs.



WARNING

Keep bystanders away during assembly

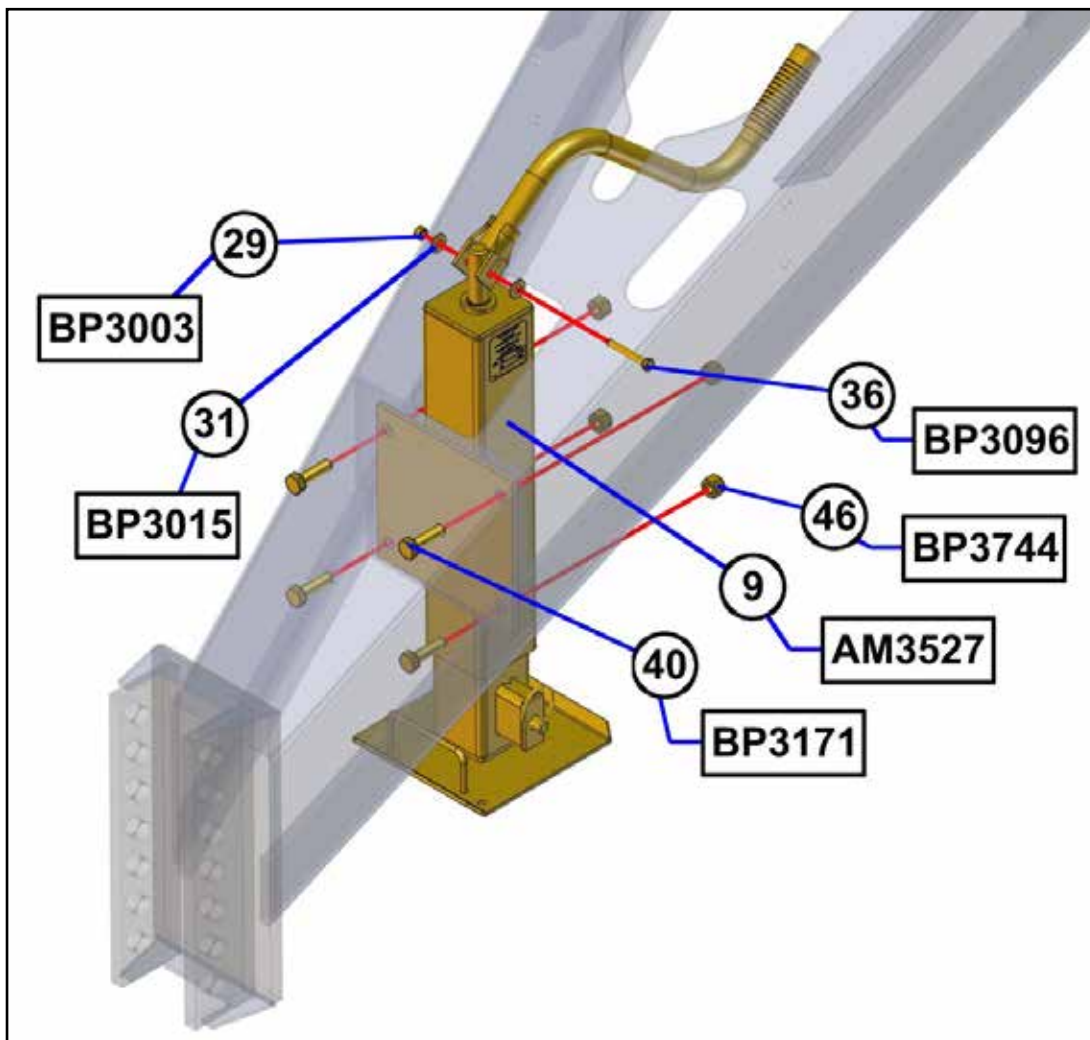
3. Tire pressure:
IF380/105R50 177D: Tire for **2000** gallon tank (**70** P.S.I.)
IF320/105R54 167D: Tire for **1500** gallon tank (**64** P.S.I.)

BOM ID	Qty	Item No	Description
		44200101	AT4020, BASE FRAME, 2000 GALLON TANK, IF380/105R50 TIRES
5	1	AAM2897	WHEEL, IF380/105R50 177D, LEFT-HAND
5a	1	AAM2899	WHEEL, IF320/105R54 167D, LEFT-HAND
6	1	AAM2898	WHEEL, IF380/105R50 177D, RIGHT-HAND
6a	1	AAM2900	WHEEL, IF320/105R50 167D, RIGHT-HAND

ASSEMBLY (JACK)

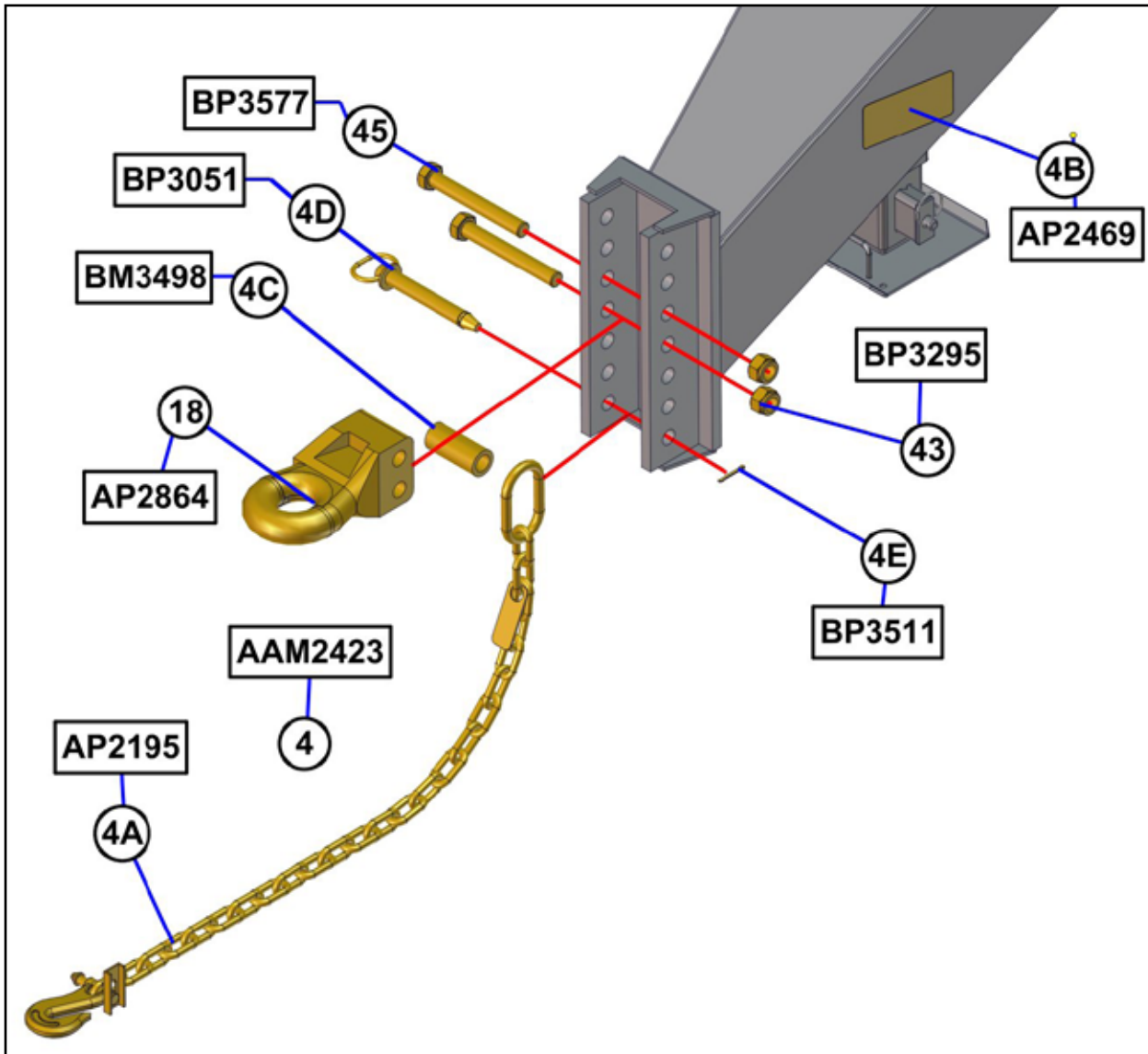
Jack Installation

1. Attach jack handle to jack.
2. Insert jack assembly through tongue opening. Use jack handle to align the jack plate with tongue plate. Secure with hardware listed below.



BOM ID	Qty	Item No	Description
		44200101	AT4020, BASE FRAME, 2000 GALLON TANK, IF380/105R50 TIRES
9	1	AM3527	JACK, 9TWDL, WITH MOUNTING PLATE, AT3000
29	3	BP3003	NUT, HEX LOCK, 3/8\"-16, GRADE 2, PLATED
31	2	BP3015	WASHER, FLAT, 3/8\", PLATED
36	1	BP3096	HEX CAP SCREW, 3/8\"-16 X 2-1/2\", GRADE 5, PLATED
40	4	BP3171	HEX CAP SCREW, 5/8\"-11 X 2\", GRADE 5, PLATED
46	4	BP3744	NUT, HEX LOCK, 5/8\"-11, GRADE 5, PLATED, TOPLOCK

ASSEMBLY (HITCH, SAFETY CHAIN)

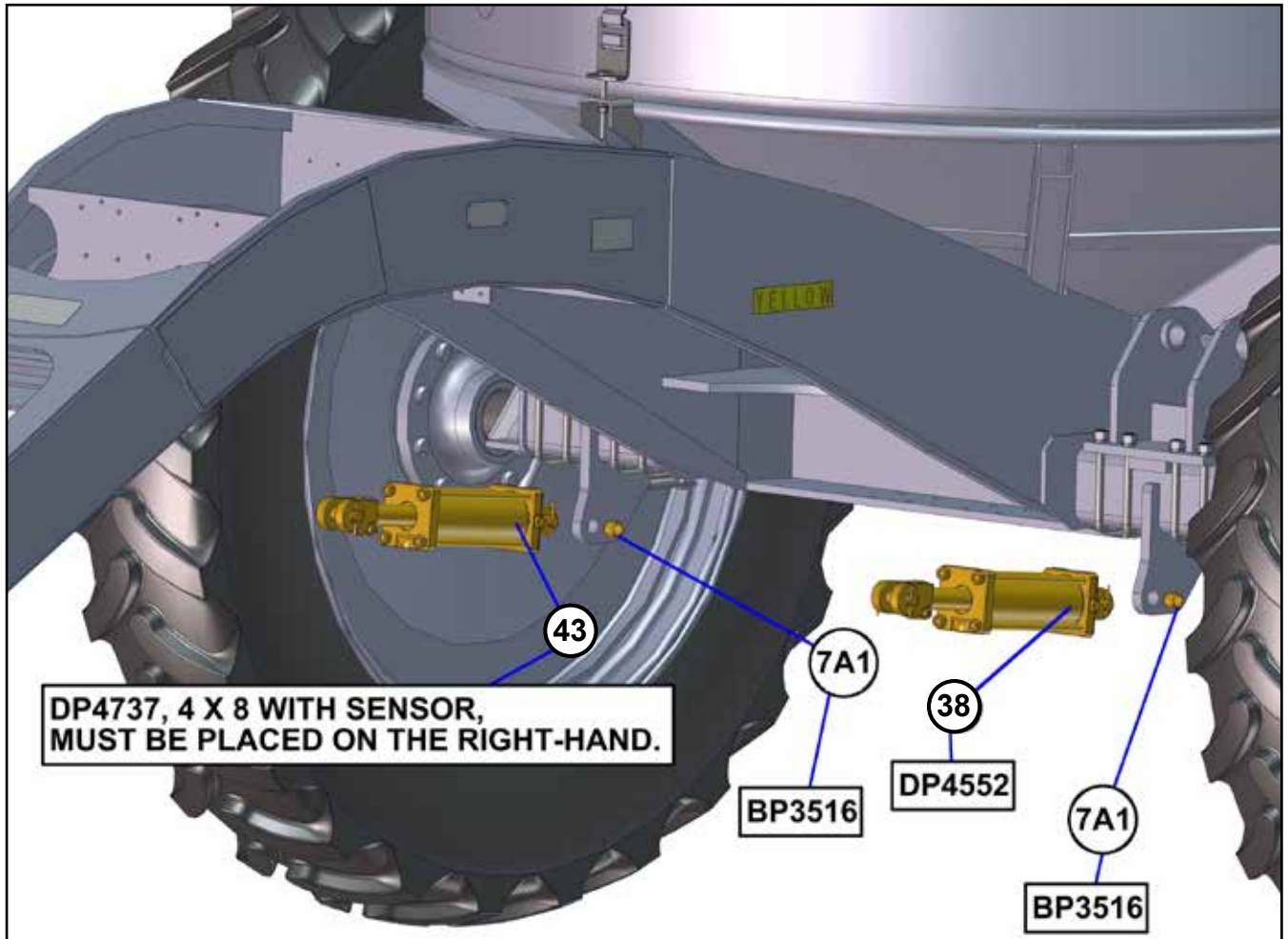


BOM ID	Qty	Item No	Description
		44200101	AT4020, BASE FRAME, 2000 GALLON TANK, IF380/105R50 TIRES
4	1	AAM2423	TRANSPORT CHAIN KIT, 30,000 lb.
4A	1	AP2195	TRANSPORT CHAIN, 30000 lb., 7/16"
4B	1	AP2469	DECAL, SAFETY CHAIN
4C	1	BM3498	BUSHING, SAFETY CHAIN
4D	1	BP3051	PIN, 1" X 6", HITCH, PLATED
4E	1	BP3511	PIN, COTTER, 3/16" X 1-3/4"
18	1	AP2864	PERFECT HITCH, CATEGORY IV, BLACK
43	2	BP3295	NUT, HEX LOCK, 1"-8, NYLOCK
45	2	BP3577	HEX CAP SCREW, 1"-8 X 7-1/2", GRADE 8, PLATED

ASSEMBLY (CENTER SECTION LIFT CYLINDERS)

Center Section Lift Cylinders

1. Install (7A1) (BP3516), 1-1/4" x 1" x 1", tension bushing in main frame cylinder lugs
2. Attach (38) (DP4552), 4 x 8 hydraulic cylinder to the left-hand side from the rear.
3. Attach (43) (DP4737), 4 x 8 hydraulic (Sensor) cylinder to the right-hand side.

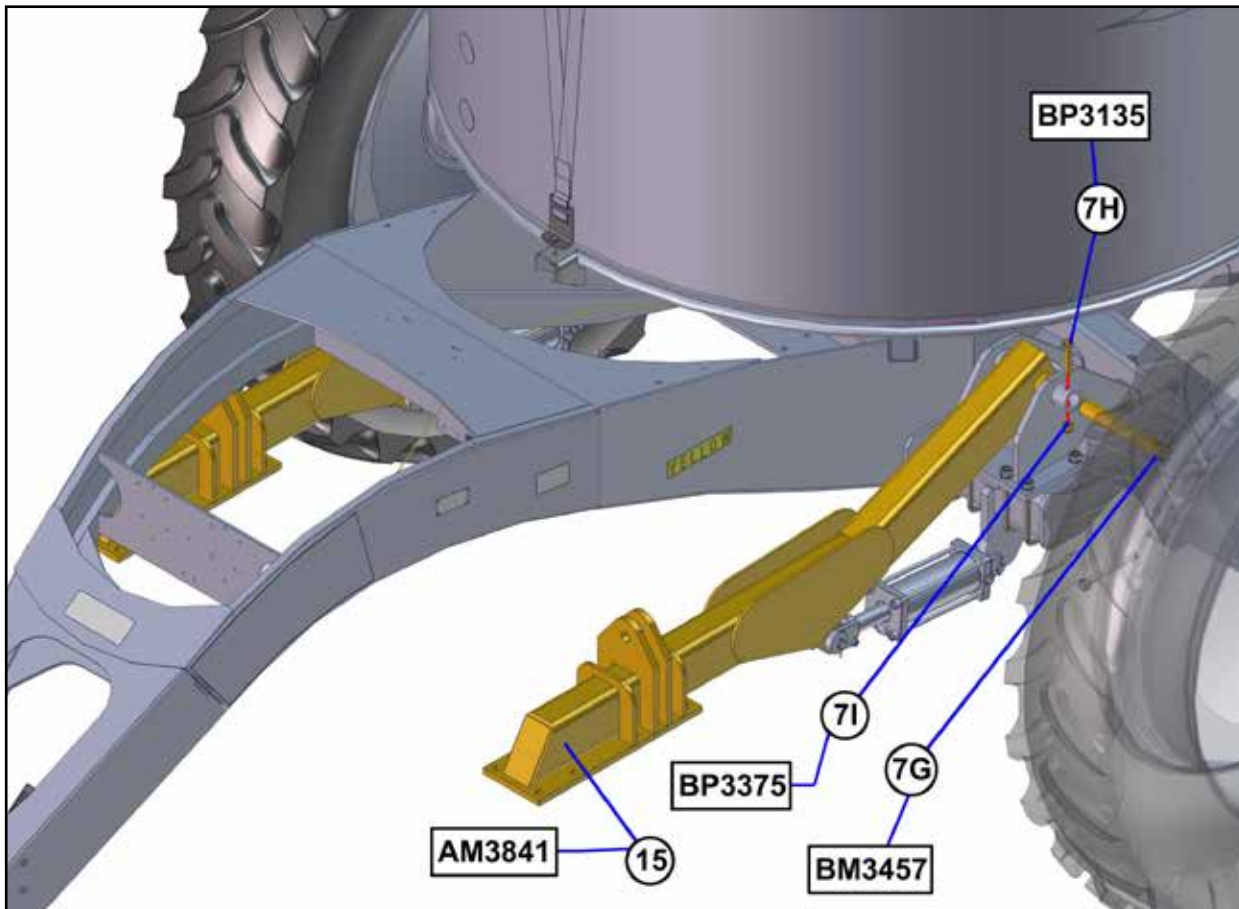


BOM ID	Qty	Item No	Description
7A1	2	BP3516	TENSION BUSHING, 1-1/4" X 1" X 1", OAL
38	1	DP4552	CYLINDER, HYDRAULIC, 4 X 8
43	1	DP4737	CYLINDER, HYDRAULIC, 4 X 8 (SENSOR)

ASSEMBLY (CENTER SECTION LIFT ARMS)

Attaching Center Section Lift Arms

1. Place (15) (AM3841), lift arm in pivot bracket. Secure with (7G) (BM3557), 1-3/4" x 11-5/8" pin, (7H) (BP3235), 5/8" x 3-1/2" hex cap screw.
2. Raise lift arms and attach lift cylinders.

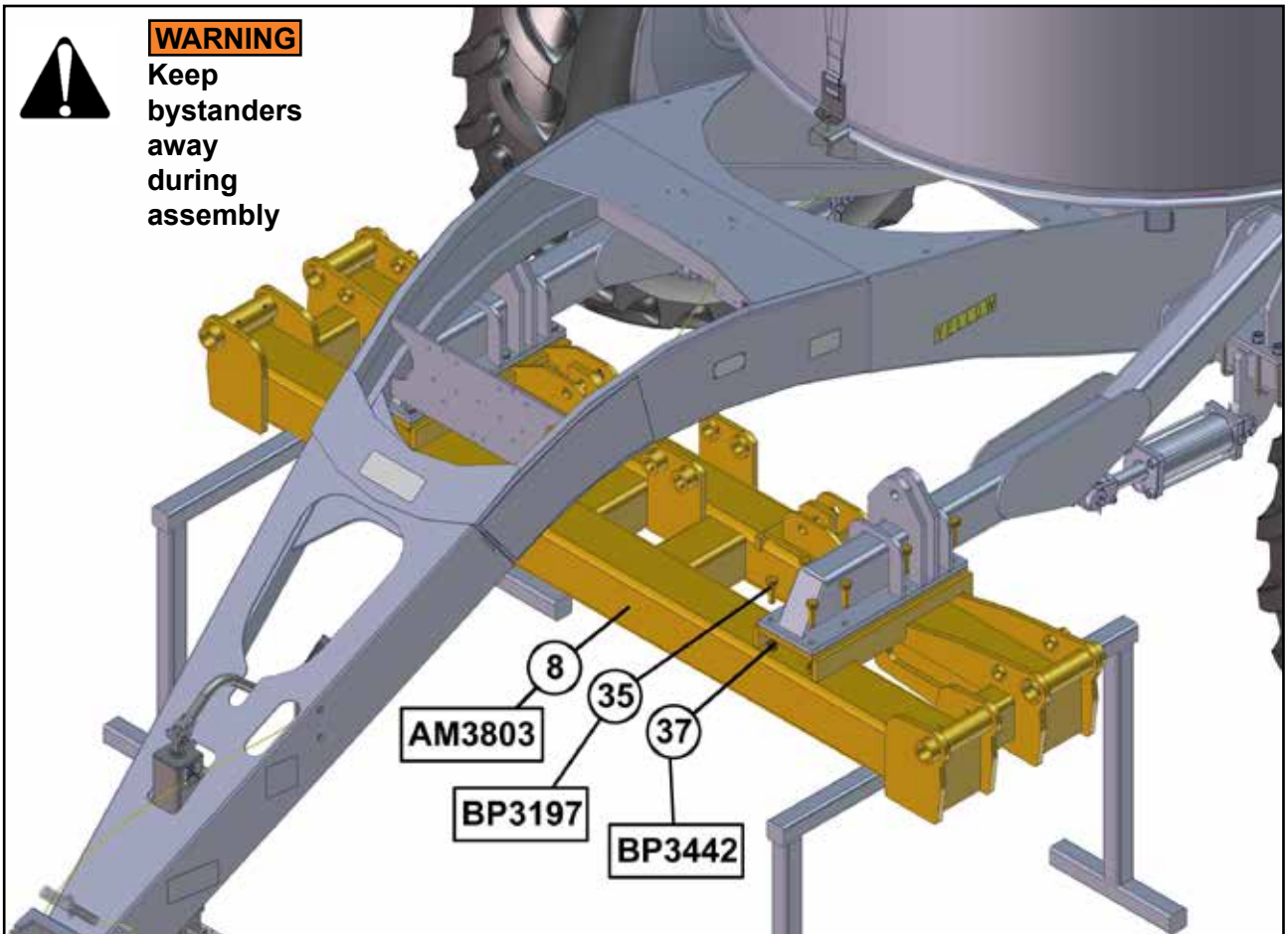


BOM ID	Qty	Item No	Description
15	2	AM3841	LIFT ARM, AT4020
7G	2	BM3471	PIN, 1-3/4" X 11-5/8" OAL, WITH 21/32" HOLE, PLATED
7H	2	BP3135	HEX CAP SCREW, 5/8" X 3-1/2", GRADE 5, PLATED
7I	2	BP3375	NUT, HEX LOCK, 5/8", NYLOCK

ASSEMBLY (CENTER SECTION MOUNTING)

Attaching Center Section To Lift Arms

1. Position (8) (AM3803), center section under lift arms. Secure with (35) (BP3197), 3/4" x 2-1/2", hex cap screws, grade 8 and (37) (BP3442), 3/4" top lock hex lock nuts.

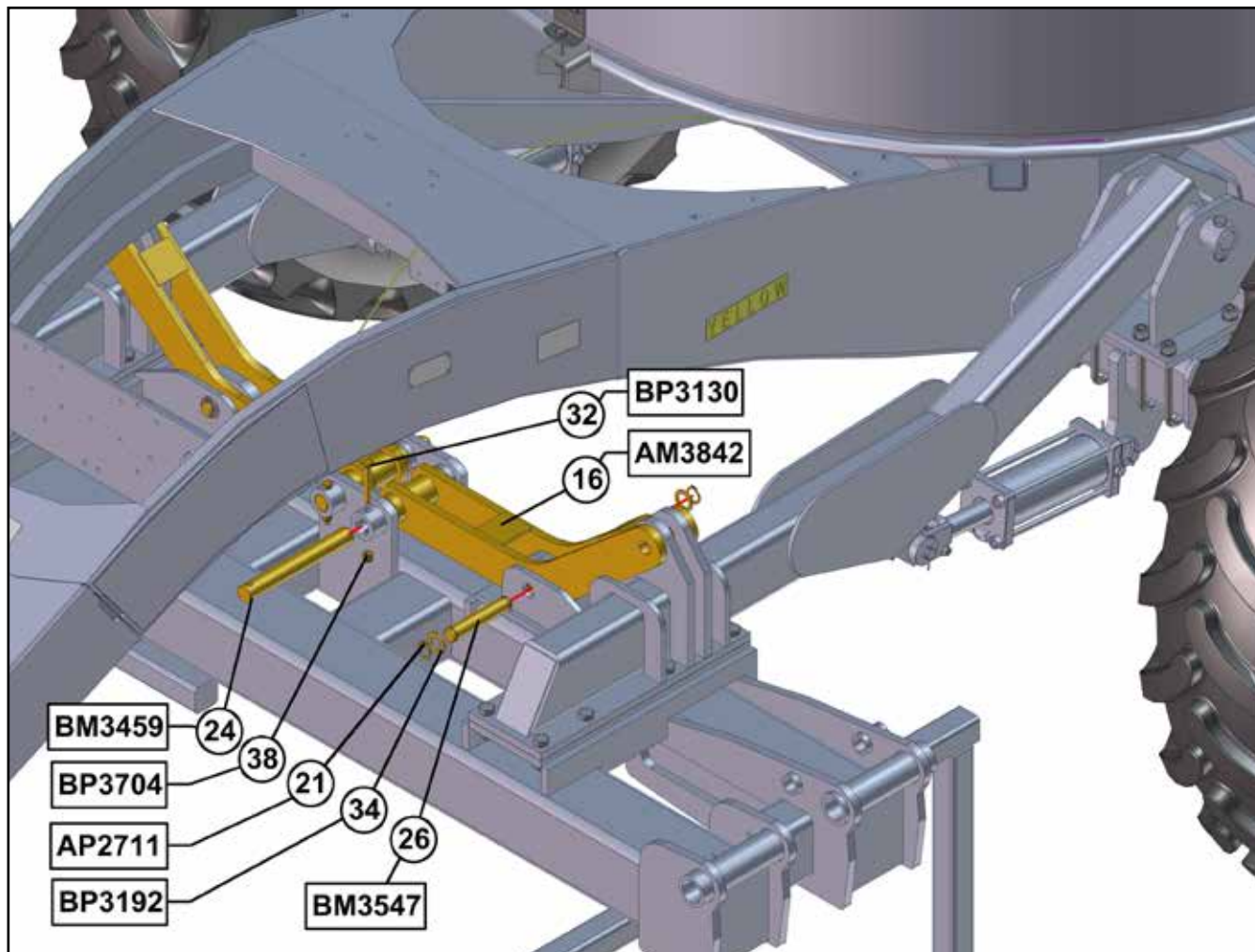


BOM ID	Qty	Item No	Description
8	1	AM3803	CENTER SECTION, TOOLBAR, AT4020
35	16	BP3197	HEX CAP SCREW, 3/4"-10 X 2-1/2", GRADE 8, PLATED
37	16	BP3442	NUT, HEX LOCK, 3/4"-10 TOP LOCK, GRADE C, PLATED

ASSEMBLY (CENTER SECTION CURVED LINKAGE)

Center Section Assembly, Curved Linkage

1. Insert (16) (AM3842), curved linkages into center section weldments. Secure rear with (24) (BP3459), 1-1/2" x 11-5/8" pin with 17/32" hole, (32) (BP3130), 1/2" x 3-1/2", hex cap screws and (38) (BP3704), 1/2" lock nuts.
2. Secure hinge end with (26) (BM3547), 1-1/4" x 5-3/4" pin, (34) (BP3192), 1-7/8" OD x 1-1/4" ID x 10 GA machinery bushings and (21) (AP2711), 1-1/4" snap rings.

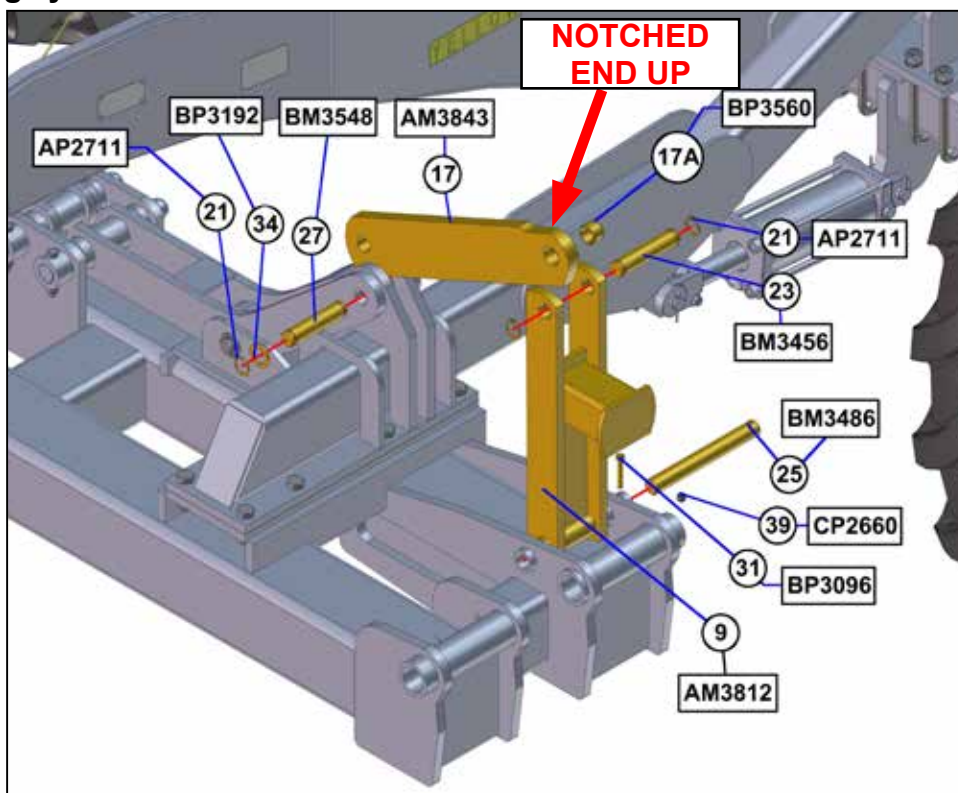


BOM ID	Qty	Item No	Description
16	2	AM3842	CURVED LINKAGE
21	12	AP2711	SNAP RING, 1-1/4" EXTERNAL, HEAVY DUTY
24	2	BM3459	PIN, 1-1/2" X 11-5/8" OAL W/ 17/32" HOLE, PLATED
26	2	BM3547	PIN, 1-1/4" X 5-3/4" USEABLE
32	2	BP3130	HEX CAP SCREW, 1/2"-13 X 3-1/2", GRADE 5, PLATED
34	8	BP3192	MACHINERY BUSHING, 1-7/8" OD X 1-1/4" ID X 10GA, PLATED
38	2	BP3704	NUT, LOCK, NYLON INSERT, 1/2"-13

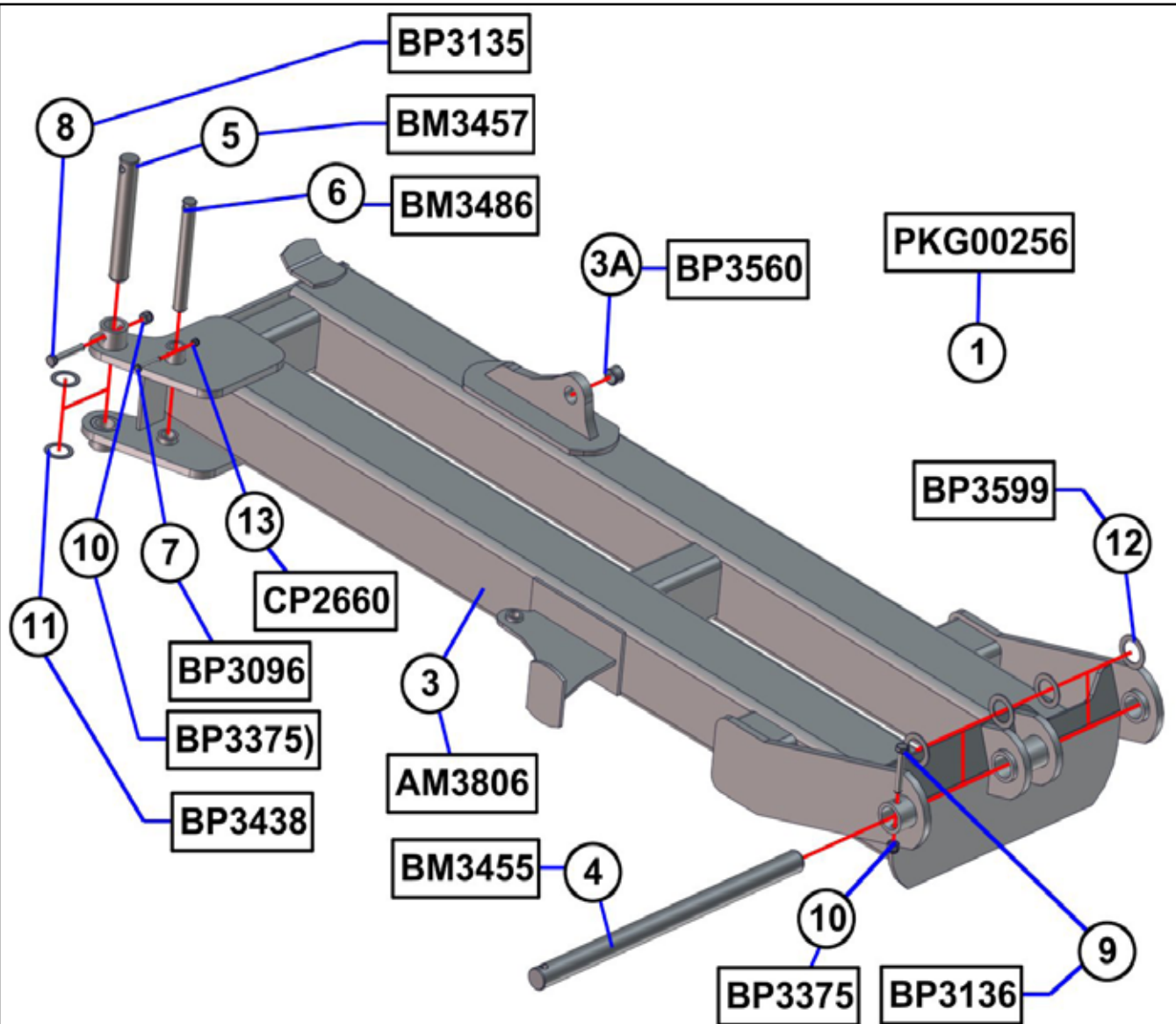
ASSEMBLY (CENTER SECTION DOUBLE OFFSET LINKAGE)

Double Offset Linkage

1. Insert (9) (AM3812), 20-1/2" double offset linkage in center section hinge weldment. Secure with (25) (BM3486), 1-1/4" x 10-7/16" pin with 13/32" hole, (31) (BP3096), 3/8" x 2-1/2" hex cap screw and (39) (CP2660), 3/8" hex lock nut.
2. Install (17A) (BP3560), 1-1/2" X 1-1/4" tension bushing in notched end.
3. Attach (17) (AM3843), linkage center section end with (27) (BM3548), 1-1/4" x 4-3/4" double grooved pin, (34) (BP3192), 1-7/8" OD x 1-1/4" ID x 10 GA machinery bushings and (21) (AP2711), 1-1/4" snap rings.
4. Raise double linkage and insert (23) (BM3456), 1-1/4" x 5-1/8" double grooved pin through both linkages. Place (21) (AP2711), 1-1/4" snap ring on each end. This pin will be removed later to install butt end of primary wing cylinders.



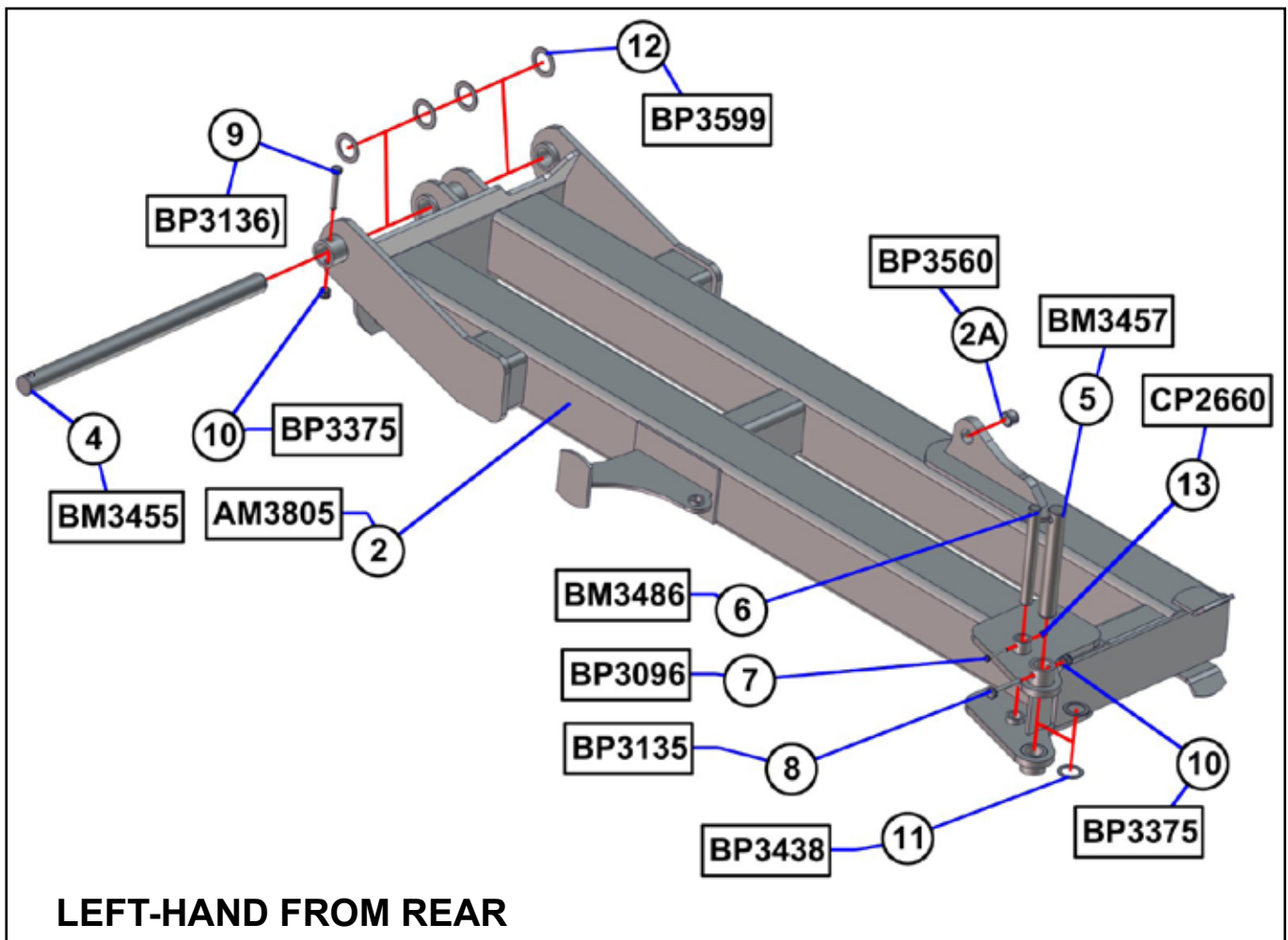
BOM ID	Qty	Item No	Description
9	2	AM3812	LINKAGE, OFFSET, DOUBLE (20-1/2")
17	2	AM3843	LINKAGE
17A	2	BP3560	TENSION BUSHING, 1-1/2" X 1-1/4" X 1" OAL
21	12	AP2711	SNAP RING, 1-1/4" EXTERNAL, HEAVY DUTY
23	2	BM3456	PIN, 1-1/4" X 5-1/8" USEABLE, DOUBLE GROOVED, PLATED
25	2	BM3486	PIN, 1-1/4" X 10-7/16" OAL, WITH 13/32" HOLE, PLATED
27	2	BM3548	PIN, 1-1/4" X 4-3/4" USEABLE, DOUBLE GROOVED, PLATED
31	2	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
34	8	BP3192	MACHINERY BUSHING, 1-7/8" OD X 1-1/4" ID X 10GA, PLATED
39	2	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK



RIGHT-HAND FROM REAR

AT4020 60' Toolbar With Coulters (44200201) (PKG00256 Primary Wings LEFT-HAND)

BOM ID	Qty	Item No	Description
1	1	PKG00256	WINGS, PRIMARY, AT4020, W/ HARDWARE
2	1	AM3805	PRIMARY WING, LEFT-HAND, AT4020
2A	1	BP3560	TENSION BUSHING, 1-1/2" X 1-1/4" X 1" OAL
3	1	AM3806	PRIMARY WING, RIGHT-HAND, AT4020
3A	1	BP3560	TENSION BUSHING, 1-1/2" X 1-1/4" X 1" OAL
4	2	BM3455	PIN, 2" X 31-5/8" OAL, WITH 21/32" HOLE
5	2	BM3457	PIN, 1-3/4" X 11-5/8" OAL, WITH 21/32" HOLE, PLATED
6	2	BM3486	PIN, 1-1/4" X 10-7/16" OAL, WITH 13/32" HOLE, PLATED
7	2	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
8	2	BP3135	HEX CAP SCREW, 5/8"-11 X 3-1/2", GRADE 5, PLATED
9	2	BP3136	HEX CAP SCREW, 5/8"-11 X 4", GRADE 5, PLATED
10	4	BP3375	NUT, HEX LOCK, 5/8"-11, NYLOCK
11	4	BP3438	MACHINERY BUSHING, 2-1/2" OD X 1-3/4" ID X 14 GAUGE, PLATED
12	8	BP3599	MACHINERY BUSHING, 3" OD X 2" ID X 10 GAUGE
13	2	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK

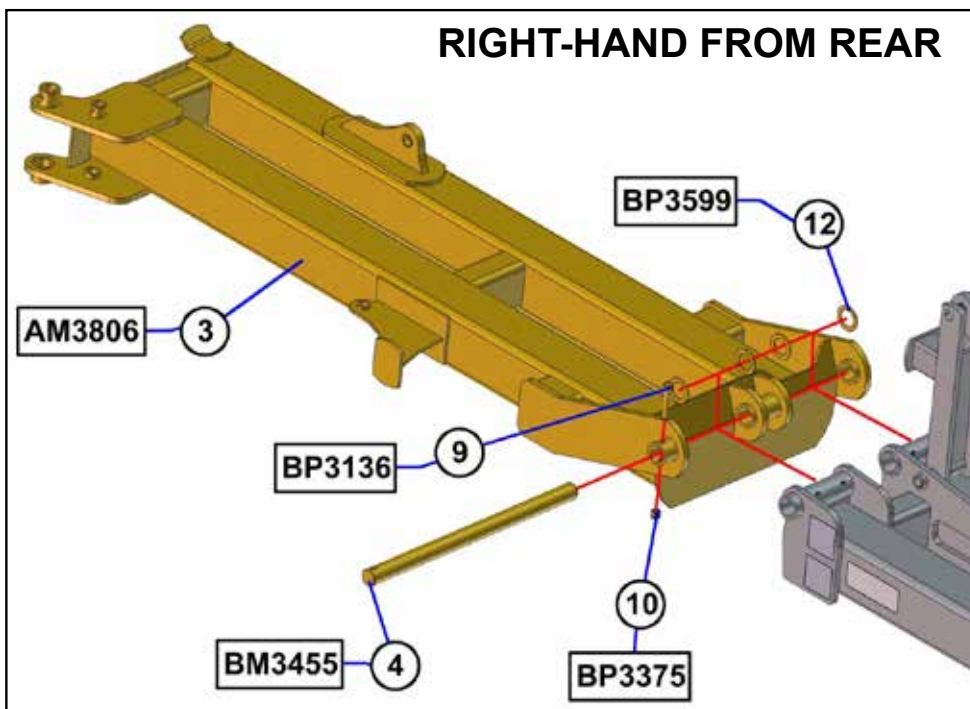




ASSEMBLY (PRIMARY WING) PKG00256

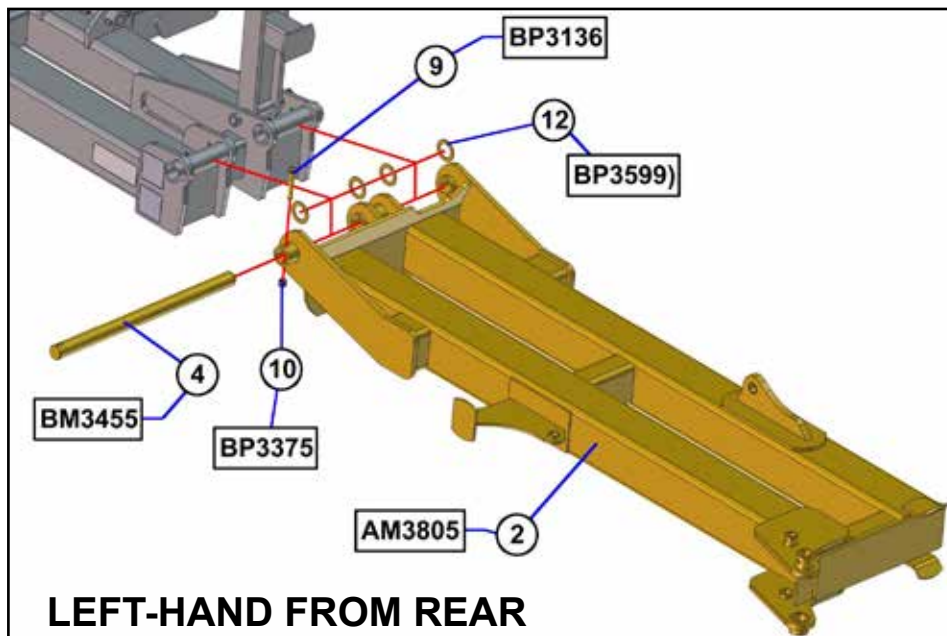
Primary Wing Mounting

1. Position primary wing in center section hinge weldment.
2. Insert (4) (BM3455) 2" x 31-5/8" pin. Place (12) (BP3599) machinery bushings on each side of hinge weldment as pin is inserted.



BOM ID	Qty	Item No	Description
2	1	AM3805	PRIMARY WING, LEFT-HAND, AT4020
3	1	AM3806	PRIMARY WING, RIGHT-HAND, AT4020
4	2	BM3455	PIN, 2" X 31-5/8" OAL, W/ 21/32" HOLE
9	2	BP3136	HEX CAP SCREW, 5/8"-11 X 4", GRADE 5, PLATED
10	4	BP3375	NUT, HEX LOCK, 5/8"-11, NYLOCK
12	8	BP3599	MACHINERY BUSHING, 3" OD X 2" ID X 10 GAUGE

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY



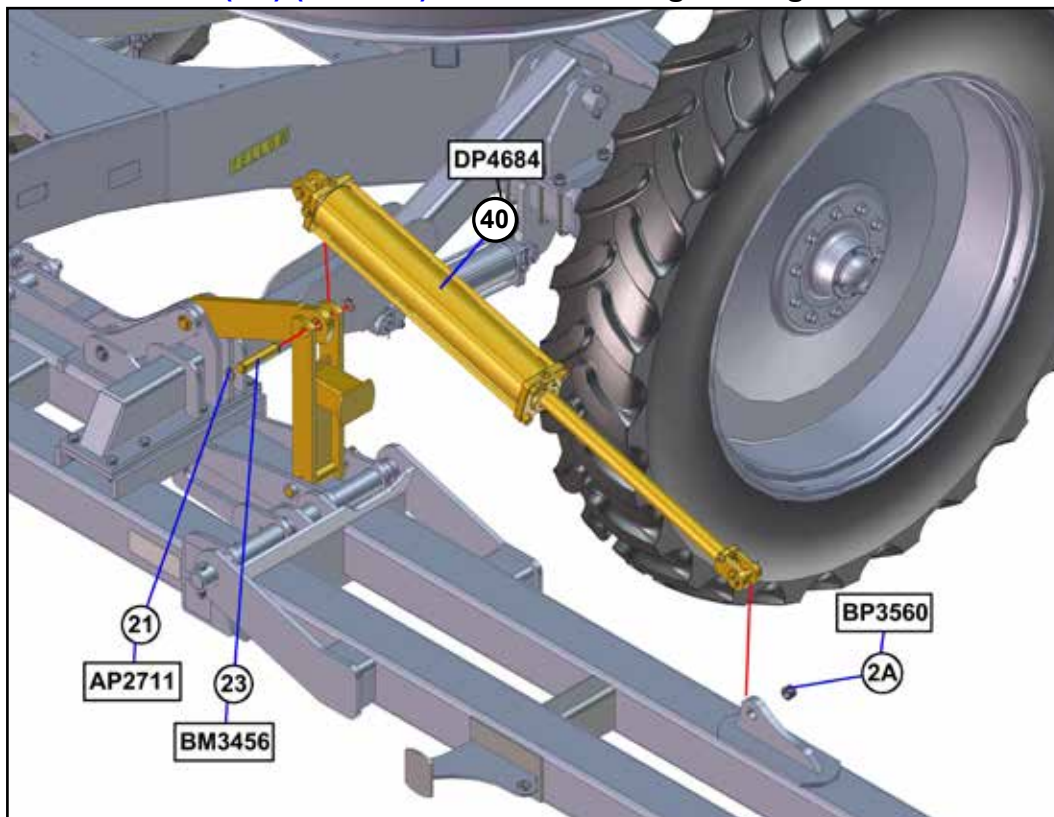
ASSEMBLY (PRIMARY WING CYLINDER)



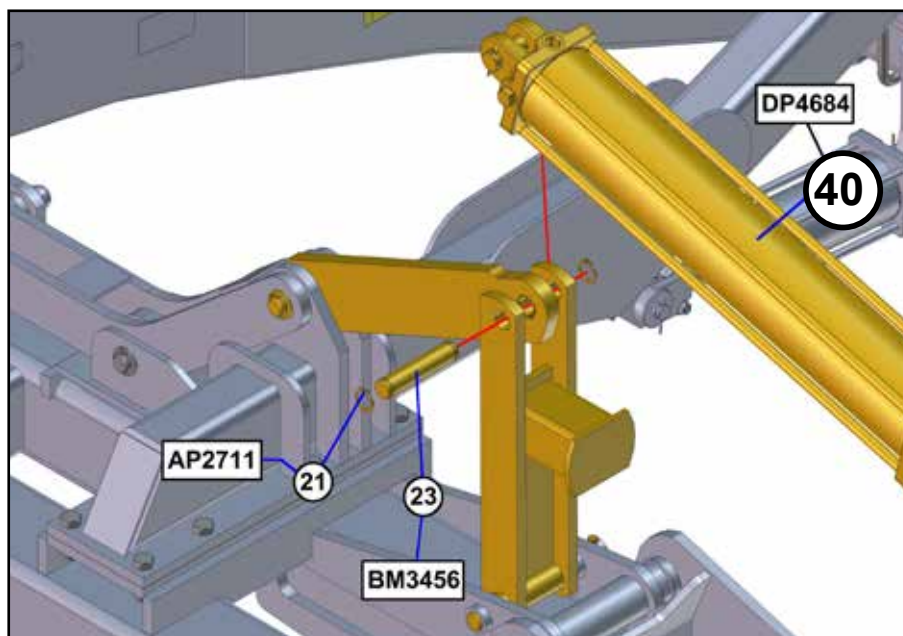
ASSEMBLY (PRIMARY WING CYLINDER)

Primary Wing Cylinder Mounting

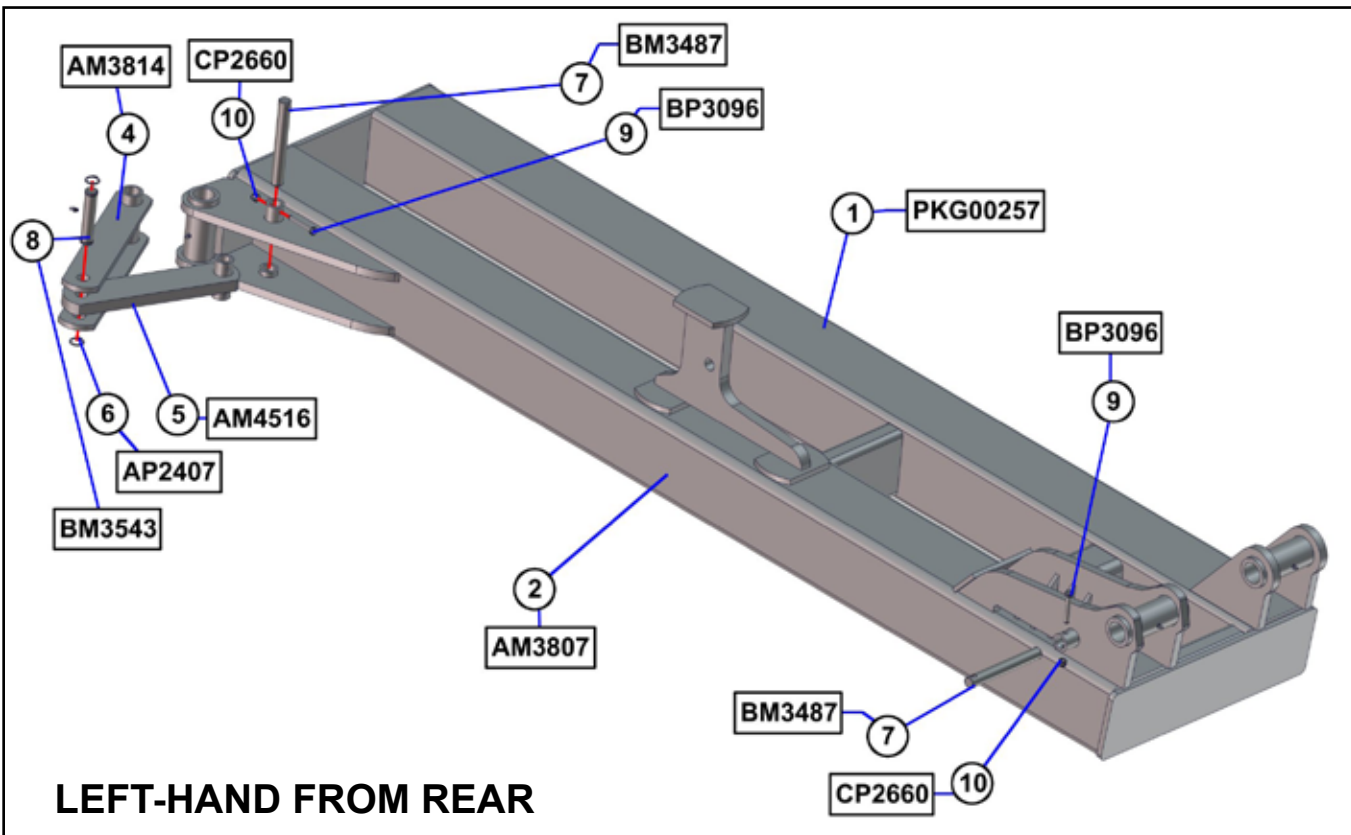
1. Rotate Rod end clevis before attaching to primary wing weldment
2. Loosen cylinder port plugs to extend to weldment.
3. **NOTE:** Install (2A) (BP3560) tension bushing in wing weldment.



BOM ID	Qty	Item No	Description
2A	1	BP3560	TENSION BUSHING, 1-1/2" X 1-1/4" X 1" OAL
21	2	AP2711	SNAP RING, 1-1/4" EXTERNAL, HEAVY DUTY
23	2	BM3456	PIN, 1-1/4 X 5-1/8 USEABLE, DOUBLE GROOVED, PLATED
40	2	DP4684	CYLINDER, HYDRAULIC, 5 X 30, 3000 PSI, WITH INTERNAL SENSOR

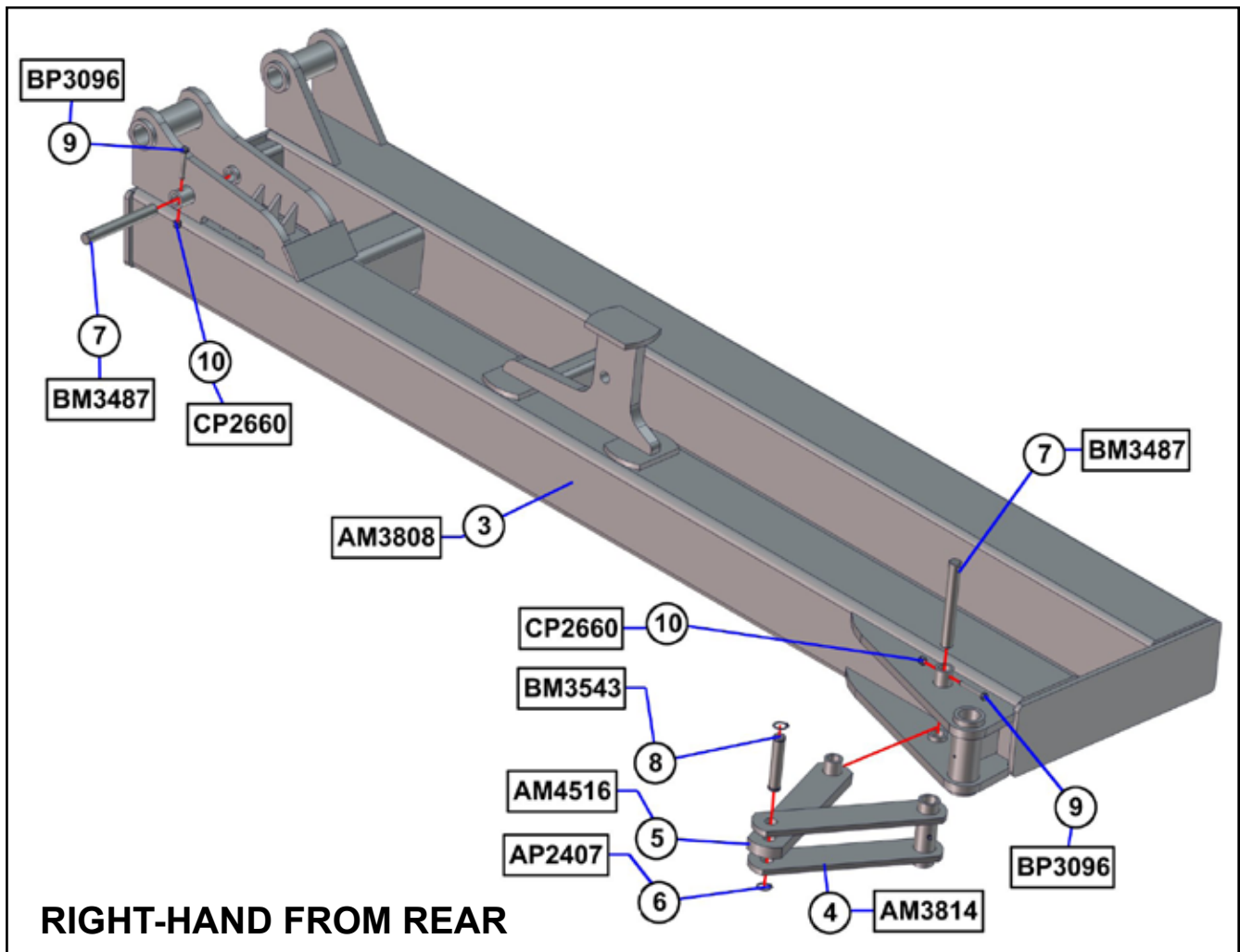


AT4020 60' TOOLBAR WITH COULTERS (44200201) (PKG00257 SECONDARY WINGS LEFT-HAND)



BOM ID	Qty	Item No	Description
1	1	PKG00257	WINGS, SECONDARY, AT4020, W/ HARDWARE
2	1	AM3807	SECONDARY WING, AT4020, LEFT-HAND
3	1	AM3808	SECONDARY WING, AT4020, RIGHT-HAND
4	2	AM3814	WING LINKAGE, DOUBLE, 13", W/ HOLE FOR 1" PIN
5	2	AM4516	LINKAGE, SECONDARY WING CYLINDER, #2
6	4	AP2407	SNAP RING, 1" EXTERNAL, HEAVY DUTY
7	4	BM3487	PIN, 1" X 7-3/4" OAL, WITH 13/32" HOLE, PLATED
8	2	BM3543	PIN, 1" X 4-5/16" USEABLE DOUBLE GROOVED, PLATED
9	4	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
10	4	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK

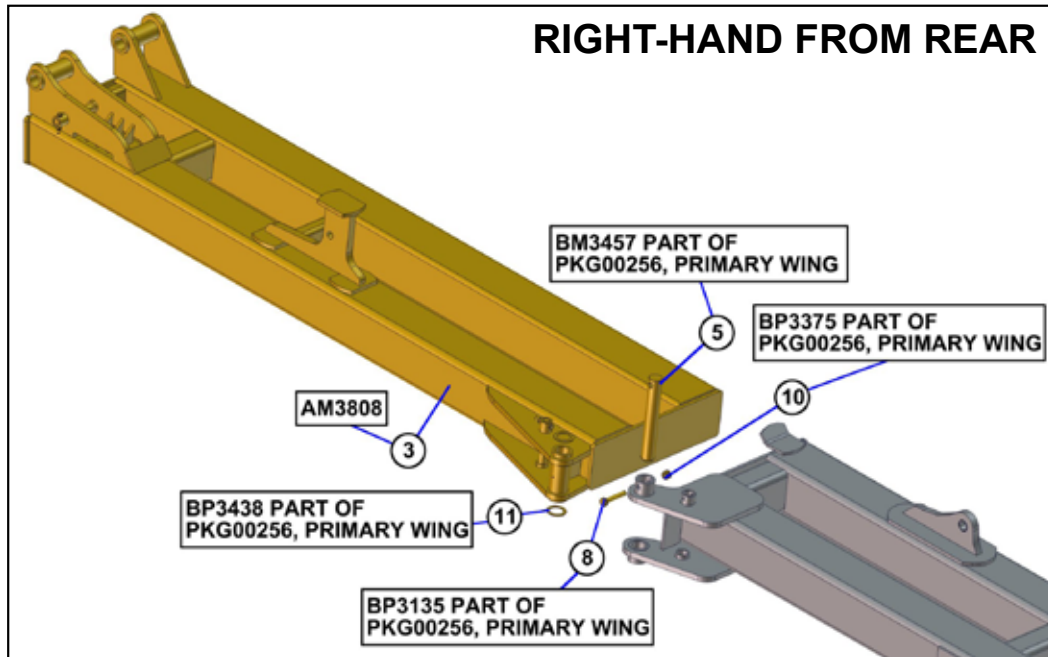
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY



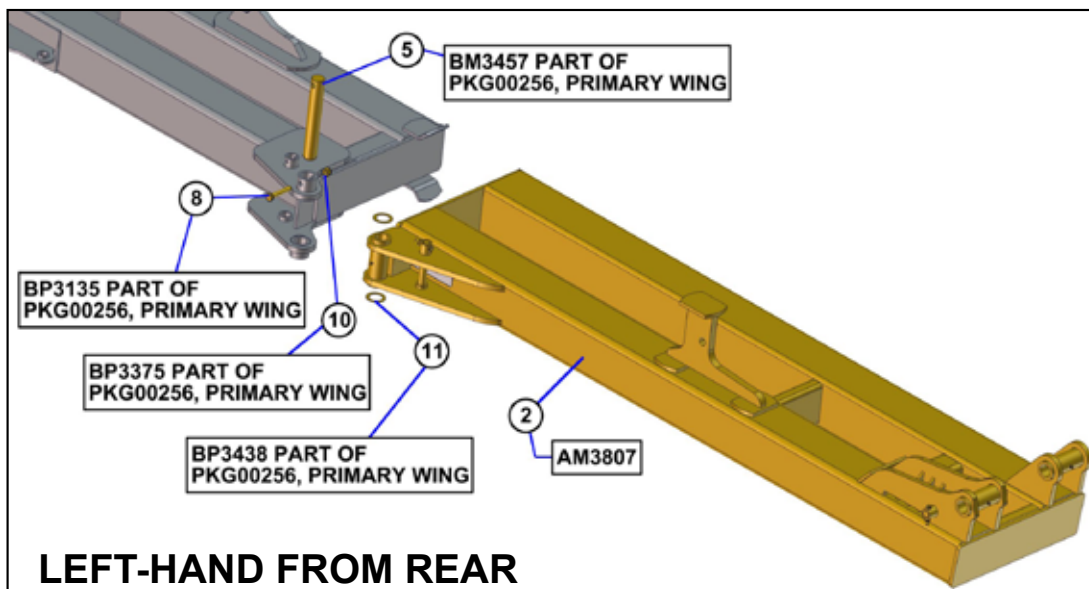
ASSEMBLY (SECONDARY WING) PKG00257

Secondary Wing Mounting

1. Position secondary wing in primary wing hinge weldment.
2. Insert (5) (BM3457) 1-3/4" x 11-5/8" pin. Place (11) (BP3438) machinery bushings on each side of hinge weldment as pin is inserted.



BOM ID	Qty	Item No	Description
		PKG00257	WINGS, SECONDARY, AT4020, W/ HARDWARE
2	1	AM3807	SECONDARY WING, AT4020, LEFT-HAND
3	1	AM3808	SECONDARY WING, AT4020, RIGHT-HAND



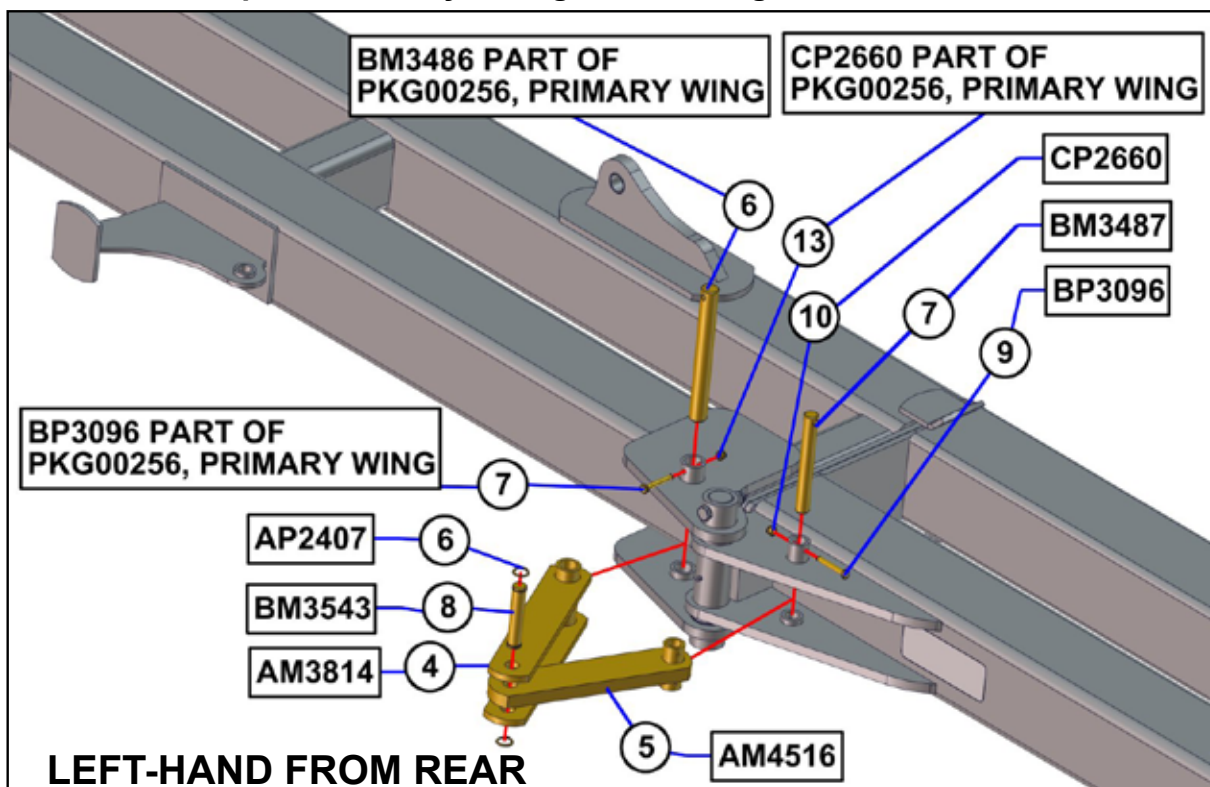
BOM ID	Qty	Item No	Description
		PKG00256	WINGS, PRIMARY, AT4020, W/ HARDWARE
5	2	BM3457	PIN, 1-3/4" X 11-5/8" OAL, W/ 21/32" HOLE, PLATED
8	2	BP3135	HEX CAP SCREW, 5/8"-11 X 3-1/2", GRADE 5, PLATED
10	4	BP3375	NUT, HEX LOCK, 5/8"-11, NYLOCK
11	4	BP3438	MACHINERY BUSHING, 2-1/2" OD X 1-3/4" ID X 14 GAUGE, PLATED

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

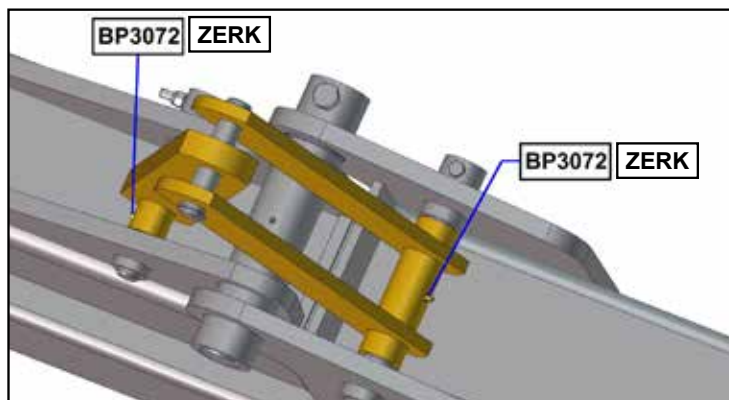
ASSEMBLY (SECONDARY WING LINKAGE) PKG00257

Secondary Wing Linkage Installation

1. Install linkages with the grease **zerk** facing **away** from the hinge.
2. Repeat assembly on Right-hand wing



BOM ID	Qty	Item No	Description
4	2	AM3814	WING LINKAGE, DOUBLE, 13", W/ HOLE FOR 1" PIN
5	2	AM4516	LINKAGE, SECONDARY WING CYLINDER, #2
6	4	AP2407	SNAP RING, 1" EXTERNAL, HEAVY DUTY
7	4	BM3487	PIN, 1" X 7-3/4" OAL, W/ 13/32" HOLE, PLATED
8	2	BM3543	PIN, 1" X 4-5/16" USEABLE DOUBLE GROOVED, PLATED
9	4	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
10	4	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK



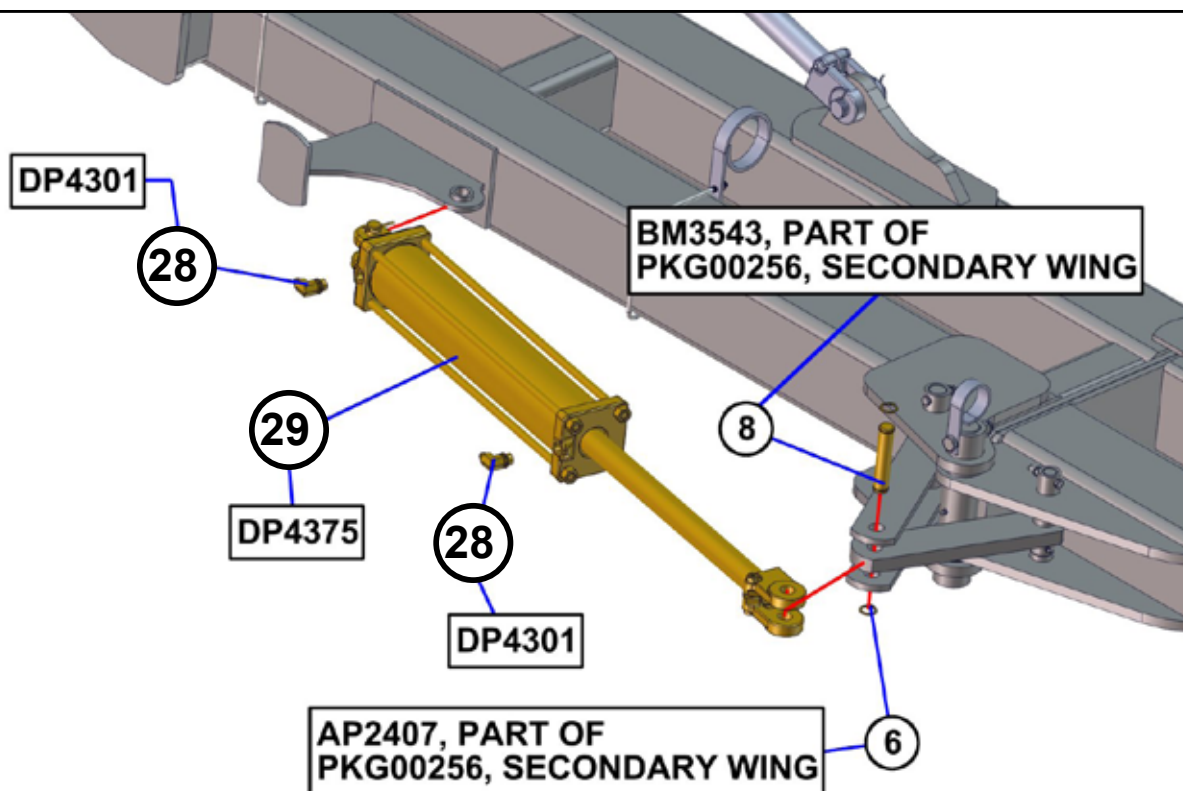
BOM ID	Qty	Item No	Description
		PKG00256	WINGS, PRIMARY, AT4020, W/ HARDWARE
6	2	BM3486	PIN, 1-1/4" X 10-7/16" OAL, W/ 13/32" HOLE, PLATED
7	2	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
13	2	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (SECONDARY WING CYLINDERS)

Secondary Wing Cylinders

1. Rotate Rod end clevis before attaching to third wing linkage
2. Loosen cylinder port plugs to extend to linkage.



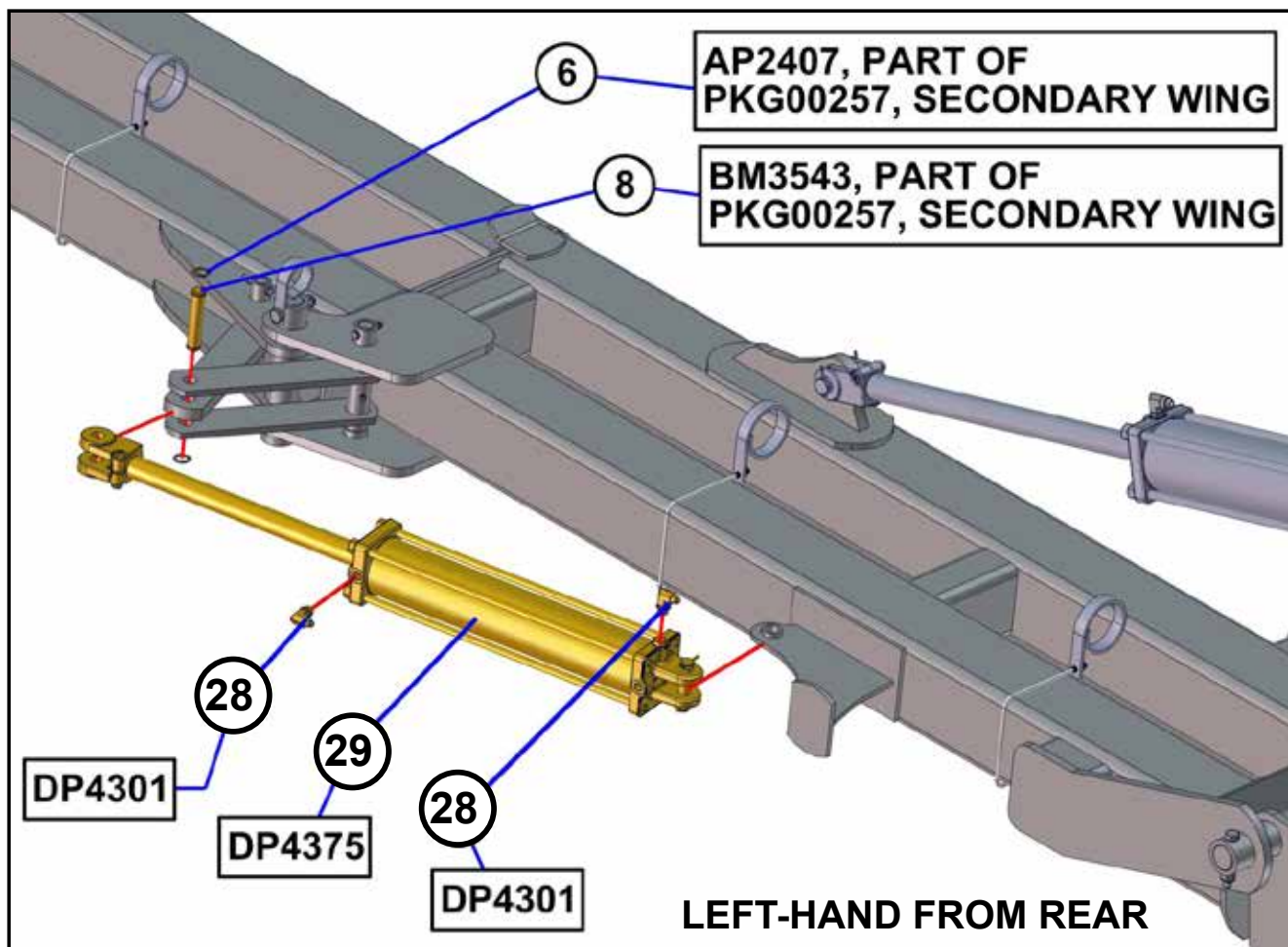
RIGHT-HAND FROM REAR

BOM ID	Qty	Item No	Description
		44200105	HYDRAULICS KIT AT4020, CONTROLLED
28	8	DP4301	ADAPTER, 6MJ-8MSAE, 90 DEGREE
29	2	DP4375	CYLINDER, HYDRAULIC, 4 X 20, 3000 PSI, B400200ABACB07E

BOM ID	Qty	Item No	Description
6	4	AP2407	SNAP RING, 1" EXTERNAL, HEAVY DUTY
8	2	BM3543	PIN, 1" X 4-5/16" USEABLE DOUBLE GROOVED, PLATED

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

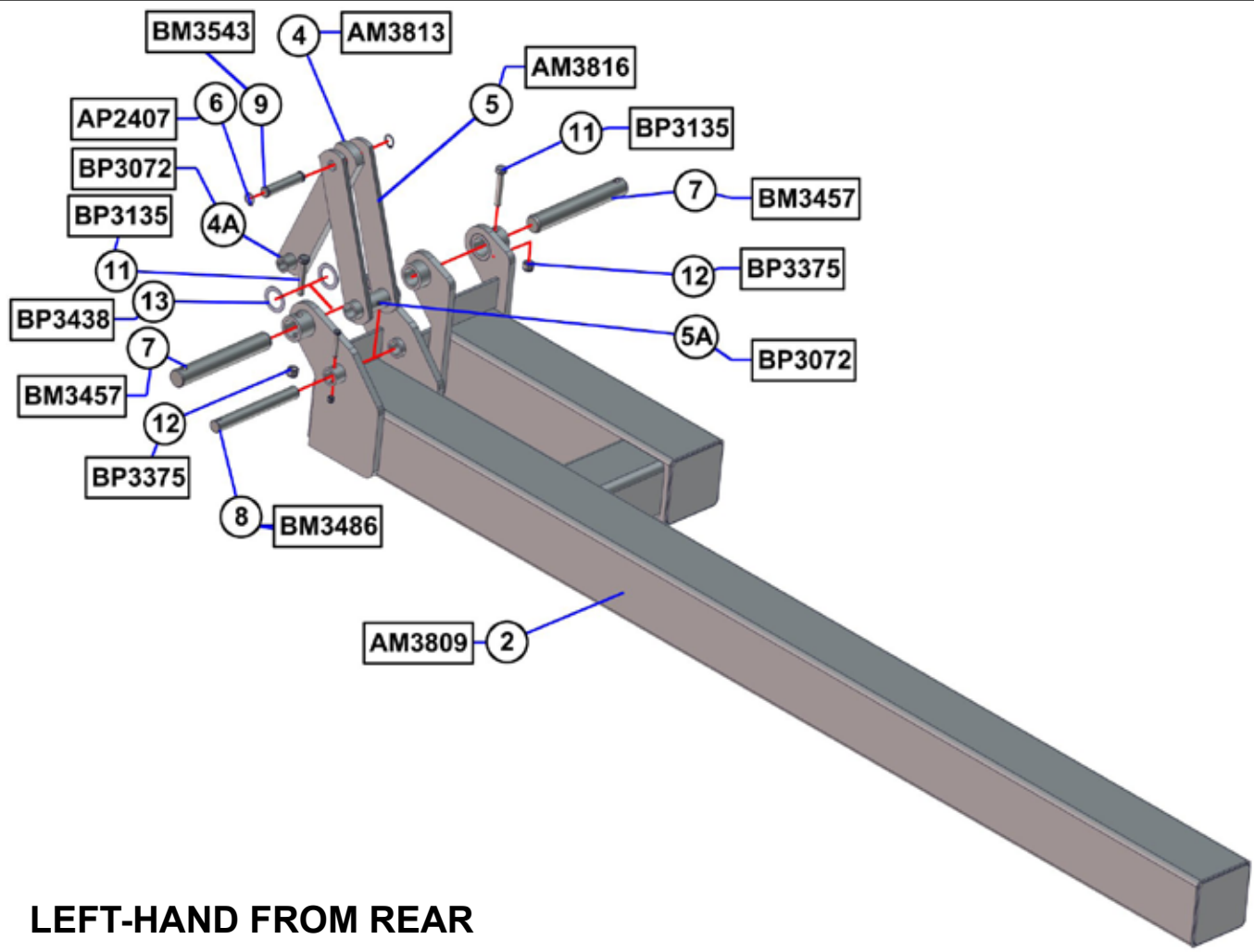
ASSEMBLY (SECONDARY WING CYLINDERS)



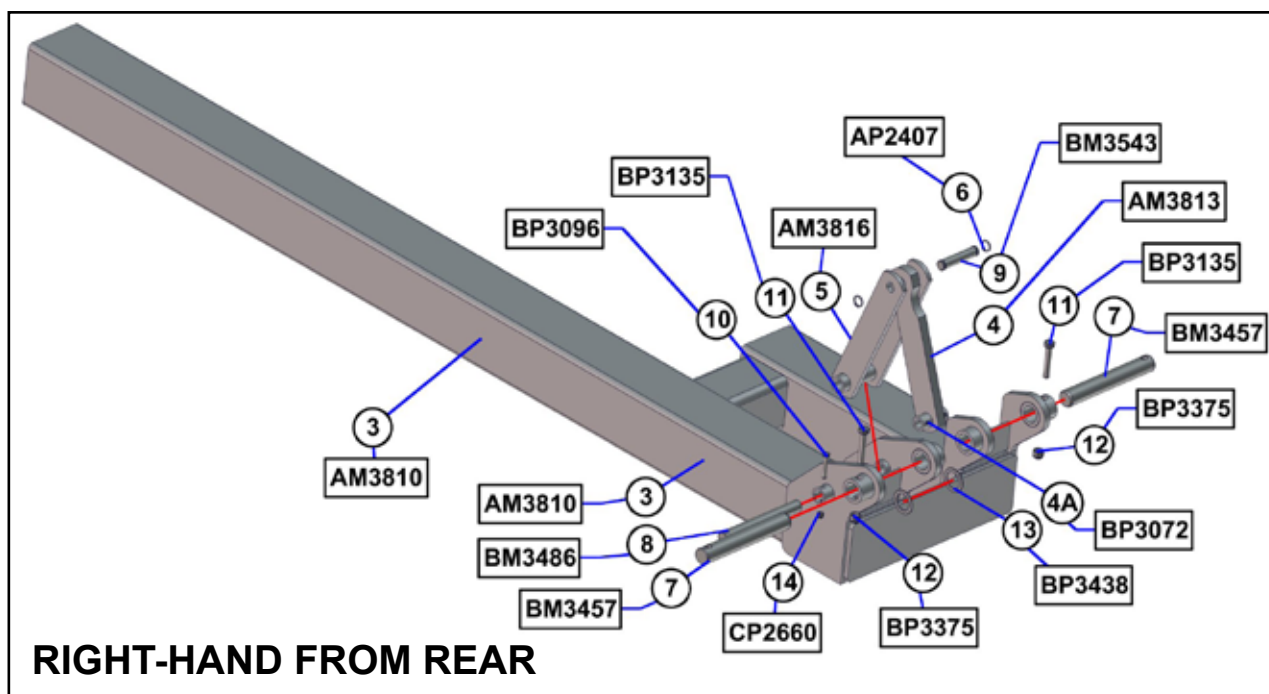
BOM ID	Qty	Item No	Description
		44200105	HYDRAULICS KIT AT4020, CONTROLLED
28	8	DP4301	ADAPTER, 6MJ-8MSAE, 90 DEGREE
29	2	DP4375	CYLINDER, HYDRAULIC, 4 X 20, 3000 PSI, B400200ABACB07E

BOM ID	Qty	Item No	Description
6	4	AP2407	SNAP RING, 1" EXTERNAL, HEAVY DUTY
8	2	BM3543	PIN, 1" X 4-5/16" USEABLE DOUBLE GROOVED, PLATED

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY



AT4020 60' TOOLBAR WITH COULTERS (44200201) (PKG00258 THIRD WINGS)



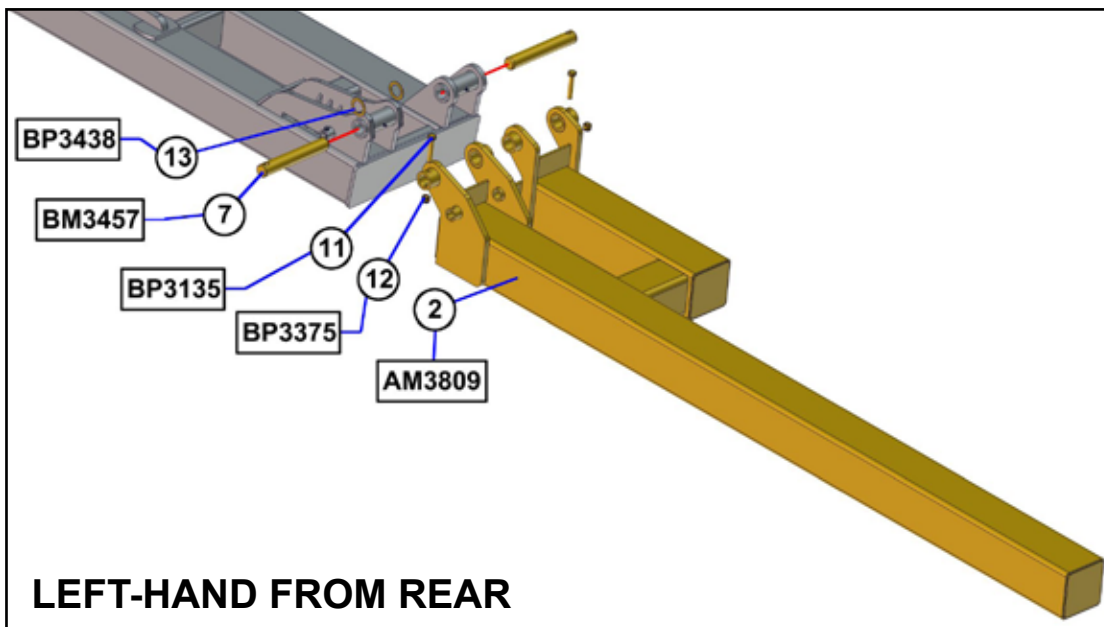
BOM ID	Qty	Item No	Description
1	2	PKG00258	WINGS, TERTIARY, AT4020, W/ HARDWARE
2	1	AM3809	THIRD WING, LEFT-HAND, AT4020
3	1	AM3810	THIRD WING, RIGHT-HAND, AT4020
4	2	AM3813	WING LINKAGE, 14", NOTCHED W/ HOLE FOR 1" PIN
4A	4	BP3072	GREASE ZERK, 1/4"-28
5	2	AM3816	WING LINKAGE, DOUBLE, 13-3/4" W/ HOLE FOR 1" PIN
5A	2	BP3072	GREASE ZERK, 1/4"-28
6	4	AP2407	SNAP RING, 1" EXTERNAL, HEAVY DUTY
7	4	BM3457	PIN, 1-3/4" X 11-5/8" OAL, W/ 21/32" HOLE, PLATED
8	2	BM3486	PIN, 1-1/4" X 10-7/16" OAL, W/ 13/32" HOLE, PLATED
9	2	BM3543	PIN, 1 X 4-5/16 USEABLE DOUBLE GROOVED, PLATED
10	2	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
11	4	BP3135	HEX CAP SCREW, 5/8"-11 X 3-1/2", GRADE 5, PLATED
12	4	BP3375	NUT, HEX LOCK, 5/8"-11, NYLOCK
13	4	BP3438	MACHINERY BUSHING, 2-1/2" OD X 1-3/4" ID X 14 GAUGE, PLATED
14	2	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (THIRD WING MOUNTING) PKG00258

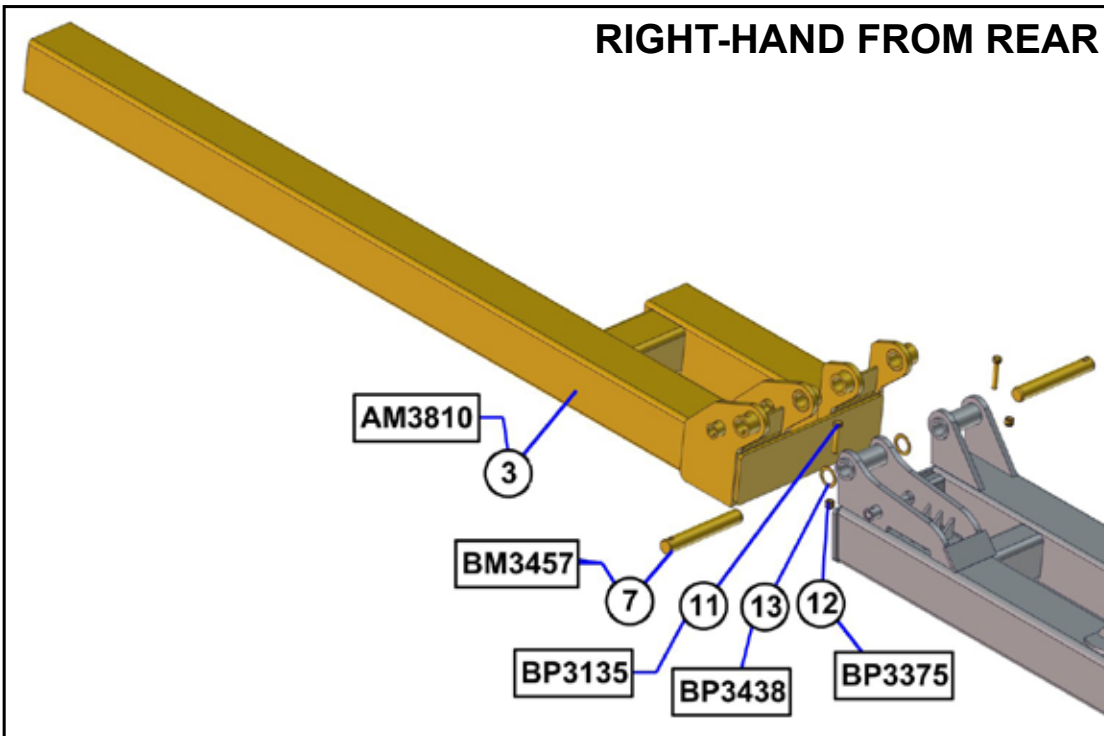
Third Wing Mounting

1. Position third wing over secondary hinge weldment.
2. Insert (7) (BM3457) 1-3/4" x 11-5/8" pin. Place (13) (BP3438) machinery bushings on each side of hinge weldment as pin is inserted. (Tractor Side Only)



BOM ID	Qty	Item No	Description
2	1	AM3809	THIRD WING, LEFT-HAND, AT4020
3	1	AM3810	THIRD WING, RIGHT-HAND, AT4020
7	4	BM3457	PIN, 1-3/4" X 11-5/8" OAL, W/ 21/32" HOLE, PLATED
11	4	BP3135	HEX CAP SCREW, 5/8"-11 X 3-1/2", GRADE 5, PLATED
12	4	BP3375	NUT, HEX LOCK, 5/8"-11, NYLOCK
13	4	BP3438	MACHINERY BUSHING, 2-1/2" OD X 1-3/4" ID X 14 GAUGE, PLATED

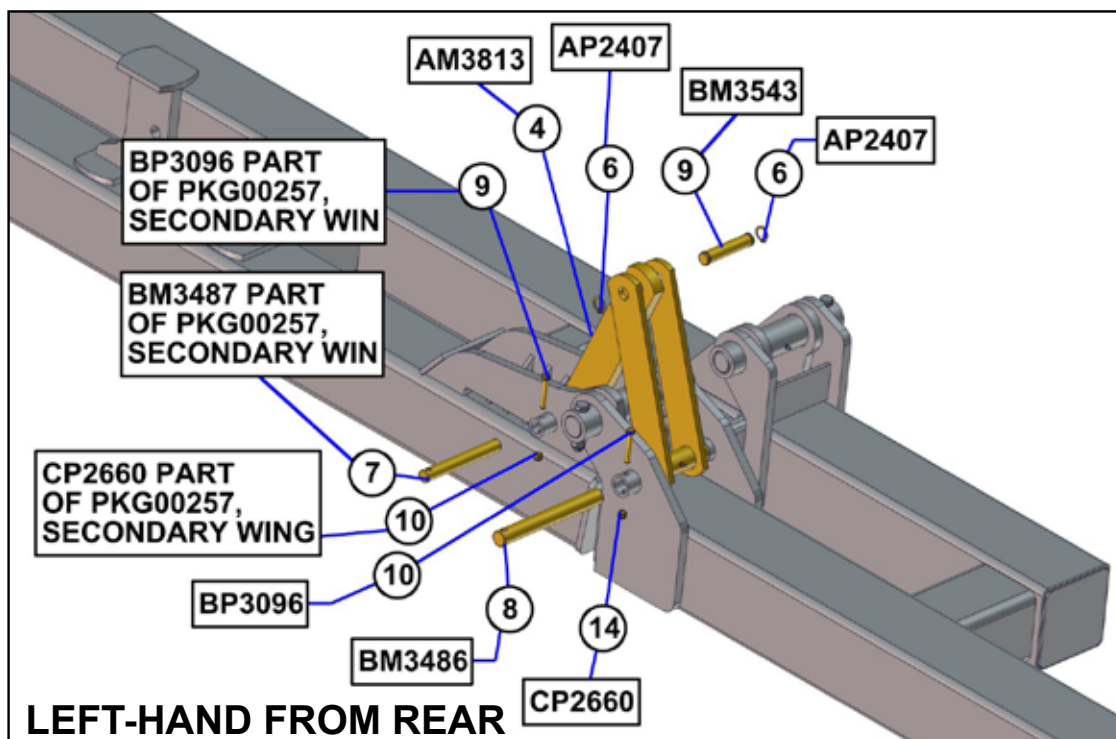
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY



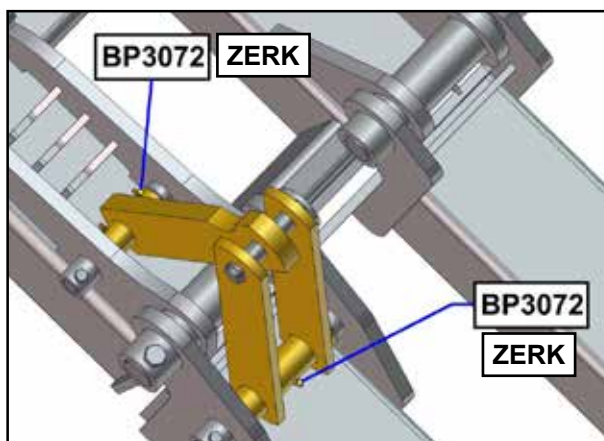
ASSEMBLY (THIRD WING LINKAGE) PKG00258

Third Wing Linkage Installation

1. Install linkages with the grease **zerk** facing **away** from the hinge.
2. Repeat assembly on Right-hand wing



BOM ID	Qty	Item No	Description
4	2	AM3813	WING LINKAGE, 14", NOTCHED W/ HOLE FOR 1" PIN
6	4	AP2407	SNAP RING, 1" EXTERNAL, HEAVY DUTY
7	4	BM3457	PIN, 1-3/4" X 11-5/8" OAL, W/ 21/32" HOLE, PLATED
9	2	BM3543	PIN, 1 X 4-5/16 USEABLE DOUBLE GROOVED, PLATED
10	2	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
14	2	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK



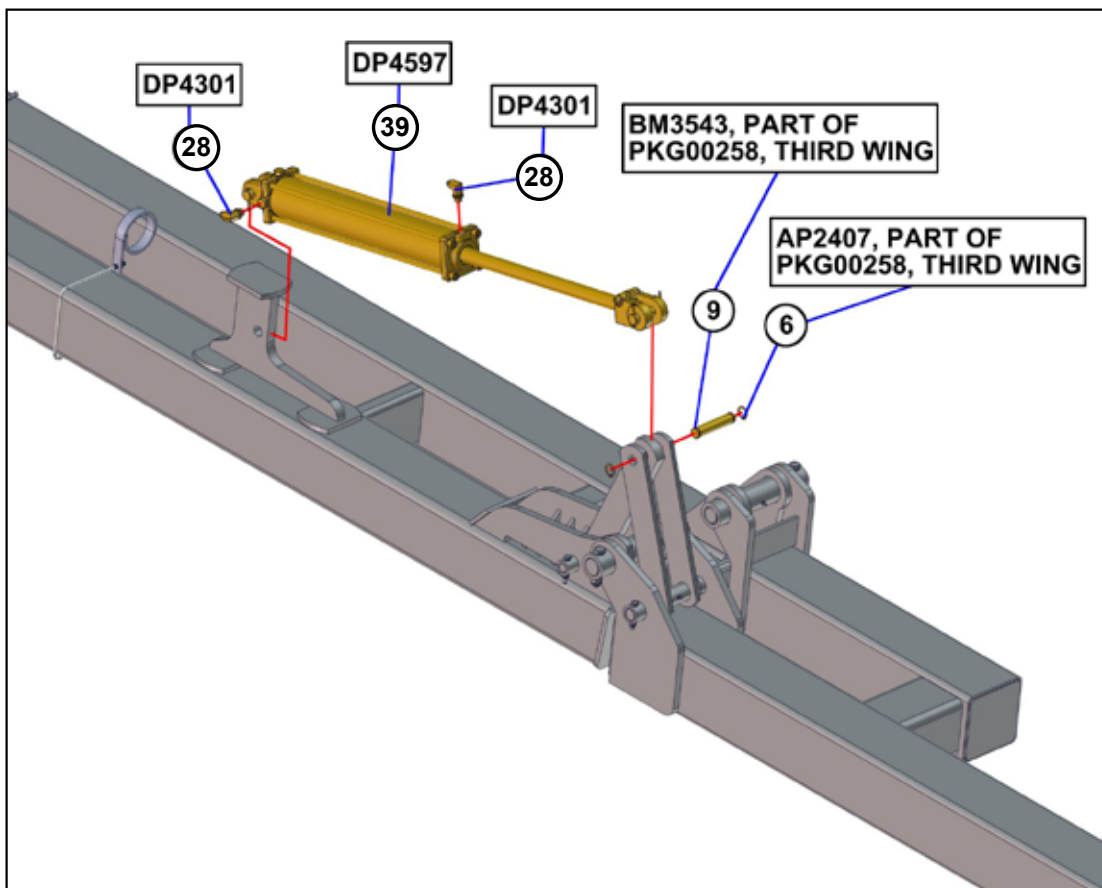
BOM ID	Qty	Item No	Description
		PKG00257	WINGS, SECONDARY, AT4020, W/ HARDWARE
7	4	BM3487	PIN, 1" X 7-3/4" OAL, W/ 13/32" HOLE, PLATED
9	4	BP3096	HEX CAP SCREW, 3/8"-16 X 2-1/2", GRADE 5, PLATED
10	4	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (THIRD WING CYLINDERS)

Third Wing Cylinders

1. Rotate Rod end clevis before attaching to third wing linkage.
2. Loosen cylinder port plugs to extend to linkage.

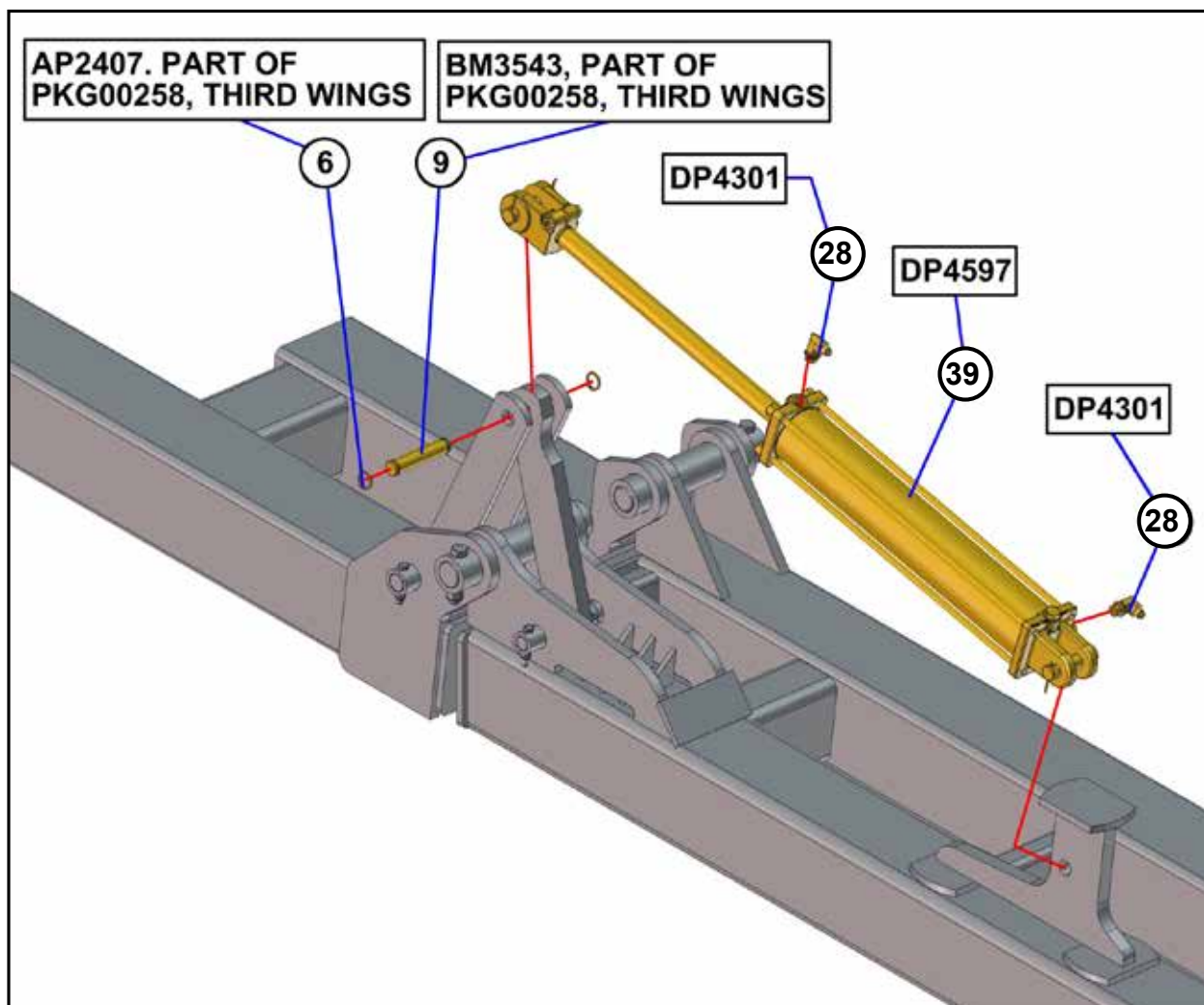


BOM ID	Qty	Item No	Description
		44200105	HYDRAULICS KIT AT4020, CONTROLLED
28	8	DP4301	ADAPTER, 6MJ-8MSAE, 90 DEGREE
39	2	DP4597	CYLINDER, HYDRAULIC, 4" X 20, 3000 PSI, W/ INTERNAL SENSOR

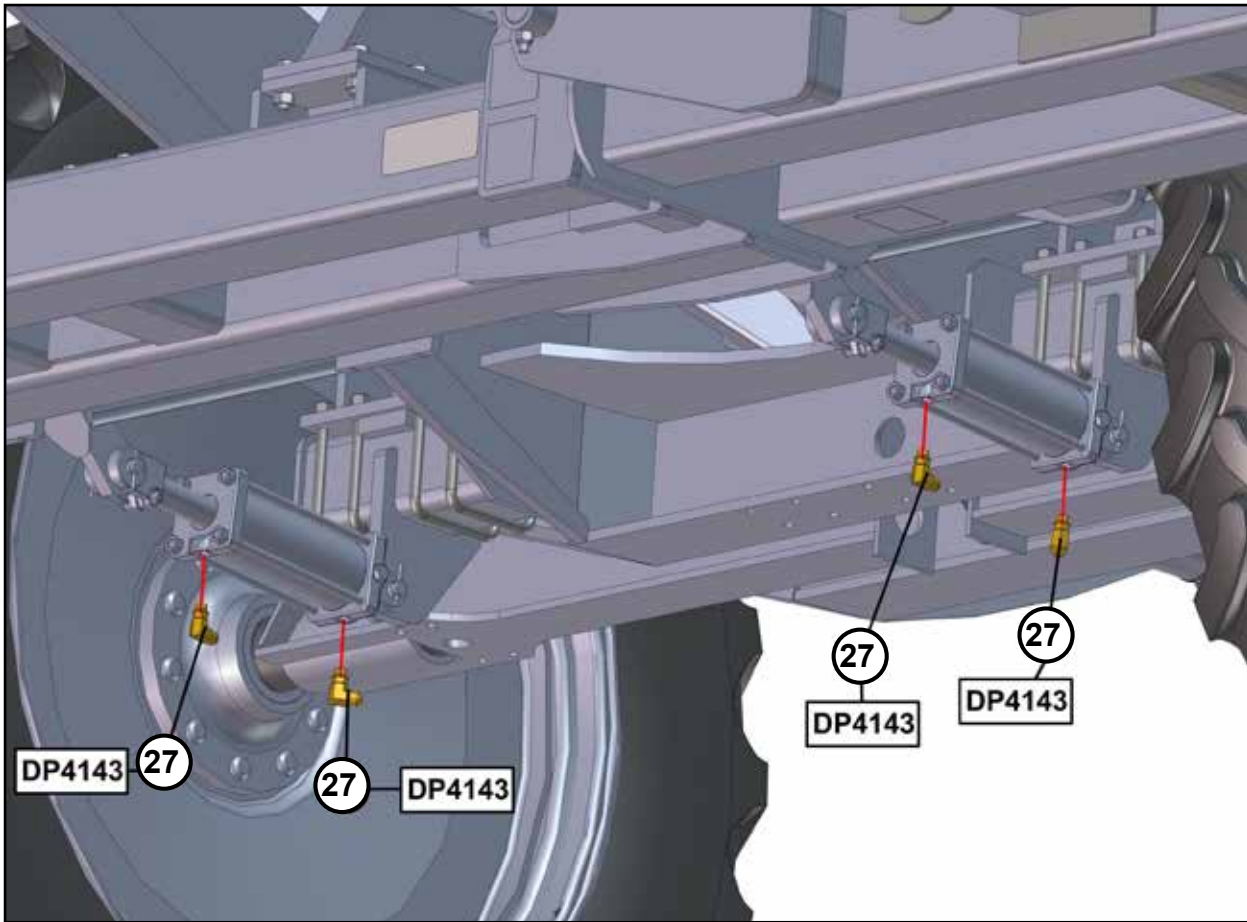
BOM ID	Qty	Item No	Description
6	4	AP2407	SNAP RING, 1" EXTERNAL, HEAVY DUTY
9	2	BM3543	PIN, 1" X 4-5/16" USEABLE DOUBLE GROOVED, PLATED

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (THIRD WING CYLINDERS)



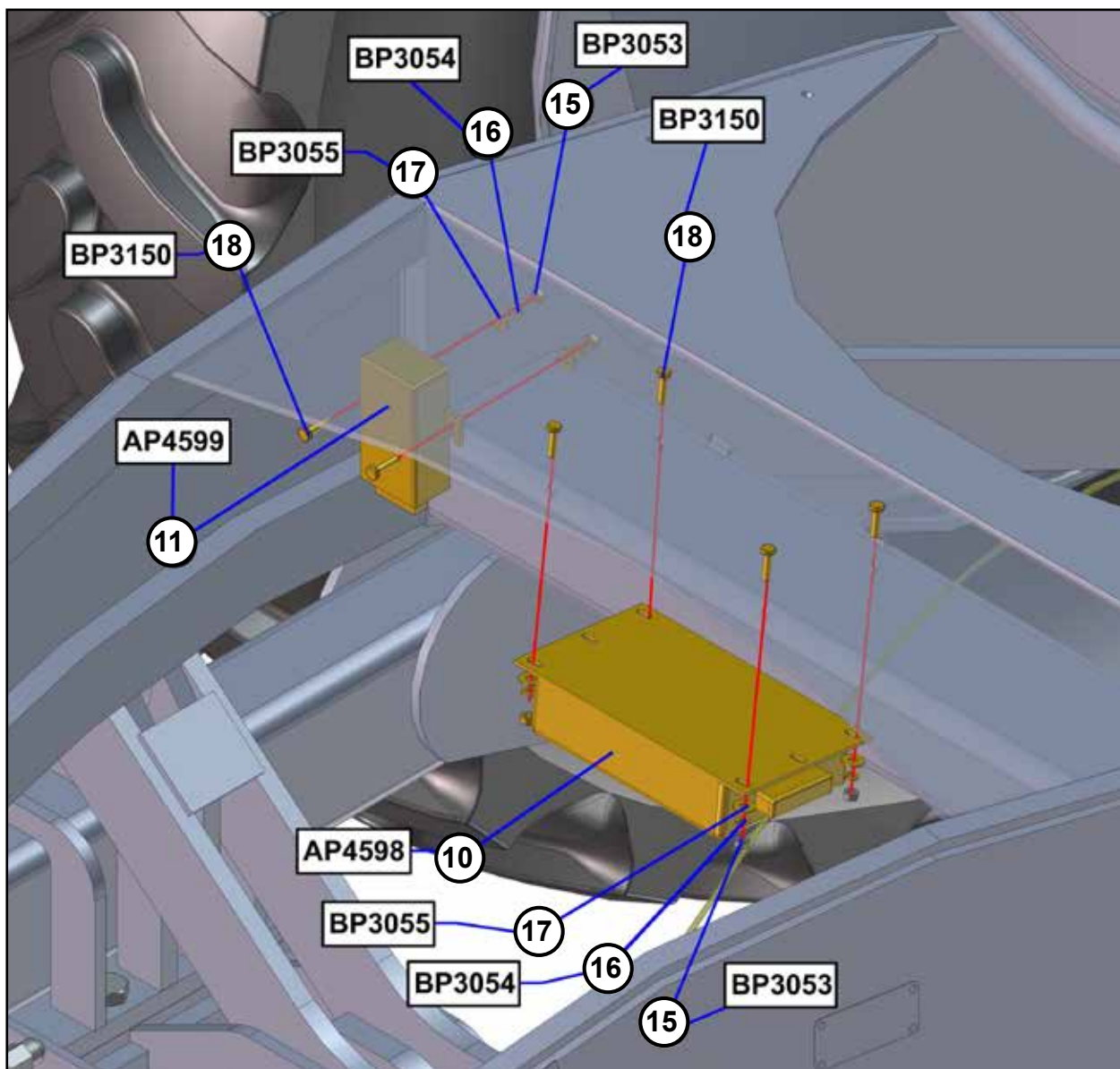
ASSEMBLY (LIFT CYLINDER FITTINGS)



BOM ID	Qty	Item No	Description
		44200105	HYDRAULICS KIT AT4020, CONTROLLED
27	8	DP4143	ADAPTER, 10MJIC-8MSAE, 90 DEGREE

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (ECU BOXES)



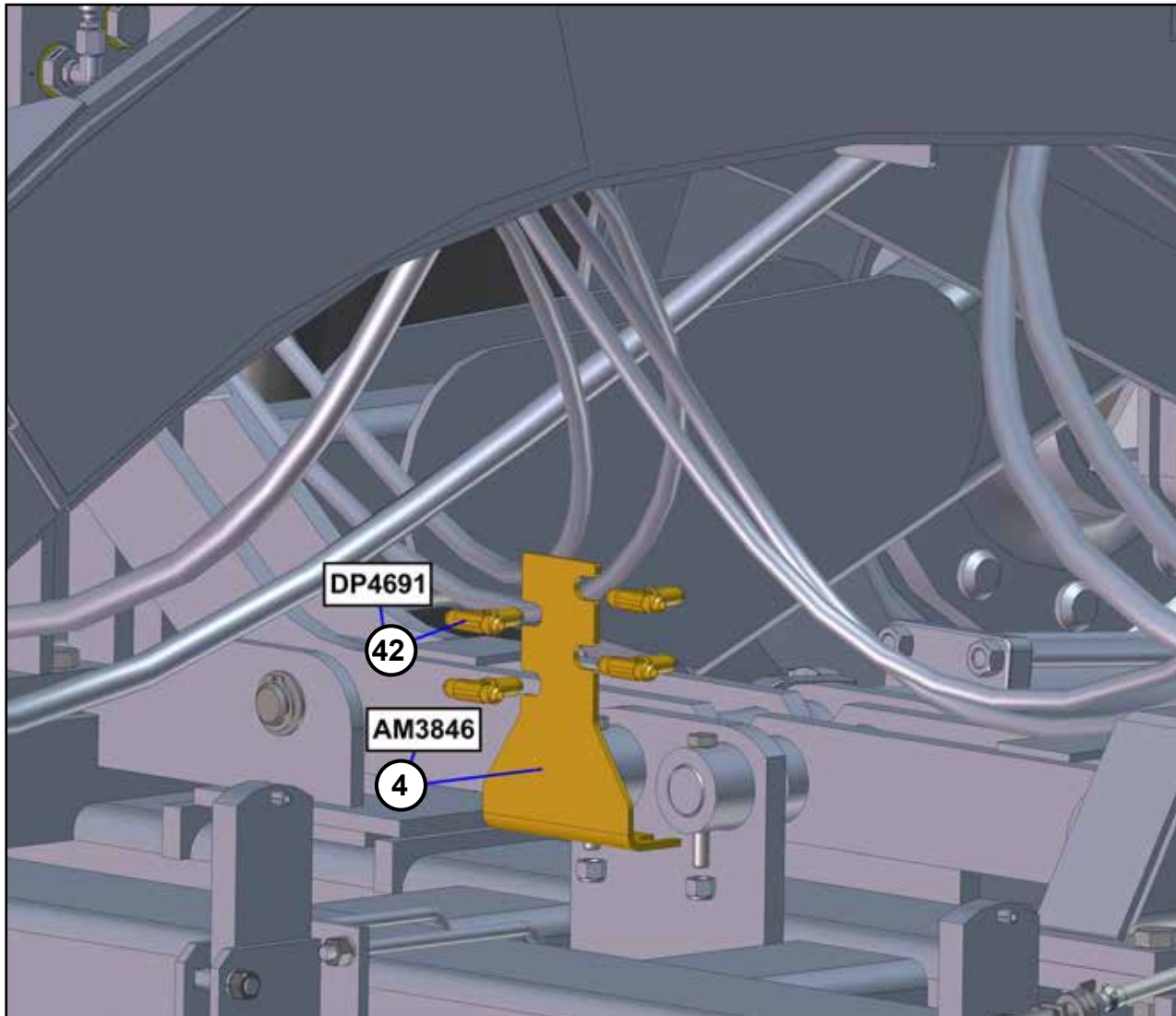
BOM ID	Qty	Item No	Description
		44200105	HYDRAULICS KIT AT4020, CONTROLLED
10	1	AP4598	ECU, PS6_VAR 19, MULLER ECU
11	1	AP4599	MICRO CAN IO, MULLER MICRO ECU
15	6	BP3053	NUT, HEX, 1/4"-20, GRADE 2
16	6	BP3054	WASHER, LOCK, 1/4", PLATED
17	6	BP3055	WASHER, FLAT, 1/4", PLATED
18	6	BP3150	HEX CAP SCREW, 1/4"-20 X 1", GRADE 5, PLATED

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (HYDRAULIC HOSE MOUNT)

Hydraulic Hose Mount

1. Bulkhead fittings can be mounted before attaching bracket to tongue.



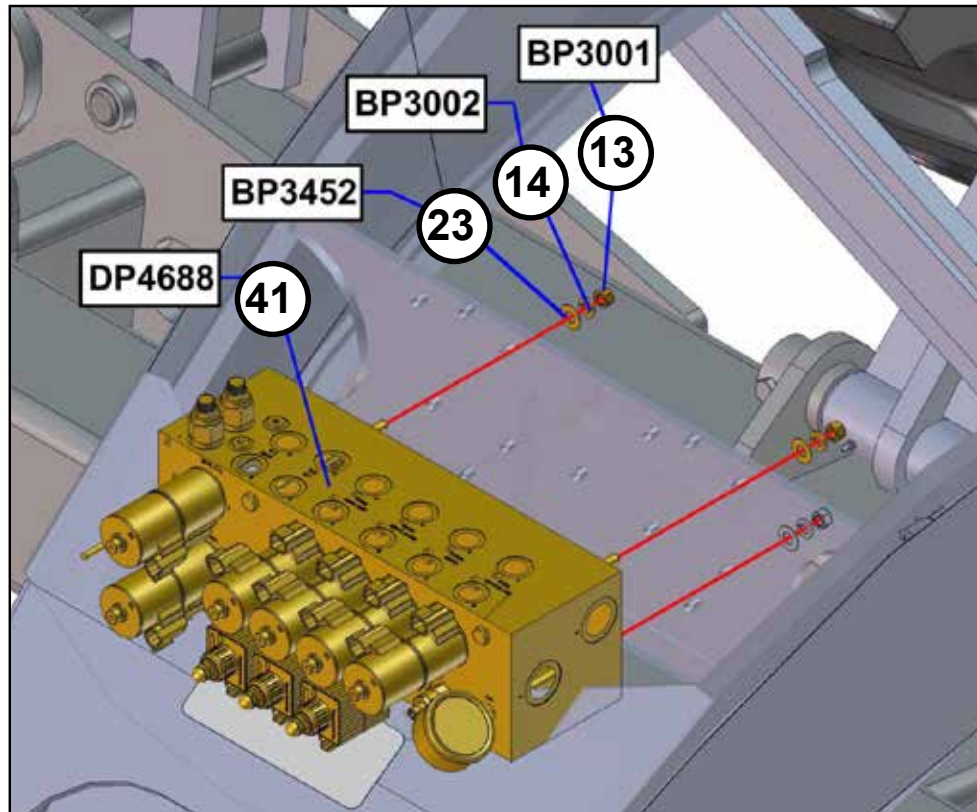
BOM ID	Qty	Item No	Description
		44200105	HYDRAULICS KIT AT4020, CONTROLLED
4	1	AM3846	HYDRAULIC HOSE MOUNT
42	4	DP4691	TEE, 6MJ-6MJ-6MJ, BULKHEAD

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (HYDRAULIC VALVE)

Hydraulic Valve Mounting

1. Use **CAUTION** when mounting the hydraulic valve to the frame. Do not hit or damage the units on the tractor side of the valve.



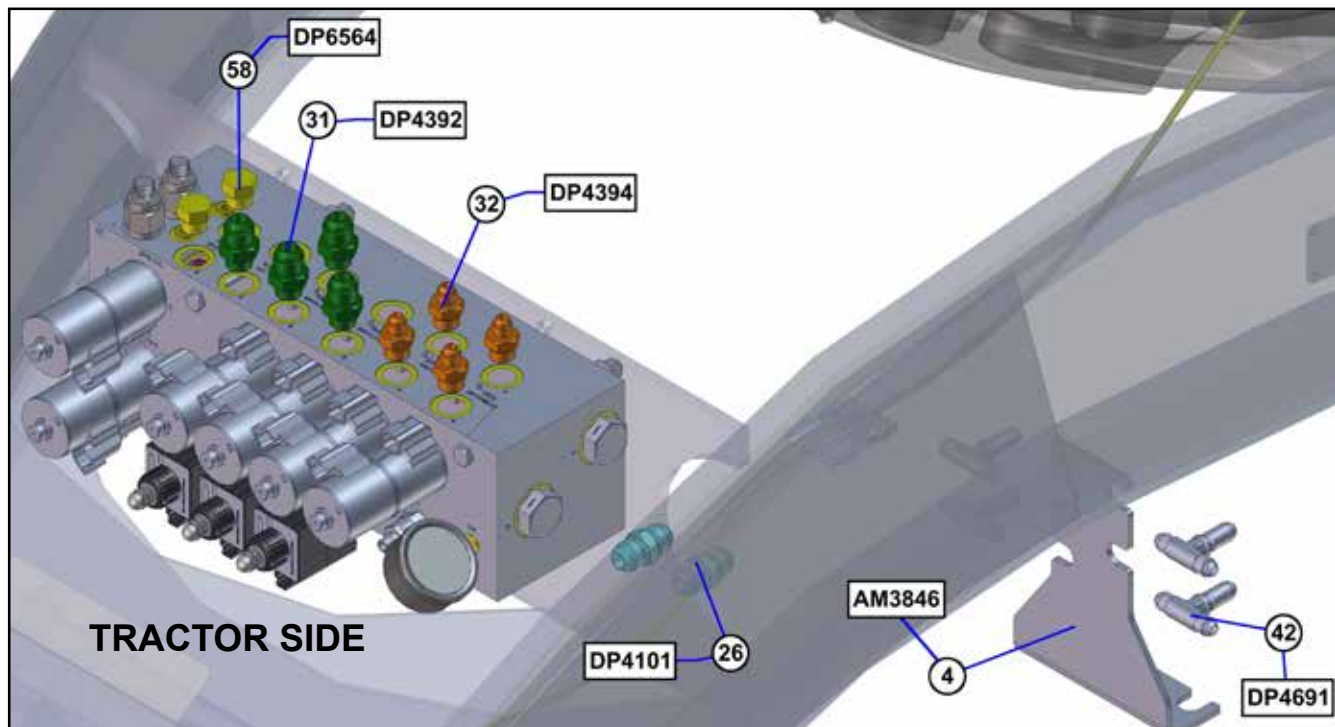
BOM ID	Qty	Item No	Description
		44200105	HYDRAULICS KIT AT4020, CONTROLLED
13	8	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
14	8	BP3002	WASHER, LOCK, 3/8", PLATED
23	4	BP3452	WASHER, FLAT, 3/8", 7/8" OD, 18-8 STAINLESS STEEL
41	1	DP4688	HYDRAULIC VALVE, AT4020

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (HYDRAULIC VALVE FITTINGS)

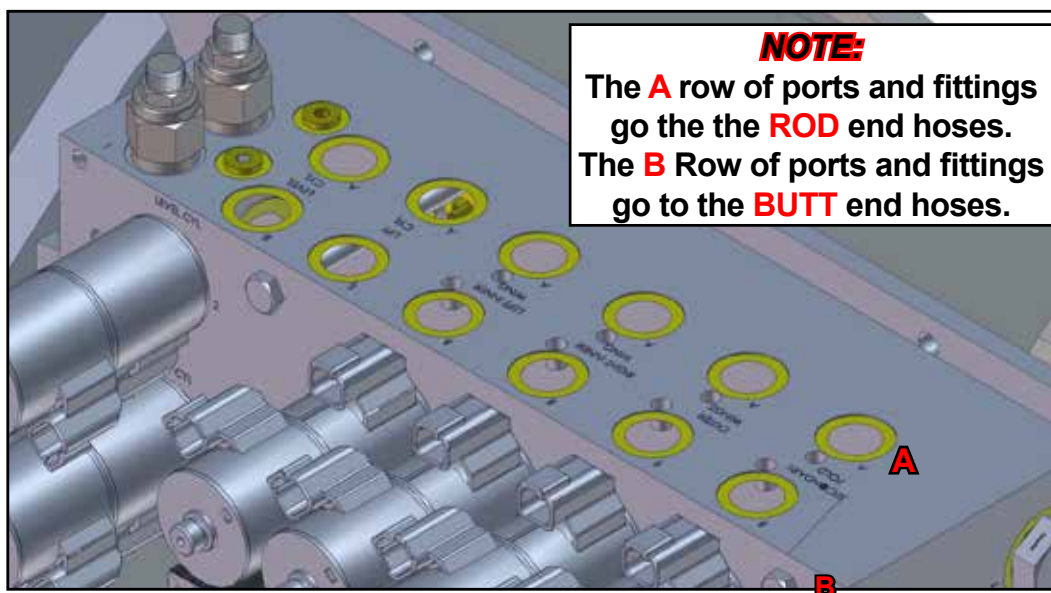
Hydraulic Valve Fittings

- NOTE:** Two ports on the back row do not require adapters.



BOM ID	Qty	Item No	Description
4	1	AM3846	HYDRAULIC HOSE MOUNT
26	2	DP4101	ADAPTER, 10MJ-10MJ
31	6	DP4392	ADAPTER, 8MSAE-10MJIC, STRAIGHT, 6400-10-8
32	4	DP4394	ADAPTER, 8MSAE-6MJIC, 6400-6-8
42	4	DP4691	TEE, 6MJ-6MJ-6MJ, BULKHEAD
58	2	DP6564	PLUG, 8MSAE, HEX, 6408-8

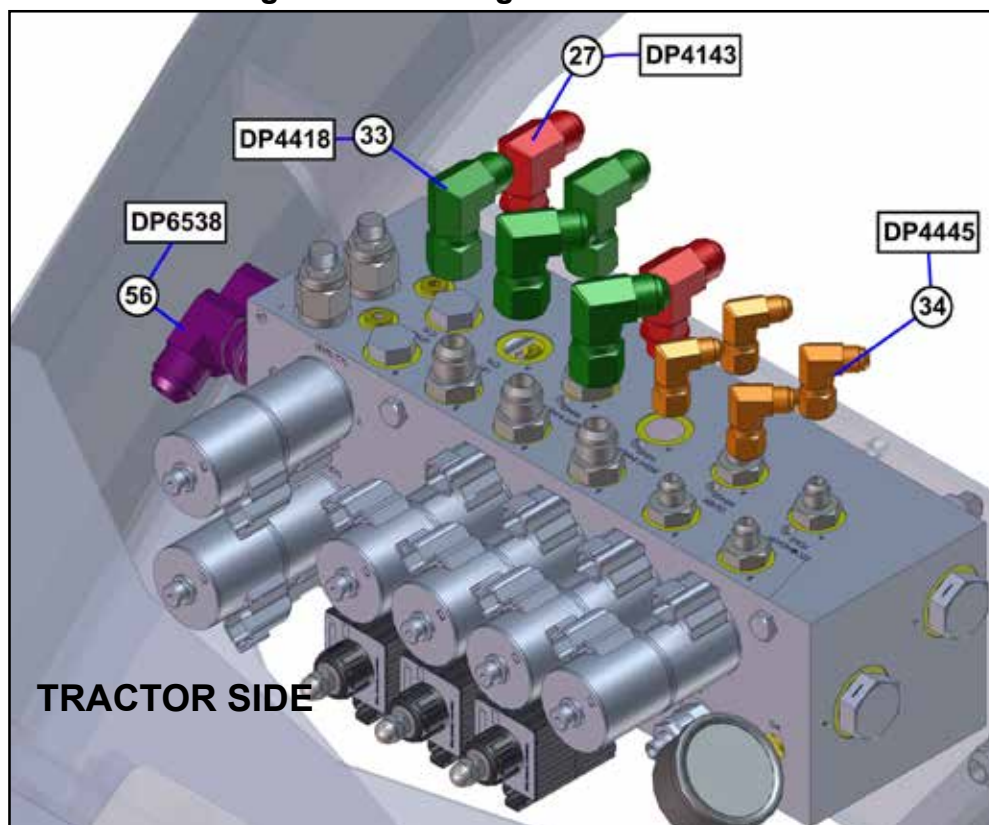
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY



ASSEMBLY (HYDRAULIC VALVE FITTINGS & HOSES)

Hydraulic Valve Fittings

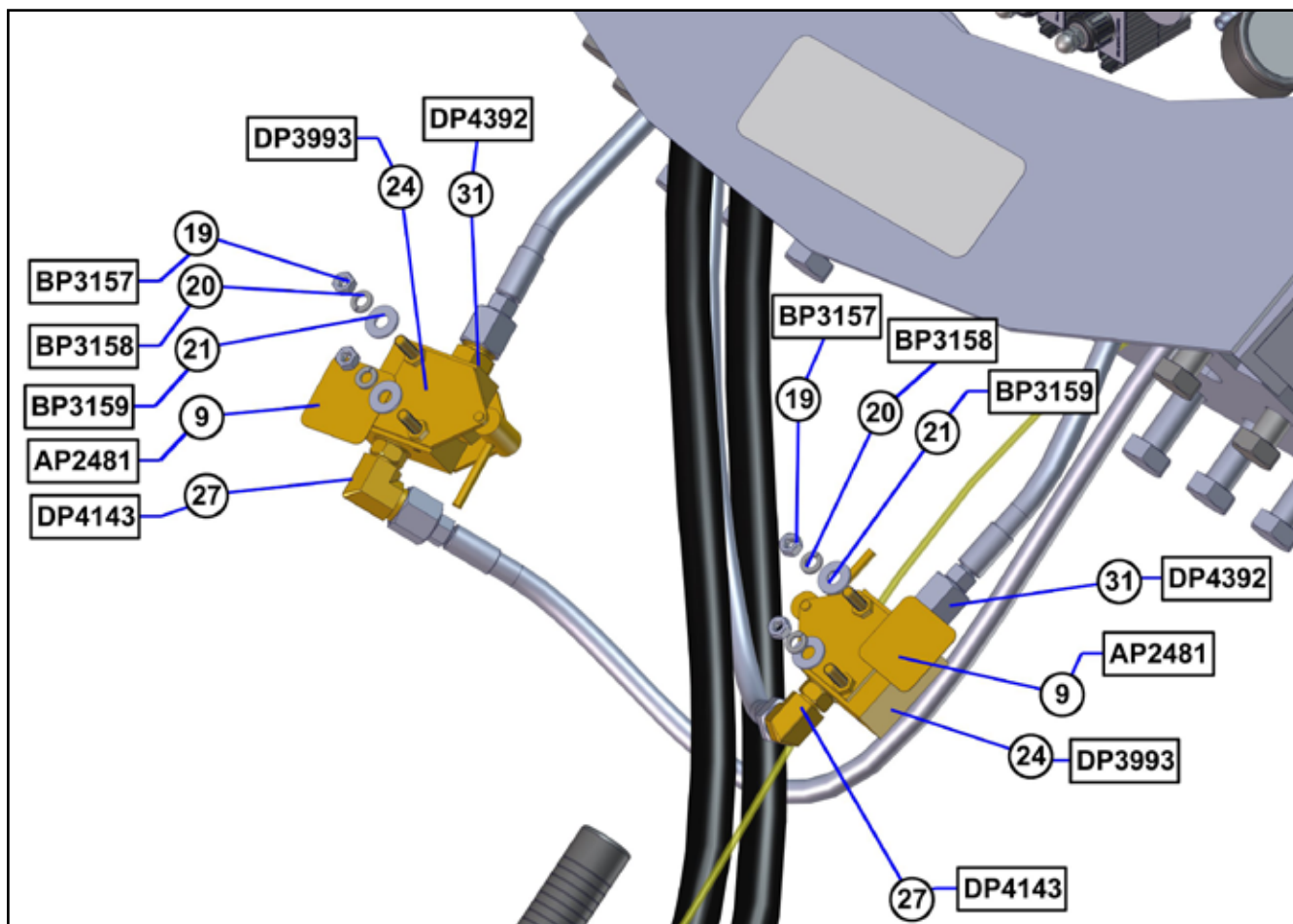
1. Install the 90 degree elbows from the center out.
2. **NOTE:** Do not tighten the 90 degree elbows until the hose are installed.



BOM ID	Qty	Item No	Description
27	8	DP4143	ADAPTER, 10MJIC-8MSAE, 90°
33	2	DP4418	ELBOW, 90°, 10MJIC-10FJX, 6500-10
34	4	DP4445	ELBOW, 90°, 6MJIC-6FJX, 6500-6
56	2	DP6538	ADAPTER, 12MJ-12MSAE 90, 6801-12

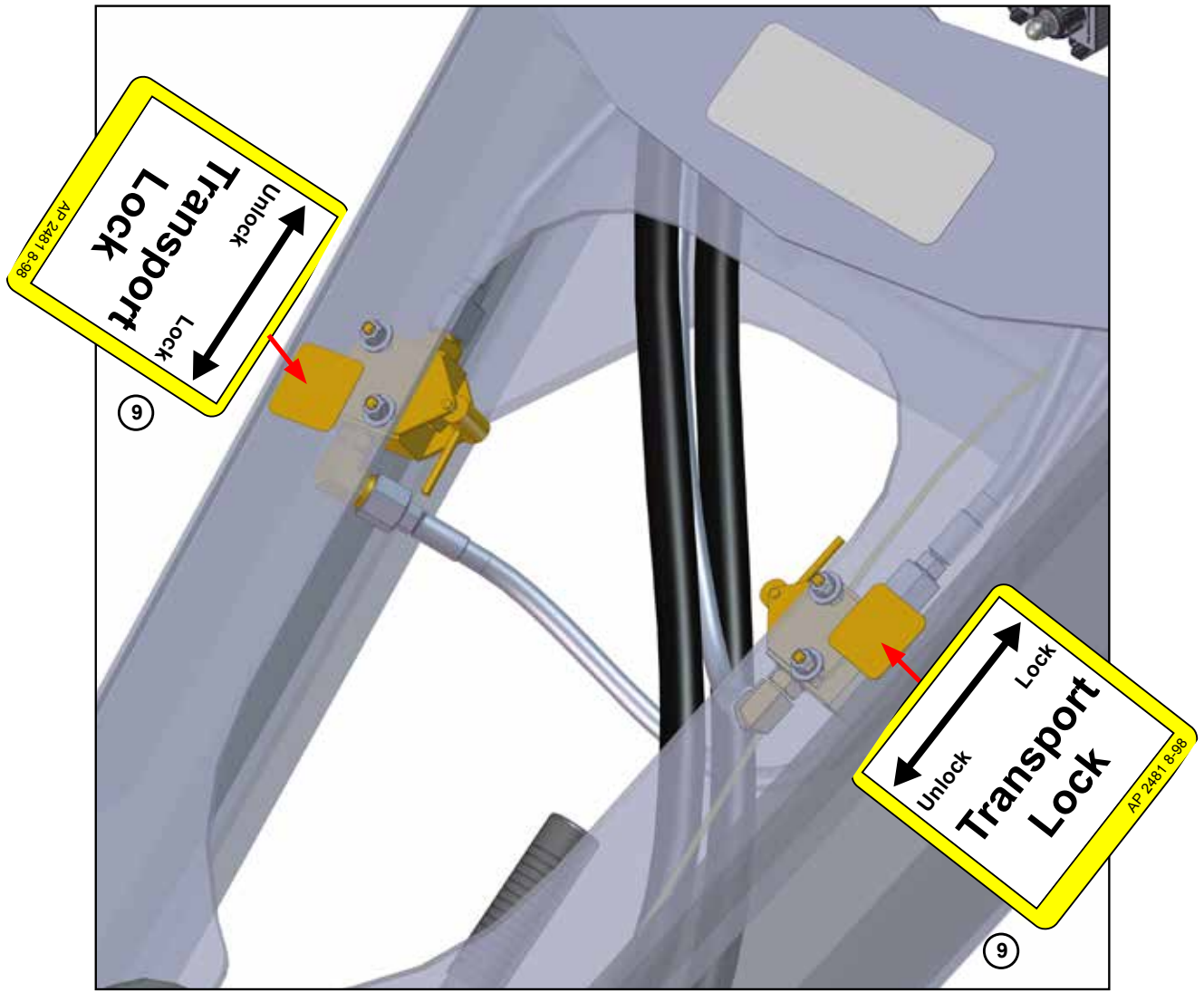
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (CHECK VALVES)



BOM ID	Qty	Item No	Description
9	2	AP2481	DECAL, TRANSPORT LOCK
19	4	BP3157	NUT, HEX, 5/16"-18, GRADE 2, PLATED
20	4	BP3158	WASHER, LOCK, 5/16", PLATED
21	4	BP3159	WASHER, FLAT, 5/16", PLATED
24	2	DP3993	HYDRAULIC CHECK VALVE, WITH MANUAL RELEASE
27	8	DP4143	ADAPTER, 10MJIC-8MSAE, 90 DEGREE
31	6	DP4392	ADAPTER, 8MSAE-10MJIC, STRAIGHT, 6400-10-8

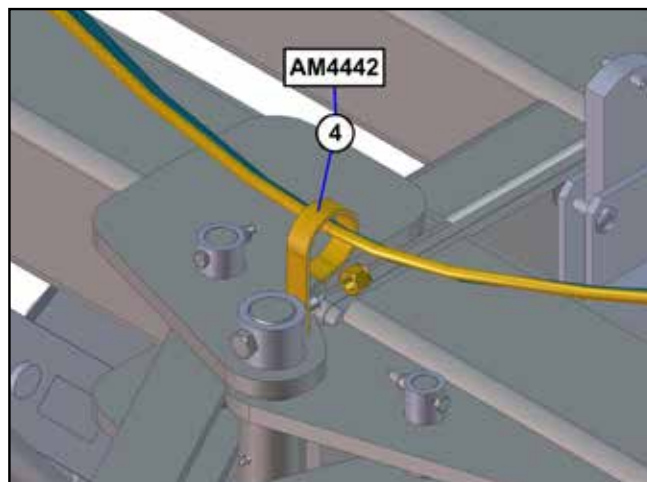
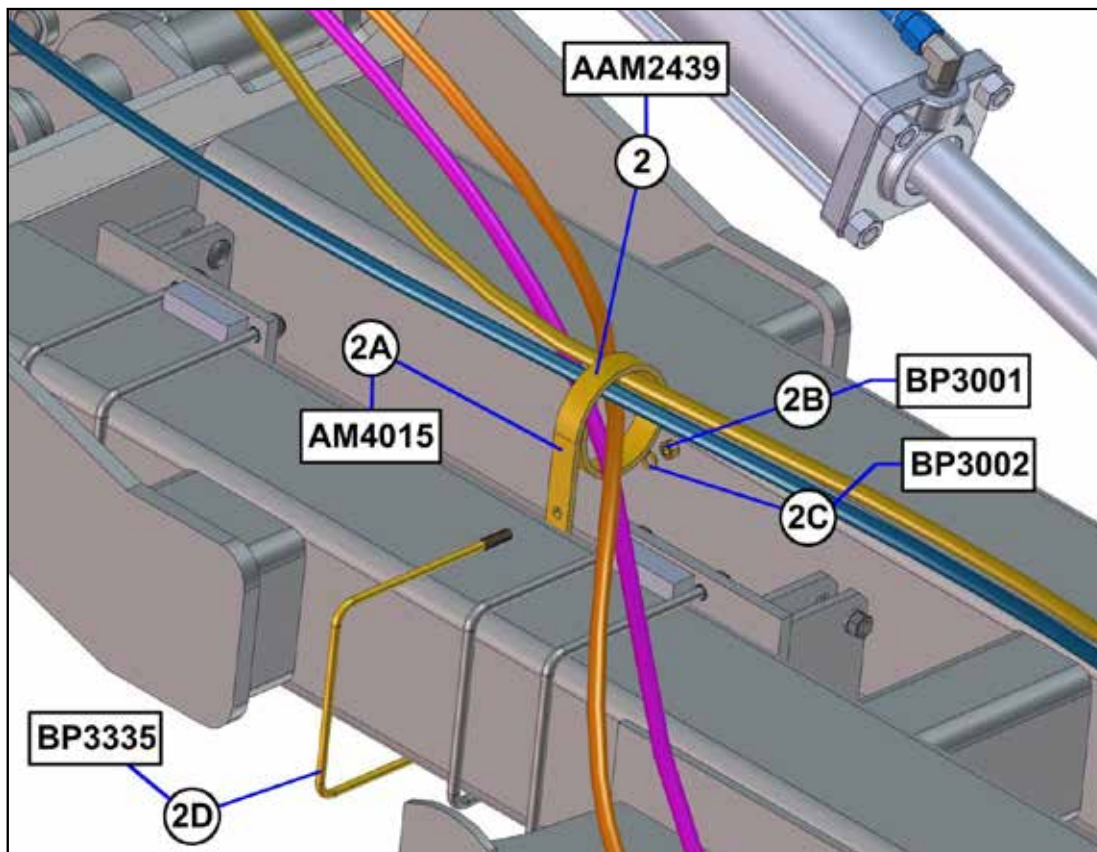
ASSEMBLY (CHECK VALVES)



ASSEMBLY (HOSE RETAINERS)

Hose Retainers

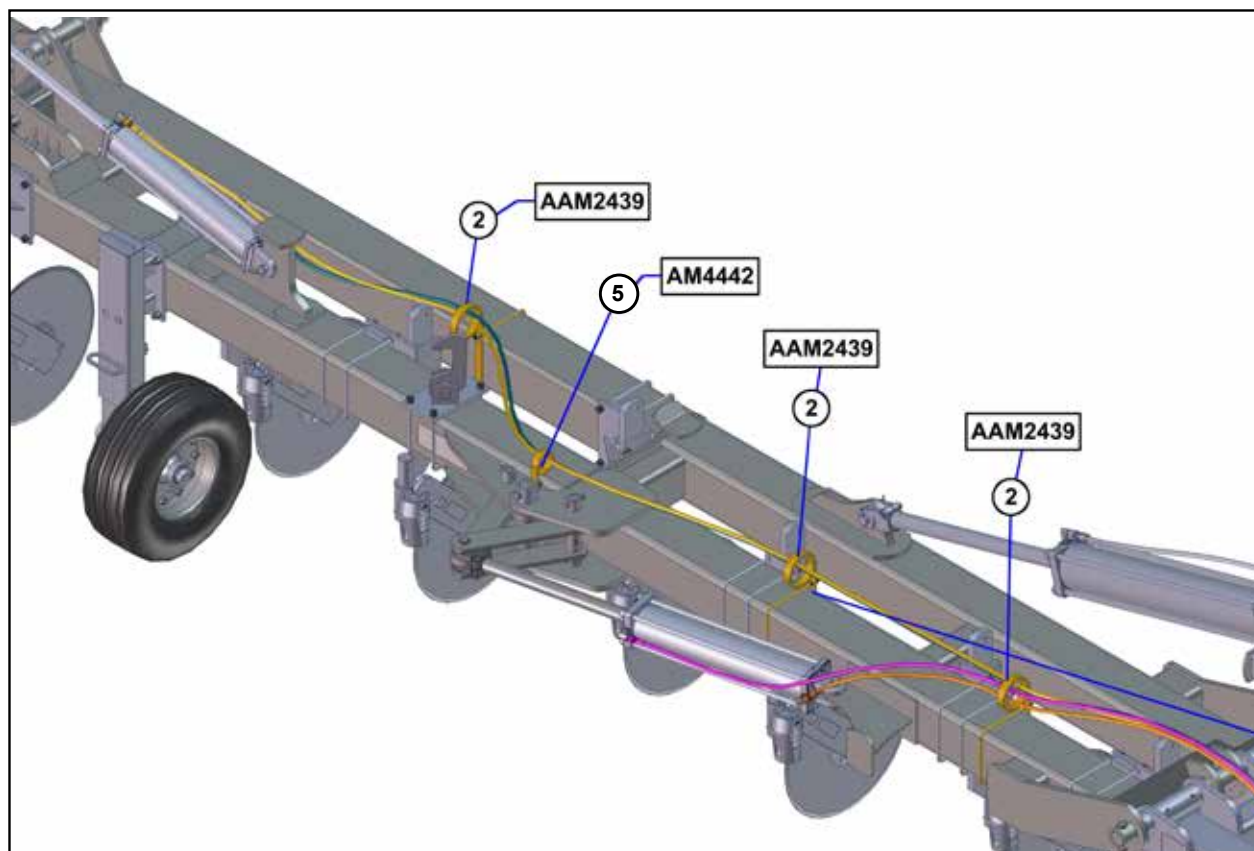
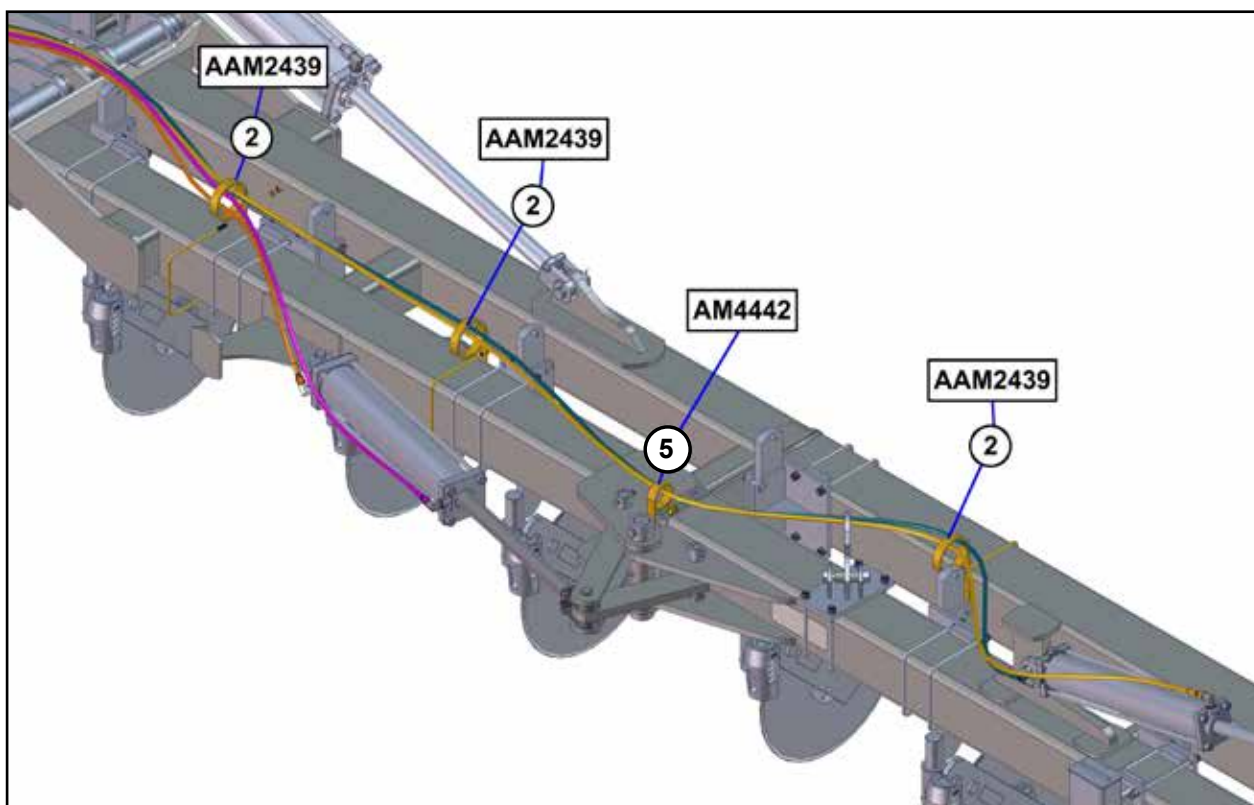
1. Install all the hose retainers before installing hydraulic hoses.



BOM ID	Qty	Item No	Description
		44200105	HYDRAULICS KIT AT4020, CONTROLLED
2	6	AAM2439	HOSE RETAINER ASSEMBLY, CLOSED LOOP, 7" X 7" TUBE
2A	6	AM4015	HOSE RETAINER, CLOSED LOOP, 6" & 7" MOUNTING
2B	12	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
2C	12	BP3002	WASHER, LOCK, 3/8", PLATED
2D	6	BP3335	U-BOLT, 3/8"-16 X 7"W X 8"L, PLATED
5	2	AM4442	HOSE RETAINER, CLOSED LOOP

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

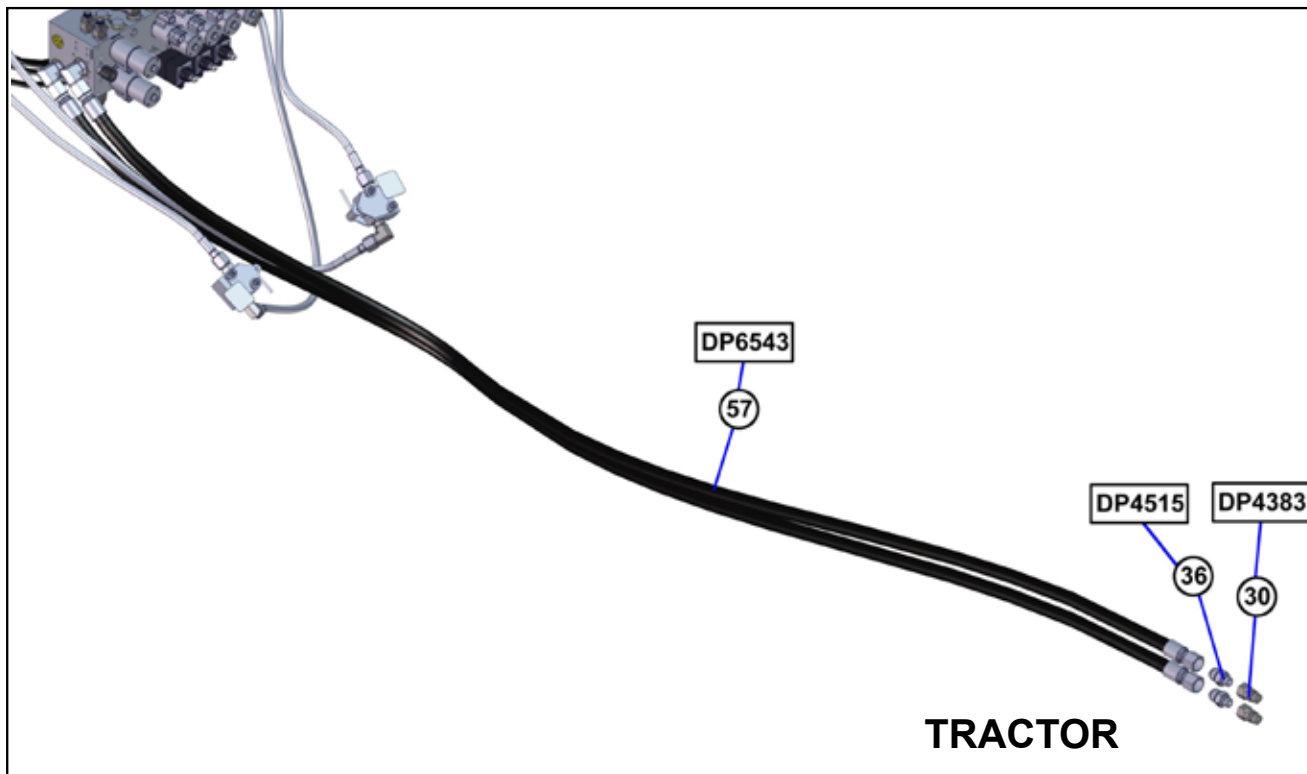
ASSEMBLY (HOSE RETAINERS)



ASSEMBLY (HYDRAULIC TRACTOR HOSES)

Tractor Hydraulic Hoses

1. Attach hoses to side port 90's on valve.
2. Extend hoses through tongue frame to hitch area.
3. Install (36) (DP4515) and (30) (DP4383) fittings to end of each hose.

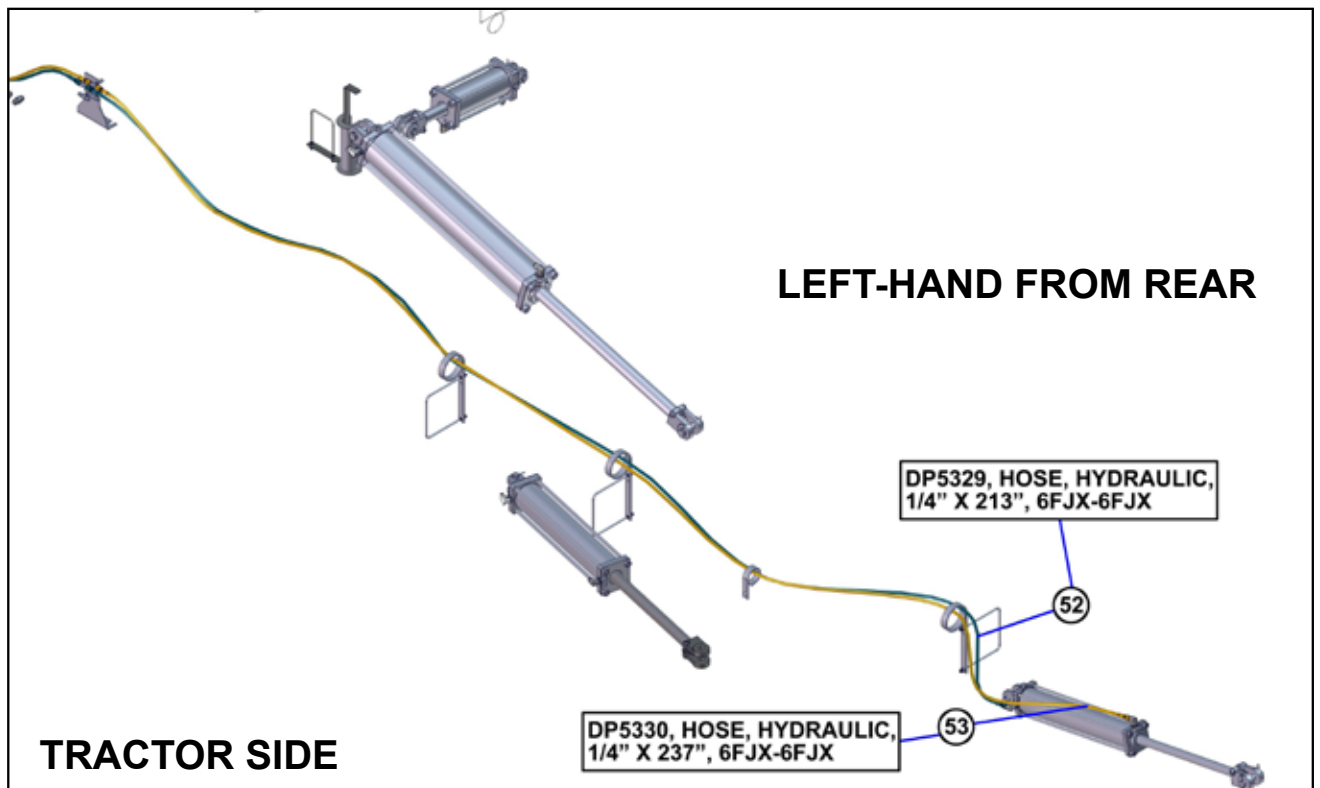
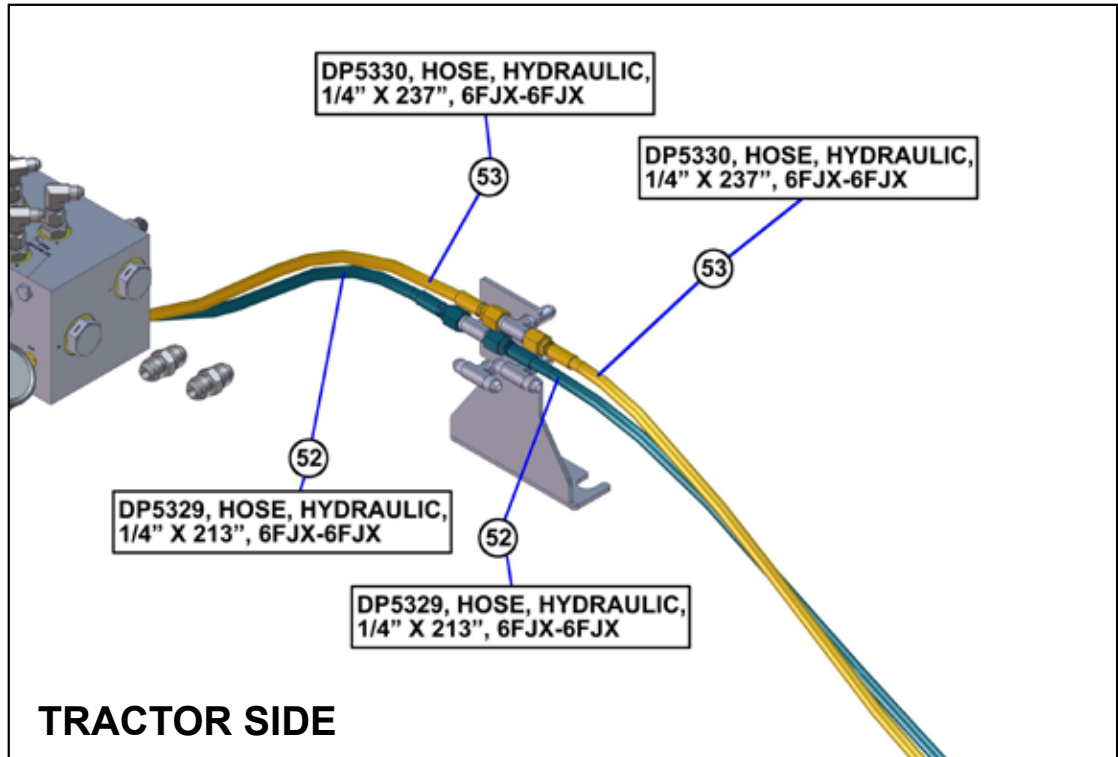


BOM ID	Qty	Item No	Description
30	2	DP4383	COUPLER, PIONEER, 8MQBA-8FSAE
36	2	DP4515	ADAPTER, 12MJIC-8MSAE, STRAIGHT
57	2	DP6543	HOSE, HYDRAULIC, 3/4" X 121", 12FJX-12FJX

ASSEMBLY (HYDRAULIC THIRD WING HOSES)

Third Wing Hydraulic Hoses

1. Extend hoses from center section fittings to third wing cylinder.
2. Repeat assembly on Right-hand third wing cylinder.

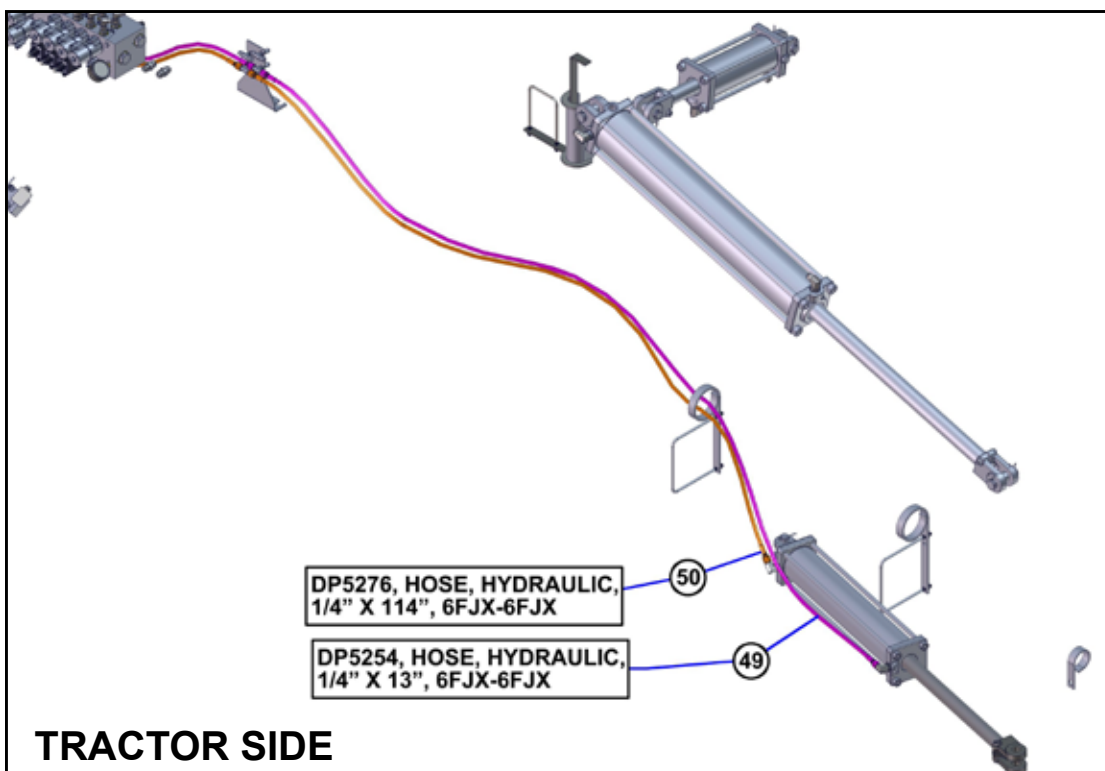
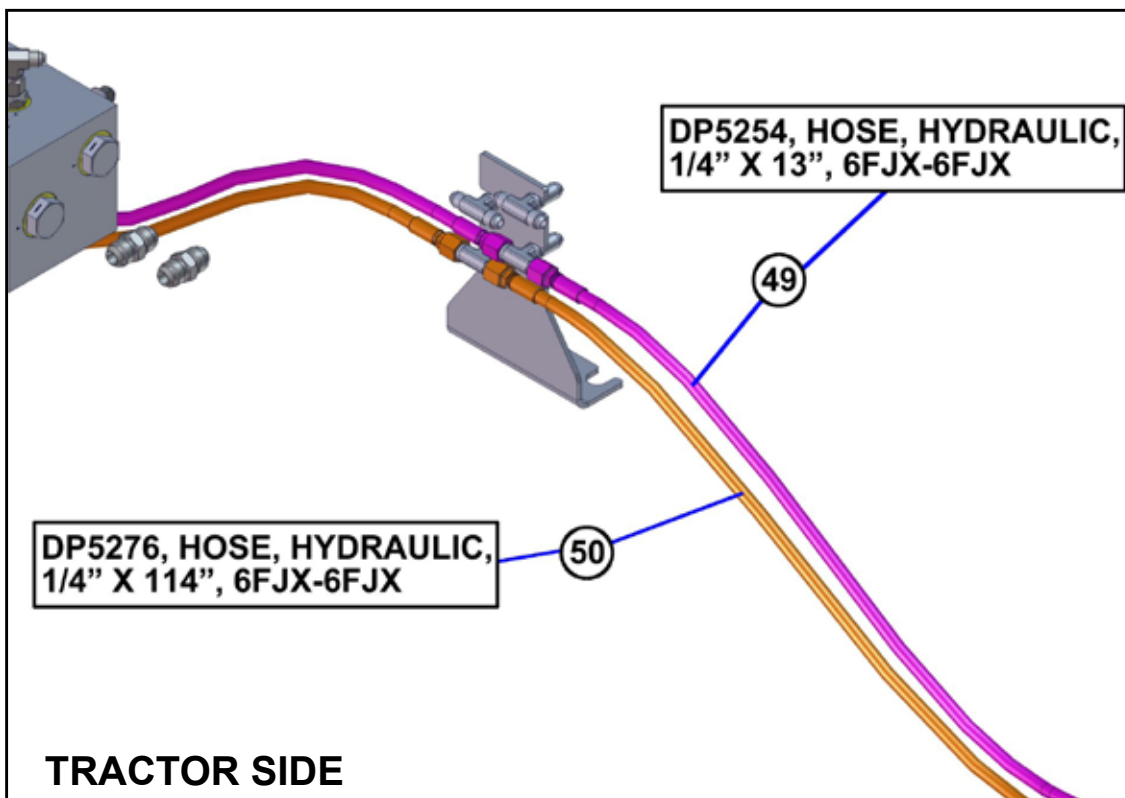


BOM ID	Qty	Item No	Description
52	2	DP5329	HOSE, HYDRAULIC, 1/4" X 213"
53	2	DP5330	HOSE, HYDRAULIC, 1/4" X 237"

ASSEMBLY (HYDRAULIC SECONDARY WING HOSES)

Secondary Wing Hydraulic Hoses

1. Extend hoses from center section fittings to third wing cylinder.

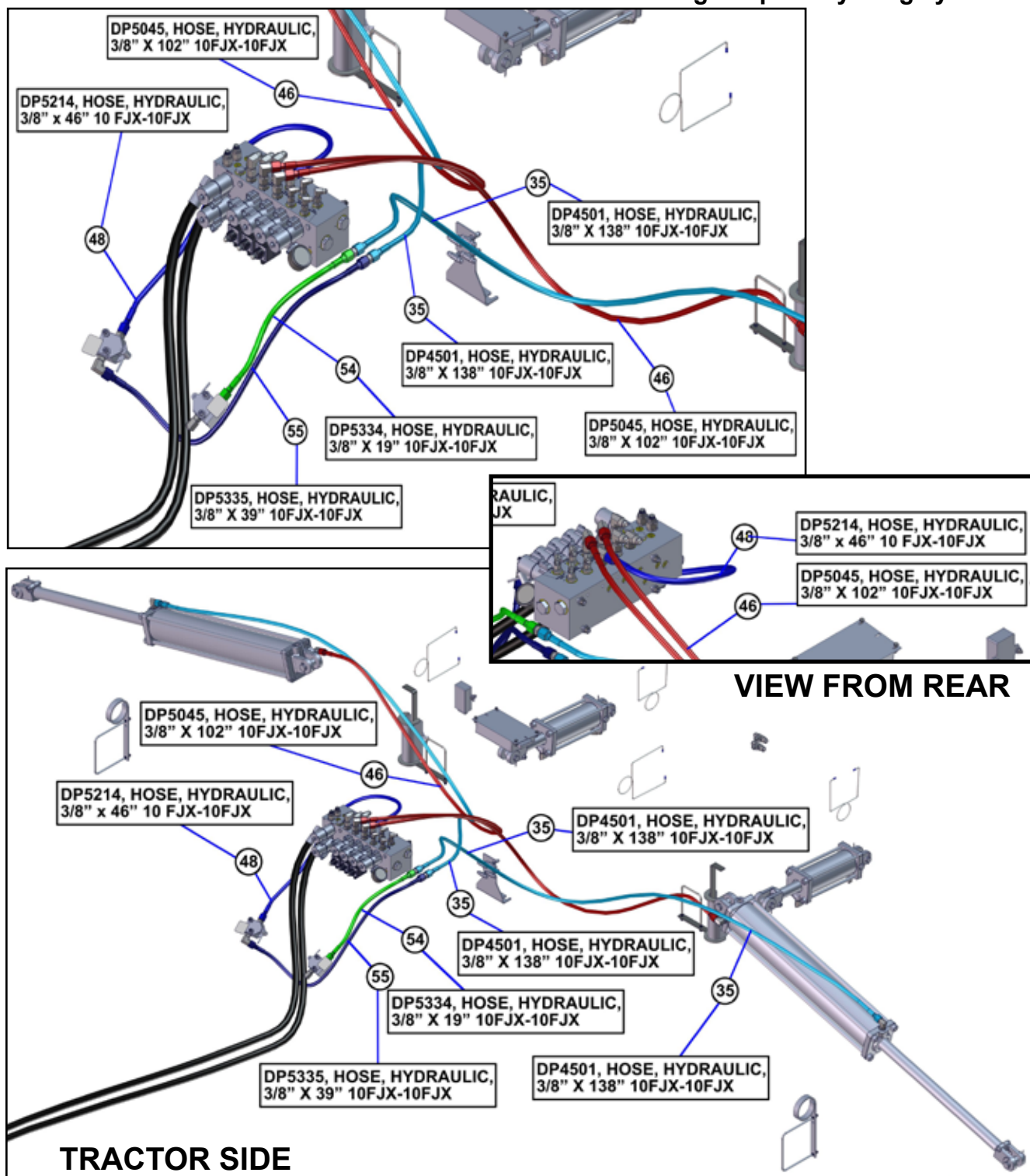


BOM ID	Qty	Item No	Description
49	2	DP5254	HOSE, HYDRAULIC, 1/4" X 137"
50	2	DP5276	HOSE, HYDRAULIC, 1/4" X 114"

ASSEMBLY (HYDRAULIC PRIMARY WING HOSES)

Primary Wing Hydraulic Hoses

1. Extend hoses from center section valve fittings to primary wing cylinders.

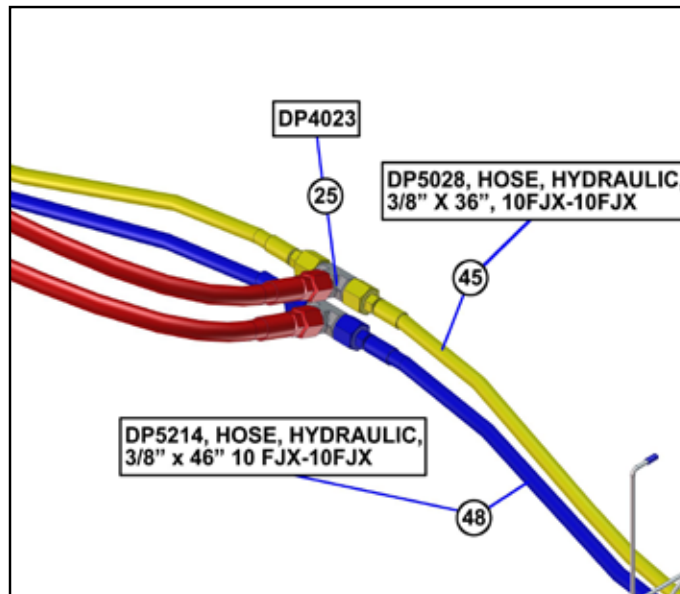
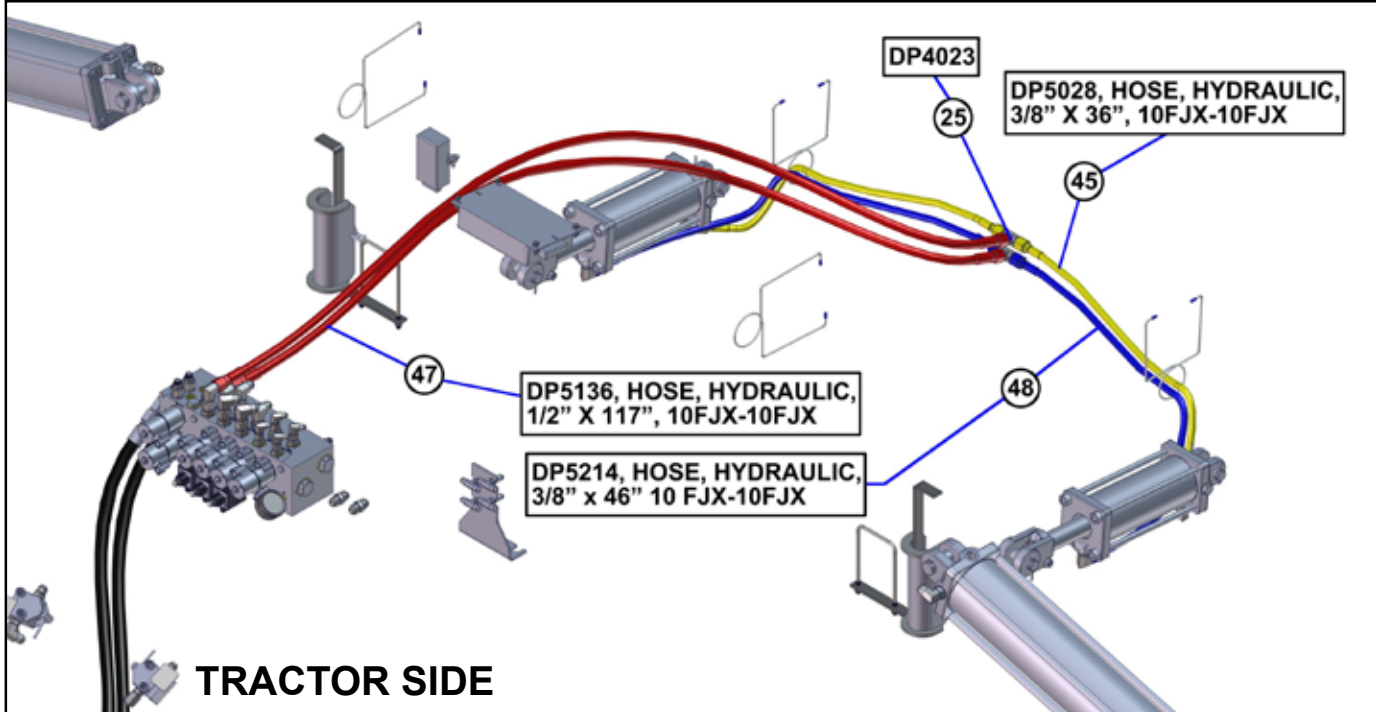


BOM ID	Qty	Item No	Description
35	2	DP4501	HOSE, HYDRAULIC, 3/8" X 138" 10FJX-10FJX
46	2	DP5045	HOSE, HYDRAULIC, 3/8" X 102" 10FJX-10FJX
48	3	DP5214	HOSE, HYDRAULIC, 3/8" X 46" 10FJX-10FJX
54	1	DP5334	HOSE, HYDRAULIC, 3/8" X 19" 10FJX-10FJX
55	1	DP5335	HOSE, HYDRAULIC, 3/8" X 39" 10FJX-10FJX

ASSEMBLY (HYDRAULIC LIFT WING HOSES)

LIFT Hydraulic Hoses

1. Extend (47) (DP5136) hoses from valve fittings to (25) (DP4023) Tee.
2. Extend (45) (DP5028) hoses from cylinder butt ends to top tee.
3. Extend (48) (DP5214) hoses from cylinder rod ends to bottom tee



BOM ID	Qty	Item No	Description
25	2	DP4023	TEE, 10MJ-10MJ-10MJ
47	2	DP5136	HOSE, HYDRAULIC, 1/2" X 117" 10FJX-10FJX
45	2	DP5028	HOSE, HYDRAULIC, 3/8" X 36" 10FJX-10FJX
48	2	DP5214	HOSE, HYDRAULIC, 3/8" X 46" 10FJX-10FJX

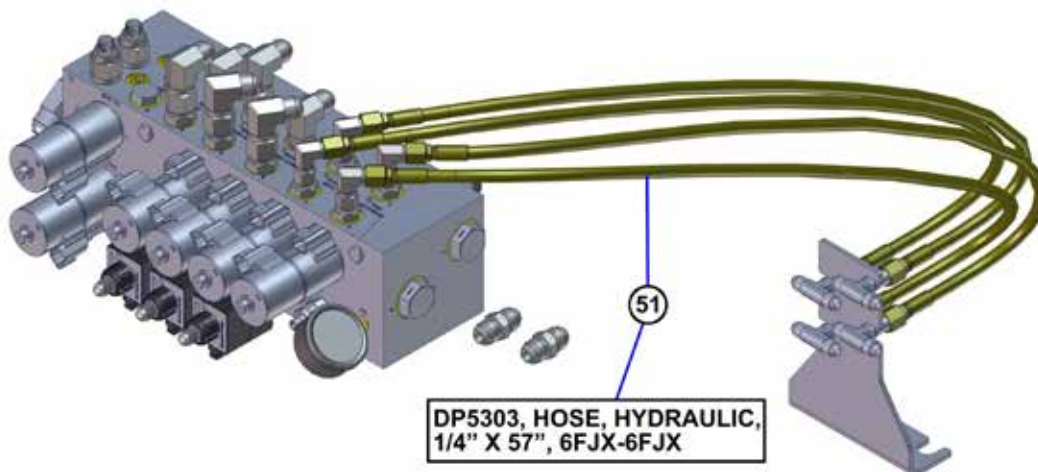
ASSEMBLY (HYDRAULIC SECONDARY FOLD AND OUTER WING FOLD HOSES)

Secondary Fold and Outer Wing Fold Hydraulic Hoses

1. Attach (51) (DP5303) hoses to Secondary Fold and Outer Wing Fold 90's on the valve.
2. Extend hoses to bottom bulkhead fittings on bracket.

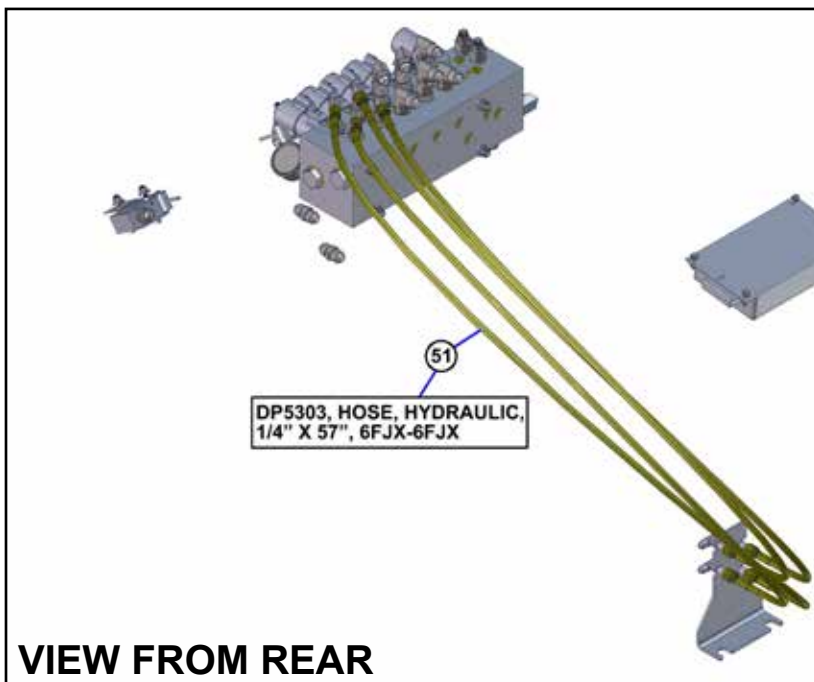
NOTE:

Tighten all the 90 degree elbows on the valve after the last hose is installed.

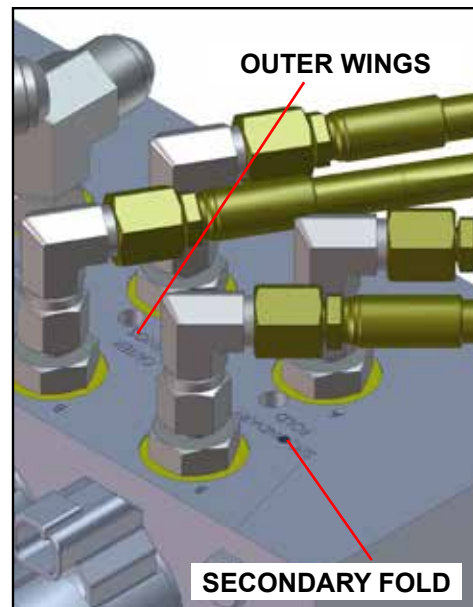


TRACTOR SIDE

BOM ID	Qty	Item No	Description
51	4	DP5303	HOSE, HYDRAULIC, 1/4" X 57" 6FJX-6FJX



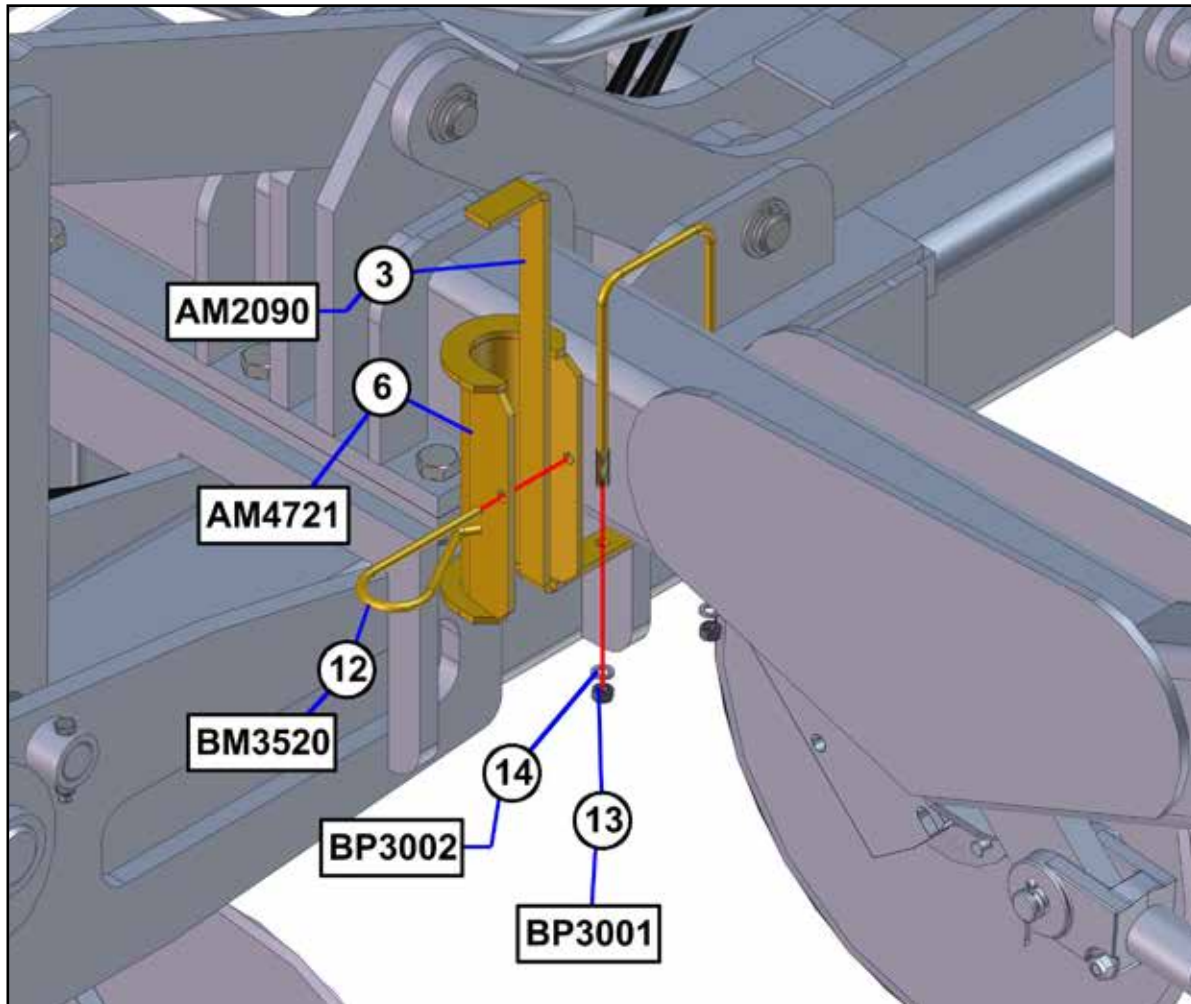
VIEW FROM REAR



NOTE:

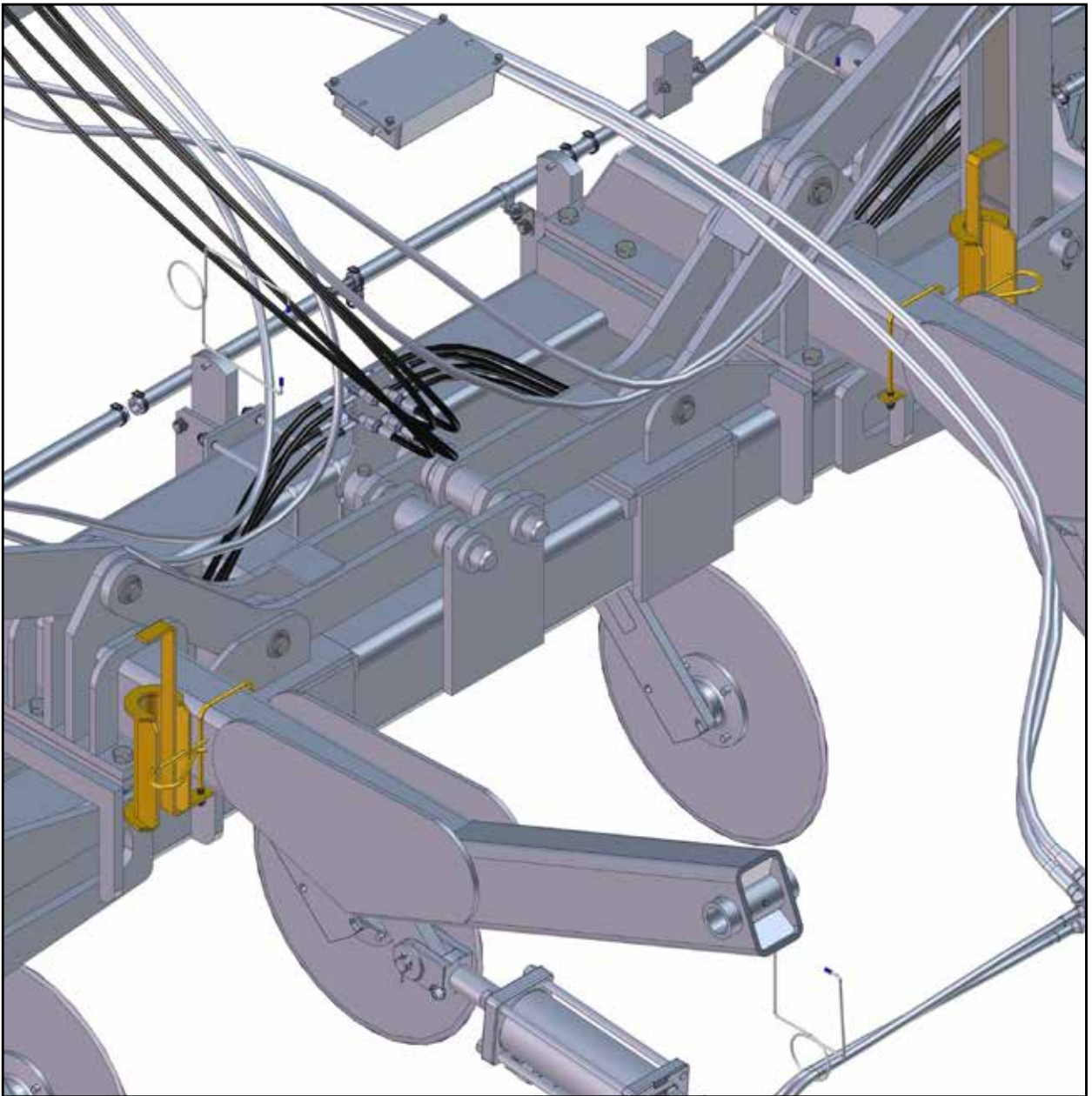
The **B** row of ports and fittings go the the **BUTT** end hoses.
The **A** Row of ports and fittings go to the **ROD** end hoses.

ASSEMBLY (LIFT CYLINDER LOCKUP)



BOM ID	Qty	Item No	Description
3	2	AM2090	BRACKET, DEPTH COLLAR & LOCKUP STORAGE
6	2	AM4721	TRANSPORT LOCK, HD 1-3/4" & 2" CYLINDER. ROD
12	2	BM3520	CLIP PIN, TRANSPORT LOCK
13	8	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
14	8	BP3002	WASHER, LOCK, 3/8", PLATED

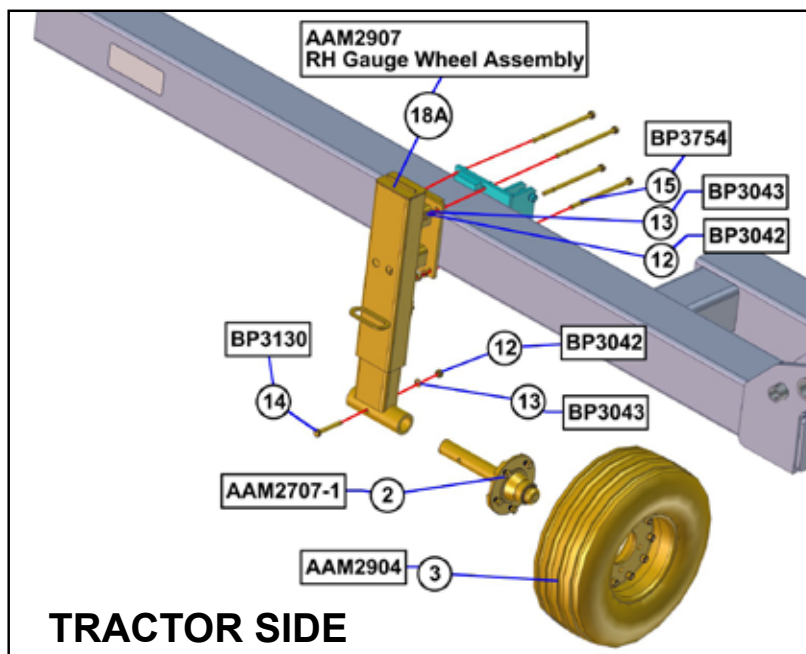
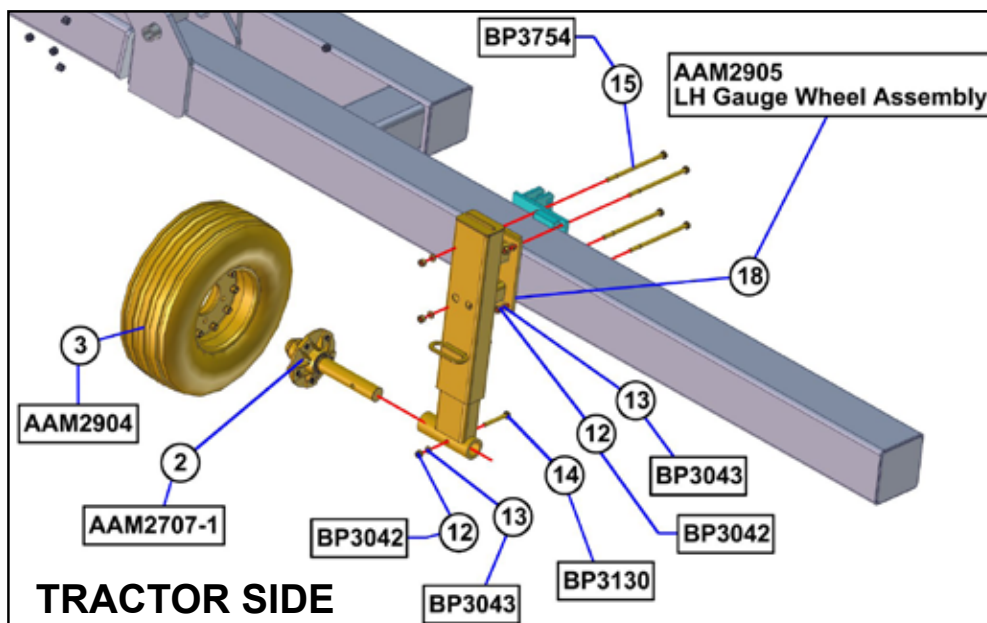
ASSEMBLY (LIFT CYLINDER LOCKUP)



ASSEMBLY (GAUGE WHEEL MOUNTING)

Gauge Wheel Mounting

1. Gauge wheels are mounted with the Offset Flatback using (15) (BP3754).
2. Consult row spacing pages for measurements.



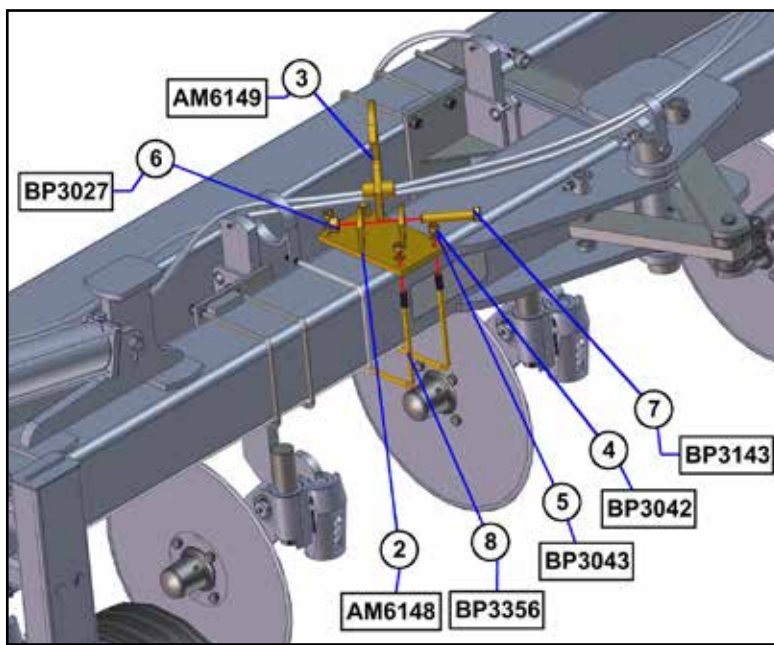
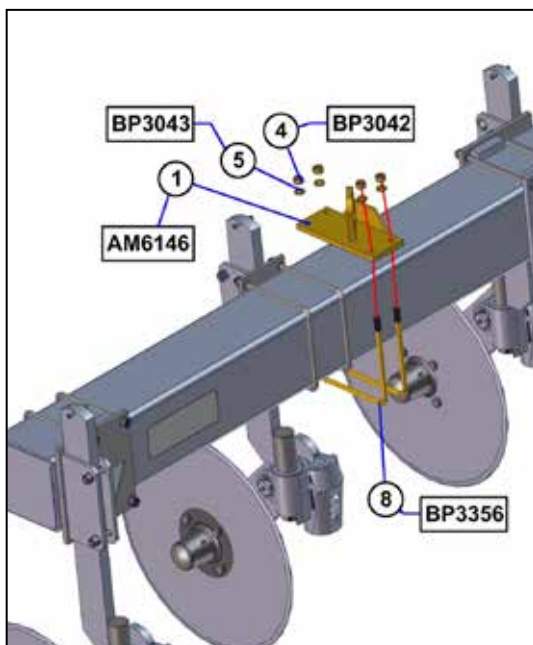
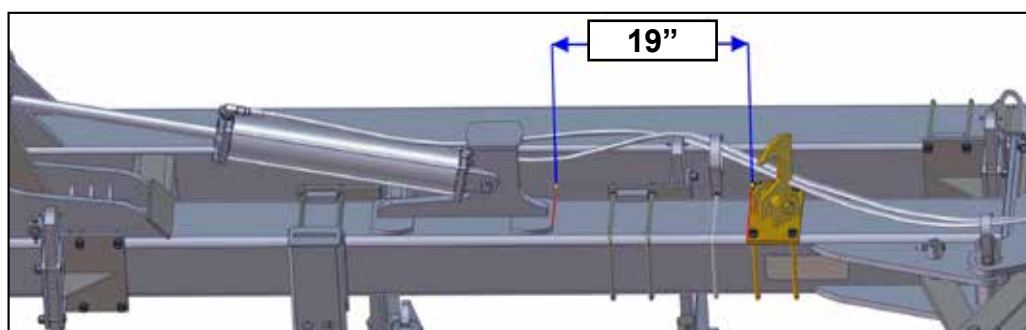
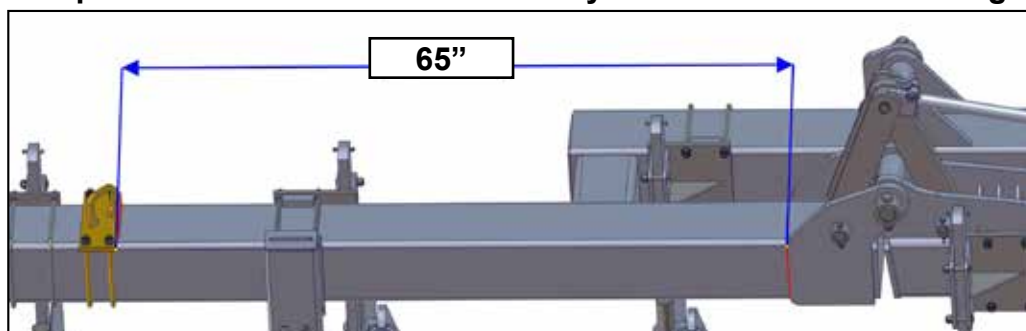
BOM ID	Qty	Item No	Description
2	4	AAM2707-1	ASSEMBLY, HUB & SPINDLE, 511 HUB, 1-3/4 X 13
3	4	AAM2904	ASSEMBLY, GAUGE WHEEL, AT4020
12	20	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
13	20	BP3043	WASHER, LOCK, 1/2", PLATED
14	4	BP3130	HEX CAP SCREW, 1/2"-13 X 3-1/2", GRADE 5, PLATED
15	16	BP3754	HEX CAP SCREW, 1/2"-13 X 9", GRADE 5, PLATED
18	4	AAM2905	SLIDE ADJUST GAUGE WHEEL, LEFT-HAND, AT4020
18A	4	AAM2907	SLIDE ADJUST GAUGE WHEEL, RIGHT-HAND, AT4020

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

WING LATCHES RIGHT-HAND

Wing Latches Right-hand Mounting

1. Latch placement is a starting point. Fold the wings and check latch placement. Hook must move freely in bracket. Do not over tighten.



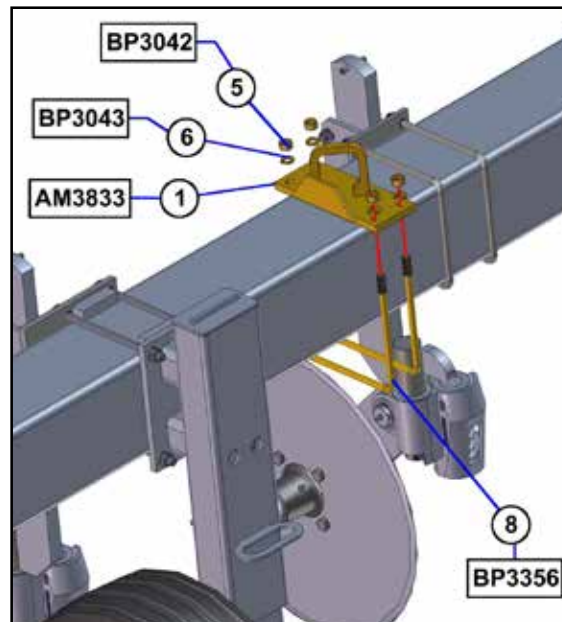
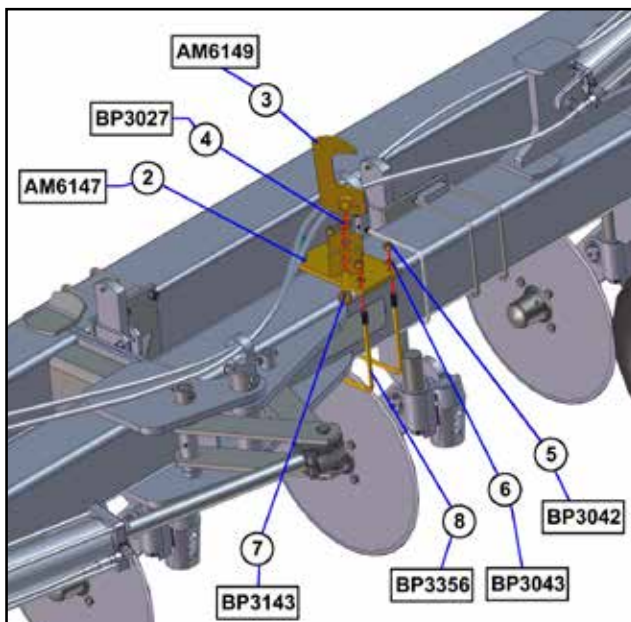
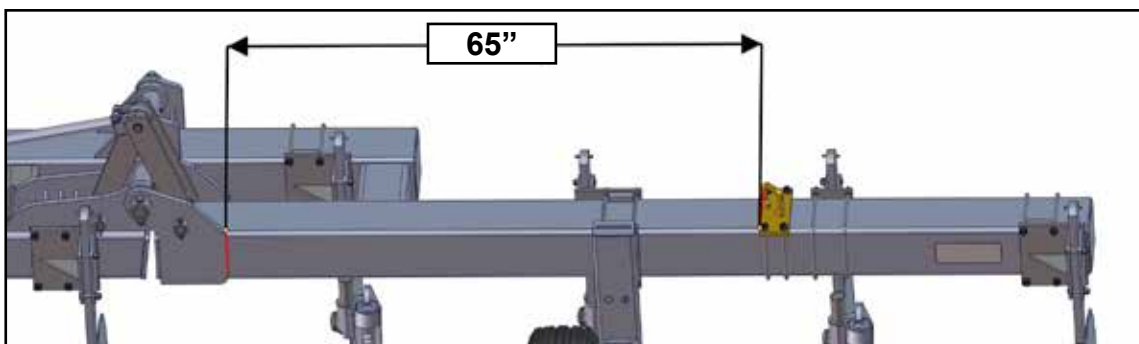
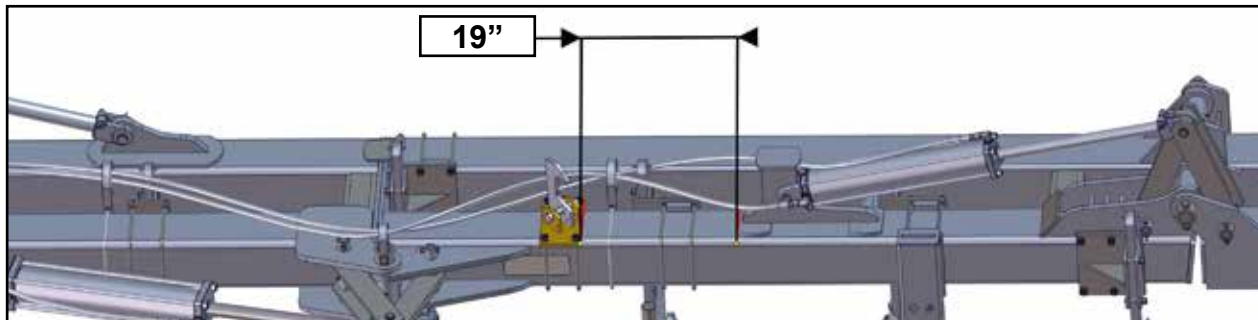
BOM ID	Qty	Item No	Description
1	1	AM6146	WING LATCH, RIGHT-HAND, AT4020
2	1	AM6148	WING LATCH MOUNT, RIGHT-HAND, AT4020
3	1	AM6149	WING LATCH HOOK, THIRD WING, AT4020
4	8	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
5	8	BP3043	WASHER, LOCK, 1/2", PLATED
6	1	BP3027	NUT, HEX LOCK, 3/4"-10, GRADE 2, PLATED
7	1	BP3143	HEX CAP SCREW, 3/4"-10 X 4", GRADE 5, PLATED
8	4	BP3356	U-BOLT, 1/2"-13 X 7"W X 8-1/4"L, GLOSS BLACK

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

WING LATCHES LEFT-HAND

Wing Latches Left-hand Mounting

1. Latch placement is a starting point. Fold the wings and check latch placement. Hook must move freely in bracket. Do not over tighten.



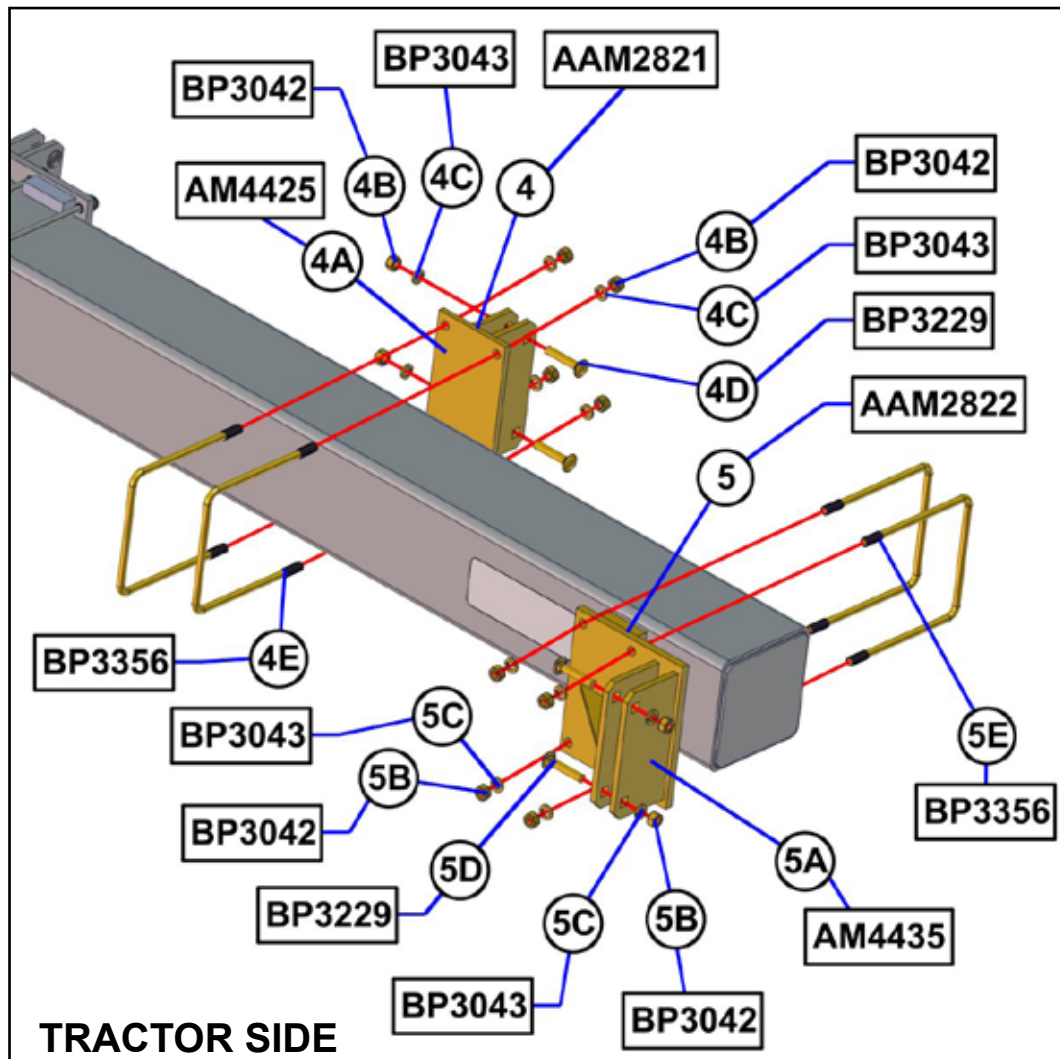
BOM ID	Qty	Item No	Description
1	1	AM3833	WING LATCH, LEFT-HAND, AT4020
2	1	AM6147	WING LATCH MOUNT, LEFT-HAND, AT4020
3	1	AM6149	WING LATCH HOOK, THIRD WING, AT4020
4	1	BP3027	NUT, HEX LOCK, 3/4"-10, GRADE 2, PLATED
5	8	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
6	8	BP3043	WASHER, LOCK, 1/2", PLATED
7	1	BP3143	HEX CAP SCREW, 3/4"-10 X 4", GRADE 5, PLATED
8	4	BP3356	U-BOLT, 1/2"-13 X 7"W X 8-1/4"L, GLOSS BLACK

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (FLATBACKS)

FlatBack Mounting

1. Consult row spacing pages for measurements.
2. Level wings with center section and mark out row spacings from center.
3. Do not tighten (5D) and (4D) (BP3229) carriage bolt hex nuts until coulters shank are installed.



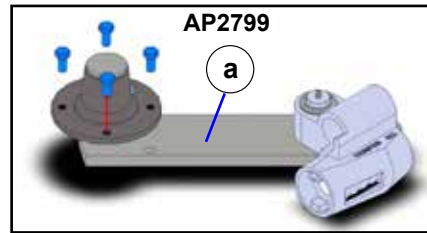
BOM ID	Qty	Item No	Description
4	7	AAM2821	COULTER, FLATBACK CENTERED ASSEMBLY, 7" X 7"
4A	7	AM4425	BRACKET, FLATBACK, 7" X 7", CENTERED
4B	42	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
4C	42	BP3043	WASHER, LOCK, 1/2", PLATED
4D	14	BP3229	BOLT, CARRIAGE, 1/2"-13 X 2-1/2", GRADE 5, PLATED
4E	14	BP3356	U-BOLT, 1/2"-13 X 7"W X 8-1/4"L, GLOSS BLACK
5	18	AAM2822	COULTER, FLATBACK OFFSET ASSEMBLY, 7" X 7"
5A	18	AM4435	BRACKET, FLATBACK, 7" X 7" OFFSET
5B	108	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
5C	108	BP3043	WASHER, LOCK, 1/2", PLATED
5D	36	BP3229	BOLT, CARRIAGE, 1/2"-13 X 2-1/2", GRADE 5, PLATED
5E	36	BP3356	U-BOLT, 1/2"-13 X 7"W X 8-1/4"L, GLOSS BLACK

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

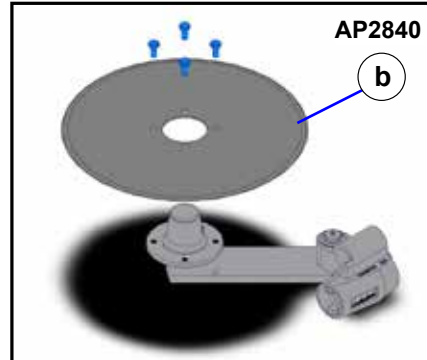
COULTER ASSEMBLY

Preparing Coulters for Mounting

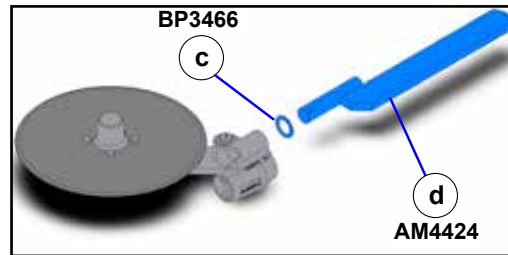
1. Remove hex cap screws from hub (a) (AM2799) coulters arm with hub and knee casting assembly.



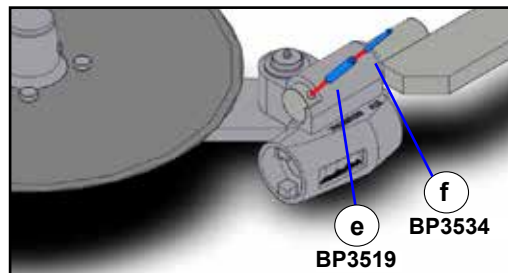
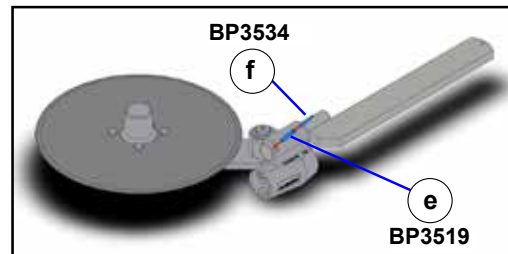
2. Place (AP2840) 20" smooth coulters blade on coulters assembly and replace hex cap screws.



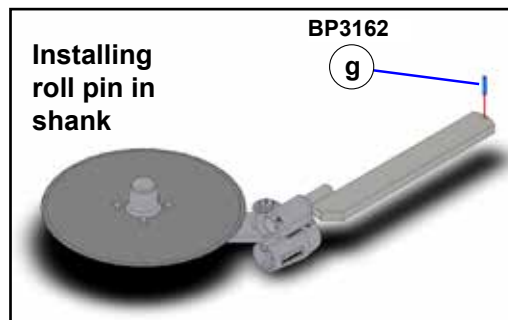
3. Install (c) (BP3466) 2-1/2" OD x 1-3/4" ID, 10 GA, 18-8 SS machinery bushing over (d) (AM4424) 23" coulters shank weldment.



4. Insert the 23" coulters shank into coulters assembly. Start (e) (BP3519) 3/8" x 2-1/2" roll pin in base of coulters shank. Insert the (f) (BP3534) 7/32" x 2-1/2" roll pin in the end of the 3/8" roll pin and drive both pins together. Leave an equal amount of pin on each sides of the shank.



5. Install the (g) (BP3162) 3/8" x 2" roll pin through the shank weldment top hole.



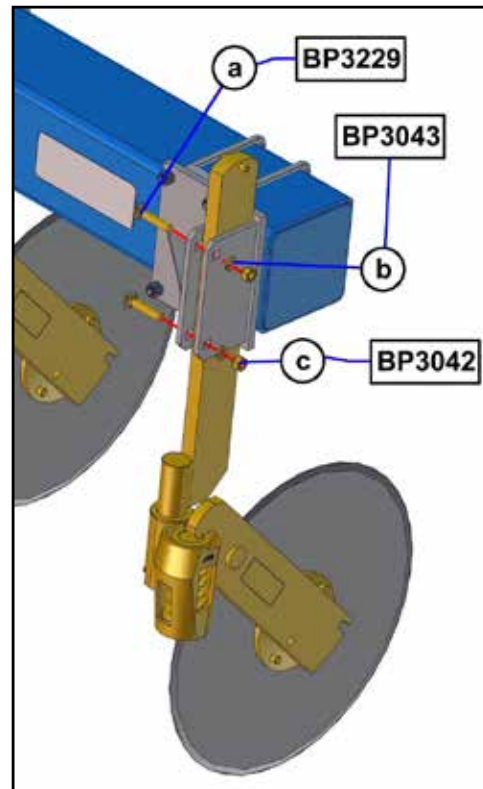
6. **AAM2728**
Super 1200 coulters 1 row
(Blade not part of bundle.)

ASSEMBLY (COULTERS)



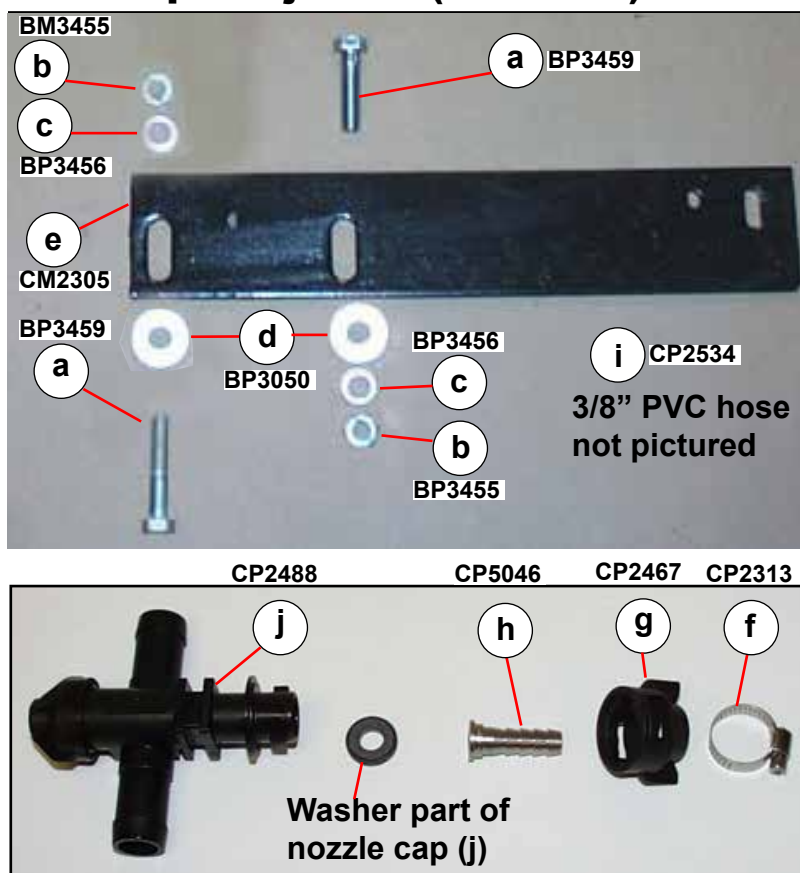
Mounting Coulters Assembly

1. Insert coulters shank into the mounting and allow assembly to rest on shank roll pin.
2. Insert (a) (BP3229) 1/2"-13 x 2-1/2" carriage bolt into top hole of bracket. Push coulters shank assembly back into the bracket and insert the bottom carriage bolt. Place (b) (BP3043) 1/2" lock washer and (c) (BP3042) 1/2"-13 hex nut on each carriage bolt. *Do not tighten at this point.*
3. Raise coulters shank assembly in bracket and place a 3" spacer between the roll pin and the top of the bracket. Tighten the 1/2" hex nuts.
This height is a starting point.



ASSEMBLY (LIQUID INJECTION)

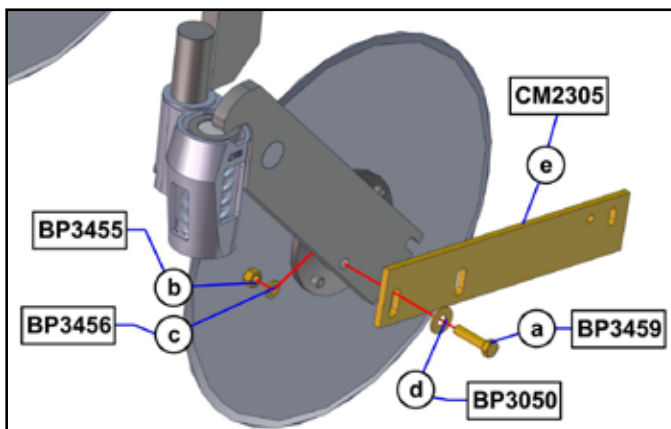
JetStream Liquid Injection (AAM3353)



BOM ID	Qty	Item No	Description
a	2	BP3459	HEX CAP SCREW, 1/2"-13, X 2", F593 GR 1 CW
b	2	BP3455	NUT, HEX, 1/2"-13, F594 GR 1 CW
c	2	BP3456	WASHER, LOCK, 1/2", 18-8 STAINLESS STEEL
d	2	BP3050	WASHER, FLAT, 1/2", PLATED
e	1	CM2305	JET STREAM MOUNTING ARM
f	2	CP2313	STAINLESS STEEL HOSE CLAMP 5/8"-1"
g	1	CP2467	NOZZLE CAP, 25608-1-NYR
h	1	CP5046	HOSE BARB INSERT, 3/8" HOSE STAINLESS STEEL
i	5	CP2534	3/8" PVC 250# PSI HOSE JET STREAM
j	1	CP2488	DIAPHRAGM CHECK VALVE, DOUBLE SHANK 3/4" HOSE
k	3	DP4086	CABLE TIE 11-3/8" STANDARD (NOT PICTURED)

Attaching Injection Mounting Brackets

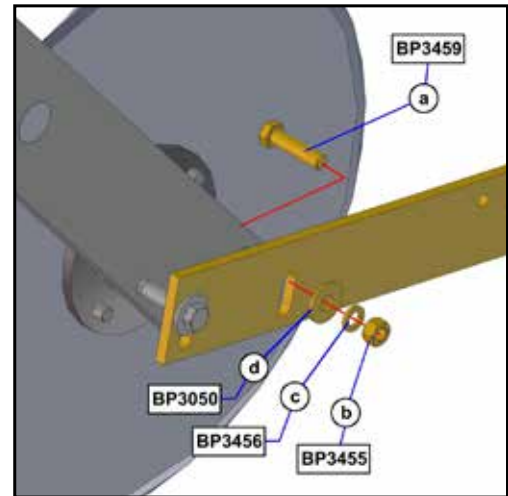
- Place (e) (CM2305) Jet Stream mounting arm on couler arm. Place (d) (BP3050) 1/2" flat washer on (a) (BP3459) 1/2" x 2" hex cap screw into couler arm slotted hole through mounting arm. Place (c) (BP3456) 1/2" lock washer and (b) (BP3455) 1/2" hex nut on hex cap screw next to blade.



ASSEMBLY (LIQUID INJECTION)

Injection Mounting Brackets

1. Raise mounting arm and insert (a) (BP3459) 1/2" x 2" hex cap screw blade side into coultter arm slotted hole through mounting arm. Place (d) (BP3050) 1/2" flat washer, (c) (BP3456) 1/2" lock washer on hex cap screw. Raise mounting arm and secure with (b) (BP3455) 1/2" hex nut.



Nozzle Assembly

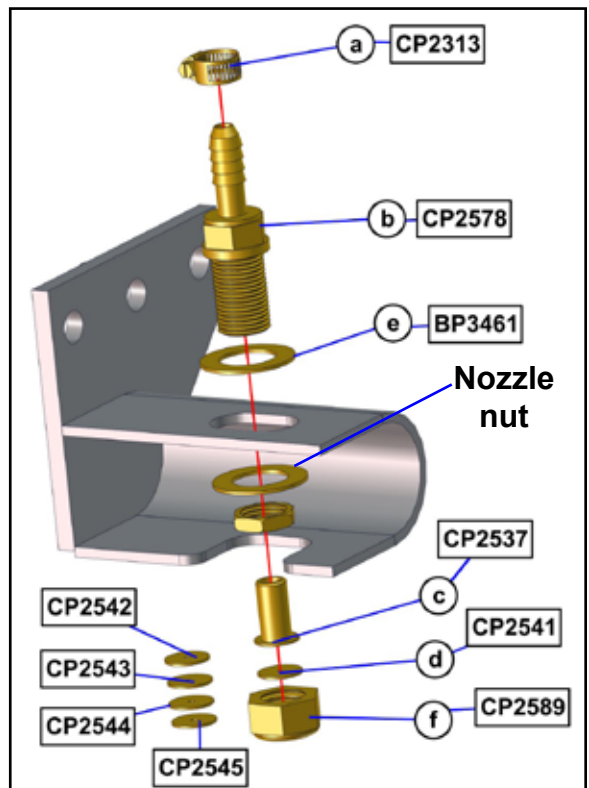
2. a. CP2313 1 Stainless steel hose clamp 5/8"-1"
b. CP2578 1 Straight nozzle body with/nut, 3/8" hose, Stainless steel
c. CP2537 1 Stream stabilizer Stainless steel
d. Orifice plate:
CP2541 1 #4916-63
CP2542 1 #4916-70
CP2543 1 #4916-78
CP2544 1 #4916-86
CP2545 1 #4916-95
f. CP2589 1 Nozzle cap, SS



3. Place JetStream nozzle mount in vise. Insert (b) (CP2578) straight nozzle body into (e) (BP3461) 5/8", 1-1/2" OD, 0.78, 18-8 SS, flat washer. Insert into nozzle mount. Place second (e) (BP3461) 5/8", 1-1/2" OD, 0.78, 18-8 SS, flat-washer over threads of nozzle assembly, center assembly on slotted hole and secure with nozzle nut.

Nozzle assembly should be aligned with blade after coultter assembly is complete.

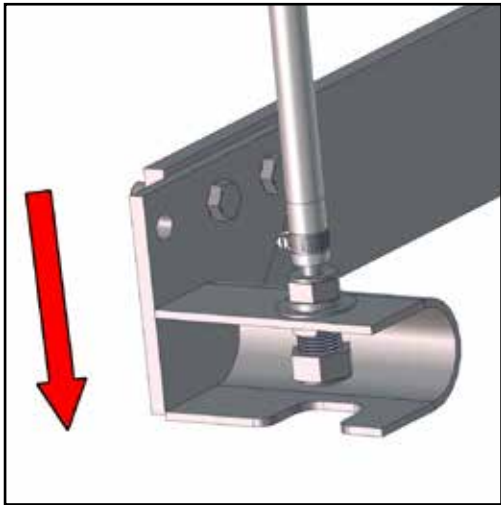
4. Place orifice plate (d) into (f) (CP2589) nozzle cap. Insert (c) (CP2537) stream stabilizer SS into nozzle cap. Install assembly into nozzle body.



NOTE:

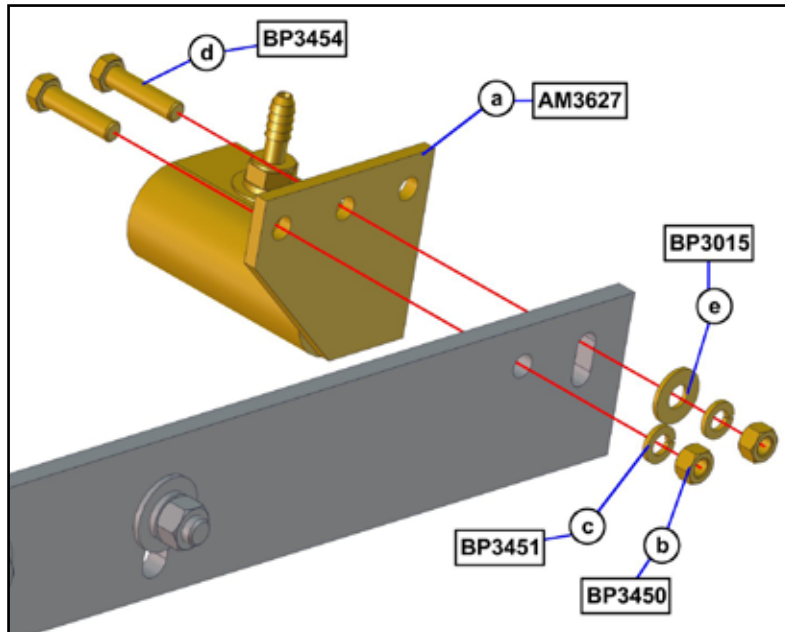
Consult rate chart for orifice size.

ASSEMBLY (LIQUID INJECTION)



NOTE:

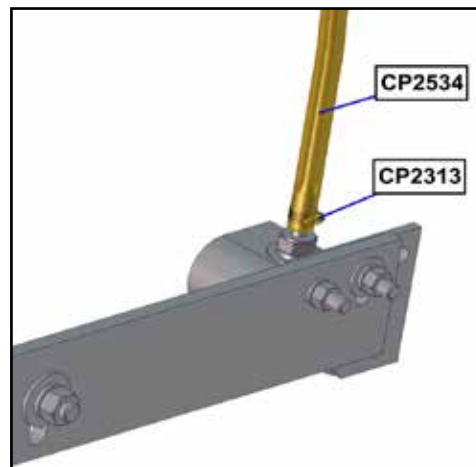
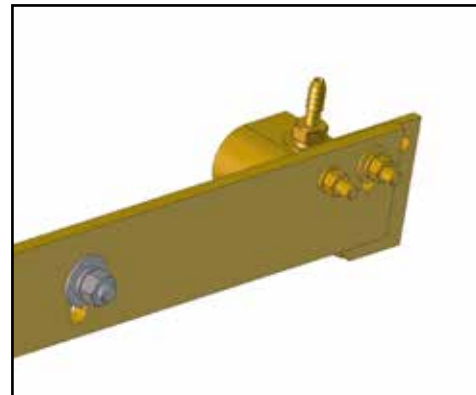
Rotate rear of nozzle mount down before securing.



BOM ID	Qty	Item No	Description
a	1	AM3627	NOZZLE MOUNT, JETSTREAM
b	2	BP3450	NUT, HEX, 3/8"-16, F594 GR 1 CW
c	2	BP3451	WASHER, LOCK, 3/8", 18-8 STAINLESS STEEL
d	2	BP3454	3/8"-16 X 1-1/2" HEX CAP SCREW, F593 GR 1 CW
e	1	BP3015	WASHER, FLAT, 3/8", PLATED

Jet Stream Mounting Bracket

- Mount (a) (AM3627) JetStream nozzle mount to JetStream mounting arm with two (d) (BP3454) 3/8" x 1-1/2" hex cap screws, F594 GR 1 CW. Secure each hex cap screws with (e) (BP3015) 3/8" flat washers, (c) (BP3451) 3/8" lock washers, 18-8 SS and (b) (BP3450) 3/8" hex nuts, F594 GR 1 CW.
- Push assembly down. Secure with (e) (BP3015) 3/8" flat washers, 7/8" OD, 18-8, (c) (BP3451) 3/8" lock washers 18-8 SS and (b) (BP3450) 3/8"-16 hex nuts F594 GR 1 CW.
- Cut lengths from bulk (CP2534) 3/8" PVC 250# psi hose as needed. Push hose over hose barb and secure with (CP2313).



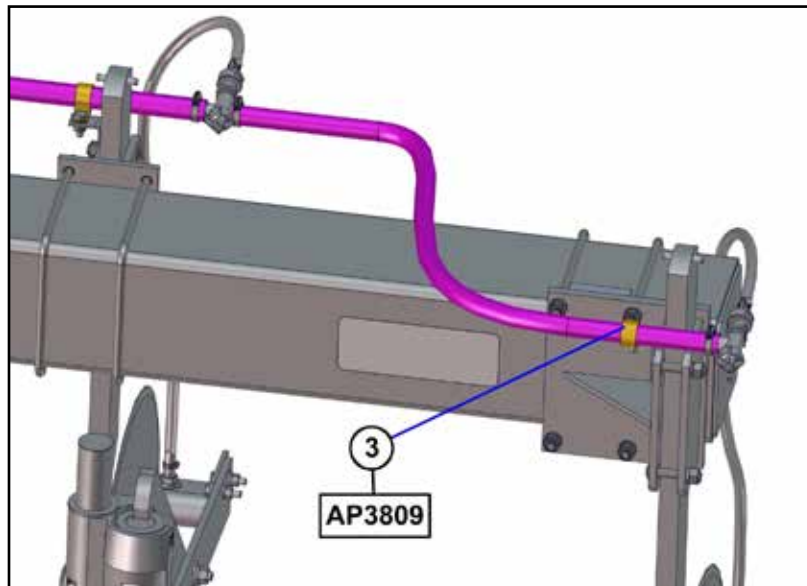
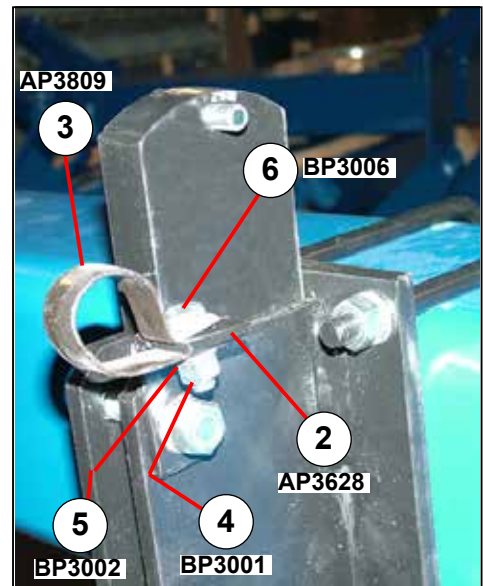
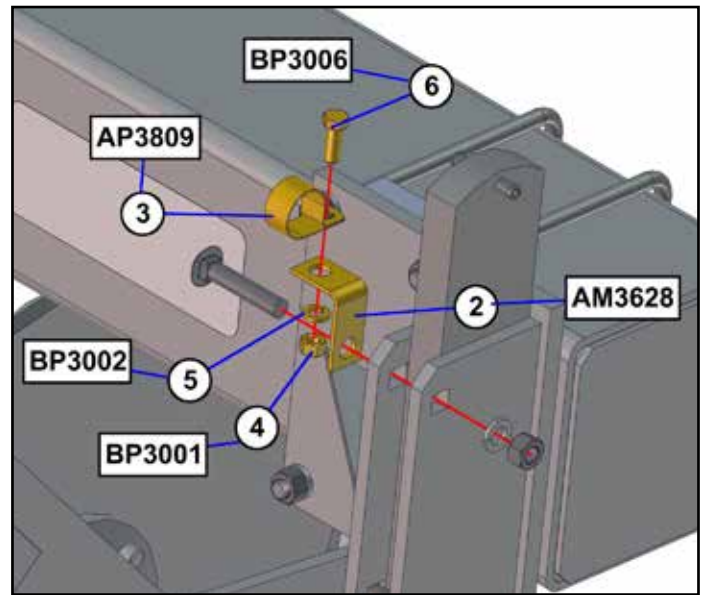
ASSEMBLY (44200111, TRUNK LINE)

Hose Supports

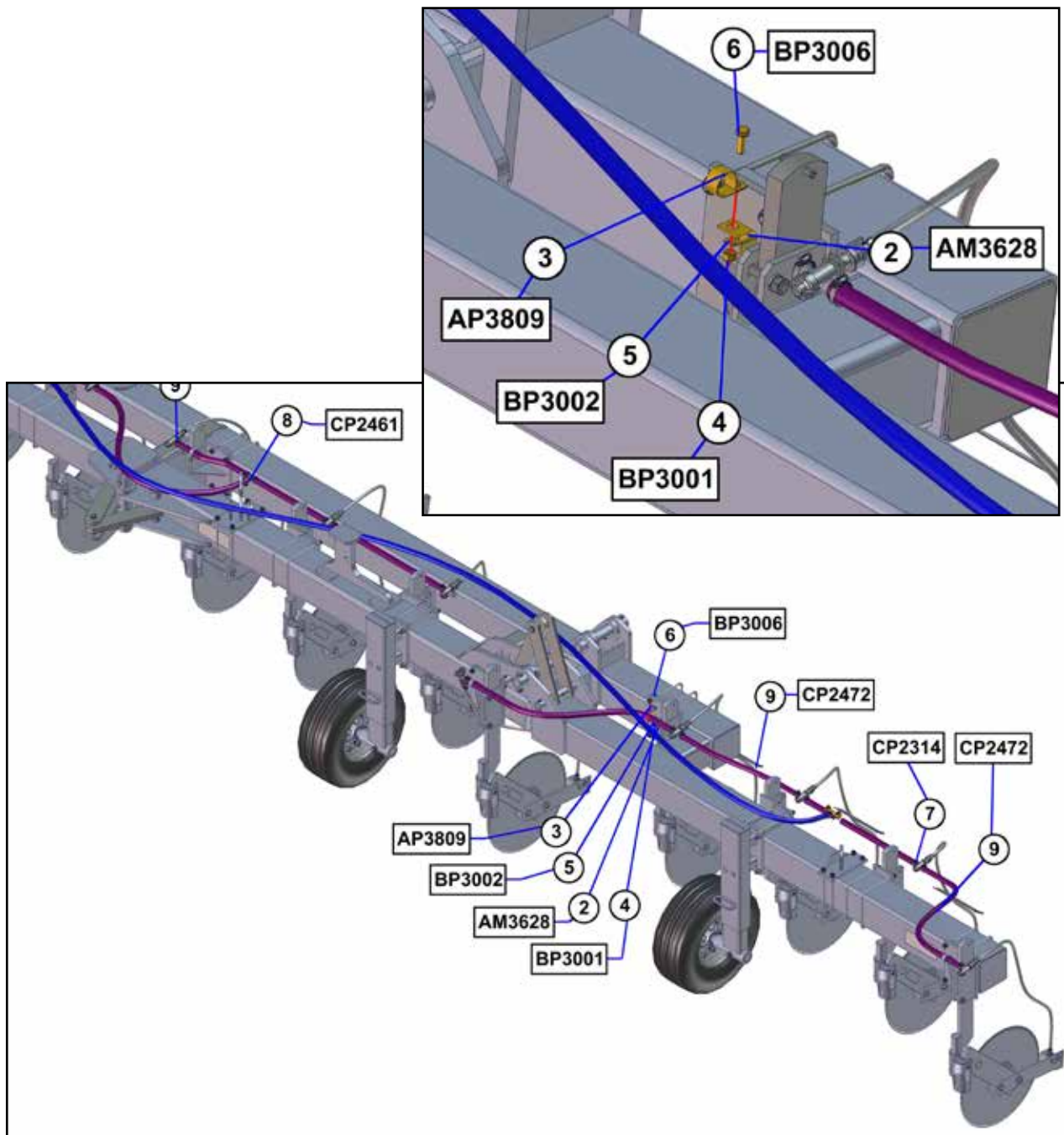
1. Remove 1/2" hex nuts and lock washers from top carriage bolt of each flatback. Install (2) (AM3628) liquid trunk line mounting bracket over carriage bolt. Replace 1/2" lock washer and hex nut.
2. Attach (3) (AP3809) 1-1/4" hose support clamp to (2) with (6) (BP3006) 3/8" x 1" hex cap screw, (5) (BP3002) 3/8" lock washer and (4) (BP3001) 3/8" hex nut.

NOTE:

Do not tighten hose clamps until hoses are inserted and adjusted.



ASSEMBLY (44200111, TRUNK LINE)



BOM ID	Qty	Item No	Description
		44200111	TRUNK LINES
2	24	AM3628	BRACKET, MOUNTING, LIQUID TRUNK LINE
3	25	AP3809	1-1/4" HOSE SUPPORT CLAMP, 3/8" BOLT
4	25	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
5	25	BP3002	WASHER, LOCK, 3/8", PLATED
6	25	BP3006	HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED
7	53	CP2314	HOSE CLAMP, WORM GEAR, 1/2" - 1" TUBING, STAINLESS STEEL
8	3	CP2461	TEE, 3/4"HB-3/4"HB-3/4"HB, POLY TT9121212PP
9	23	CP2472	HOSE, EPDM RUBBER, 3/4", 200#

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

Check Valve Installation

1. Work hose down toolbar frame through hose retainers and hose support clamps.

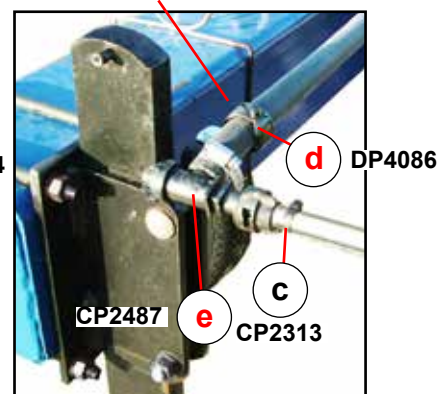
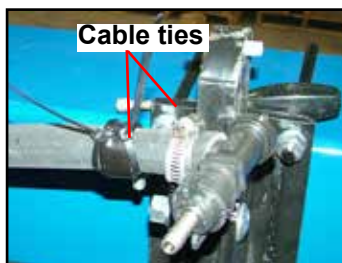
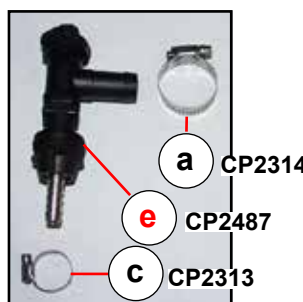
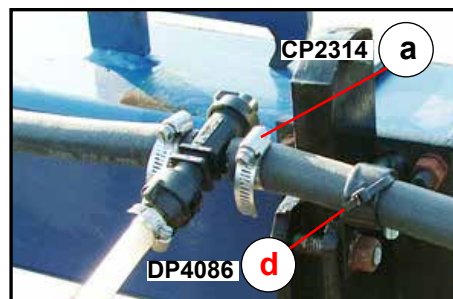
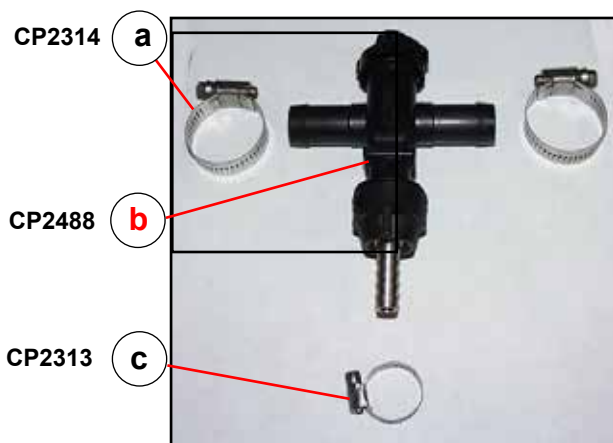
NOTE:

Allow extra hose in hinge areas to avoid kinking of hoses.

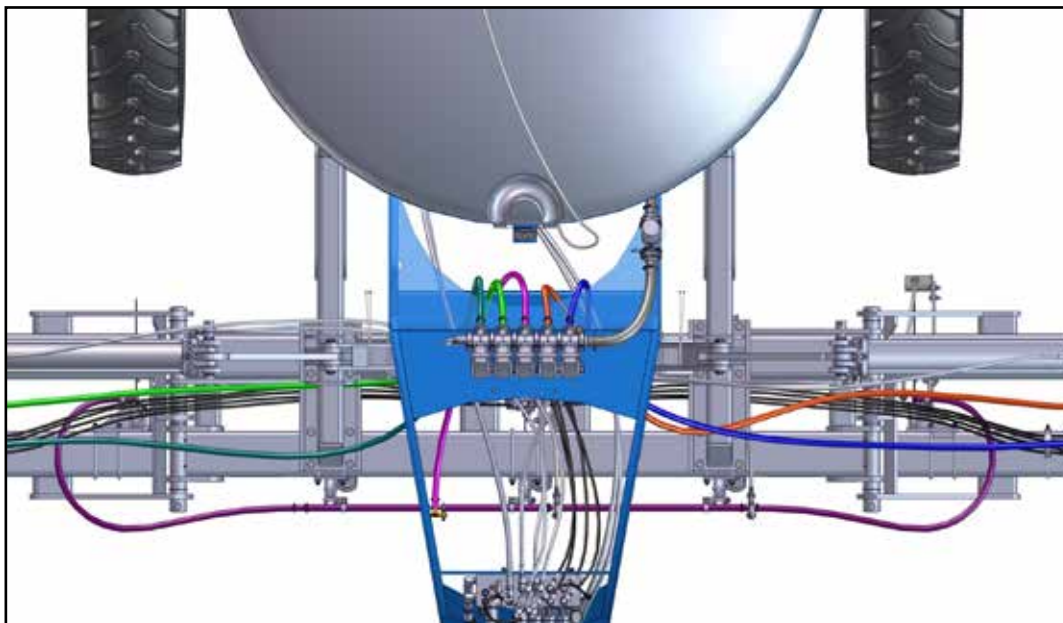
NOTE:

Start with the end row. Complete end row assembly. Secure row with cable ties. Pull hose to next row and cut hose.

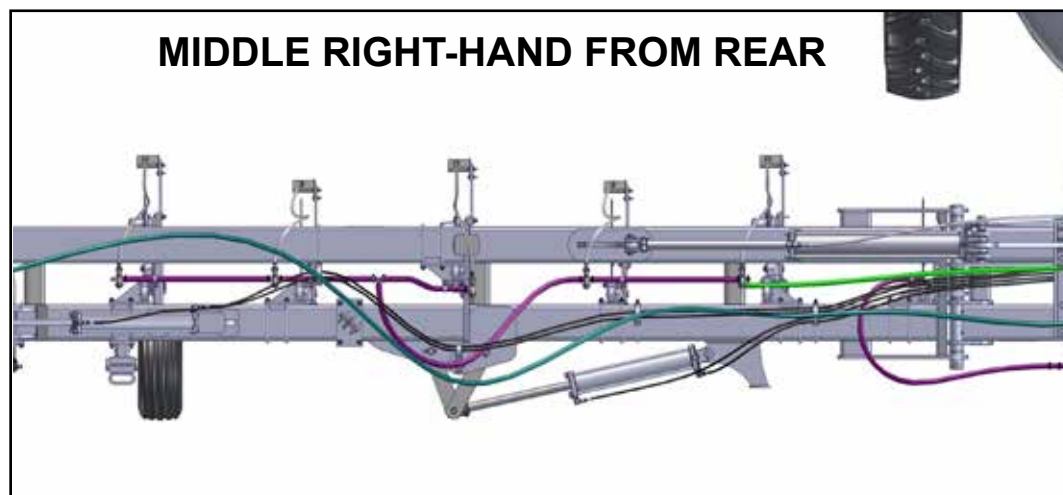
2. Cut 3/4" hose at **each row**. Place (a) (CP2314) 1/2" - 1" worm gear hose clamp over each end of the 3/4" hose. Insert (b) (CP2488) diaphragm check valve, double shank 3/4" hose into each end of the 3/4" hose. Secure with worm gear hose clamps.
3. Secure 3/4" hose to row (AP3809) 1-1/4" hose support clamp with (d) (DP4086) 11-3/8" cable ties.
4. Trim hose on **last row** and place (a) (CP2314) 1/2" - 1" worm gear hose clamp over end of the 3/4" hose. Install (e) (CP2487) diaphragm check valve single shank, 3/4" hose. Secure with worm gear clamp and (d) (DP4086) 11-3/8" cable ties.
5. Attach (CP2534) 3/8" PVC 250# psi hose to check valve assembly with (c) (CP2313) stainless steel hose clamp 1/4"-5/8".



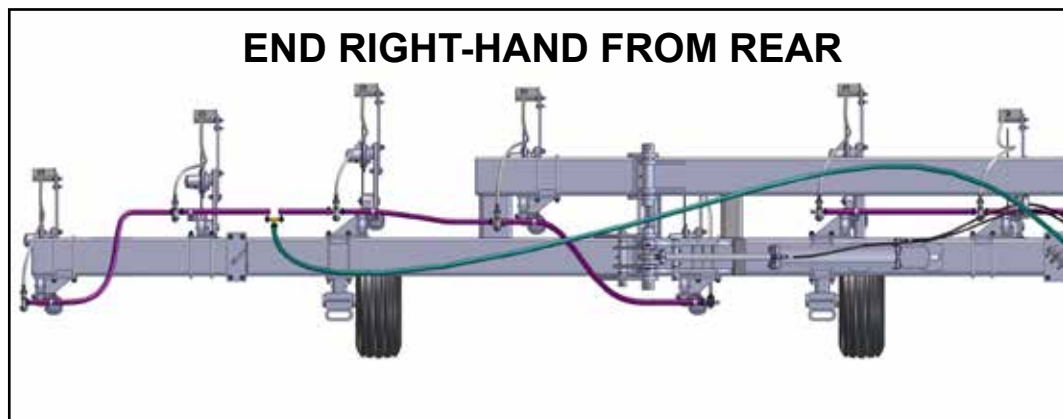
ASSEMBLY (44200111, TRUNK LINE)



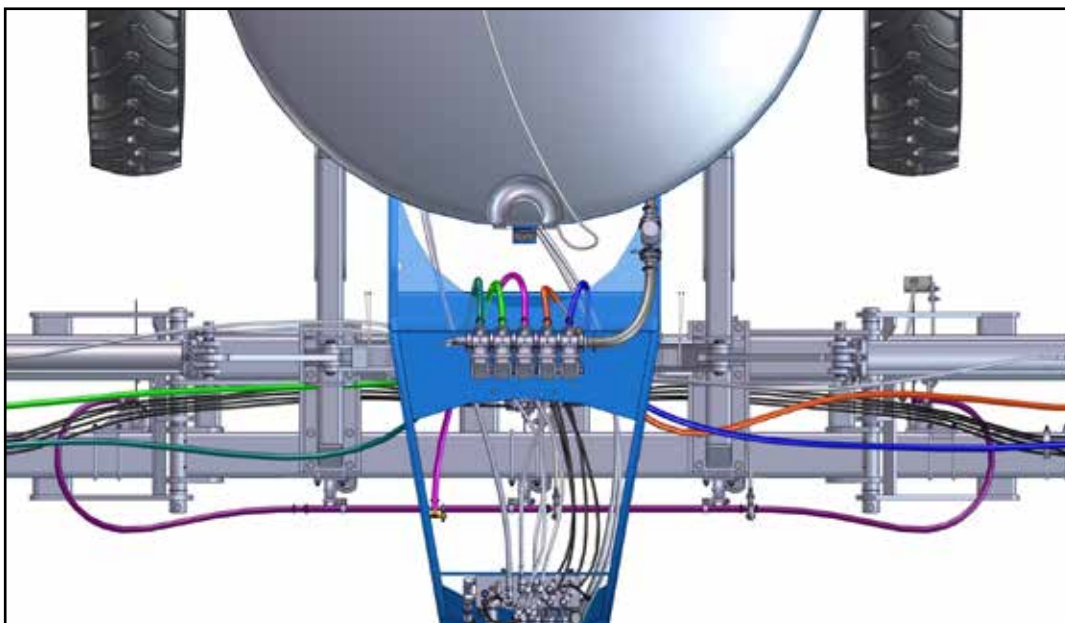
MIDDLE RIGHT-HAND FROM REAR



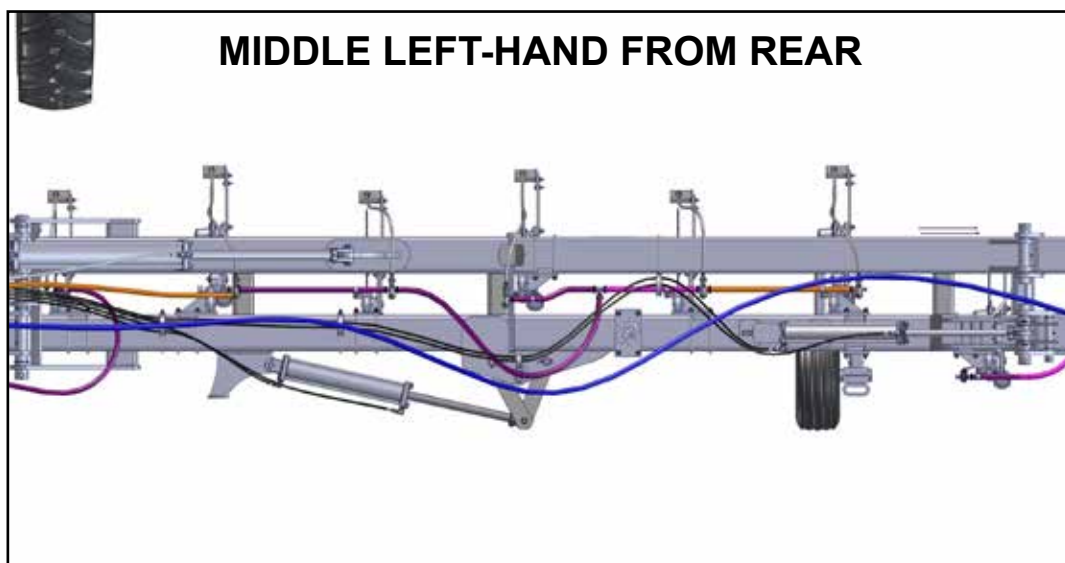
END RIGHT-HAND FROM REAR



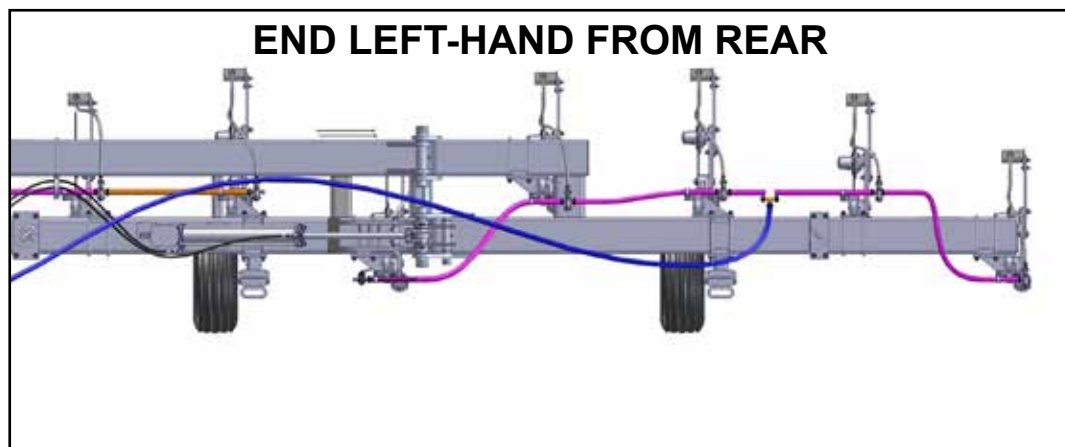
ASSEMBLY (44200111, TRUNK LINE)



MIDDLE LEFT-HAND FROM REAR



END LEFT-HAND FROM REAR

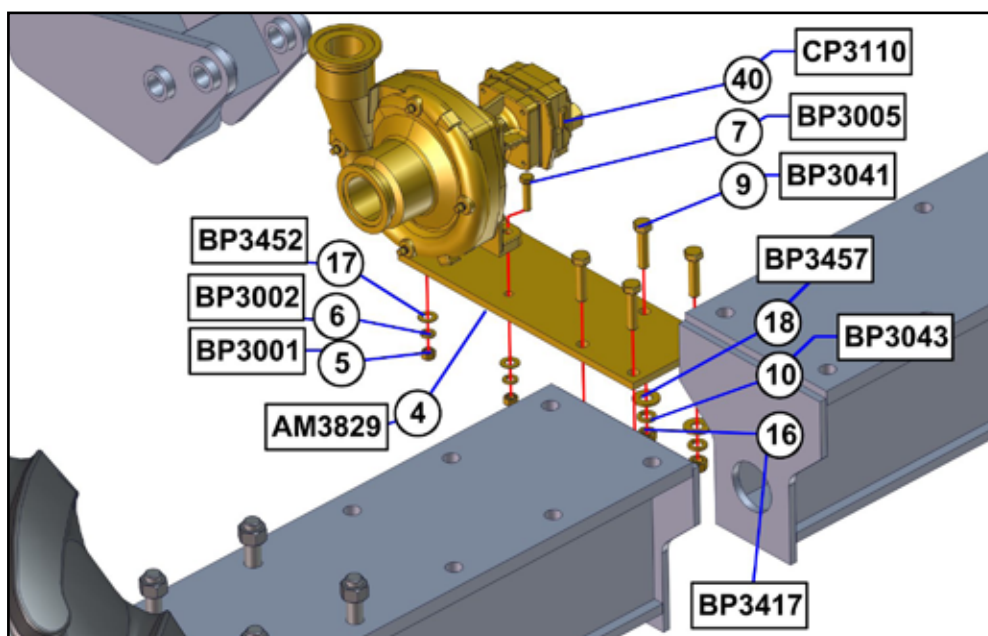


ASSEMBLY (44200107, CENTRIFUGAL PUMP PACKAGE)

BOM ID	Qty	Item No	Description
1	1	44200107	CENT PUMP PACKAGE, AT4020, 5 SECTION
2	2	AM3576	BRACKET, MOUNTING, VALVES & FLOWMETER
3	2	AM3827	BENT FLAT
4	1	AM3829	FLAT WITH HOLES
5	4	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
6	4	BP3002	WASHER, LOCK, 3/8", PLATED
7	2	BP3005	HEX CAP SCREW, 3/8"-16 X 1-1/2", GRADE 5, PLATED
8	2	BP3006	HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED
9	4	BP3041	HEX CAP SCREW, 1/2"-13 X 2", GRADE 5, PLATED
10	4	BP3043	WASHER, LOCK, 1/2", PLATED
11	2	BP3108	HEX CAP SCREW, 5/16"-18 X 1, GRADE 5, PLATED
12	2	BP3157	NUT, HEX, 5/16"-18, GRADE 2, PLATED
13	2	BP3158	WASHER, LOCK, 5/16", PLATED
14	2	BP3159	WASHER, FLAT, 5/16", PLATED
15	4	BP3233	HEX CAP SCREW, 1/4"-20 X 3/4", GRADE 2, PLATED
16	4	BP3417	NUT, HEX, 1/2"-13, GRADE 5, PLATED
17	2	BP3452	WASHER, FLAT, 3/8", 7/8" OD, 18-8 STAINLESS STEEL
18	4	BP3457	WASHER, FLAT, 1/2", 1-1/4" OD, 18-8 STAINLESS STEEL
19	1	CP1999	GAUGE PROTECTOR, PIGTAIL
20	15	CP2044	CLAMP, 2" WORM SCREW, FLANGE
21	15	CP2045	GASKET, EPDM, 2" FLANGE, 3/4" BULKHEAD, 150G
22	2	CP2047	TEE, 2" FLANGE
23	1	CP2050	STRAINER, 2" FLANGE, LINE
24	4	CP2053	ELBOW, 90 DEGREE, 2" FLANGE
25	1	CP2055	STRAINER SCREEN, 30 MESH, LS230
26	1	CP2056	HOSE BARB, 2" FLANGE X 2" HOSE
27	5	CP2077	HOSE BARB, 1" MP X 3/4" HOSE, POLY
28	6	CP2078	HOSE BARB, 2" FLANGE X 1-1/4" HOSE
29	1	CP2081	ADAPTER, 1-1/4" MPT X 2" FLANGE
30	16	CP2314	HOSE CLAMP, WORM GEAR, 1/2" - 1" TUBING, STAINLESS STEEL
31	6	CP2316	HOSE CLAMP, WORM GEAR, 1-1/4" - 2" TUBING, STAINLESS STEEL
32	2	CP2333	HOSE CLAMP, WORM GEAR, 2-1/2" - 3" TUBING, STAINLESS STEEL
33	1	CP2408	HOSE CLAMP, WORM GEAR, 2" - 2-1/2" TUBING, STAINLESS STEEL
34	3	CP2461	TEE, 3/4"HB-3"HB-3/4"HB, POLY TT9121212PP
35	6	CP2472	HOSE, EPDM RUBBER, 3/4", 200#
36	1	CP2524	GAUGE, 0-160 PSI, GLYCERIN FILLED
37	3	CP2572	HOSE 1.25" DIAMETER.
38	2	CP2577	HOSE BARB, 3/4"MP X 3/4"HB, POLY
39	2	CP2676	FLANGE PLUG 2" MANIFOLD X 3/4" FP, MF32PL-12
40	1	CP3110	PUMP, CENTRIFUGAL, <76 GPM, HYDRAULIC DRIVE 11-13 GPM
41	1	CP3142	FLOWMETER, RAVEN (1-60GPM) 1-063-0171-793
42	1	CP3143	VALVE, REGULATING, 1-1/2" FPT RAVEN
43	1	CP3144	VALVE, RELIEF 3/4" SPRAY SYSTEMS 23120-PP
44	1	CP3145	VALVE, MANIFOLD SHUTOFF
45	1	DP4000	REDUCER BUSHING, 12MP-8FP, 5406-12-8
46	1	DP4012	STREET ELBOW, 4MP-4FP, 90 DEGREE
47	1	DP4016	ADAPTER, 10MJ-8MP, 90 DEGREE
48	1	DP4029	ADAPTER, 10MJ-8MP
49	2	DP4383	COUPLER, PIONEER, 8MQBA-8FSAE
50	2	DP4392	ADAPTER, 8MSAE-10MJIC, STRAIGHT, 6400-10-8
51	1	DP4418	ELBOW, 90 DEGREE, 10MJIC-10FJX, 6500-10
52	2	DP5277	HOSE, HYDRAULIC, 5/8" X 240"

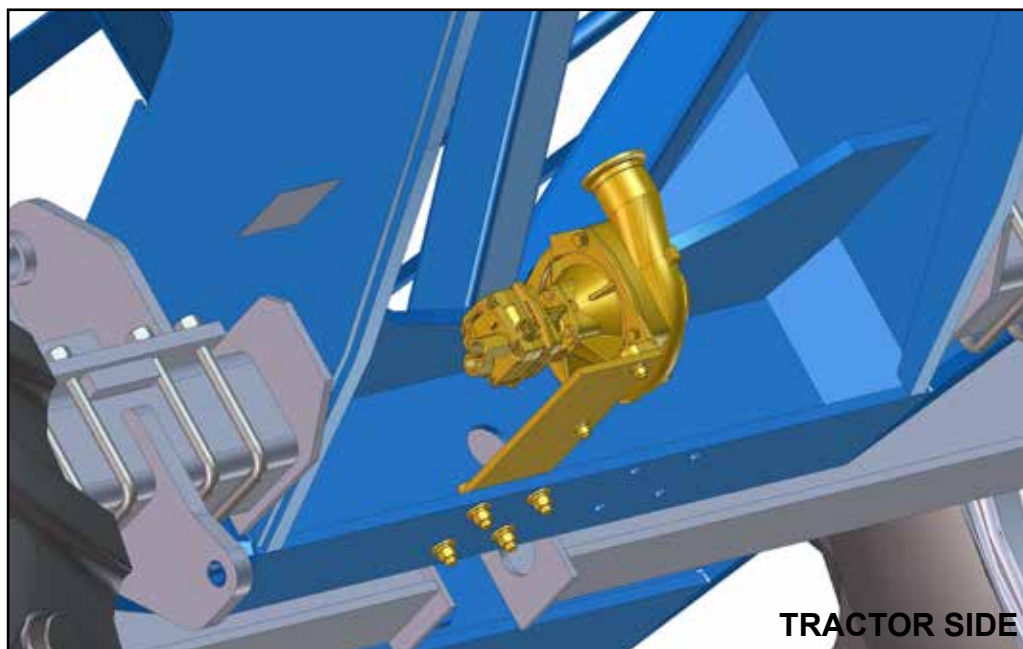
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (44200107, CENTRIFUGAL PUMP PACKAGE)

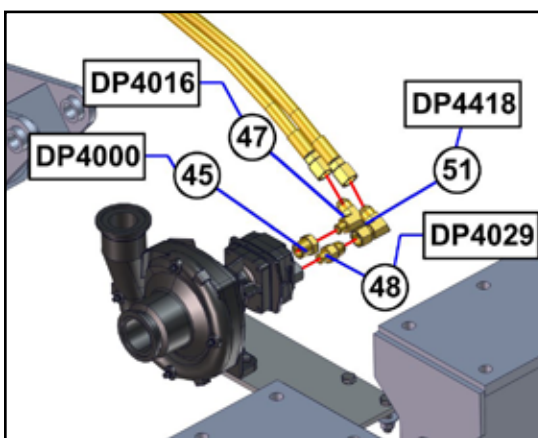
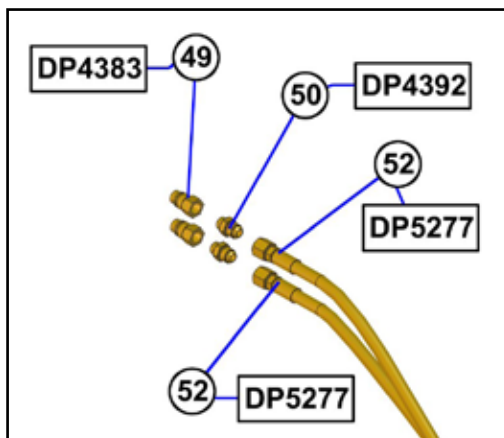
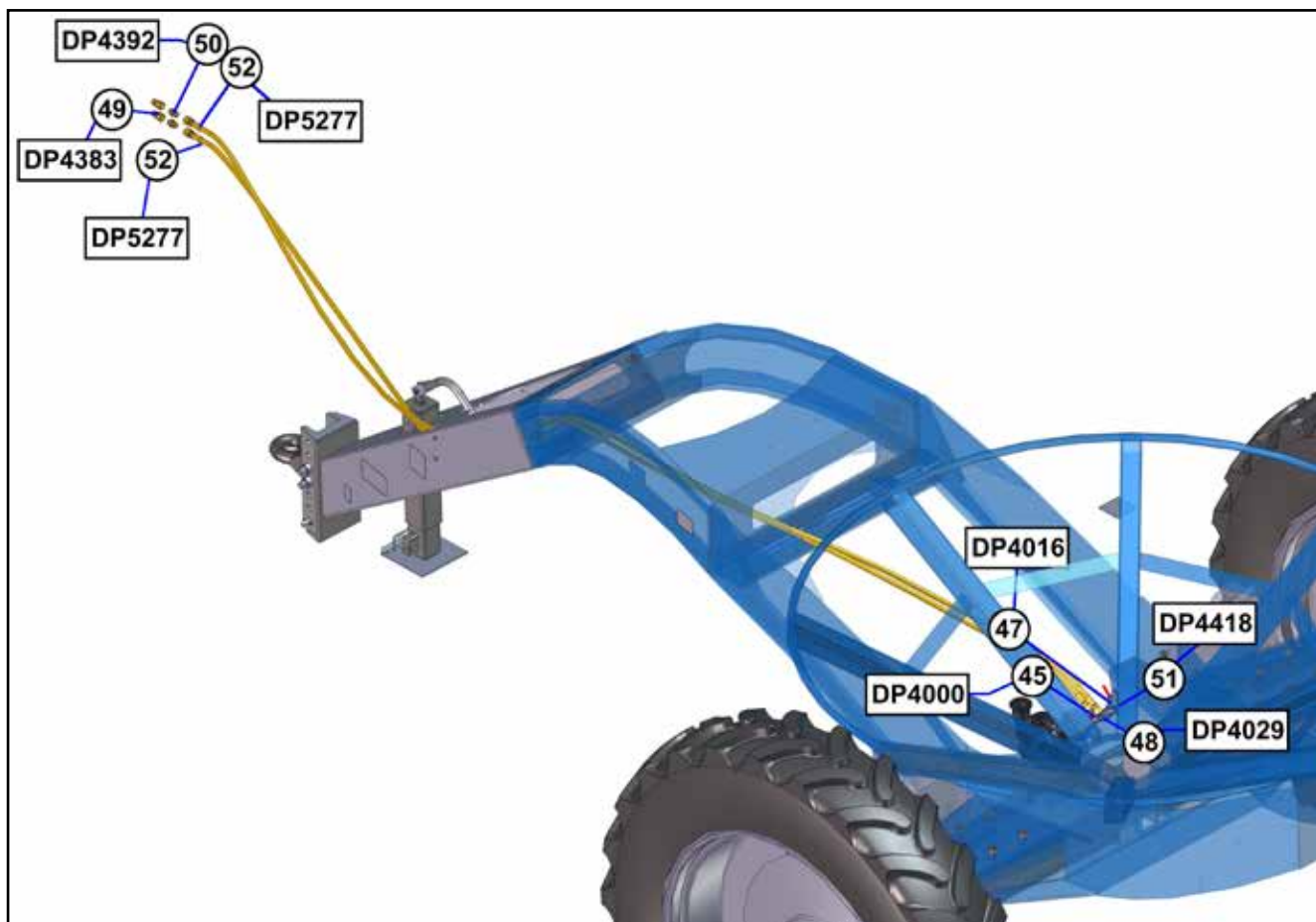


BOM ID	Qty	Item No	Description
4	1	AM3829	FLAT WITH HOLES
5	4	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
6	4	BP3002	WASHER, LOCK, 3/8", PLATED
7	2	BP3005	HEX CAP SCREW, 3/8"-16 X 1-1/2", GRADE 5, PLATED
9	4	BP3041	HEX CAP SCREW, 1/2"-13 X 2", GRADE 5, PLATED
10	4	BP3043	WASHER, LOCK, 1/2", PLATED
16	4	BP3417	NUT, HEX, 1/2"-13, GRADE 5, PLATED
17	2	BP3452	WASHER, FLAT, 3/8", 7/8" OD, 18-8 STAINLESS STEEL
18	4	BP3457	WASHER, FLAT, 1/2", 1-1/4" OD, 18-8 STAINLESS STEEL
40	1	CP3110	PUMP, CENTRIFUGAL, <76 GPM, HYDRALIC DRIVE 11-13 GPM

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY



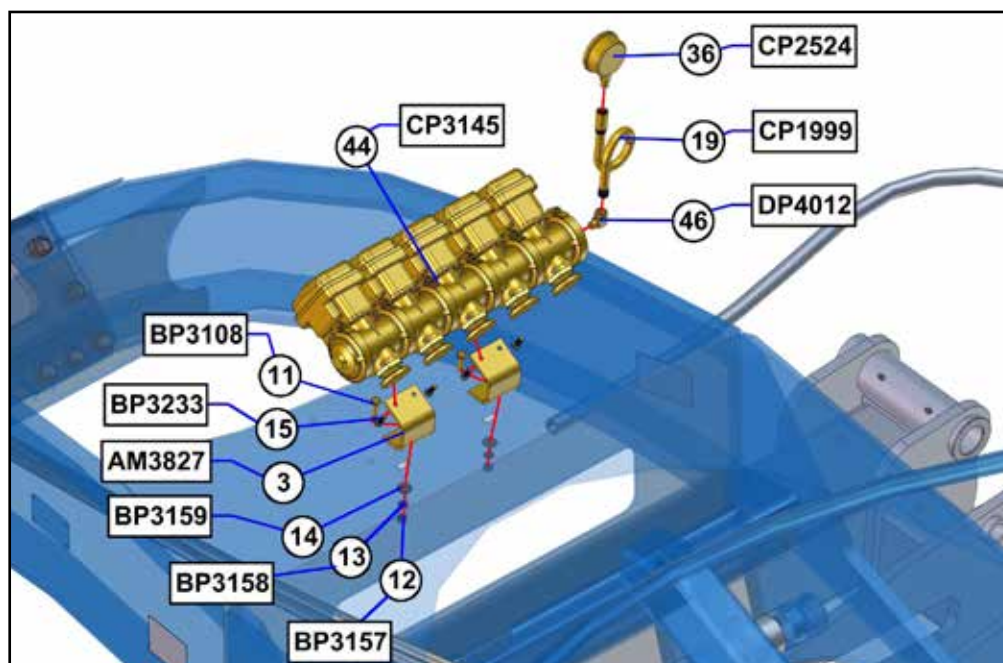
TRACTOR SIDE



BOM ID	Qty	Item No	Description
45	1	DP4000	REDUCER BUSHING, 12MP-8FP, 5406-12-8
47	1	DP4016	ADAPTER, 10MJ-8MP, 90 DEGREE
48	1	DP4029	ADAPTER, 10MJ-8MP
49	2	DP4383	COUPLER, PIONEER, 8MQBA-8FSAE
50	2	DP4392	ADAPTER, 8MSAE-10MJIC, STRAIGHT, 6400-10-8
51	1	DP4418	ELBOW, 90 DEGREE, 10MJIC-10FJX, 6500-10
52	2	DP5277	HOSE, HYDRAULIC, 5/8" X 240"

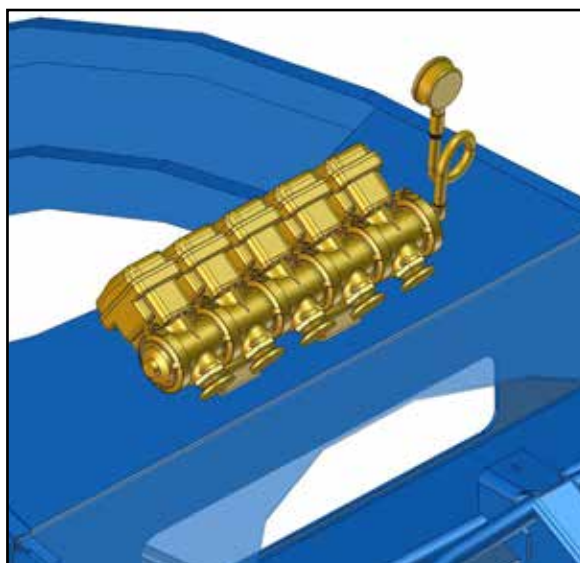
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (44200107, CENTRIFUGAL PUMP PACKAGE)

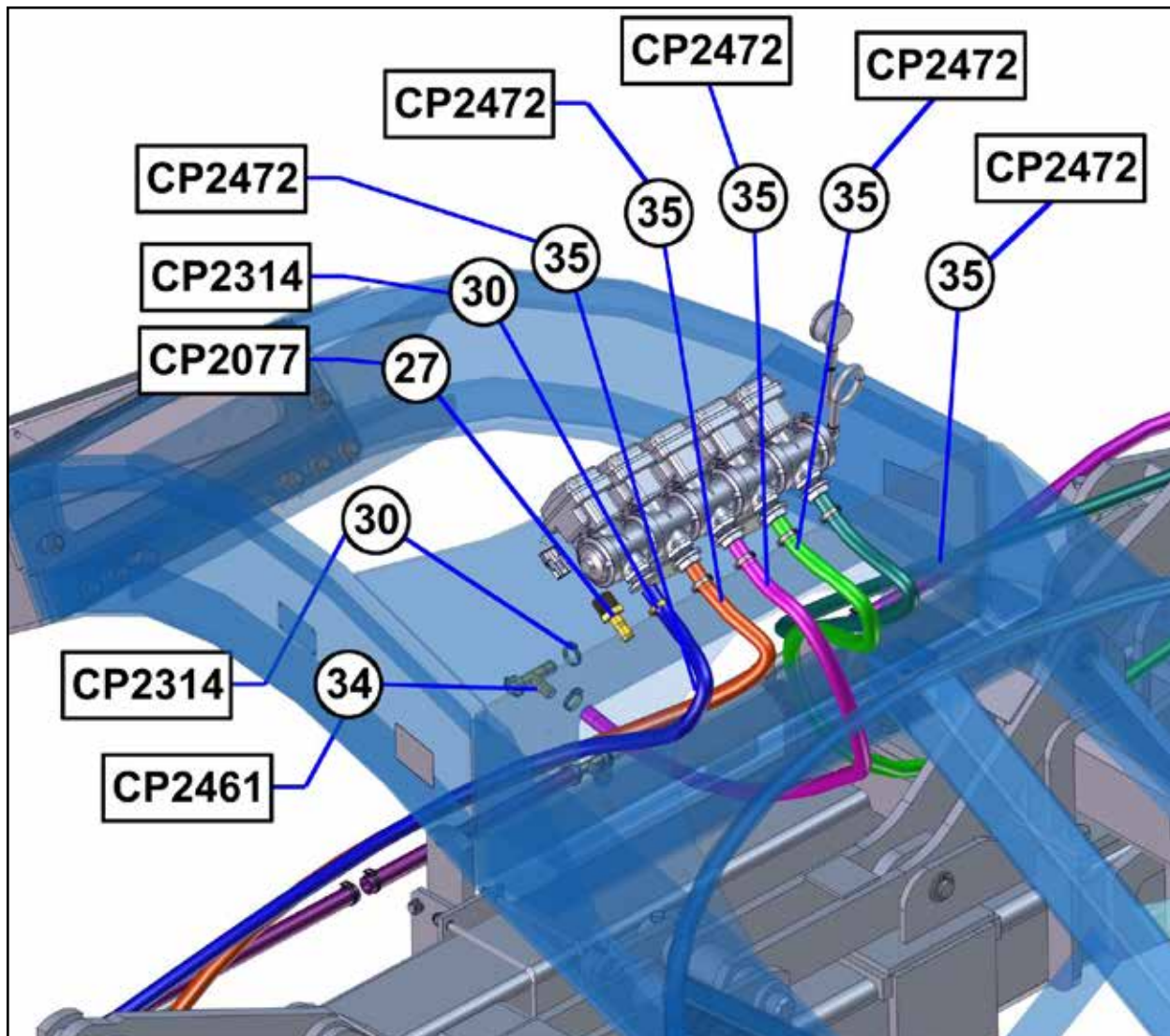


BOM ID	Qty	Item No	Description
3	2	AM3827	BENT FLAT
11	2	BP3108	HEX CAP SCREW, 5/16"-18 X 1", GRADE 5, PLATED
12	2	BP3157	NUT, HEX, 5/16"-18, GRADE 2, PLATED
13	2	BP3158	WASHER, LOCK, 5/16", PLATED
14	2	BP3159	WASHER, FLAT, 5/16", PLATED
15	4	BP3233	HEX CAP SCREW, 1/4"-20 X 3/4", GRADE 2, PLATED
19	1	CP1999	GAUGE PROTECTOR, PIGTAIL
36	1	CP2524	GAUGE, 0-160 PSI, GLYCERIN FILLED
44	1	CP3145	VALVE, MANIFOLD SHUTOFF
46	1	DP4012	STREET ELBOW, 4MP-4FP, 90 DEGREE

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

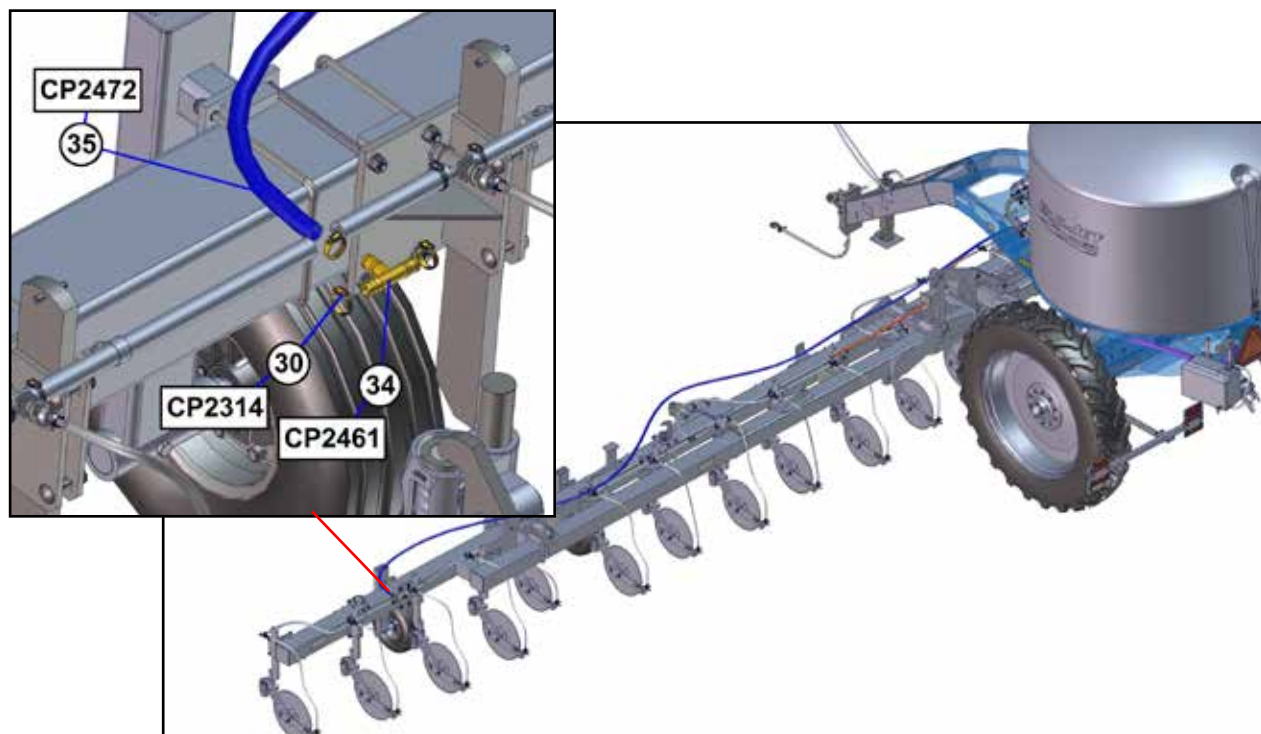
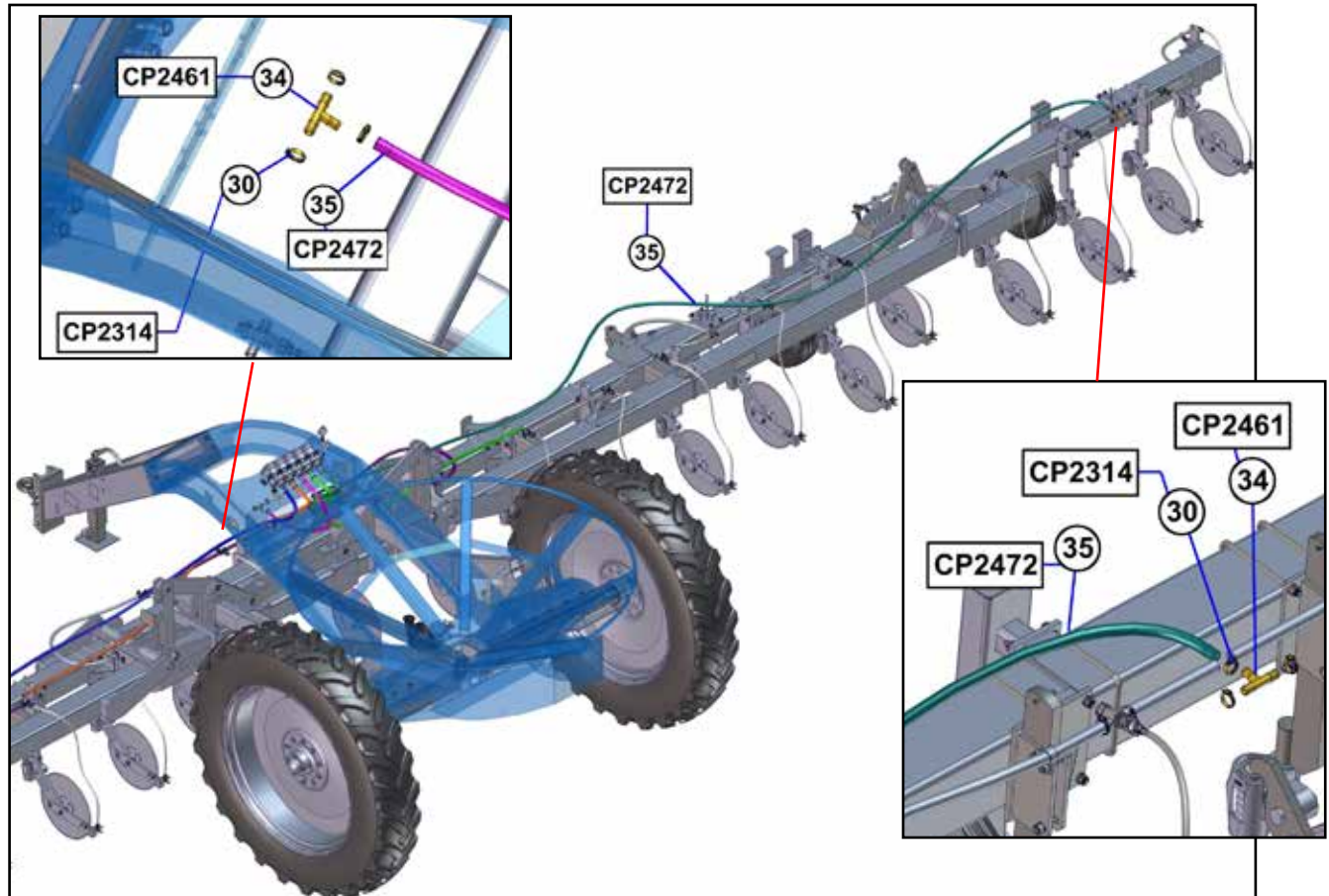


1. Tape threads of (46) (DP4012), 4MP-4FP, 90 degree street elbow install in side port of (44) (CP3145). Tape threads of (19) (CP1999) gauge protector and install in street elbow. Pour oil into pigtail and tape threads of (36) (CP2524) 160# Glycerin filled gauge. Install in top port of pigtail.

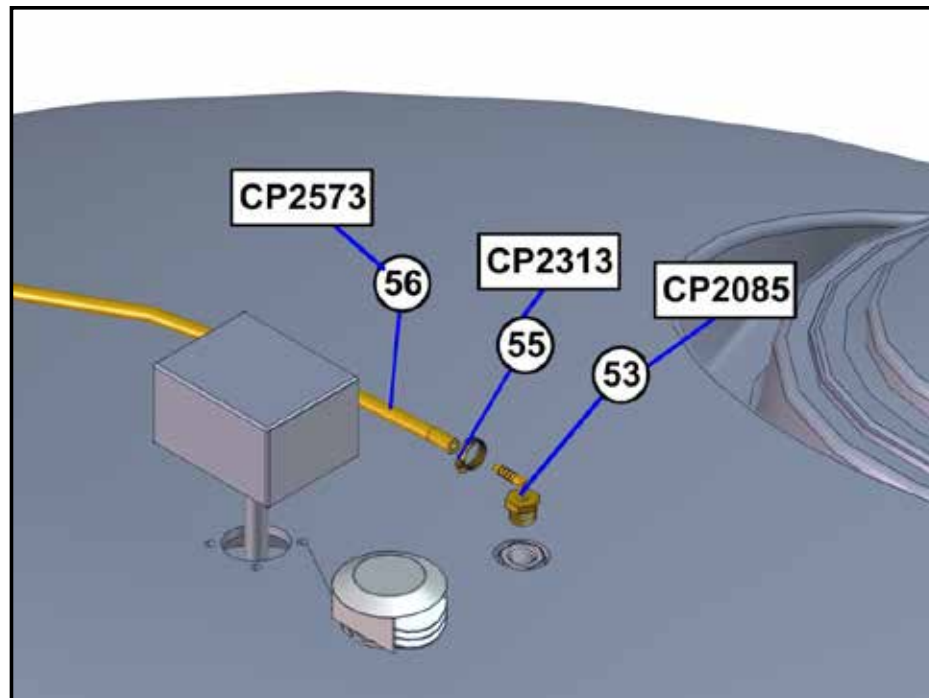


BOM ID	Qty	Item No	Description
27	5	CP2077	HOSE BARB, 1" MP X 3/4" HOSE, POLY
30	16	CP2314	HOSE CLAMP, WORM GEAR, 1/2" - 1" TUBING, STAINLESS STEEL
34	3	CP2461	TEE, 3/4" HB-3/4" HB-3/4" HB, POLY TT9121212PP
35	6	CP2472	HOSE, EPDM RUBBER, 3/4", 200#

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

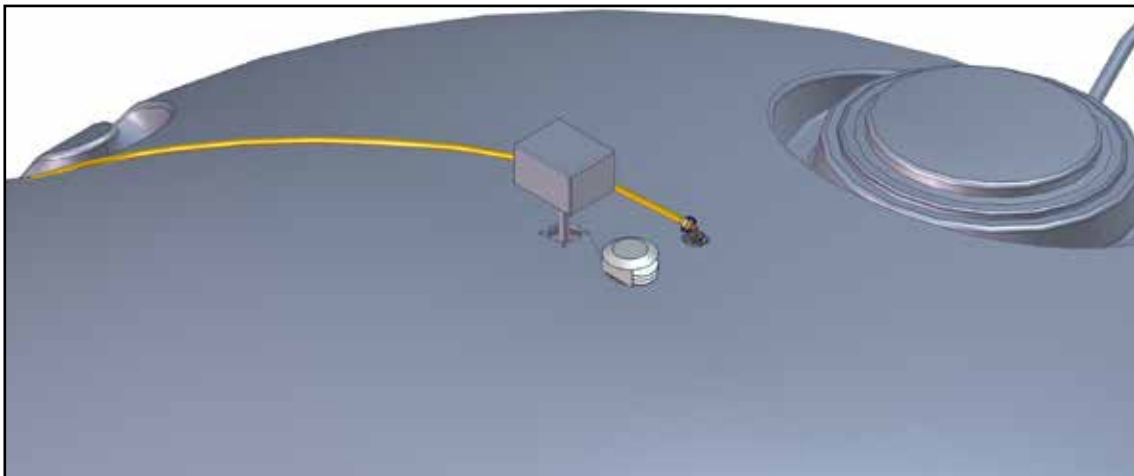


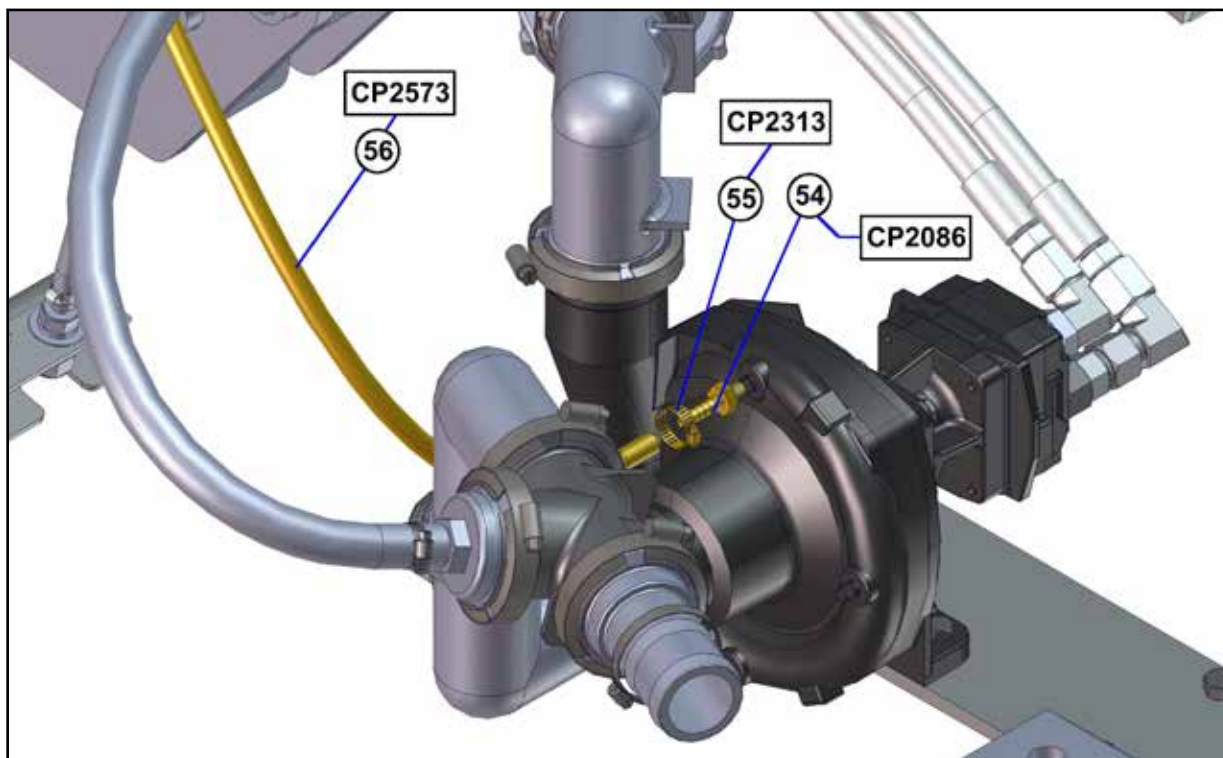
BOM ID	Qty	Item No	Description
30	16	CP2314	HOSE CLAMP, WORM GEAR, 1/2" - 1" TUBING, STAINLESS STEEL
34	3	CP2461	TEE, 3/4"HB-3/4"HB-3/4"HB, POLY TT9121212PP
35	6	CP2472	HOSE, EPDM RUBBER, 3/4", 200#



BOM ID	Qty	Item No	Description
53	1	CP2085	ELBOW, 90°, 1/2" MP X 1/4" HB, POLY
55	2	CP2313	HOSE CLAMP, WORM GEAR, 1/4" - 5/8" TUBING, STAINLESS STEEL
56	1	CP2573	HOSE, EVA, 1/4" REINFORCED, BULK, 250#

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

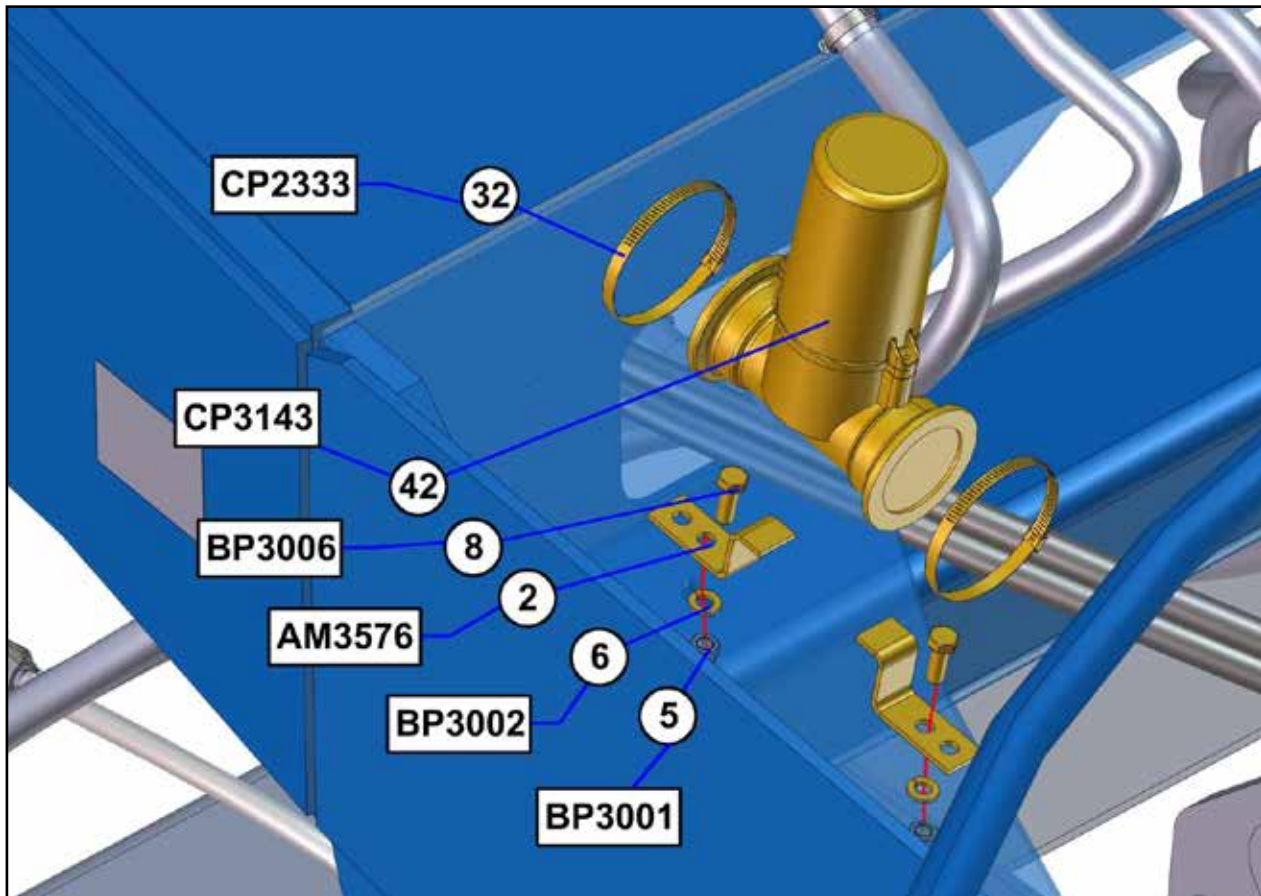




BOM ID	Qty	Item No	Description
54	1	CP2086	HOSE BARB, 1/8"MP X 1/4"HOSE, POLY
55	2	CP2313	HOSE CLAMP, WORM GEAR, 1/4" - 5/8" TUBING, STAINLESS STEEL
56	1	CP2573	HOSE, EVA, 1/4" REINFORCED, BULK, 250#

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

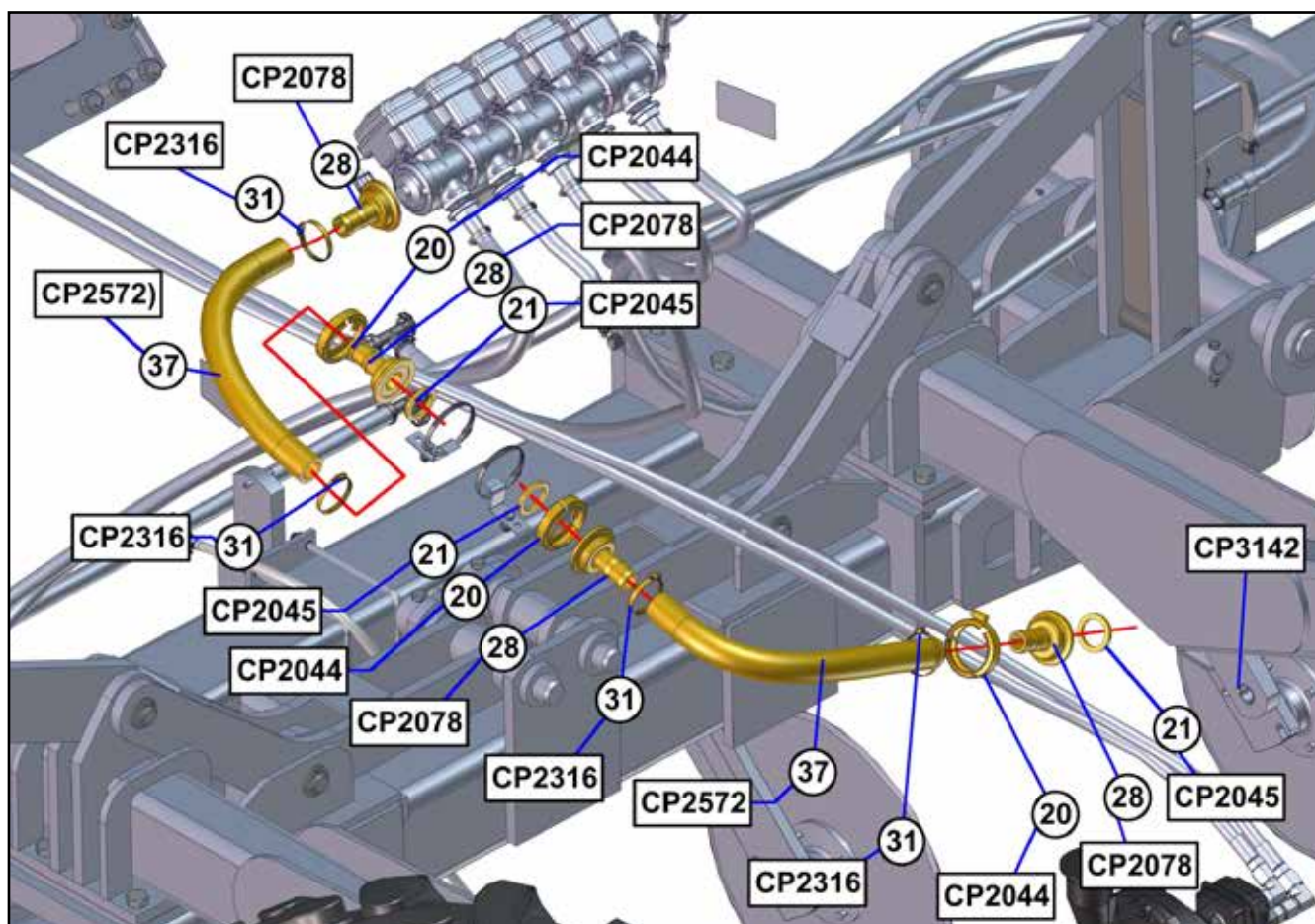




BOM ID	Qty	Item No	Description
2	2	AM3576	BRACKET, MOUNTING, VALVES & FLOWMETER
5	4	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
6	4	BP3002	WASHER, LOCK, 3/8", PLATED
8	2	BP3006	HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED
32	2	CP2333	HOSE CLAMP, WORM GEAR, 2-1/2" - 3" TUBING, STAINLESS STEEL
42	1	CP3143	VALVE, REGULATING, 1-1/2FPT RAVEN

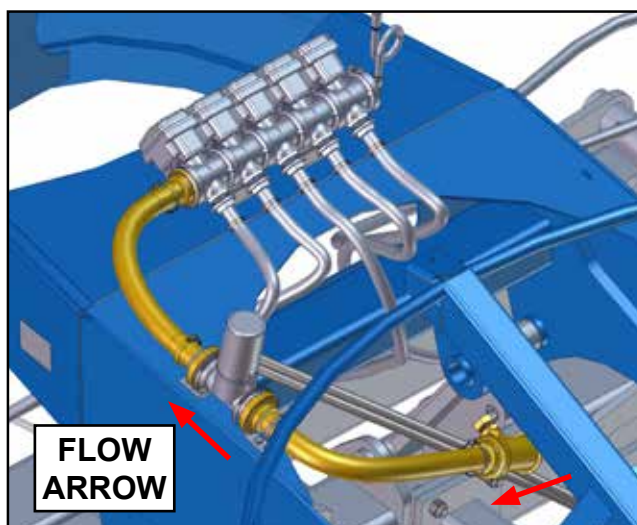
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY



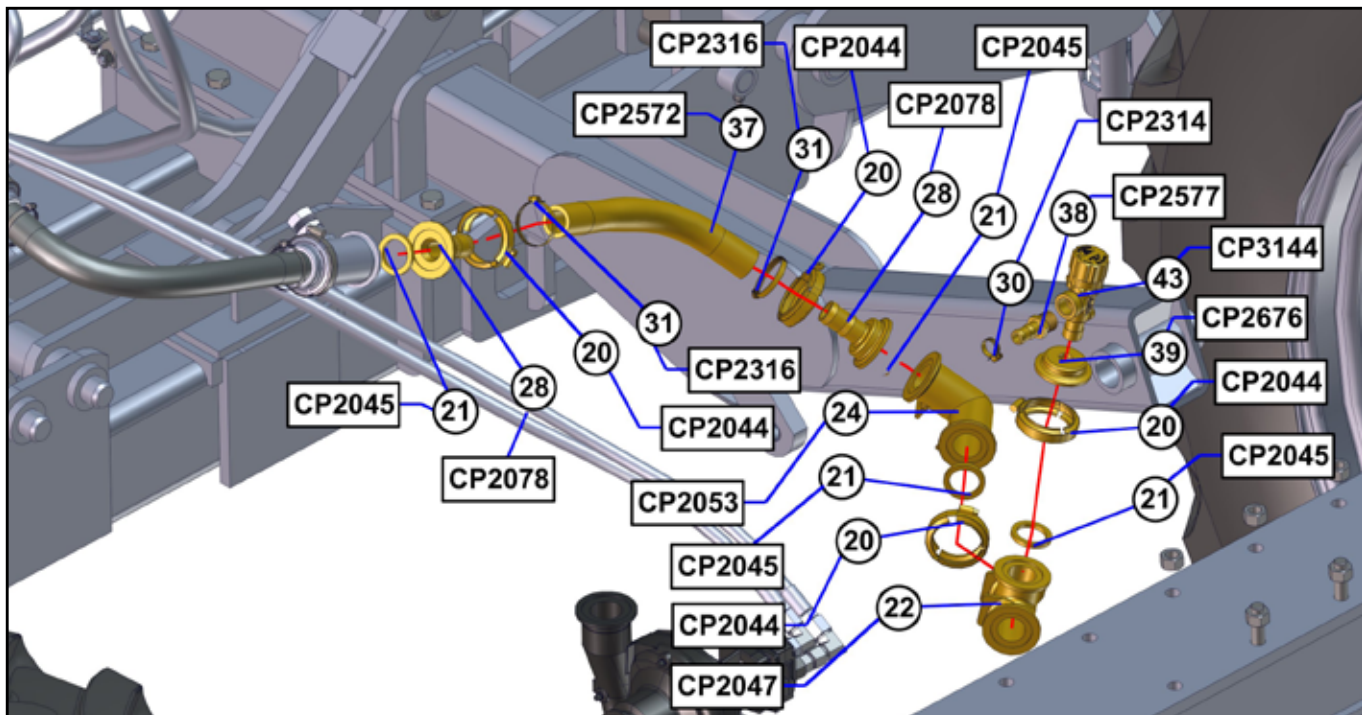


BOM ID	Qty	Item No	Description
20	15	CP2044	CLAMP, 2" WORM SCREW, FLANGE
21	15	CP2045	GASKET, EPDM, 2 FLANGE, 3/4 BULKHEAD, 150G
28	6	CP2078	HOSE BARB, 2 FLANGE X 1-1/4 HOSE
31	6	CP2316	HOSE CLAMP, WORM GEAR, 1-1/4" - 2" TUBING, STAINLESS STEEL
37	3	CP2572	HOSE 1.25" DIAMETER.
41	1	CP3142	FLOWMETER, RAVEN (1-60GPM) 1-063-0171-793

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

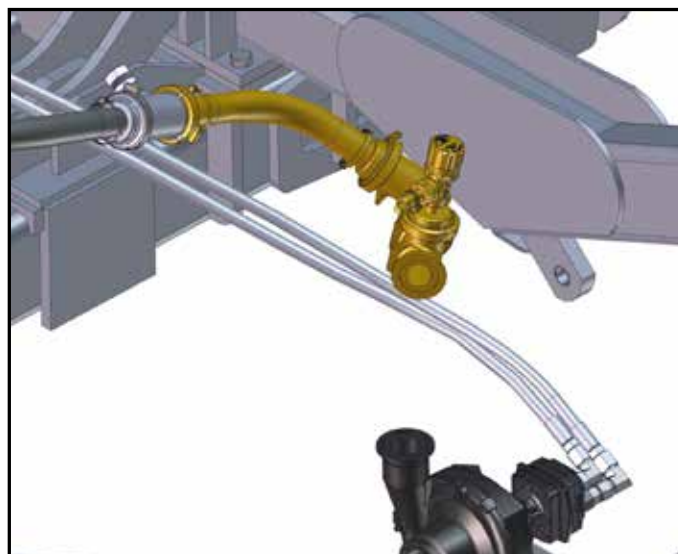


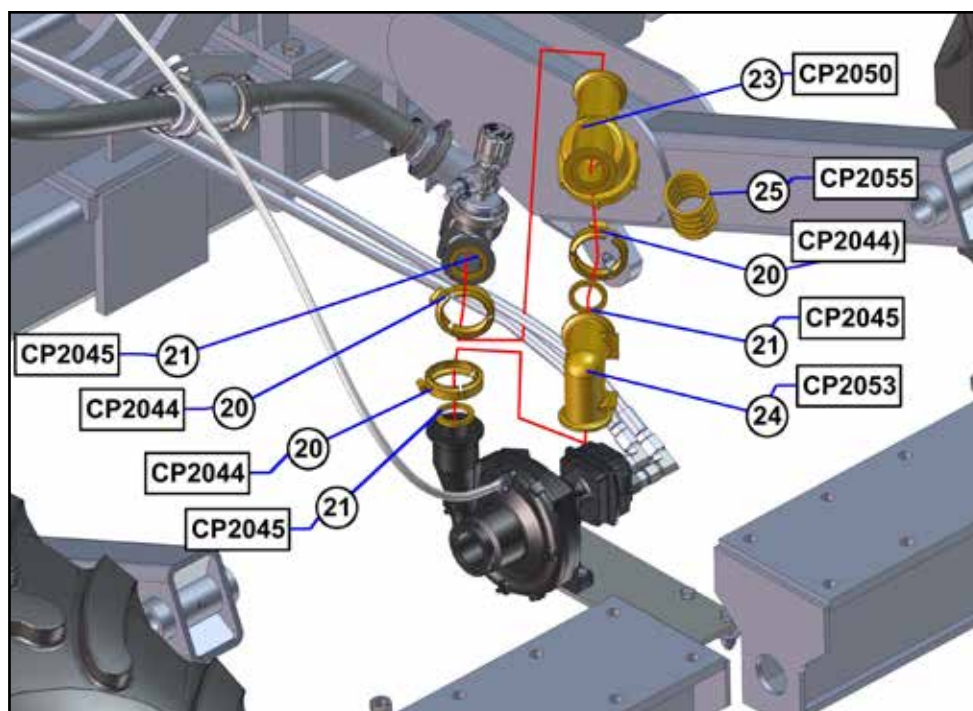
**FLOW
ARROW**



BOM ID	Qty	Item No	Description
20	15	CP2044	CLAMP, 2" WORM SCREW, FLANGE
21	15	CP2045	GASKET, EPDM, 2 FLANGE, 3/4 BULKHEAD, 150G
22	2	CP2047	TEE, 2" FLANGE
24	4	CP2053	ELBOW, 90 DEGREE, 2" FLANGE
28	6	CP2078	HOSE BARB, 2 FLANGE X 1-1/4 HOSE
30	16	CP2314	HOSE CLAMP, WORM GEAR, 1/2" - 1" TUBING, STAINLESS STEEL
31	6	CP2316	HOSE CLAMP, WORM GEAR, 1-1/4" - 2" TUBING, STAINLESS STEEL
37	3	CP2572	HOSE 1.25" DIAMETER.
38	2	CP2577	HOSE BARB, 3/4"MP X 3/4" HOSE BARB, POLY
39	2	CP2676	FLANGE PLUG 2" MANIFOLD X 3/4" FP, MF32PL-12
43	1	CP3144	VALVE, RELIEF 3/4 SPRAY SYSTEMS 23120-PP

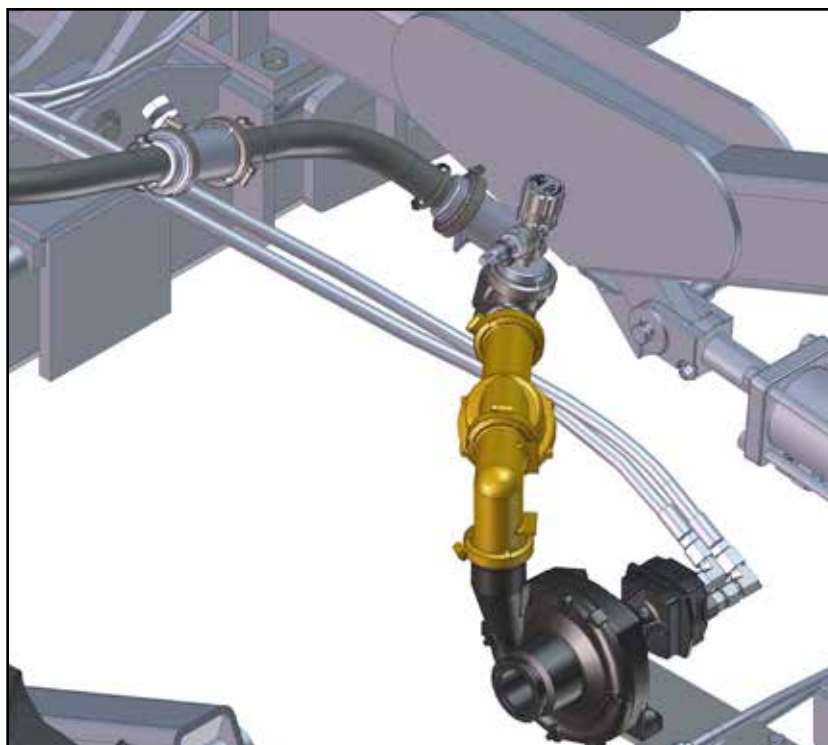
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

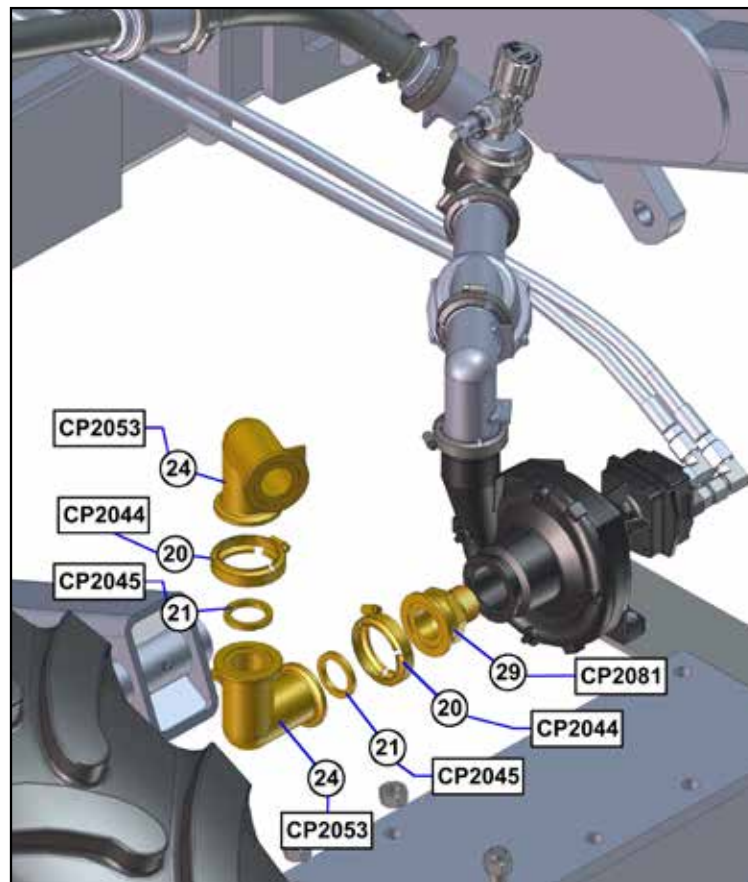




BOM ID	Qty	Item No	Description
20	15	CP2044	CLAMP, 2" WORM SCREW, FLANGE
21	15	CP2045	GASKET, EPDM, 2 FLANGE, 3/4 BULKHEAD, 150G
23	1	CP2050	STRAINER, 2" FLANGE, LINE
24	4	CP2053	ELBOW, 90*, 2" FLANGE
25	1	CP2055	STRAINER SCREEN, 30 MESH, LS230

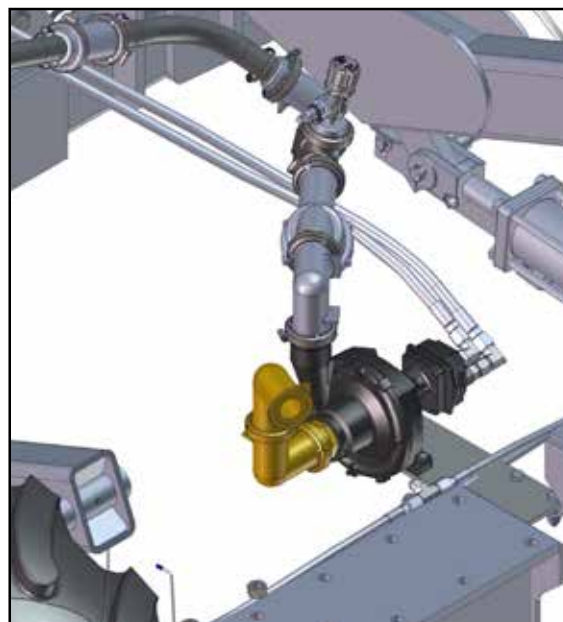
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

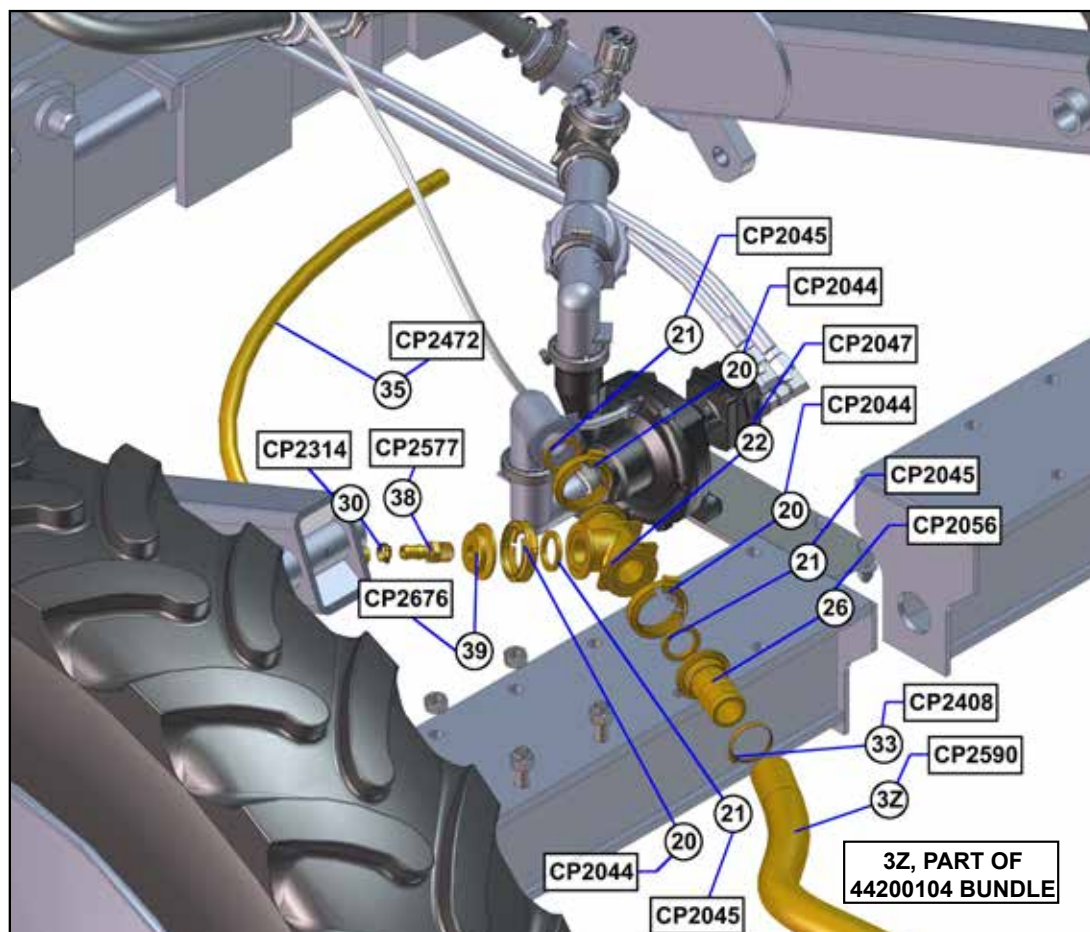




BOM ID	Qty	Item No	Description
20	15	CP2044	CLAMP, 2" WORM SCREW, FLANGE
21	15	CP2045	GASKET, EPDM, 2 FLANGE, 3/4 BULKHEAD, 150G
24	4	CP2053	ELBOW, 90°, 2" FLANGE
29	1	CP2081	ADAPTER, 1-1/4" MPT X 2" FLANGE

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY





BOM ID	Qty	Item No	Description
20	15	CP2044	CLAMP, 2" WORM SCREW, FLANGE
21	15	CP2045	GASKET, EPDM, 2" FLANGE, 3/4" BULKHEAD, 150G
22	2	CP2047	TEE, 2 FLANGE
26	1	CP2056	HOSE BARB, 2" FLANGE X 2" HOSE
30	16	CP2314	HOSE CLAMP, WORM GEAR, 1/2" - 1" TUBING, STAINLESS STEEL
33	1	CP2408	HOSE CLAMP, WORM GEAR, 2" - 2-1/2" TUBING, STAINLESS STEEL
35	6	CP2472	HOSE, EPDM RUBBER, 3/4", 200#
38	2	CP2577	HOSE BARB, 3/4"MP X 3/4"HB, POLY
39	2	CP2676	FLANGE PLUG 2" MANIFOLD X 3/4" FP, MF32PL-12

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

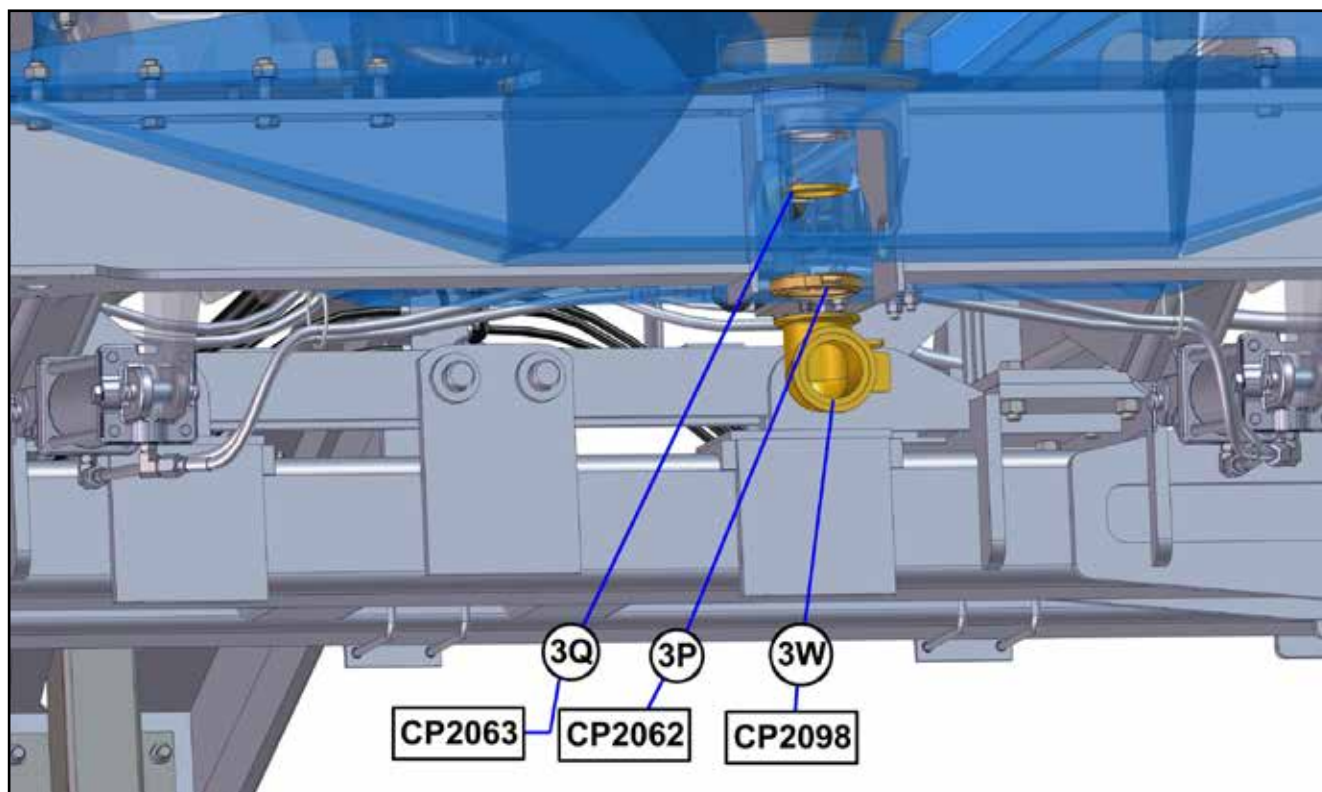


ASSEMBLY (BOTTOM FILL PLUMBING)

BOM ID	Qty	Item No	Description
3	1	44200104	BOTTOM FILL PLUMBING KIT, AT4020, 3" FILL
3A	1	AM3819	BOTTOM FILL PLATE
3AA	2	CP2591	HOSE CLAMP, WORM GEAR, 3" TUBING, STAINLESS STEEL
3AB	7	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK
3B	2	AM3820	BRACKET, SLOTTED
3C	4	BP3005	HEX CAP SCREW, 3/8"-16 X 1-1/2", GRADE 5, PLATED
3D	3	BP3006	HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED
3E	7	BP3015	WASHER, FLAT, 3/8", PLATED
3F	4	BP3299	HEX CAP SCREW, 3/8"-16 X 5-1/2", GRADE 5, PLATED
3G	2	BP3401	HEX CAP SCREW, 3/8"-16 X 4-1/2", GRADE 5, PLATED
3H	3	CP2044	CLAMP, 2" WORM SCREW, FLANGE
3I	3	CP2045	GASKET, EPDM, 2" FLANGE, 3/4" BULKHEAD, 150G
3J	1	CP2049	VALVE, BALL, 2" - 1-1/2" PORT
3K	1	CP2056	HOSE BARB, 2" FLANGE X 2" HOSE
3L	2	CP2057	ELBOW, 90°, 2" FLANGE X 2" HOSE BARB
3M	1	CP2058	TEE, 3" FLANGE
3N	1	CP2059	REDUCER, 3" FLANGE X 2" FLANGE, STANDARD PORT
3O	2	CP2060	HOSE BARB, 3" FLANGE X 3" HOSE
3P	8	CP2062	CLAMP, 3" WORM SCREW, FLANGE
3Q	8	CP2063	GASKET, EPDM, 3 FLANGE, 300G
3R	1	CP2064	VALVE, BALL, 3" FLANGE X 3" MALE ADAPTER
3S	1	CP2068	CAP, 3" 300 CAP
3T	1	CP2074	ELBOW, 45 DEGREE, 3" FLANGE X 3" FLANGE, POLY
3U	1	CP2076	VALVE BALL, 3" FLANGE POLY
3V	1	CP2097	MANIFOLD BOTTOM DRAIN FITTING, 3" FLANGE, MBF300BD
3W	2	CP2098	ELBOW, 90 DEGREE, 3" FLANGE X 3" FLANGE, POLY, SM300CPG90
3X	3	CP2408	HOSE CLAMP, WORM GEAR, 2" - 2-1/2" TUBING, STAINLESS STEEL
3Y	1	CP2574	HOSE, EPDM RUBBER, REINFORCED, 85#
3Z	1	CP2590	HOSE, EPDM RUBBER, 2", REINFORCED, 100#

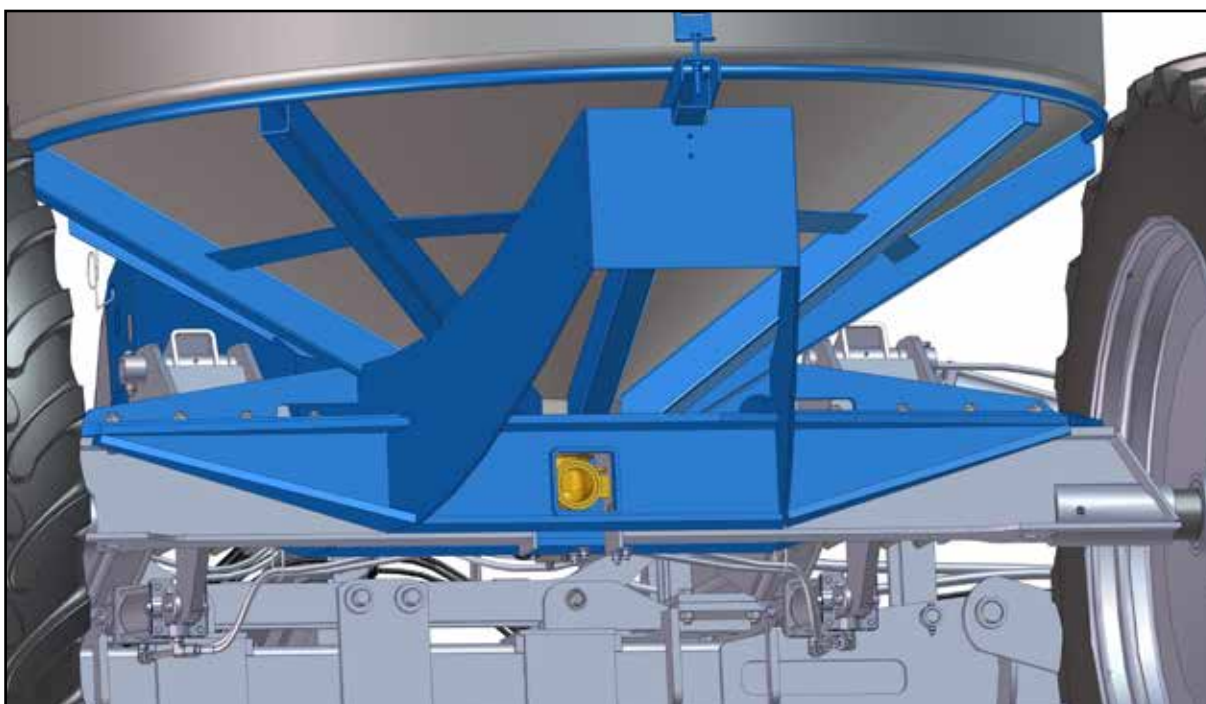
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (BOTTOM FILL PLUMBING)

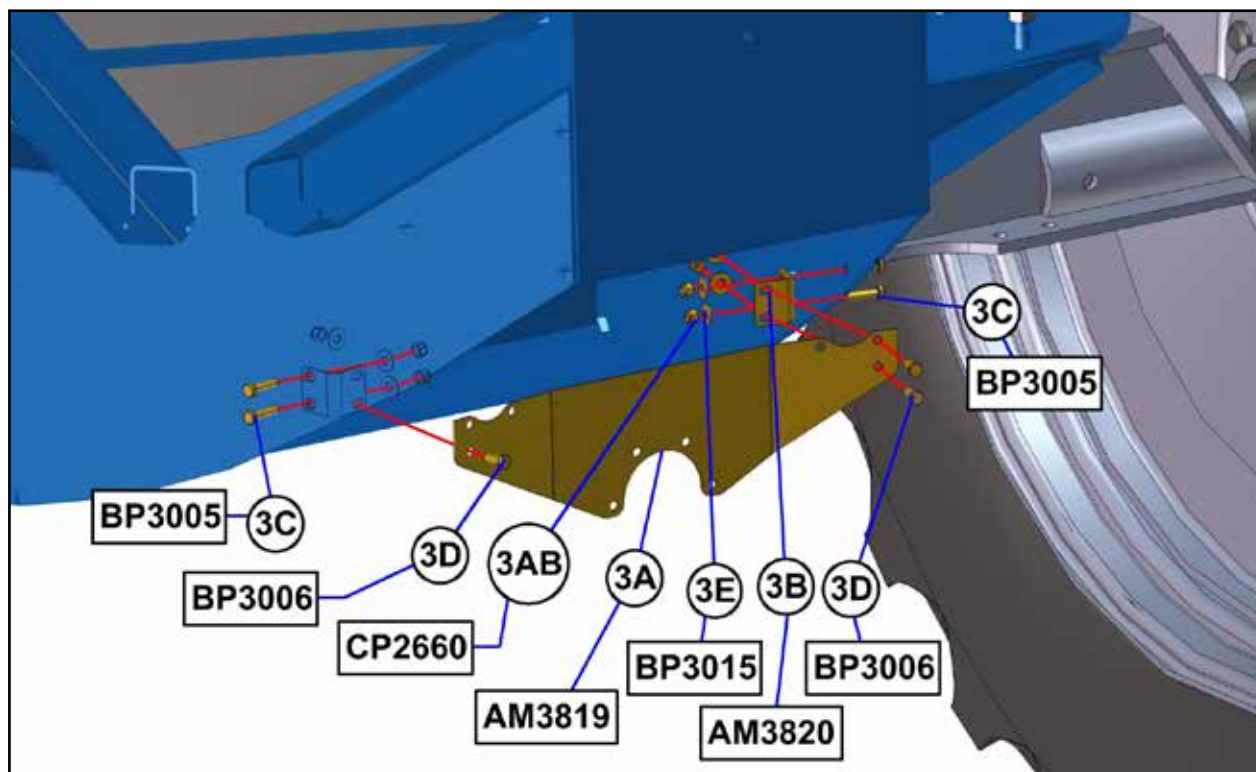


BOM ID	Qty	Item No	Description
3P	8	CP2062	CLAMP, 3" WORM SCREW, FLANGE
3Q	8	CP2063	GASKET, EPDM, 3 FLANGE, 300G
3W	2	CP2098	ELBOW, 90°, 3" FLANGE X 3" FLANGE, POLY, SM300CPG90

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

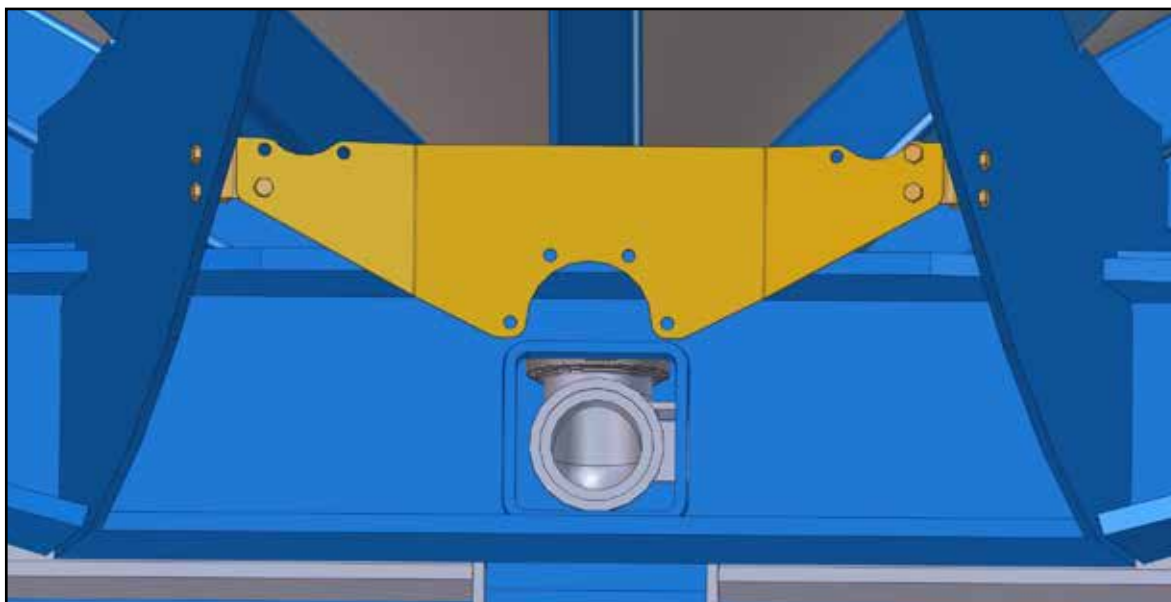


ASSEMBLY (BOTTOM FILL PLUMBING)

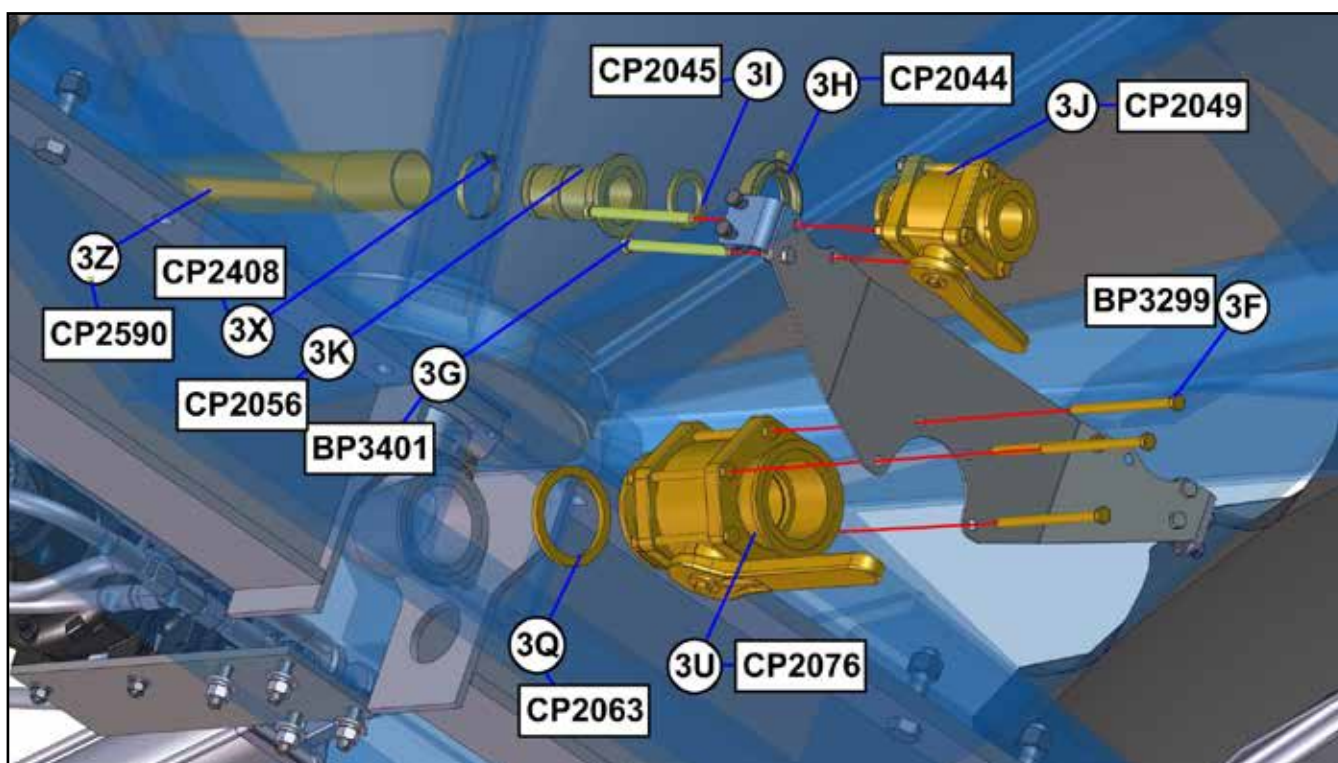


BOM ID	Qty	Item No	Description
3A	1	AM3819	BOTTOM FILL PLATE
3AB	7	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK
3B	2	AM3820	BRACKET, SLOTTED
3C	4	BP3005	HEX CAP SCREW, 3/8"-16 X 1-1/2", GRADE 5, PLATED
3D	3	BP3006	HEX CAP SCREW, 3/8"-16 X 1", GRADE 5, PLATED
3E	7	BP3015	WASHER, FLAT, 3/8", PLATED

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

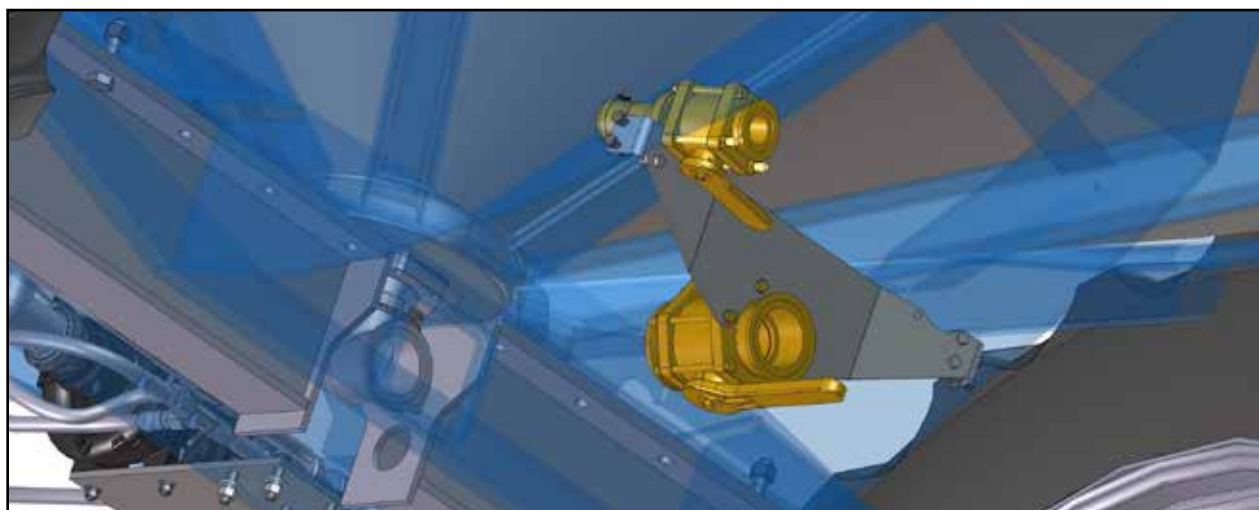


ASSEMBLY (BOTTOM FILL PLUMBING)

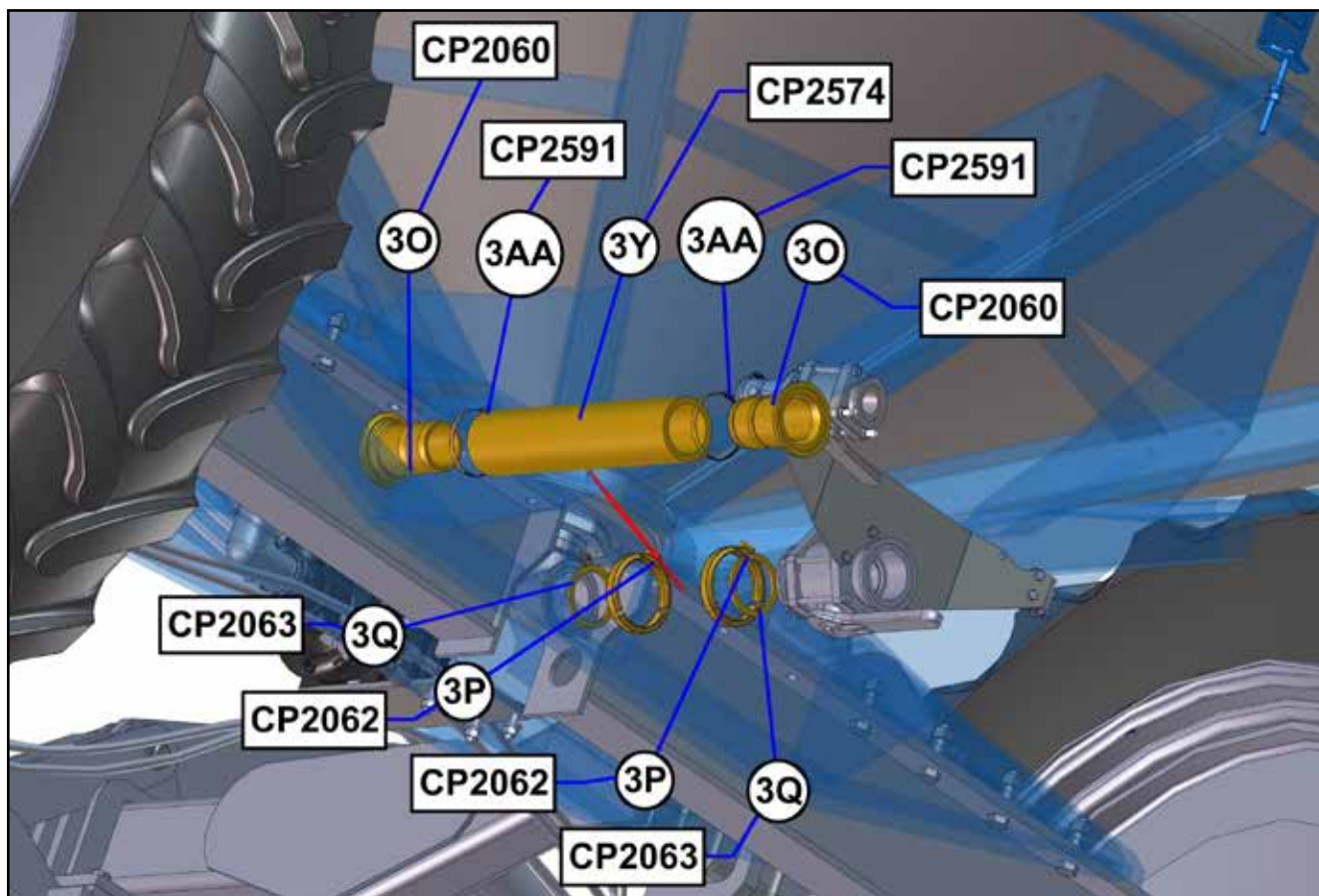


BOM ID	Qty	Item No	Description
3F	4	BP3299	HEX CAP SCREW, 3/8"-16 X 5-1/2", GRADE 5, PLATED
3G	2	BP3401	HEX CAP SCREW, 3/8"-16 X 4-1/2", GRADE 5, PLATED
3H	3	CP2044	CLAMP, 2" WORM SCREW, FLANGE
3I	3	CP2045	GASKET, EPDM, 2" FLANGE, 3/4" BULKHEAD, 150G
3J	1	CP2049	VALVE, BALL, 2" - 1-1/2" PORT
3K	1	CP2056	HOSE BARB, 2" FLANGE X 2" HOSE
3Q	8	CP2063	GASKET, EPDM, 3 FLANGE, 300G
3U	1	CP2076	VALVE BALL, 3" FLANGE POLY
3X	3	CP2408	HOSE CLAMP, WORM GEAR, 2" - 2-1/2" TUBING, STAINLESS STEEL

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

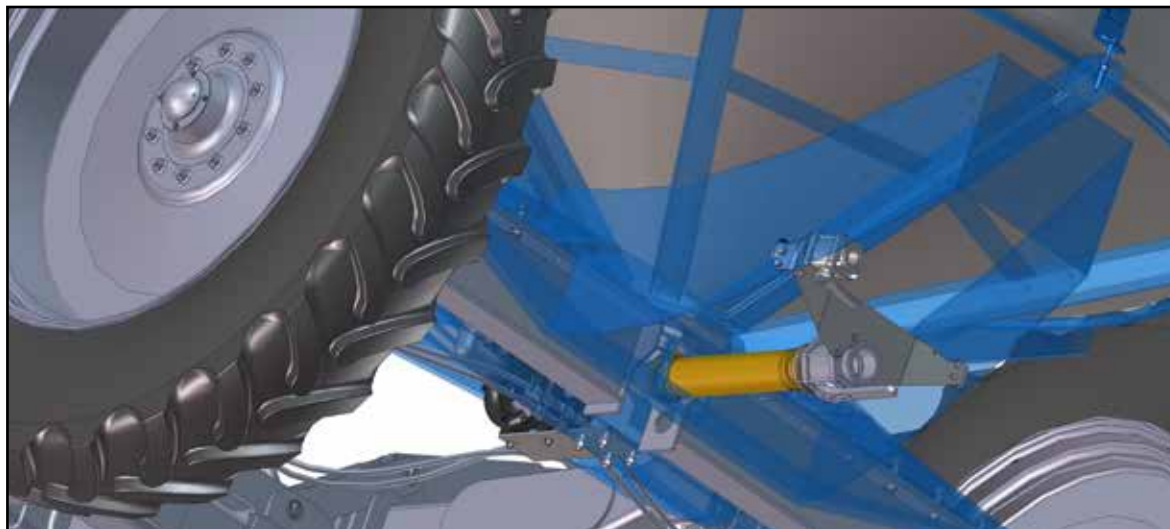


ASSEMBLY (BOTTOM FILL PLUMBING)

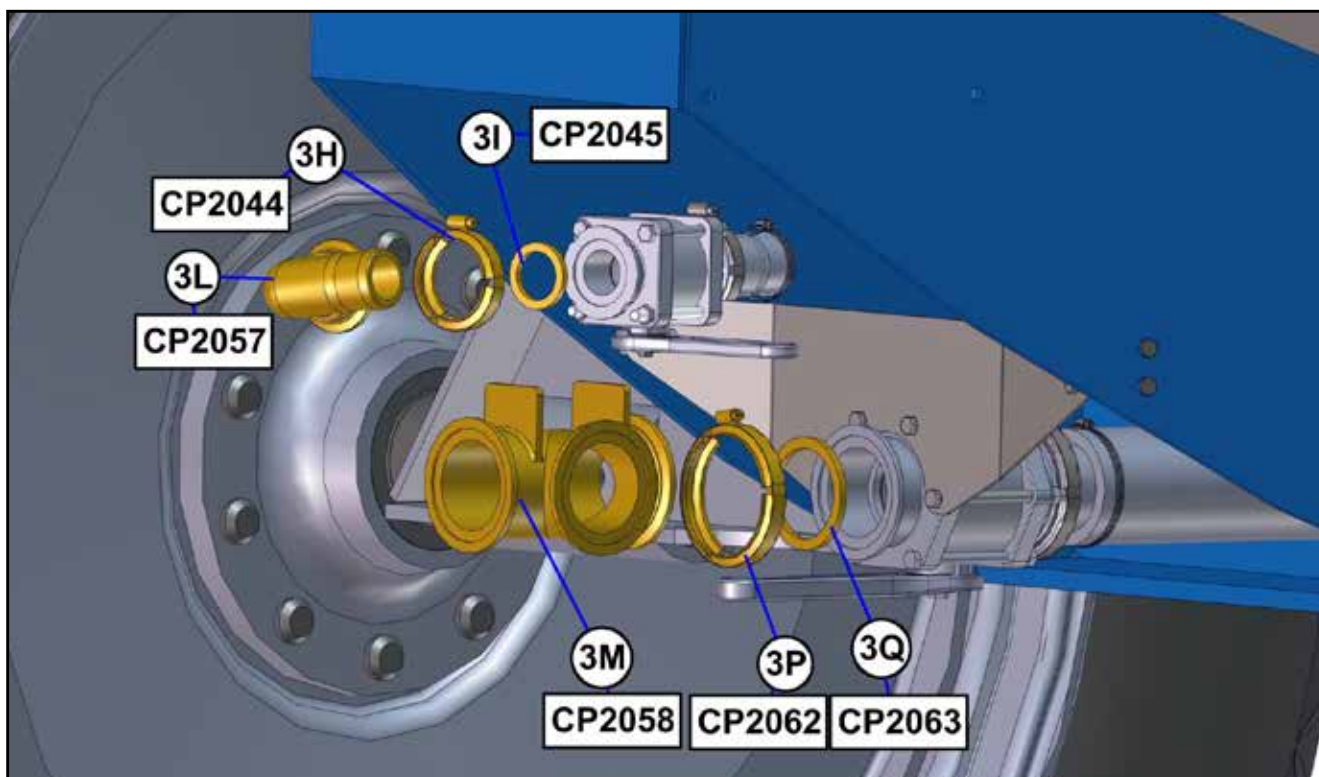


BOM ID	Qty	Item No	Description
3AA	2	CP2591	HOSE CLAMP, WORM GEAR, 3" TUBING, STANLESS STEEL
3O	2	CP2060	HOSE BARB, 3" FLANGE X 3" HOSE
3P	8	CP2062	CLAMP, 3" WORM SCREW, FLANGE
3Q	8	CP2063	GASKET, EPDM, 3 FLANGE, 300G
3Y	1	CP2574	HOSE, EPDM RUBBER, REINFORCED, 85#

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

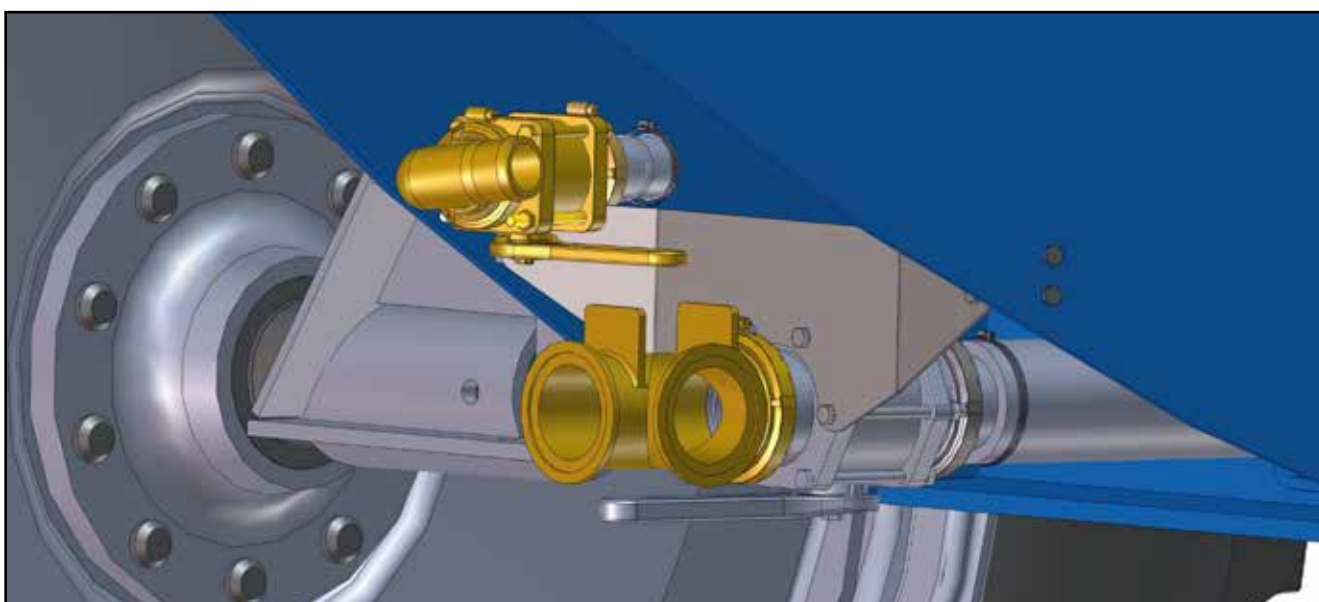


ASSEMBLY (BOTTOM FILL PLUMBING)

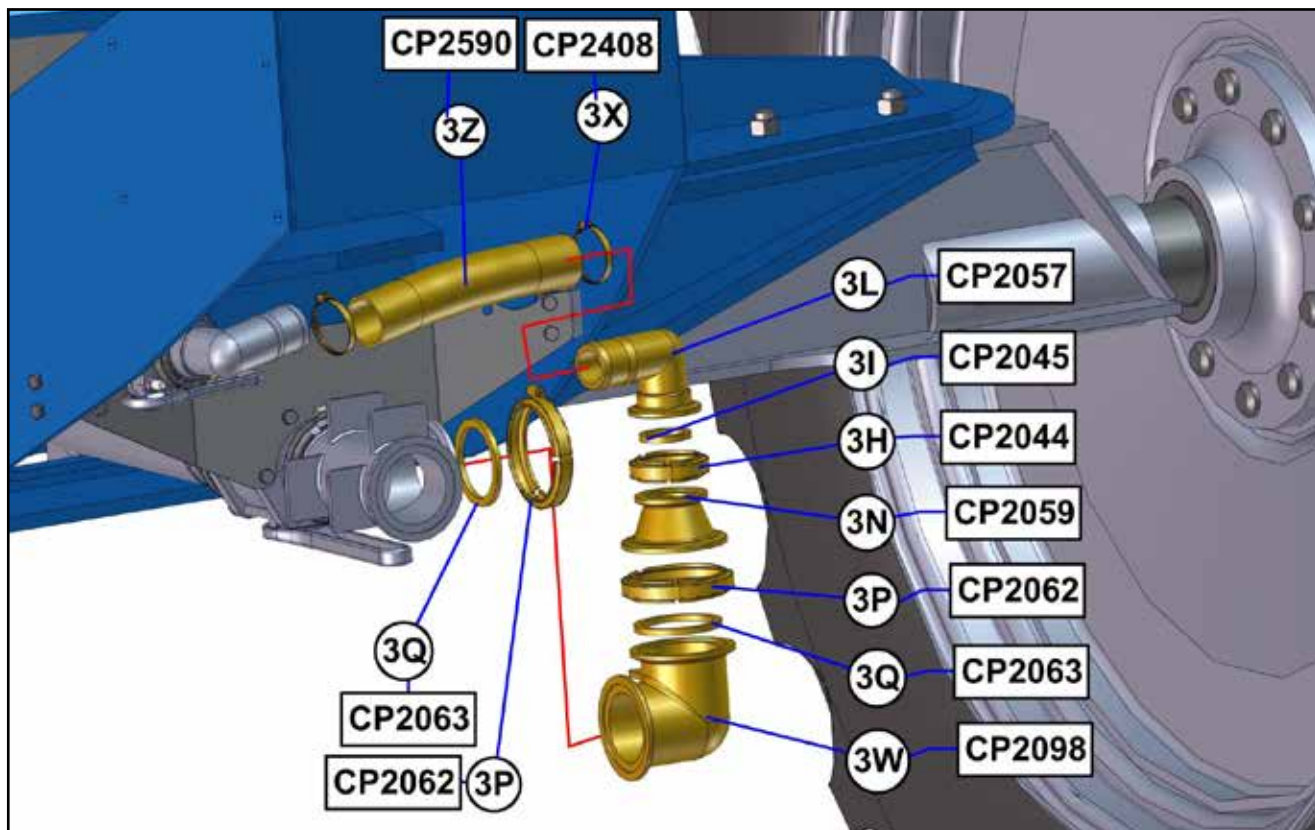


BOM ID	Qty	Item No	Description
3H	3	CP2044	CLAMP, 2" WORM SCREW, FLANGE
3I	3	CP2045	GASKET, EPDM, 2 FLANGE, 3/4 BULKHEAD, 150G
3L	2	CP2057	ELBOW, 90°, 2" FLANGE X 2" HOSE BARB
3M	1	CP2058	TEE, 3" FLANGE
3P	8	CP2062	CLAMP, 3" WORM SCREW, FLANGE
3Q	8	CP2063	GASKET, EPDM, 3" FLANGE, 300G

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

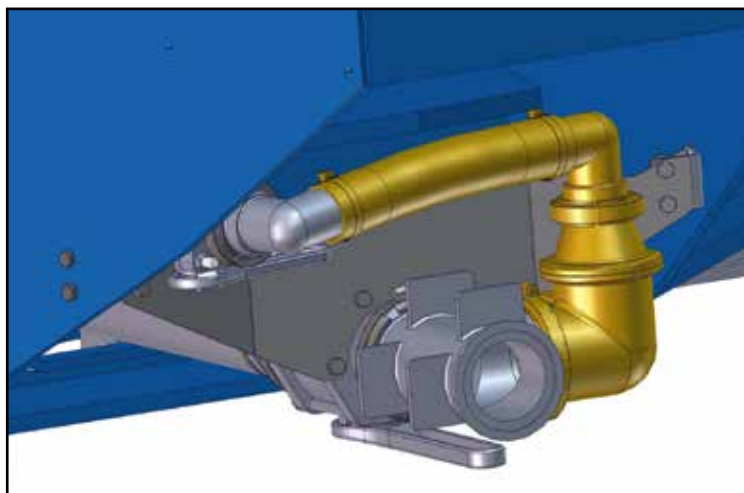


ASSEMBLY (BOTTOM FILL PLUMBING)

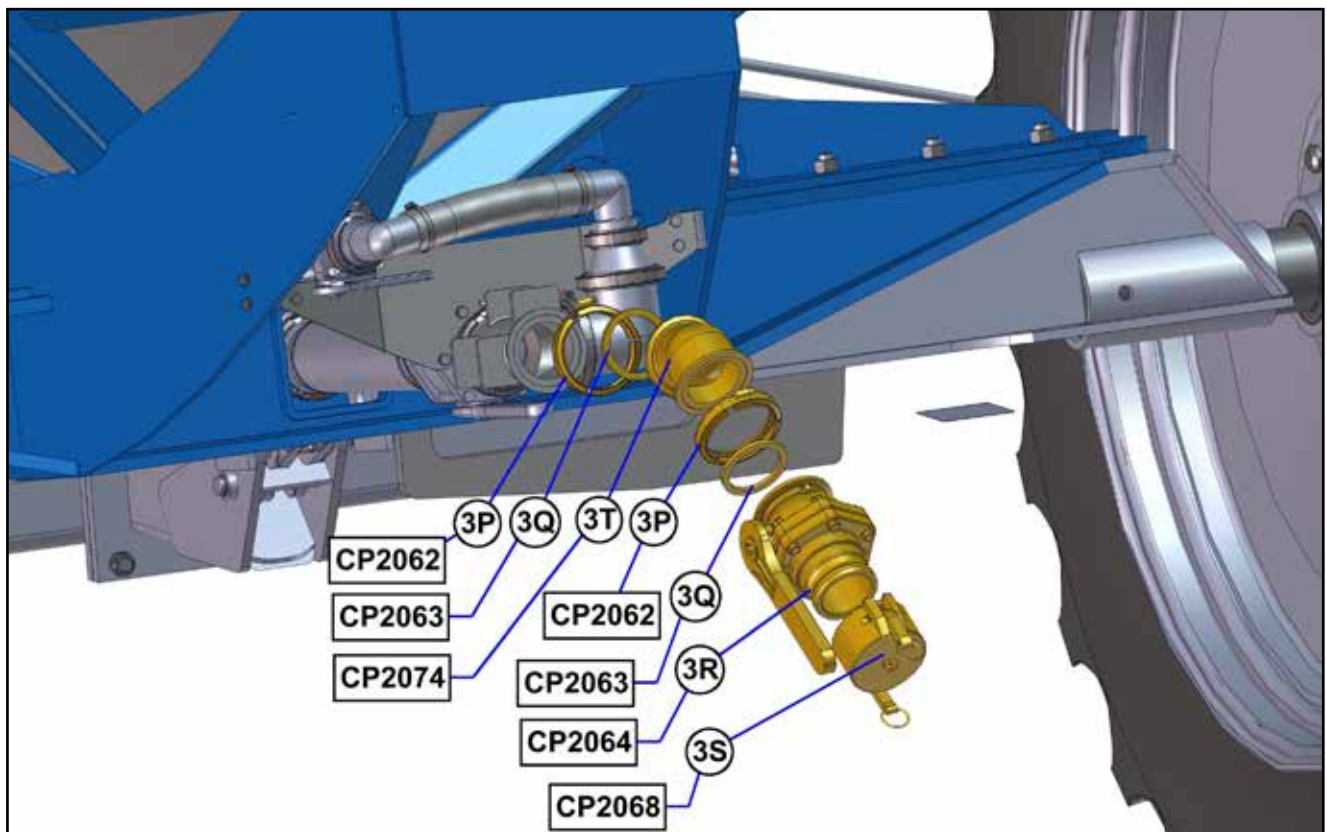


BOM ID	Qty	Item No	Description
3H	3	CP2044	CLAMP, 2" WORM SCREW, FLANGE
3I	3	CP2045	GASKET, EPDM, 2" FLANGE, 3/4" BULKHEAD, 150G
3L	2	CP2057	ELBOW, 90°, 2" FLANGE X 2" HOSE BARB
3N	1	CP2059	REDUCER, 3" FLANGE X 2" FLANGE, STANDARD PORT
3P	8	CP2062	CLAMP, 3" WORM SCREW, FLANGE
3Q	8	CP2063	GASKET, EPDM, 3" FLANGE, 300G
3W	2	CP2098	ELBOW, 90°, 3" FLANGE X 3" FLANGE, POLY, SM300CPG90
3X	3	CP2408	HOSE CLAMP, WORM GEAR, 2" - 2-1/2" TUBING, STAINLESS STEEL
3Z	1	CP2590	HOSE, EPDM RUBBER, 2", REINFORCED, 100#

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

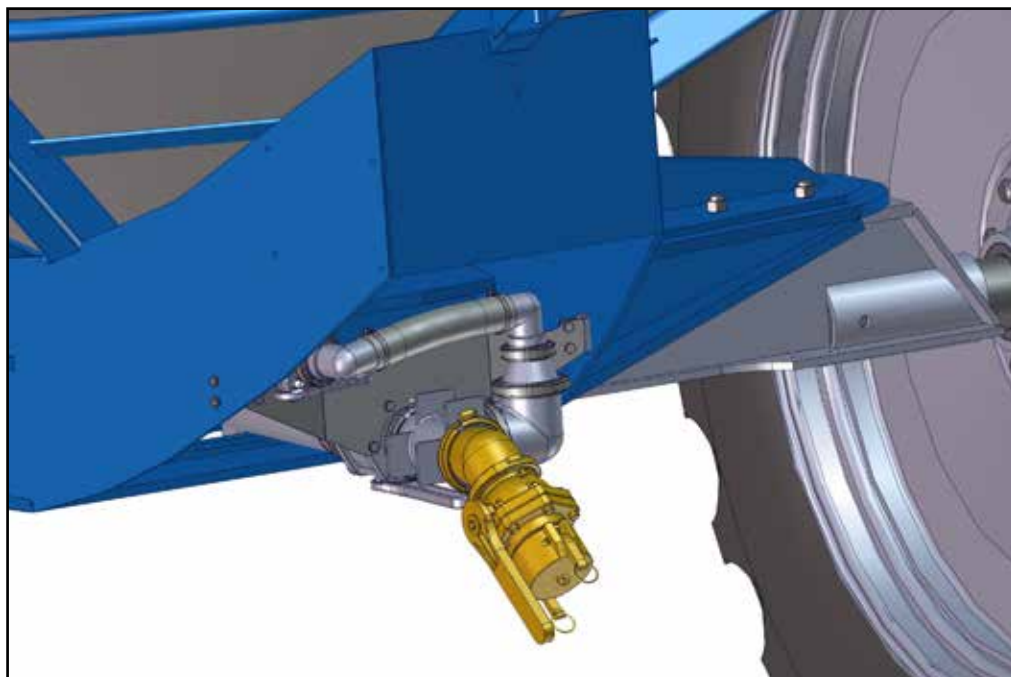


ASSEMBLY (BOTTOM FILL PLUMBING)



BOM ID	Qty	Item No	Description
3P	8	CP2062	CLAMP, 3" WORM SCREW, FLANGE
3Q	8	CP2063	GASKET, EPDM, 3 FLANGE, 300G
3R	1	CP2064	VALVE, BALL, 3" FLANGE X 3" MALE ADAPTER
3S	1	CP2068	CAP, 3" 300 CAP
3T	1	CP2074	ELBOW, 45°, 3" FLANGE X 3" FLANGE, POLY

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY



ASSEMBLY (LIGHTING KIT)

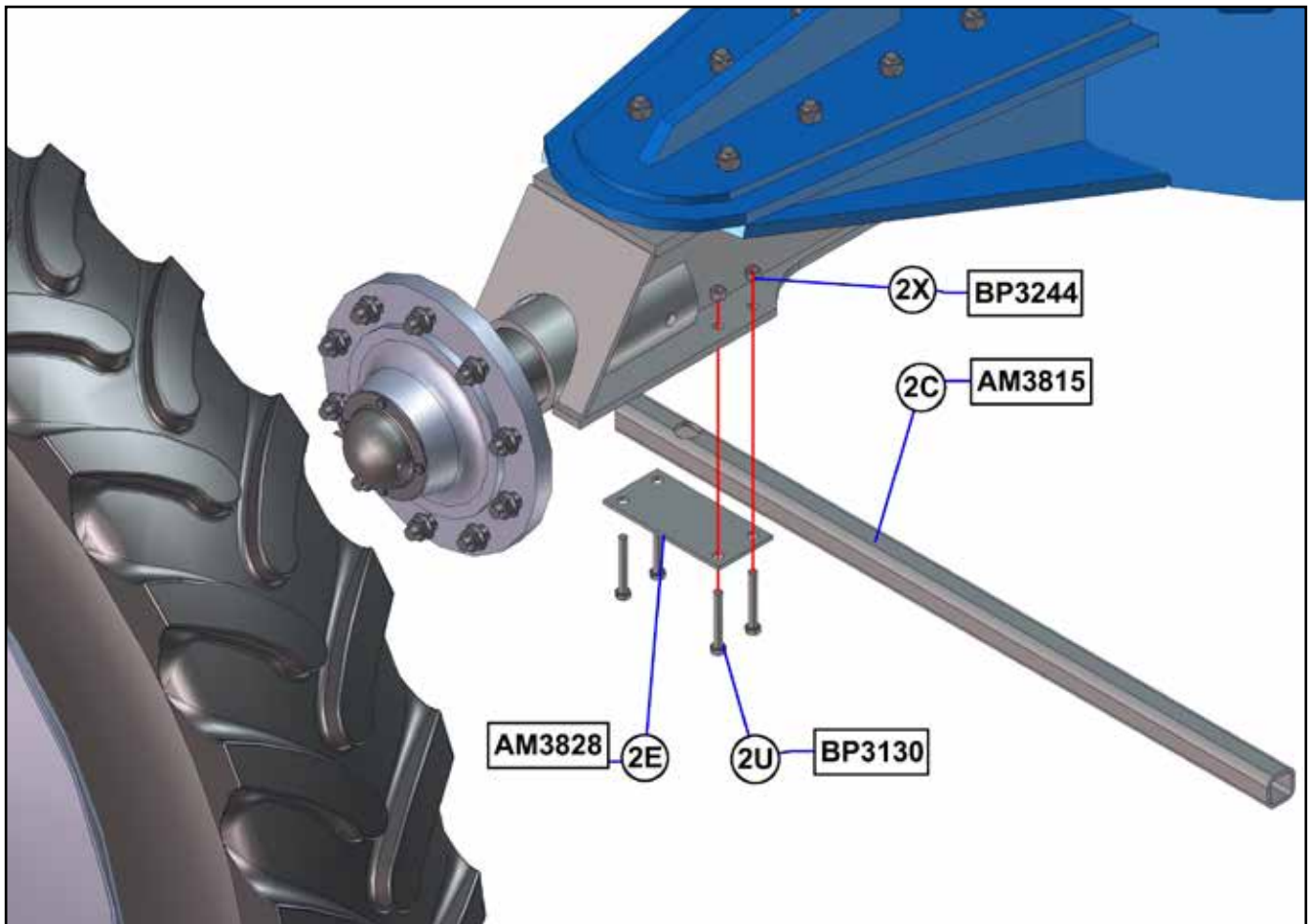


1. String **(2N) (AP3197)** 17', two post, 5 wire, electrical harness through axle, through hole in light tube bracket and extend to end of tube before mounting tube to frame.



BOM ID	Qty	Item No	Description
2N	1	AP3197	ELECTRICAL HARNESS, 17' 2 POST, 5 WIRE

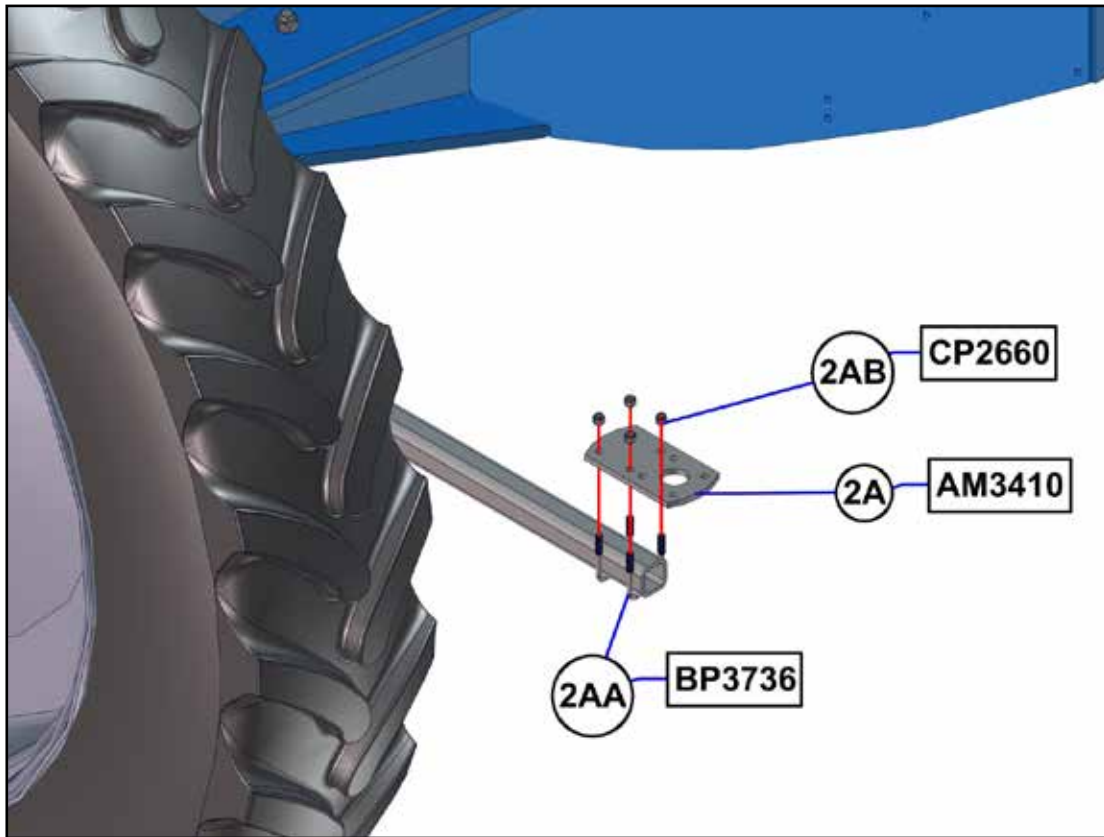
ASSEMBLY (LIGHTING KIT)



BOM ID	Qty	Item No	Description
2C	2	AM3815	TUBE, LIGHT BRACKET (4')
2E	2	AM3828	FLAT WITH 4 HOLES
2N	1	AP3197	ELECTRICAL HARNESS, 17' 2 POST, 5 WIRE
2U	8	BP3130	HEX CAP SCREW, 1/2"-13 X 3-1/2", GRADE 5, PLATED
2X	8	BP3244	NUT, HEX LOCK, 1/2"-13, PLATED

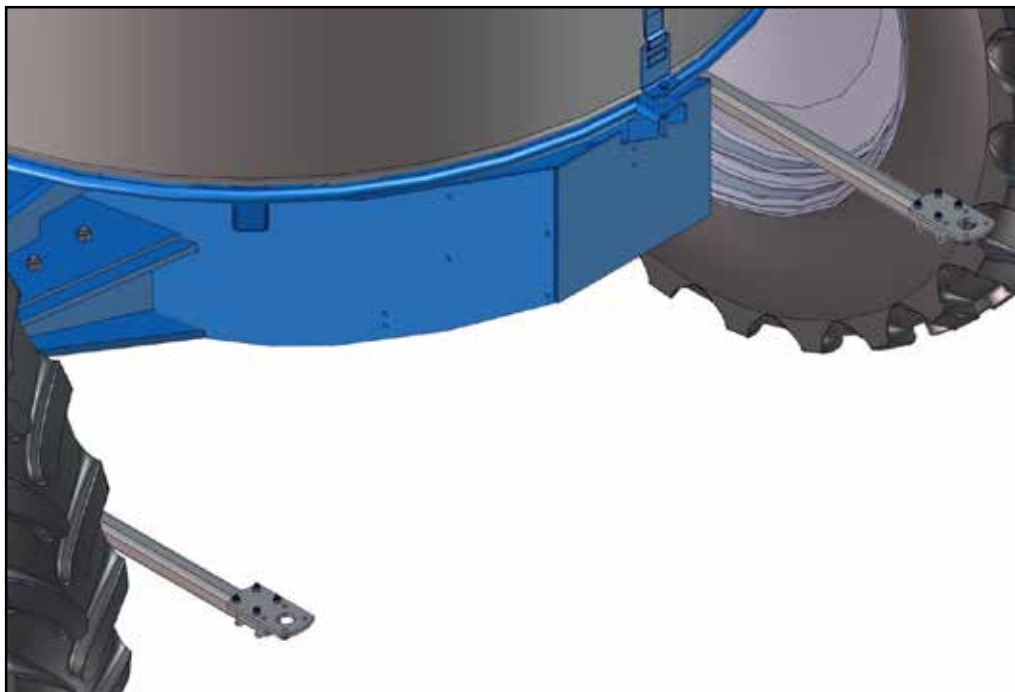
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (LIGHTING KIT)

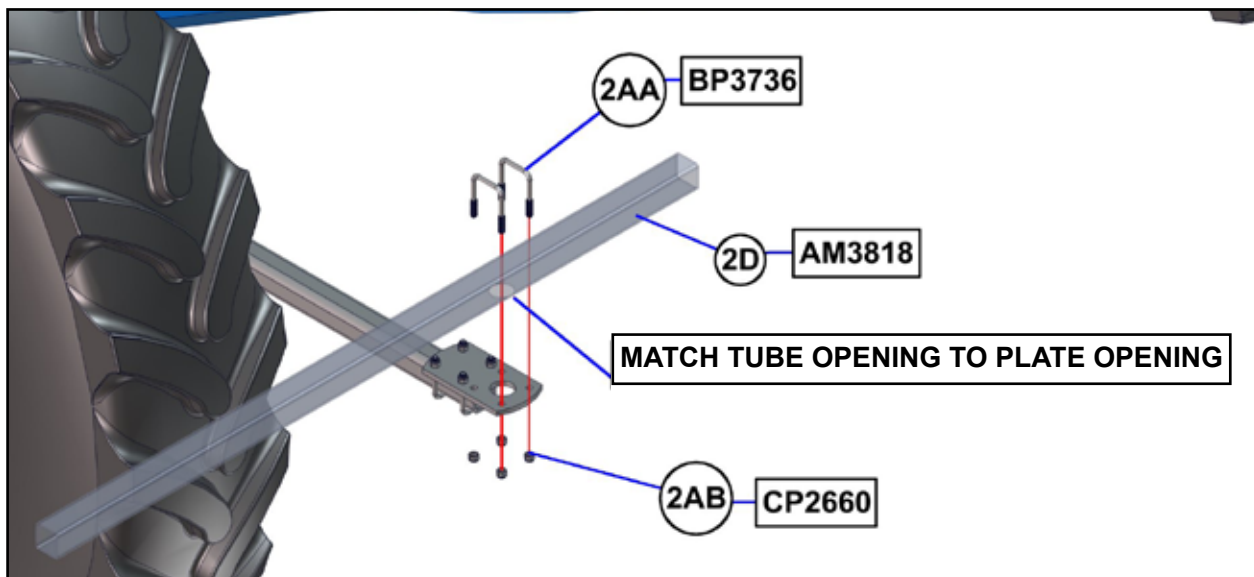


BOM ID	Qty	Item No	Description
2A	2	AM3410	MOUNTING PLATE, LIGHT POST
2AA	12	BP3736	U-BOLT, 3/8"-16 X 2"W X 3"L, PLATED
2AB	36	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

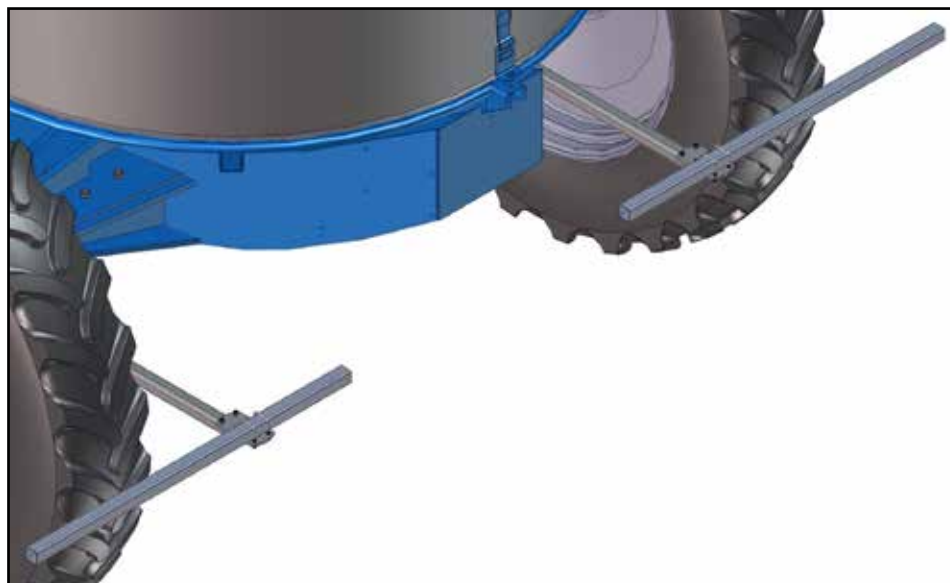
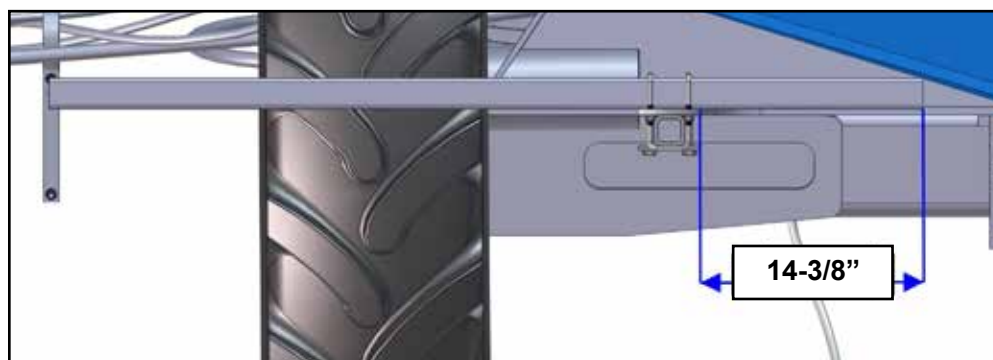


ASSEMBLY (LIGHTING KIT)

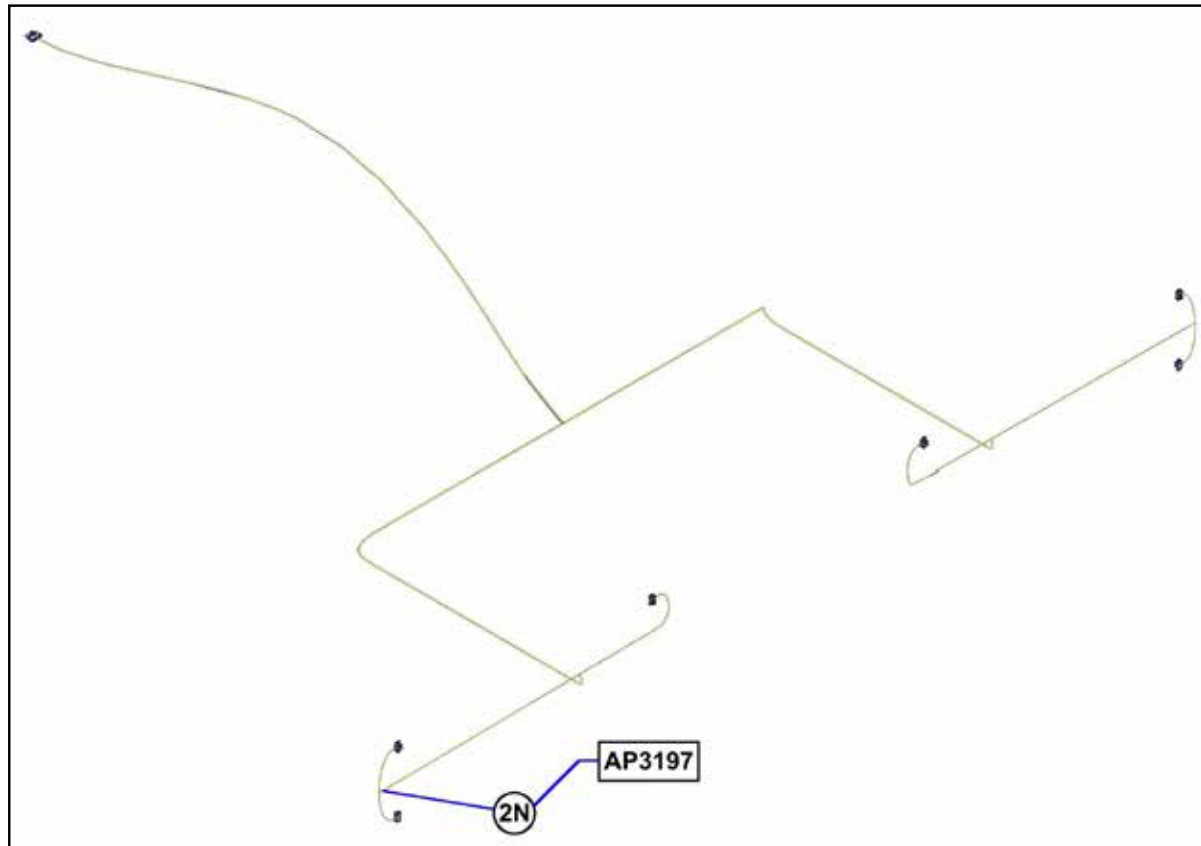


BOM ID	Qty	Item No	Description
2AA	12	BP3736	U-BOLT, 3/8"-16 X 2"W X 3"L, PLATED
2AB	36	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK
2D	2	AM3818	TUBE, LIGHT BRACKET (4'-8")

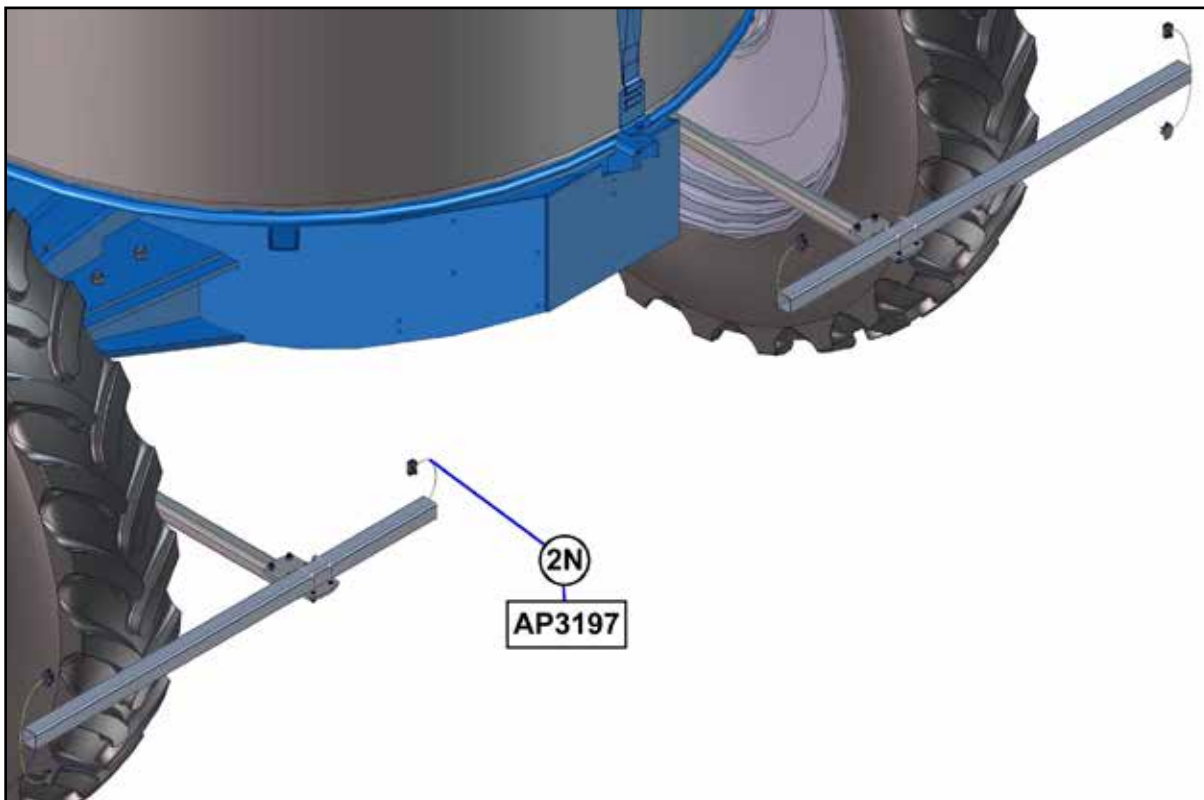
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY



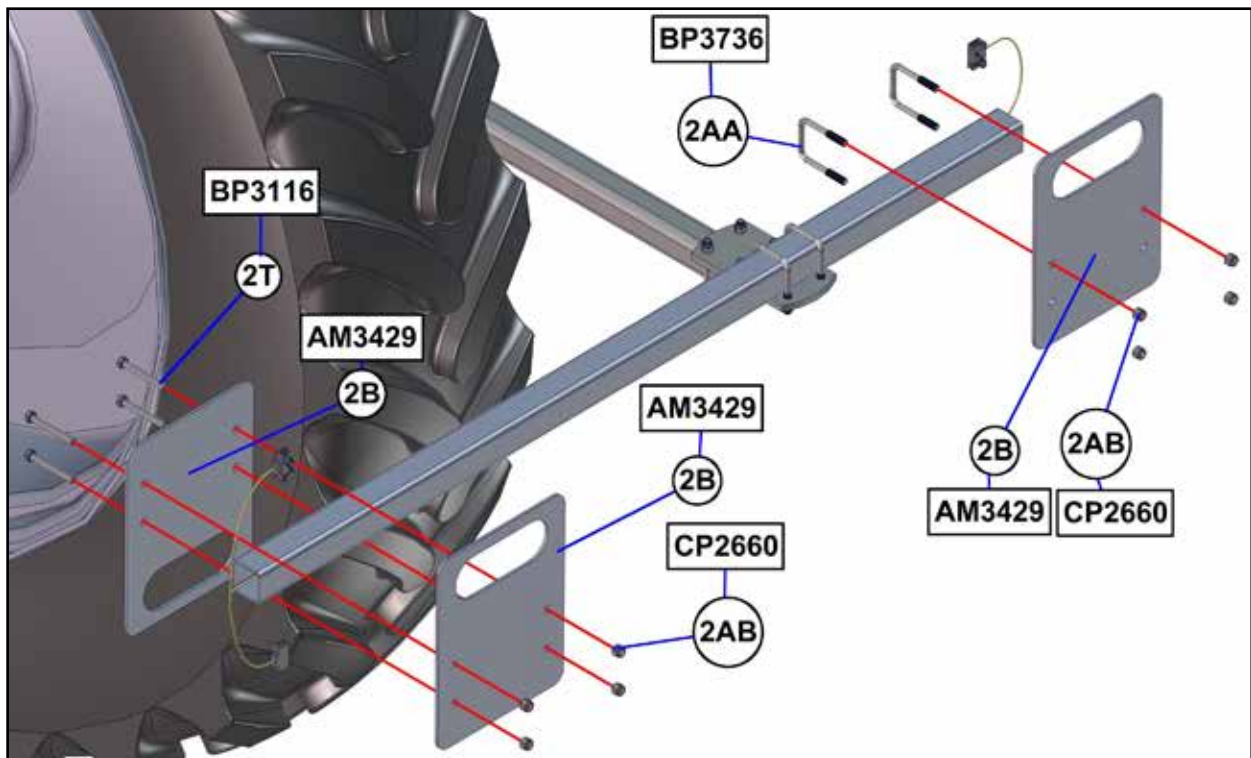
ASSEMBLY (LIGHTING KIT)



BOM ID	Qty	Item No	Description
2N	1	AP3197	ELECTRICAL HARNESS, 17' 2 POST, 5 WIRE

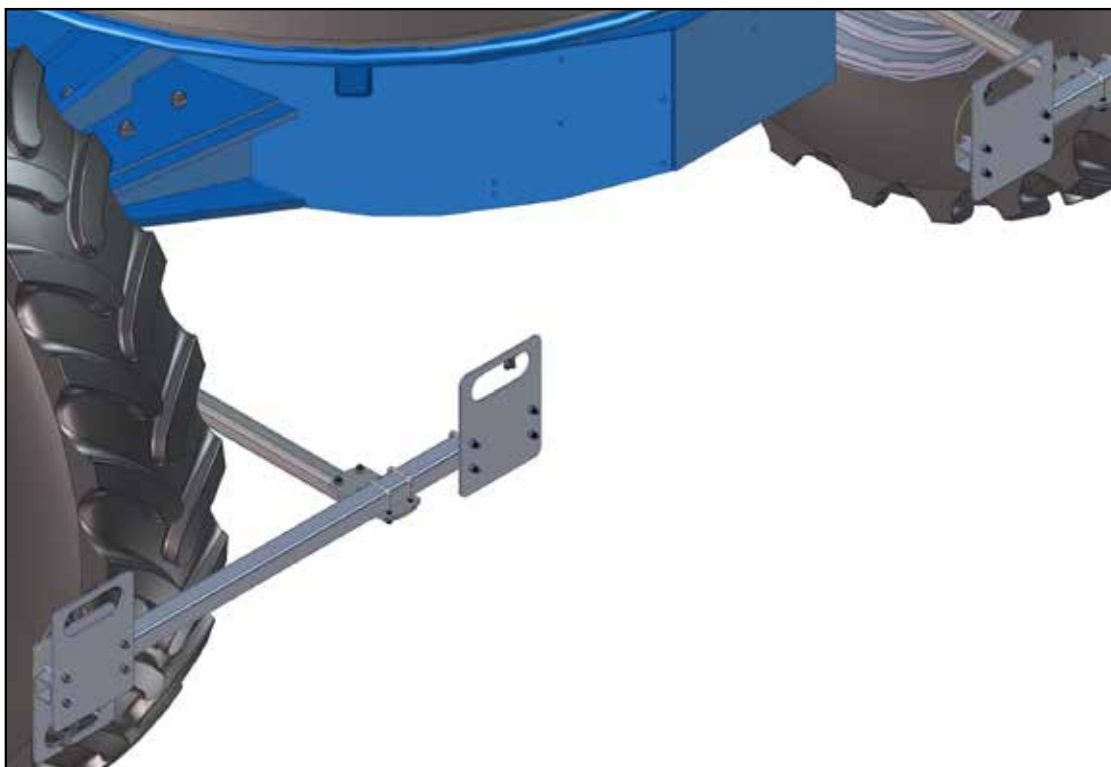


ASSEMBLY (LIGHTING KIT)

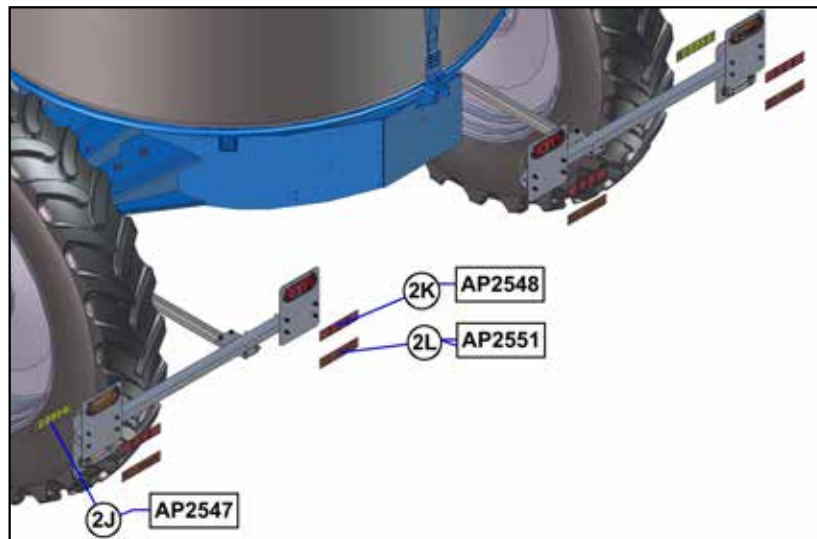
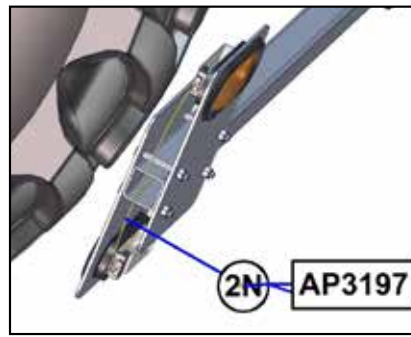
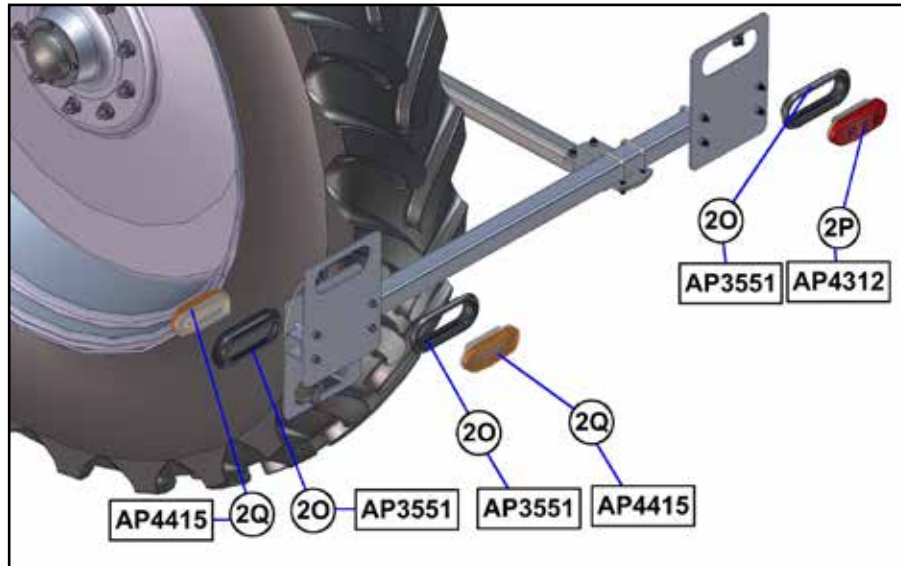


BOM ID	Qty	Item No	Description
2AA	12	BP3736	U-BOLT, 3/8"-16 X 2"W X 3"L, PLATED
2AB	36	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK
2B	6	AM3429	LIGHT MOUNT
2T	8	BP3116	HEX CAP SCREW, 3/8"-16 X 3", GRADE 5, PLATED

NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY



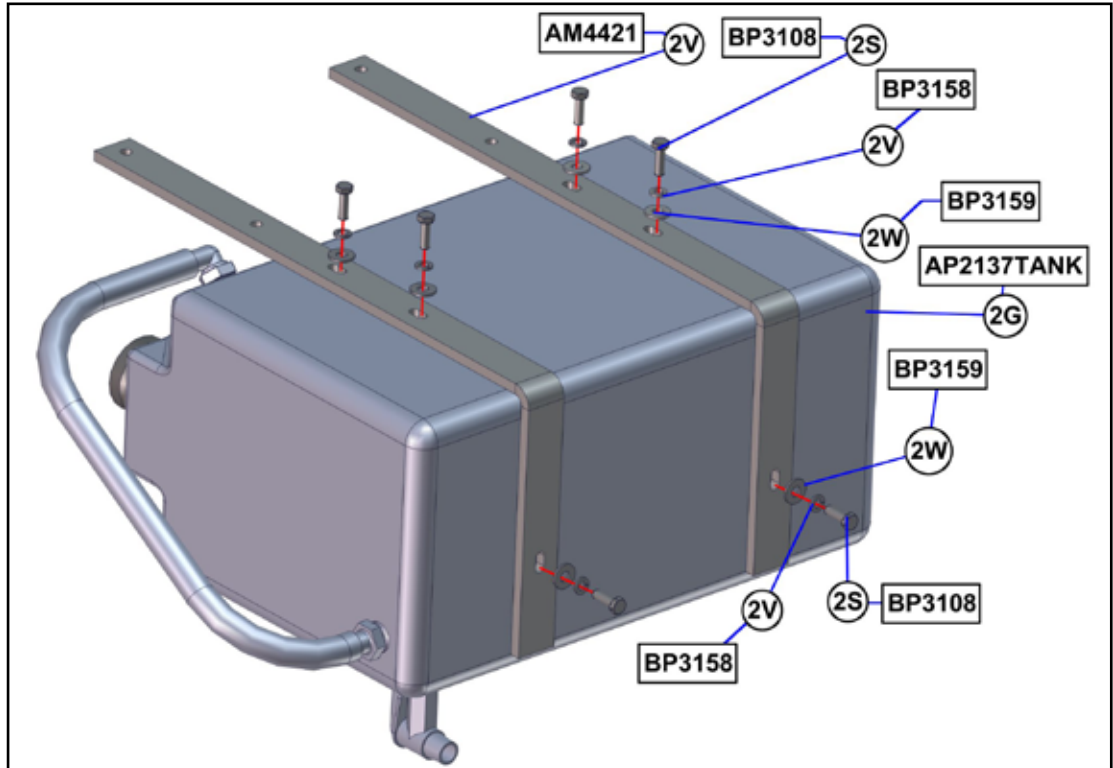
ASSEMBLY (LIGHTING KIT)



BOM ID	Qty	Item No	Description
2J	2	AP2547	DECAL, REFLECTOR, YELLOW, 2" X 9"
2K	4	AP2548	DECAL, REFLECTOR, RED, 2" X 9"
2L	4	AP2551	DECAL, FLUORESCENT, RED-ORANGE, 2" X 9", NON-REFLECTIVE
2N	1	AP3197	ELECTRICAL HARNESS, 17' 2 POST, 5 WIRE
2O	6	AP3551	GROMMET, OVAL, MODEL 60
2P	2	AP4312	LAMP, LED, OVAL, STOP TURN & TAIL, RED
2Q	4	AP4415	LAMP, LED, OVAL, TURN SIGNAL, AMBER, LED

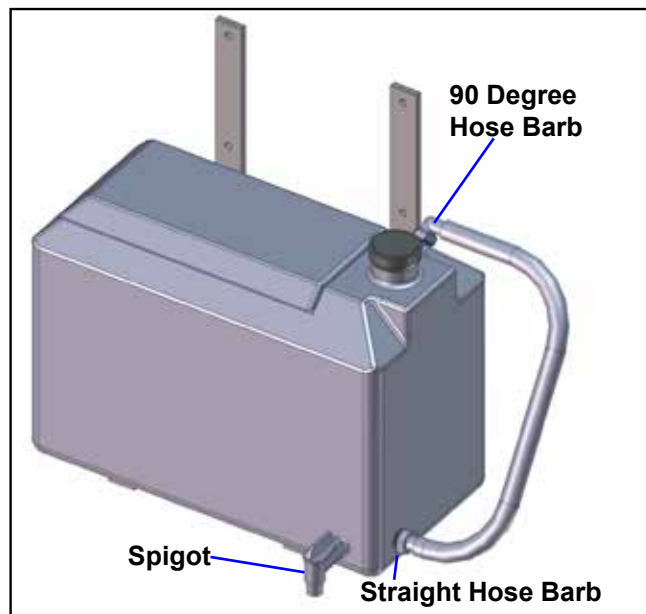
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY

ASSEMBLY (SAFETY TANK)



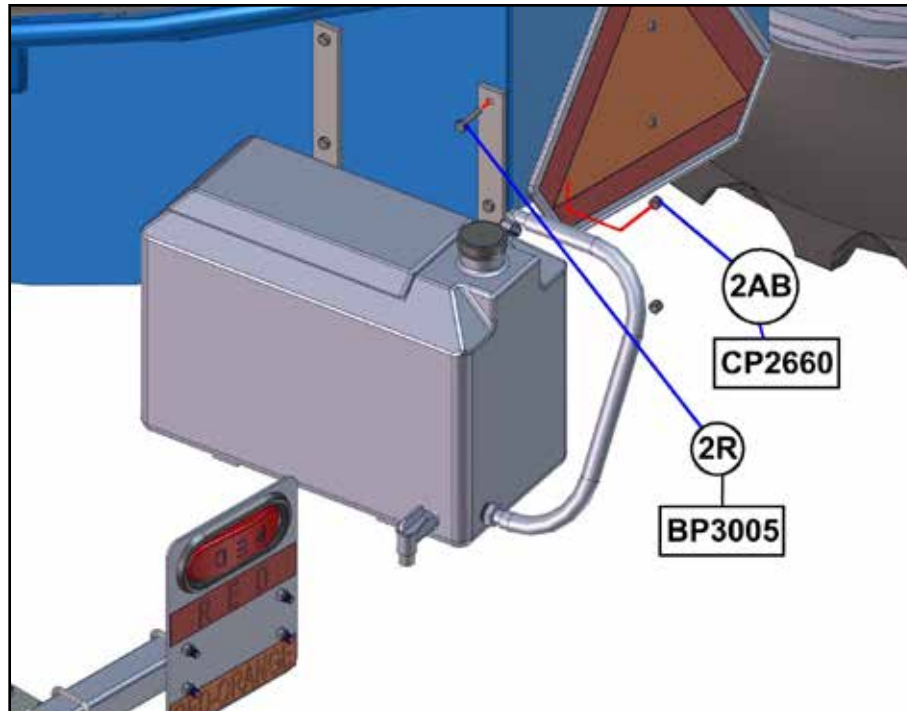
1. Attach two (2F) (AM4421) 9 gallon tank mounting brackets to (2G) (AP2137) 9 gallon fresh water safety tank with six (2W) (BP3159) 5/16" flat washers, (2V) (BP3158) 5/16" lock washers and (2S) (BP3108) 5/16" x 1" hex cap screws.

BOM ID	Qty	Item No	Description
2F	2	AM4421	BRACKET, TANK MOUNTING, 9 GALLAN, AT4000
2G	1	AP2137	SAFETY TANK, 9 GALLON
2S	6	BP3108	HEX CAP SCREW, 5/16"-18 X 1", GRADE 5, PLATED
2V	6	BP3158	WASHER, LOCK, 5/16", PLATED
2W	6	BP3159	WASHER, FLAT, 5/16", PLATED



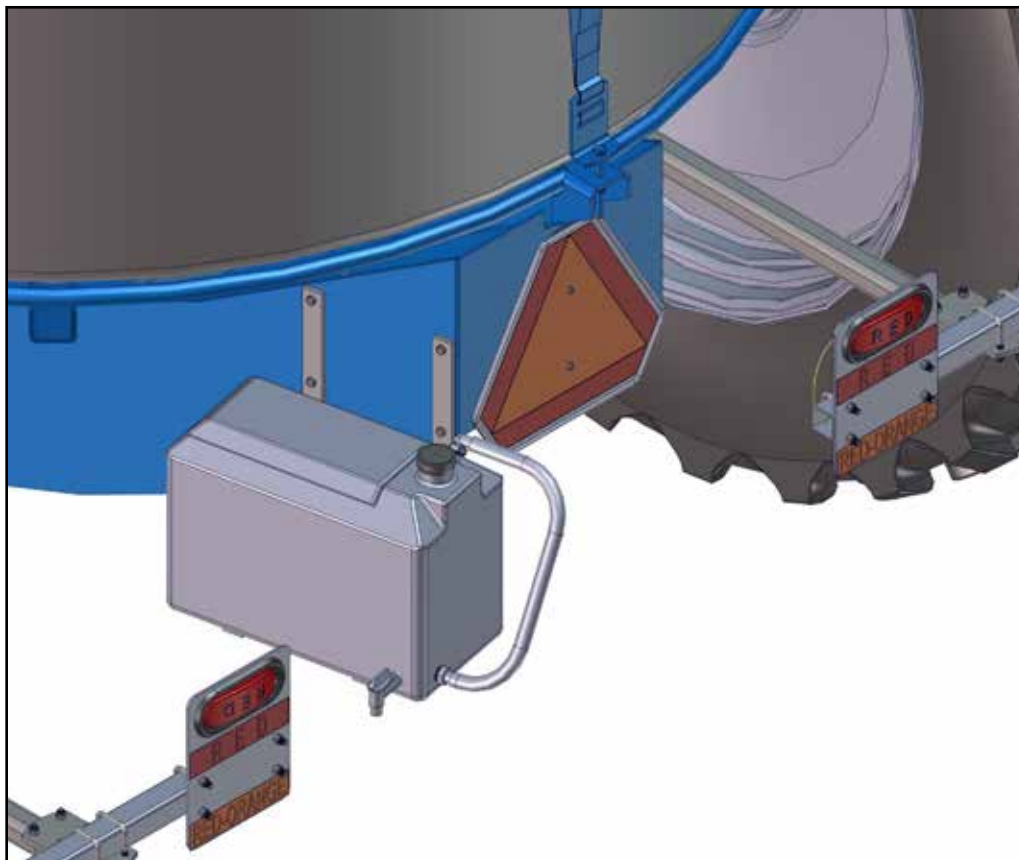
2. Place sealant on tank spigot and install in the front of the tank. Place sealant on hose barbs and install top and bottom. Place hose clamp on clear hose and attach to bottom tank hose barb. The top hose barb does not require a clamp.

ASSEMBLY (SAFETY TANK)

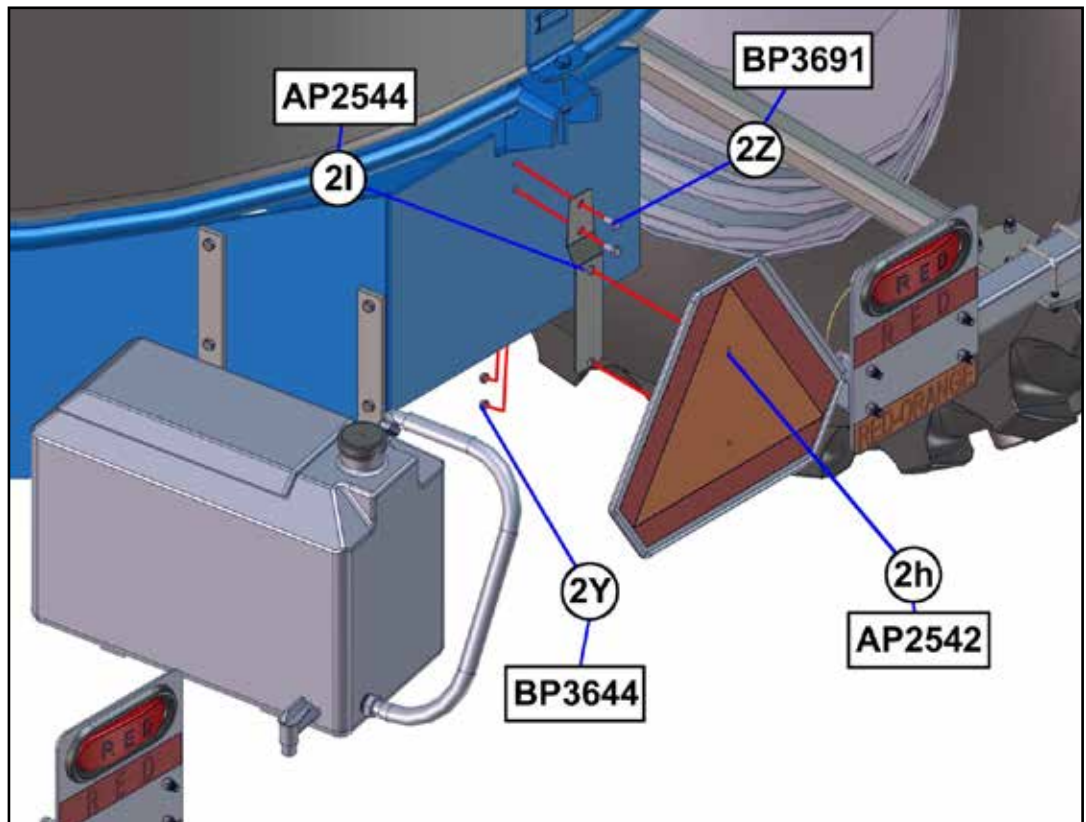


BOM ID	Qty	Item No	Description
2AB	36	CP2660	NUT, HEX LOCK, 3/8"-16, NYLOCK
2R	4	BP3005	HEX CAP SCREW, 3/8"-16 X 1-1/2", GRADE 5, PLATED

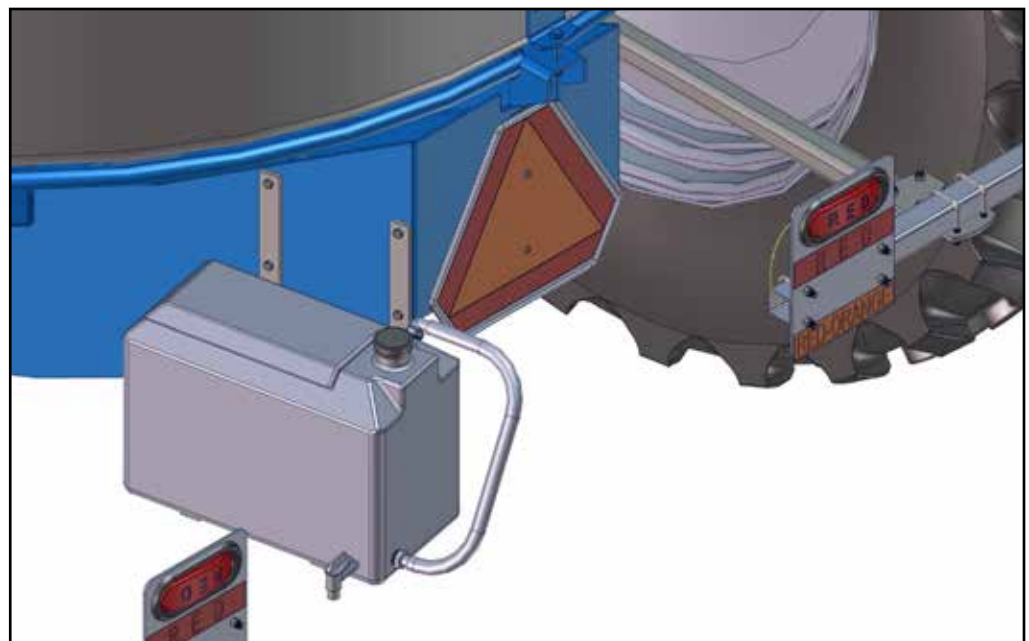
NOTE: QUANTITIES REPRESENT TOTAL ASSEMBLY



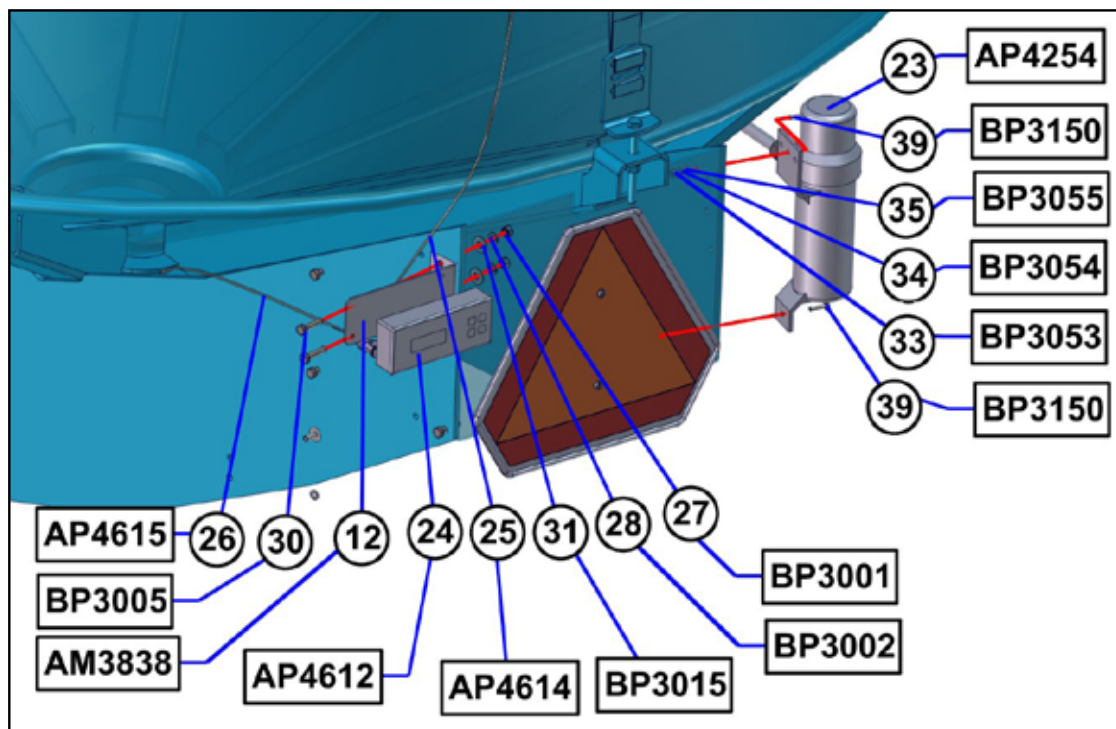
ASSEMBLY (SMV)



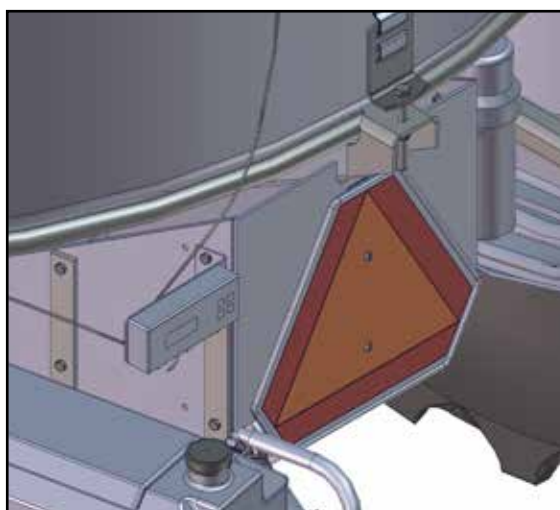
BOM ID	Qty	Item No	Description
2H	1	AP2542	SMV SIGN
2I	1	AP2544	SMV MOUNTING SPADE
2Y	2	BP3644	NUT, HEX LOCK, 5/16-18, TOP LOCK
2Z	2	BP3691	HEX CAP SCREW, 5/16"-18 X 3/4", GRADE 5, PLATED



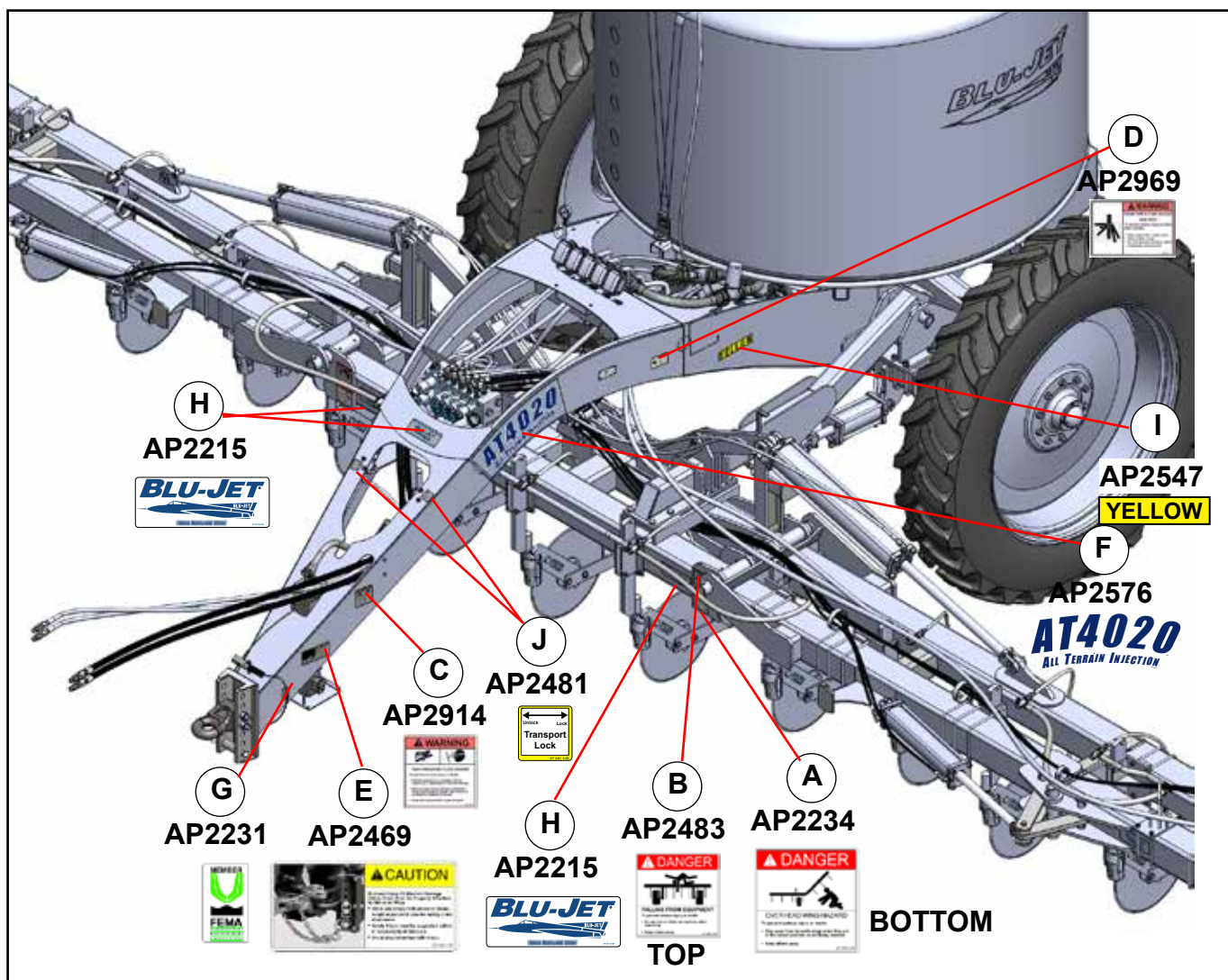
ASSEMBLY (TANK DISPLAY AND MANUAL HOLDER)



BOM ID	Qty	Item No	Description
12	1	AM3838	REAR TANK DISPLAY MOUNT
23	1	AP4254	MANUAL HOLDER, BLACK
24	1	AP4612	REAR TANK DISPLAY, AT4020
25	1	AP4614	HARNESS, DISPLAY TO SENSING ROD, AT4020
26	1	AP4615	HARNESS, EXTENSION CABLE, AT4020
27	2	BP3001	NUT, HEX, 3/8"-16, GRADE 2, PLATED
28	2	BP3002	WASHER, LOCK, 3/8", PLATED
30	2	BP3005	HEX CAP SCREW, 3/8"-16 X 1-1/2", GRADE 5, PLATED
31	4	BP3015	WASHER, FLAT, 3/8", PLATED
33	2	BP3053	NUT, HEX, 1/4"-20, GRADE 2
34	2	BP3054	WASHER, LOCK, 1/4", PLATED
35	2	BP3055	WASHER, FLAT, 1/4", PLATED
39	2	BP3150	HEX CAP SCREW, 1/4"-20 X 1", GRADE 5, PLATED




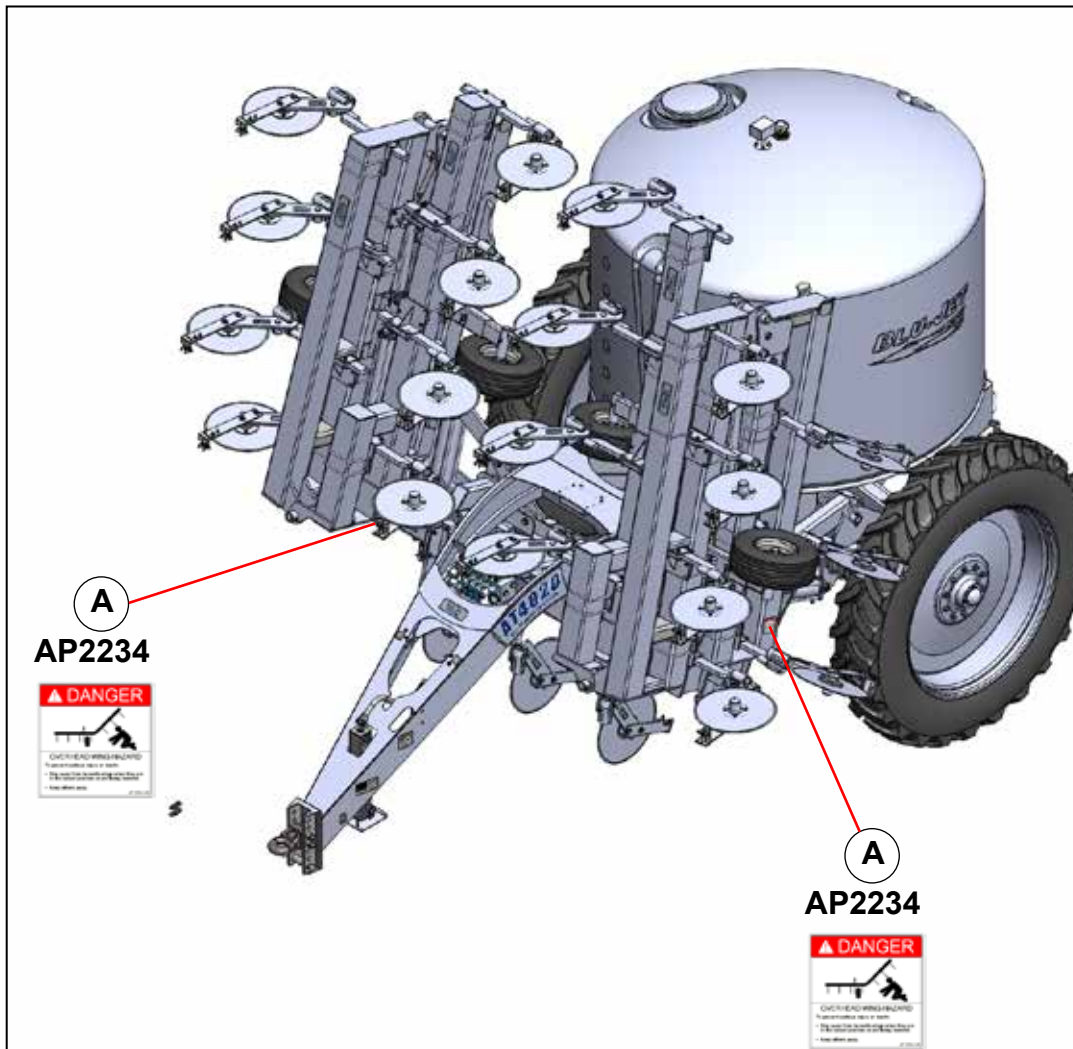
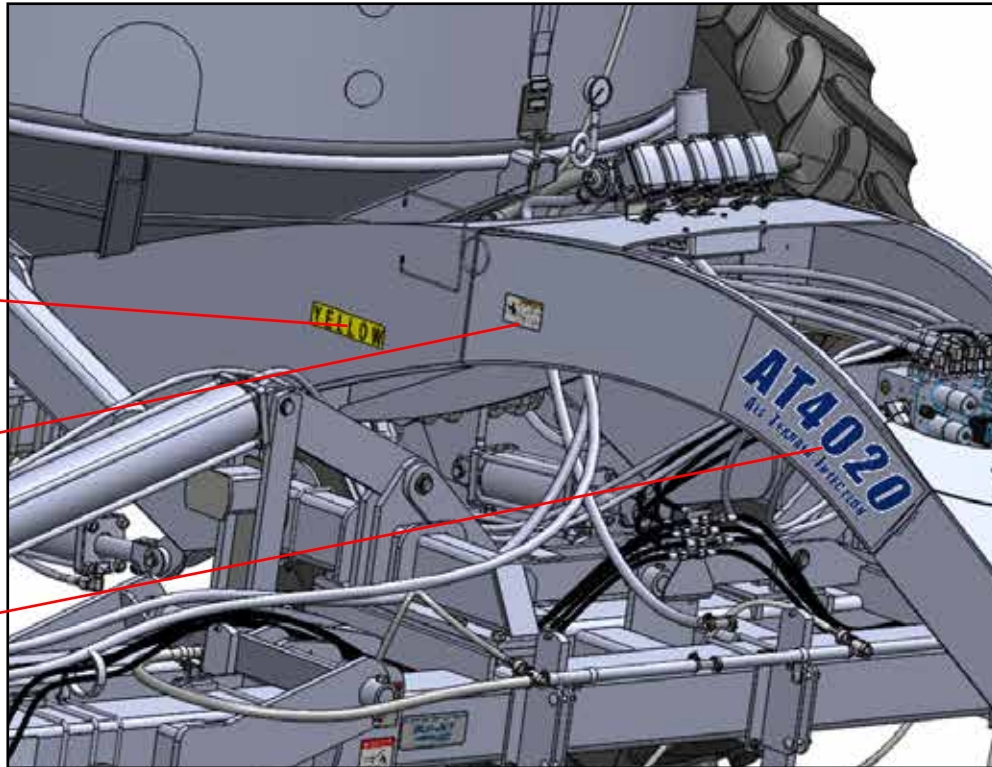
ASSEMBLY (DECAL PLACEMENT)



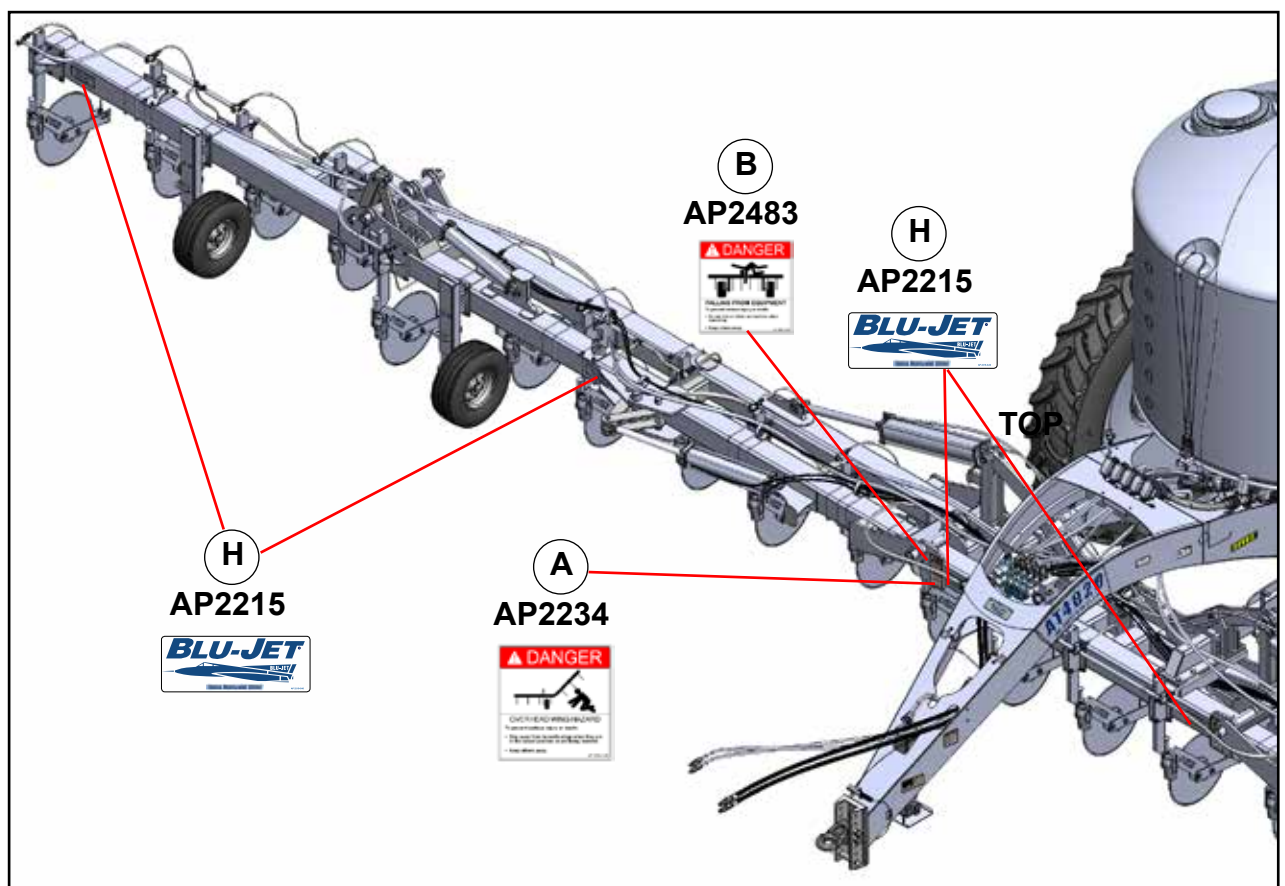
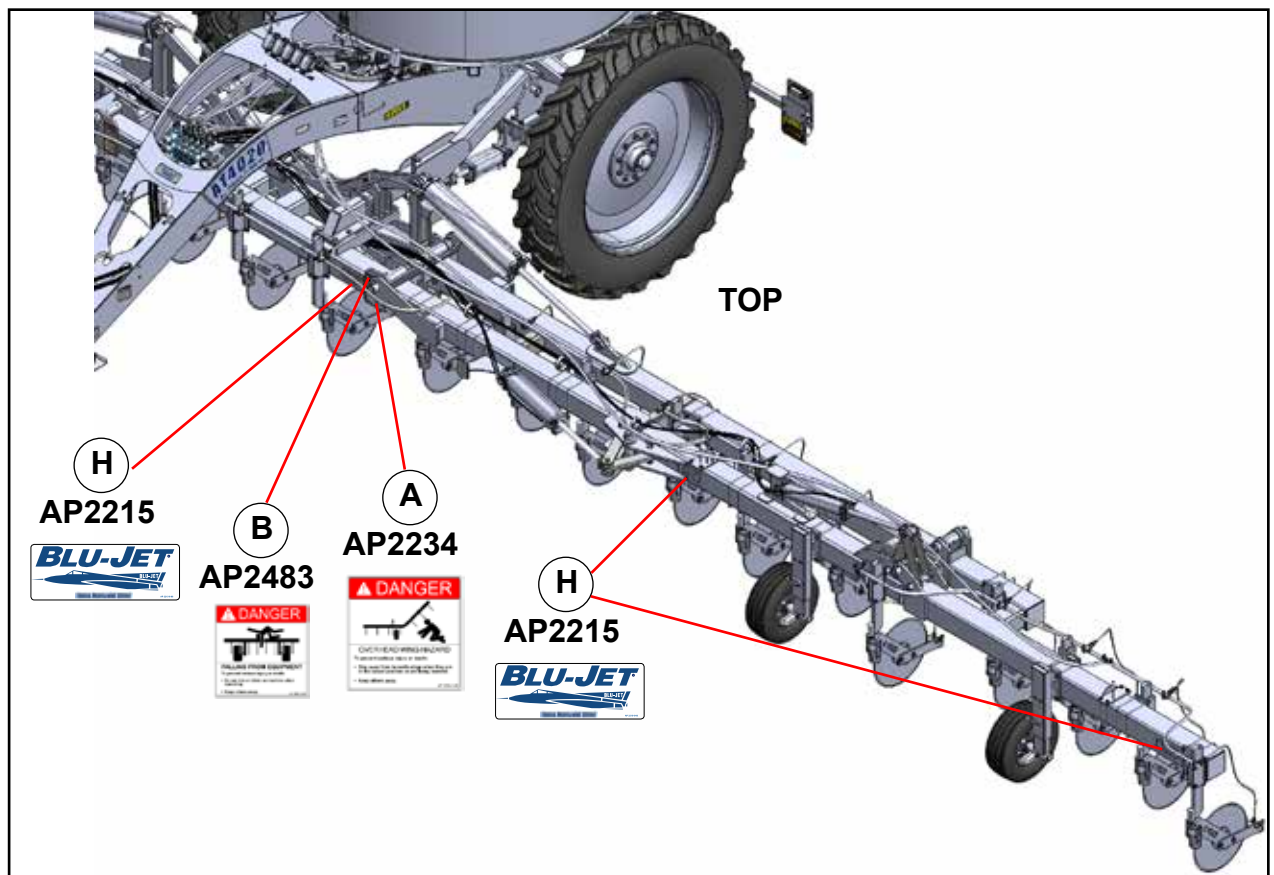
BOM ID	Qty	Item No	Description
A	4	AP2234	DECAL, DANGER STAND CLEAR FALLING WING
B	1	AP2483	DECAL, DANGER, FALLING FROM EQUIPMENT
C	1	AP2914	DECAL, WARNING, HIGH PRESSURE FLUID
D	2	AP2969	DECAL, WARNING, PINCH POINT
E	1	AP2469	DECAL, SAFETY CHAIN
F	2	AP2576	DECAL, AT4020, ALL-TERRAIN INJECTION
G	1	AP2231	DECAL, FEMA, 2-1/2" X 1-1/2"
H	11	AP2215	DECAL, BLU-JET, 3" X 8"
I	2	AP2547	DECAL, REFLECTOR, YELLOW 2" X 8"

ASSEMBLY (DECAL PLACEMENT)

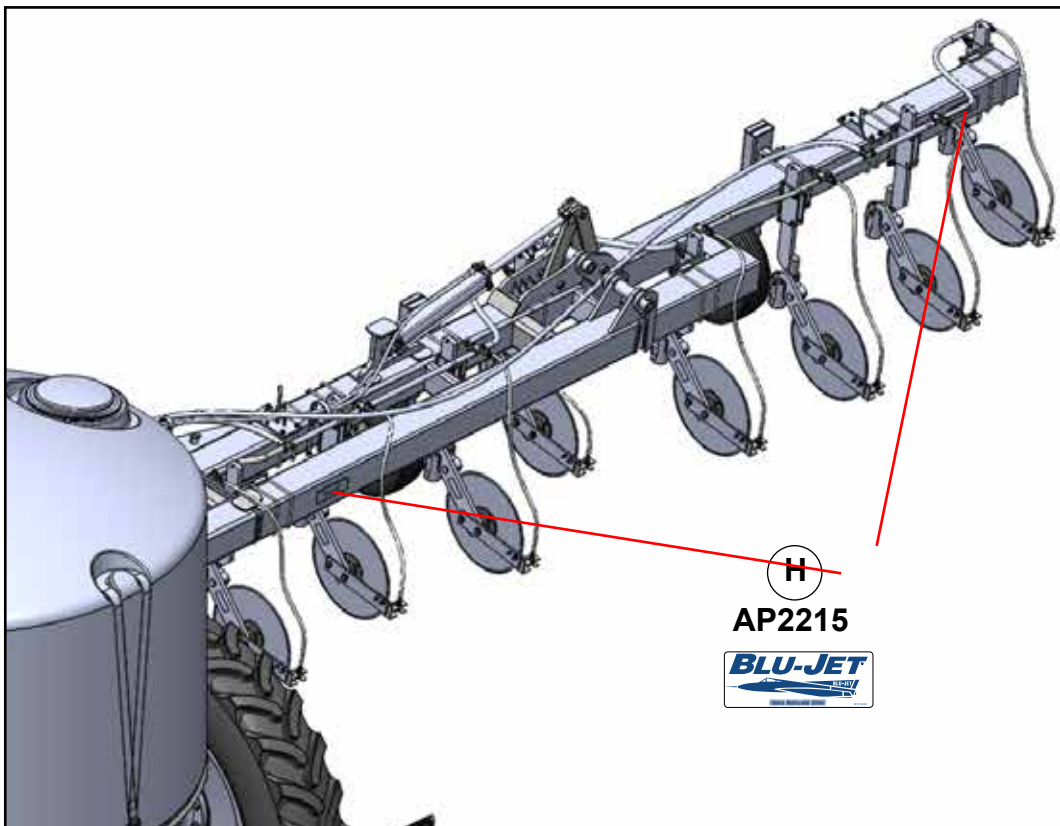
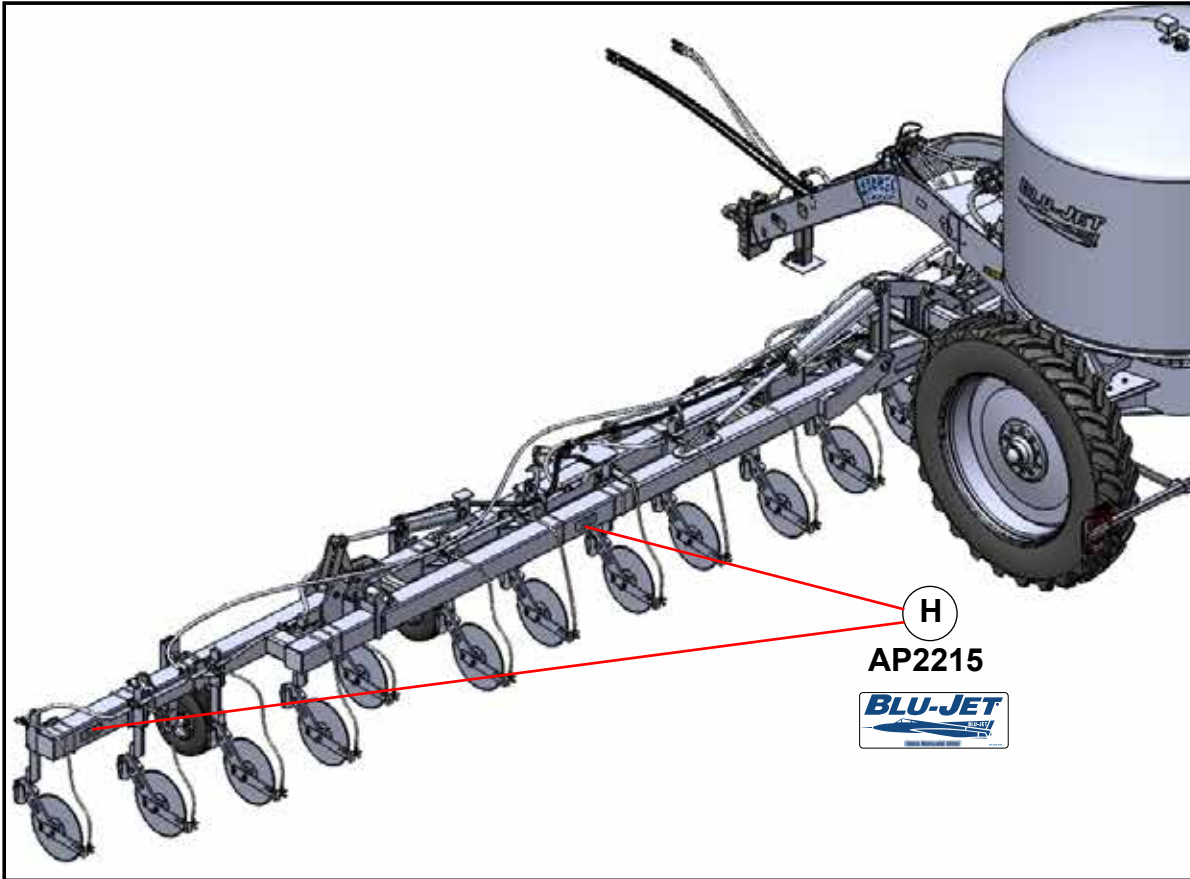
- I**
AP2547
YELLOW
- D**
AP2969

- F**
AP2576
AT4020
All Terrain Injection

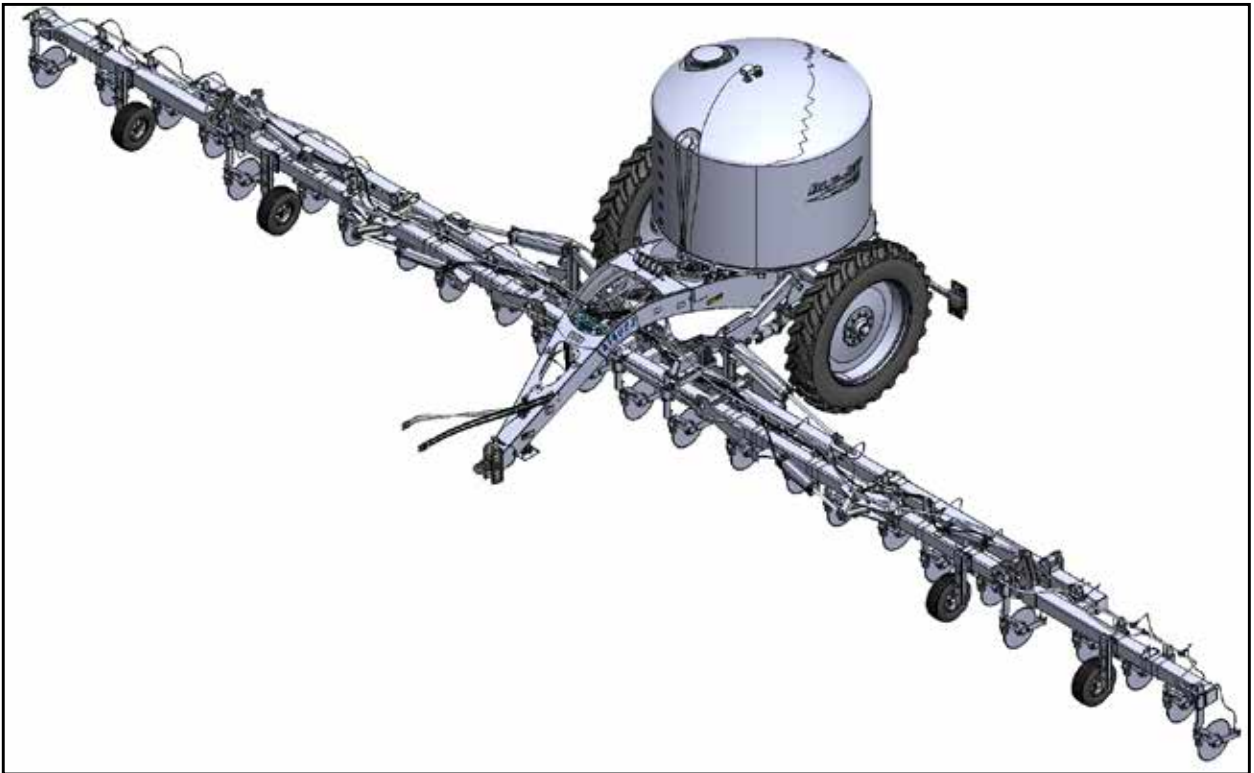


ASSEMBLY (DECAL PLACEMENT)



ASSEMBLY (DECAL PLACEMENT)





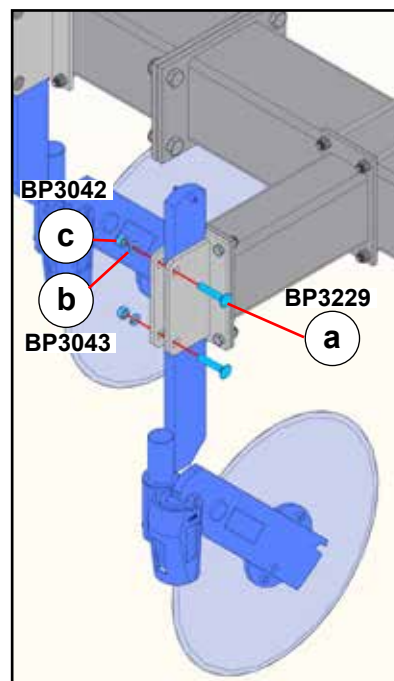
- ▶ **Preparing for storage**
 - A. Drain and rinse tank of all fertilizer.
 - B. Power wash machine to remove dirt and fertilizer residue.
 - C. Store the machine in a dry place. If the storage building has a dirt floor, place a board under the jack pad to prevent the pad from entering the ground.
 - D. Relieve pressure from hydraulic circuits. Heat from the sun can cause hydraulic systems to become over pressurized and cause hoses or components to burst.
 - E. Before storing, apply grease to all hydraulic cylinder rods to prevent rust or store with cylinders retracted if possible.
 - F. Place hydraulic hose ends in tongue hose holders.
 - G. Paint any surface that can rust.
 - H. Lubricate all grease fittings.
 - I. Inspect the machine for worn or broken parts and replace the parts as needed.

- ▶ **Removing from storage**
 - A. Remove the protective grease from the hydraulic cylinder rods.
 - B. Assemble any parts taken off for storage or reconditioning.
 - C. Check the complete machine for loose bolts and cotter pins. Check for parts out of adjustment which could result in rapid wear, possible breaking and poor operation.
 - D. Lubricate the complete machine.
 - E. Check tires for correct air pressure.
 - F. Check wheel bolt torque.

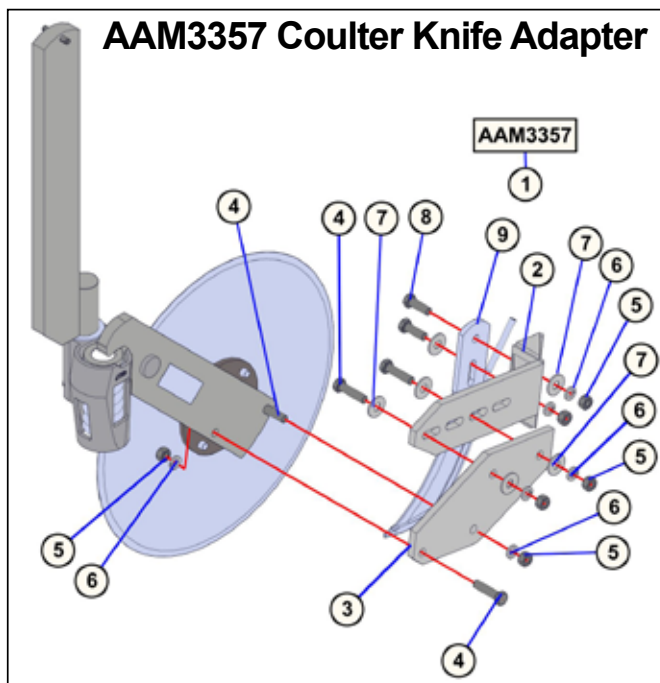
COULTER MOUNTING



1. Insert coulters shank into the mounting and allow assembly to rest on shank roll pin.
2. Insert (a) (BP3229) 1/2"-13 x 2-1/2" (12,7 mm x 6,4 cm) carriage bolt into top hole of bracket. Push coulters shank assembly back into the bracket and insert the bottom carriage bolt. Place (b) (BP3043) 1/2" (12,7 mm) lock washer and (c) (BP3042) 1/2"-13 (12,7 mm) hex nut on each carriage bolt. *Do not tighten at this point.*
3. Raise coulters shank assembly in bracket and place a 3" (8,9 cm) spacer between the roll pin and the top of the bracket. Tighten the 1/2" (12,7 mm) hex nuts. *This height is a starting point.*



AAM3357 Coulters Knife Adapter

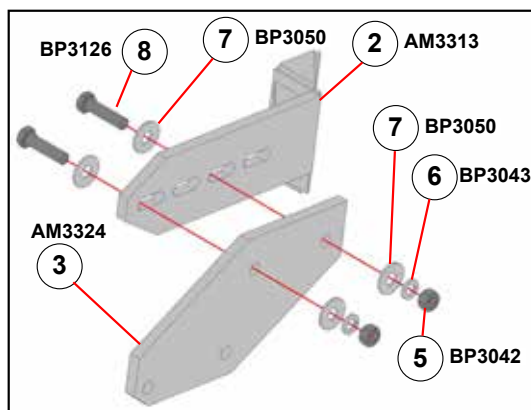


BOM ID	Qty	Item No	Description
1	1	AAM3357	COULTER KNIFE ADAPTER, WITH CO-50 KNIFE, 1 ROW
2	1	AM3313	KNIFE HOLDER/ MOUNTING ARM
3	1	AM3324	ADAPTER PLATE, COULTER KNIFE
4	4	BP3041	HEX CAP SCREW, 1/2"-13 X 2", GRADE 5, PLATED
5	6	BP3042	NUT, HEX, 1/2"-13, GRADE 2, PLATED
6	6	BP3043	WASHER, LOCK, 1/2", PLATED
7	6	BP3050	WASHER, FLAT, 1/2", PLATED
8	2	BP3126	HEX CAP SCREW, 1/2"-13 X 1-1/2", GRADE 5, PLATED
9	1	CP5038	CO-50 3/8" LIQUID KNIFE EXTRA THIN

ASSEMBLY (KNIFE INJECTION)

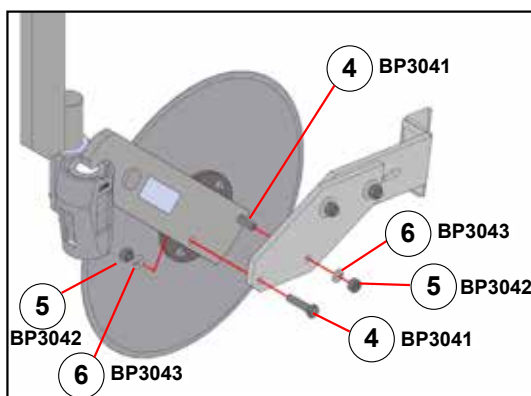
► Assemble knife holder and adapter plate

1. Pre-assemble (2) (AM3313) mounting arm knife holder and (3) (AM3324) coultter knife adapter plate.
2. Secure assembly with (8) (BP3126) 1/2" x 1-1/2", grade 5, hex cap screws, (7) (BP3050) 1/2", flat washers, (6) (BP3043) 1/2", lock washers and (5) (BP3042) 1/2", hex nuts.



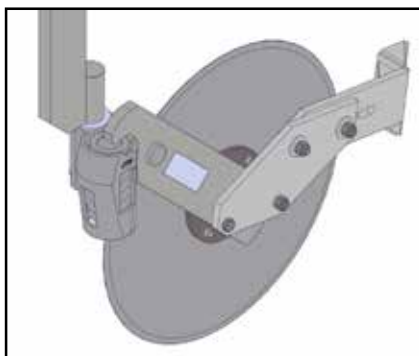
► Mounting to coultter arm

3. Mount assembly to coultter arm by inserting (4) (BP3041) 1/2"x 2", grade 5, hex cap screw into notched hole at the base of coultter arm. Install (6) (BP3043) 1/2", lock washer and (5) (BP3042) 1/2", hex nut. Insert (4) (BP3041) 1/2" x 2", grade 5, hex cap screw into adapter plated through hole in coultter arm. Secure with (6) (BP3043) 1/2", lock washer and (5) (BP3042) 1/2", hex nut.

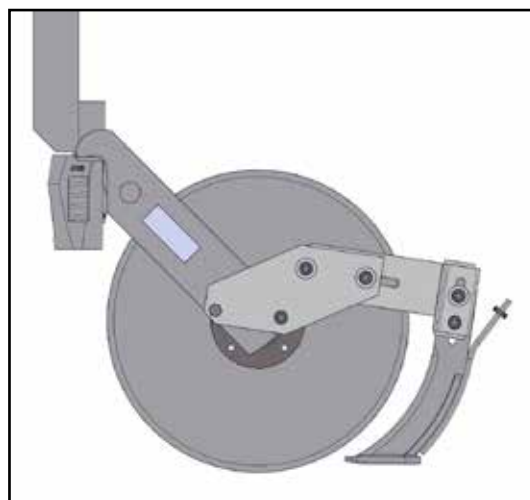
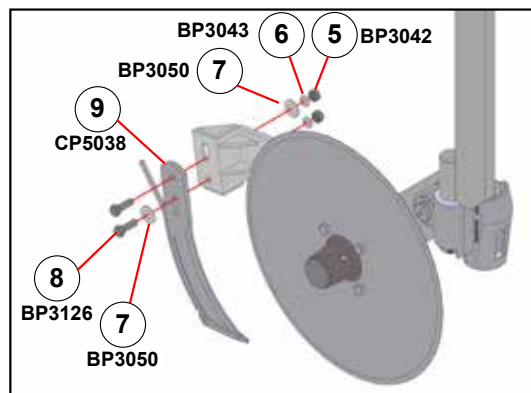


4. Tighten each 1/2" hex nuts.

► Attaching knife

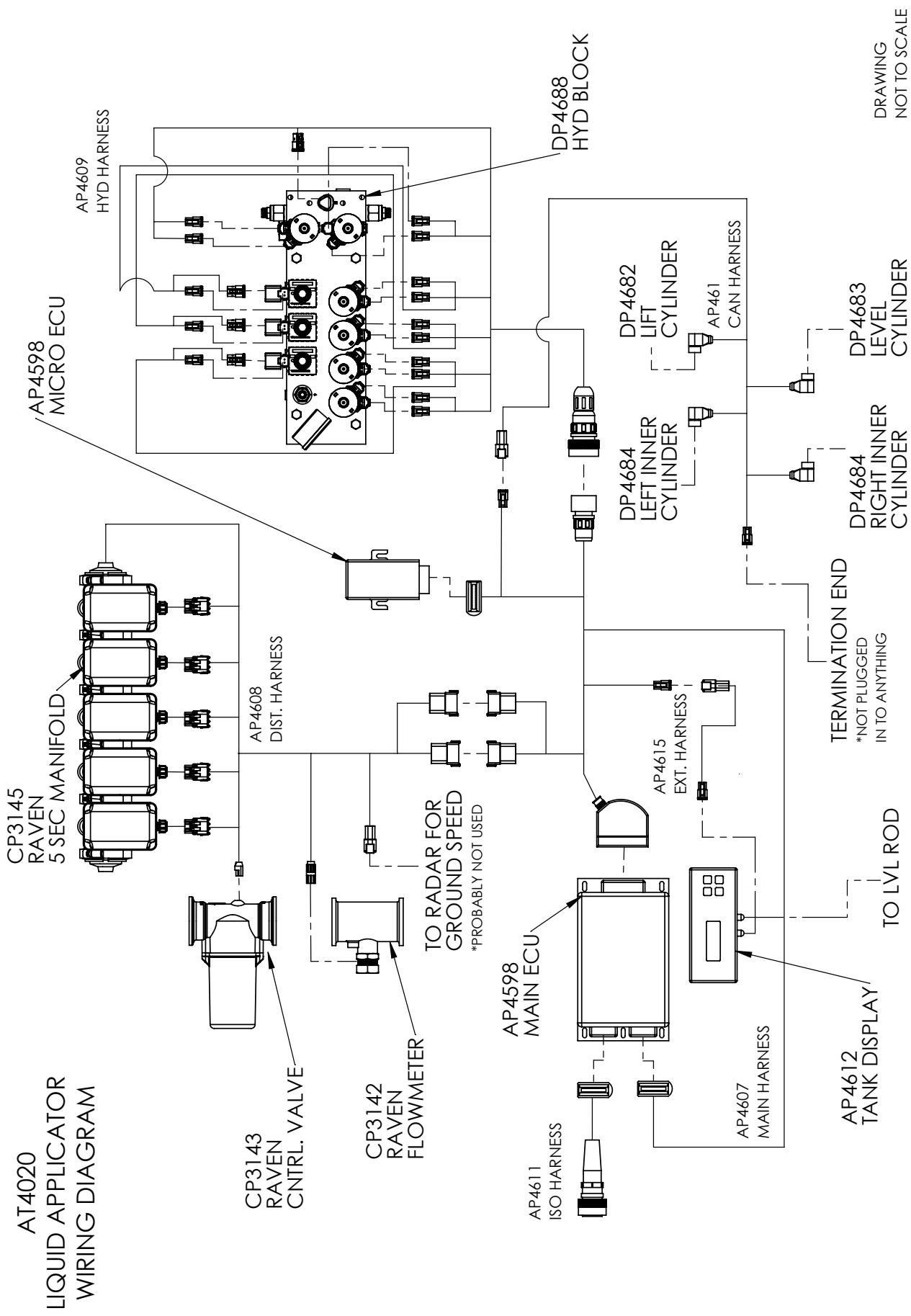


5. Attach (9) (CP5038) liquid knife to mounting arm with (8) (BP3126) 1/2" x 1-1/2", grade 5, hex cap screws, (7) (BP3050) 1/2" flat washers, (6) (BP3043) 1/2" lock washers and (5) (BP3042) 1/2" hex nuts.
6. Adjust the knife and knife holder arm until the knife is 1/2" from blade. This is a starting point.
7. Center of knife must align with blade edge to avoid trash plugging.



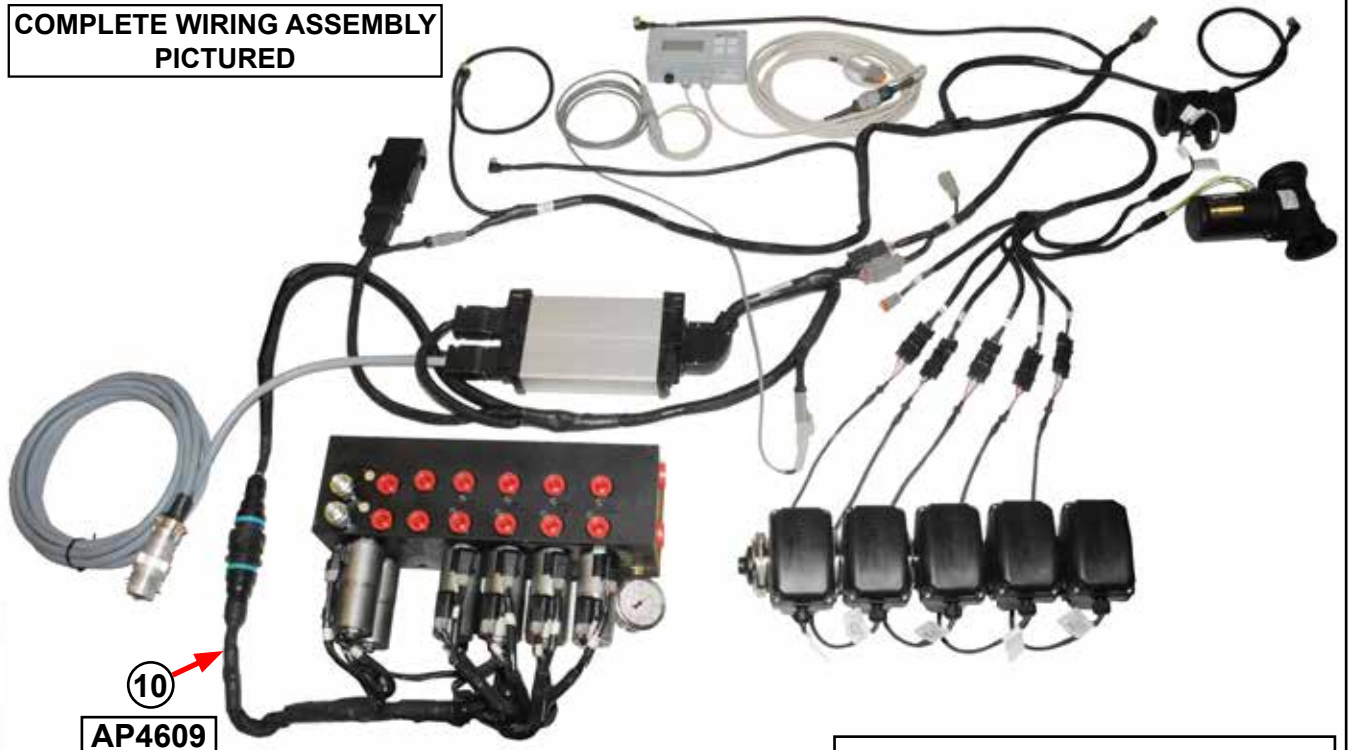
WIRING DIAGRAM

NOTE: CONTACT FACTORY FOR THE LATEST WIRING UPDATE.

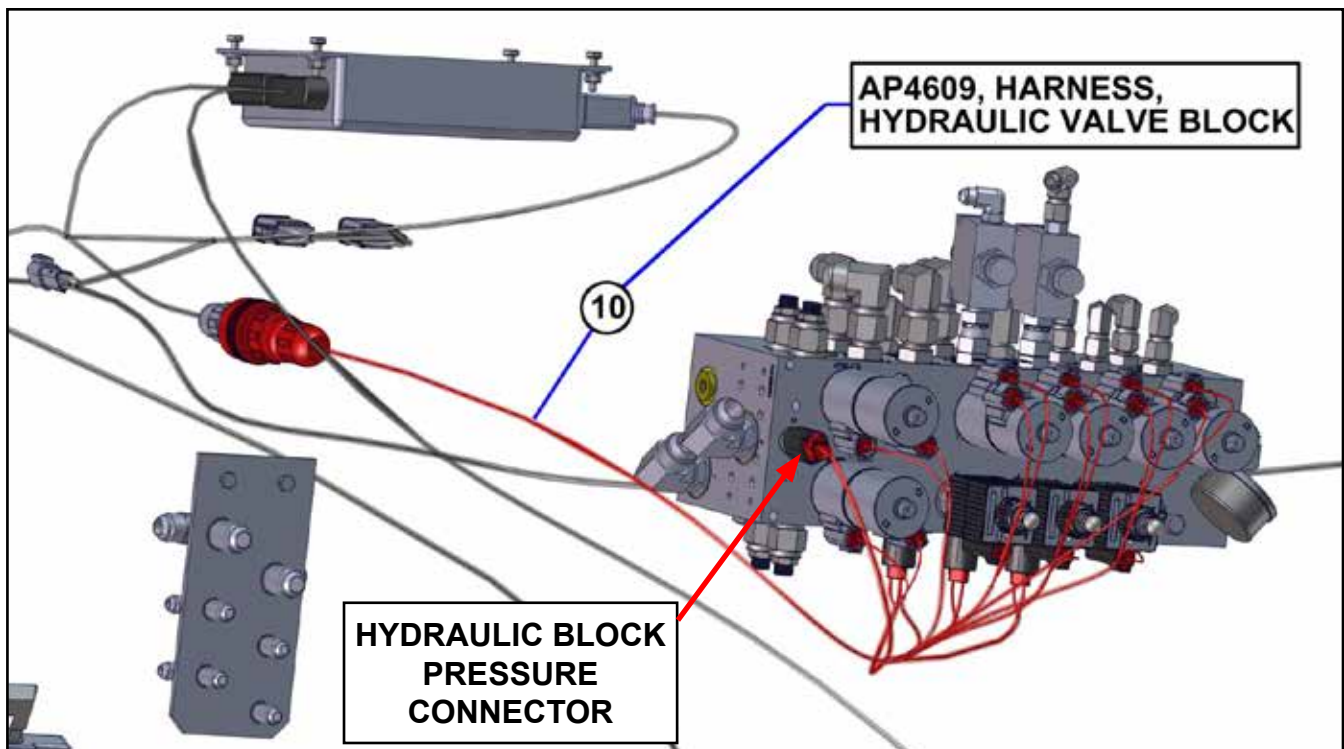


ASSEMBLY (HYDRAULIC CONTROLLED KIT WIRING)

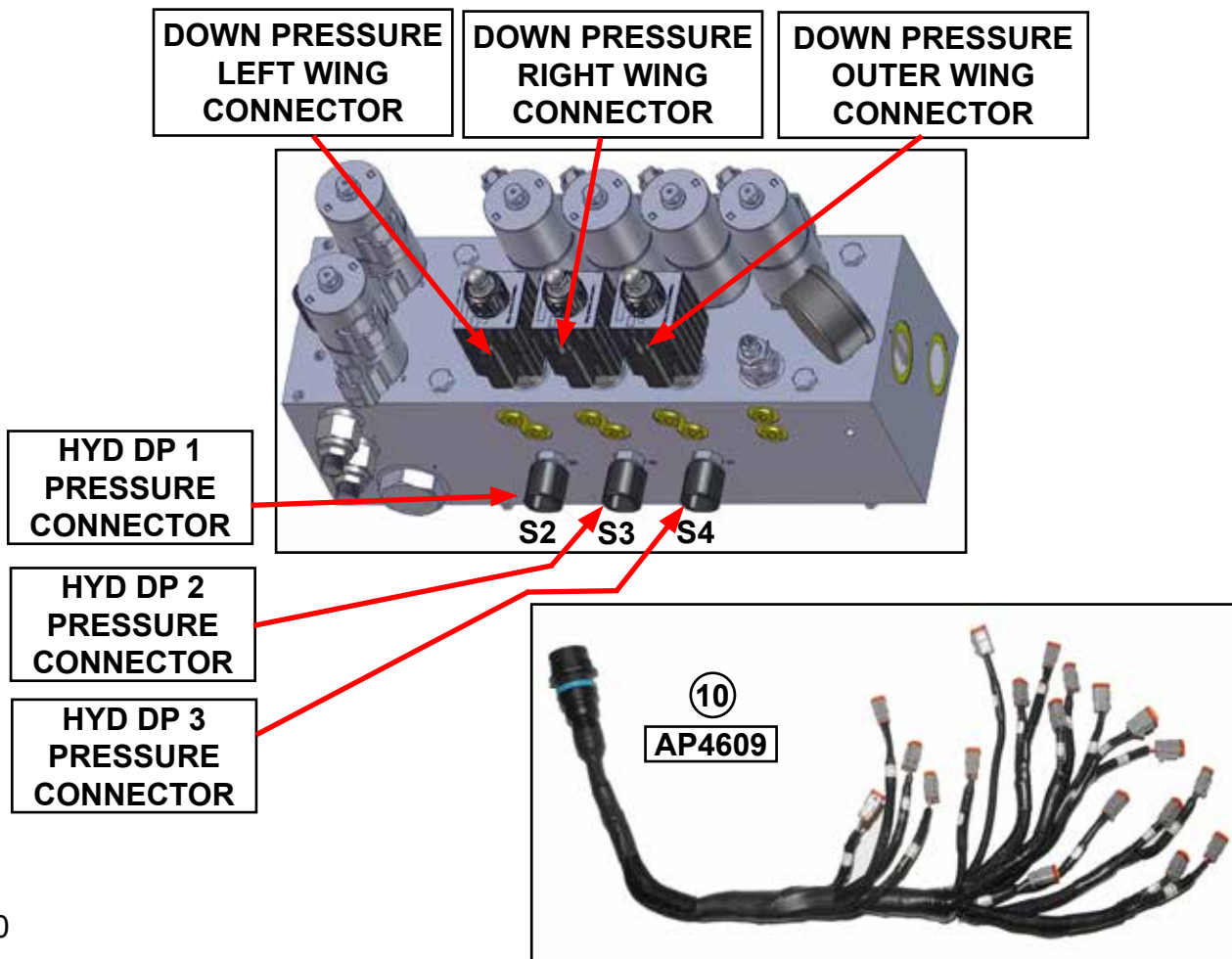
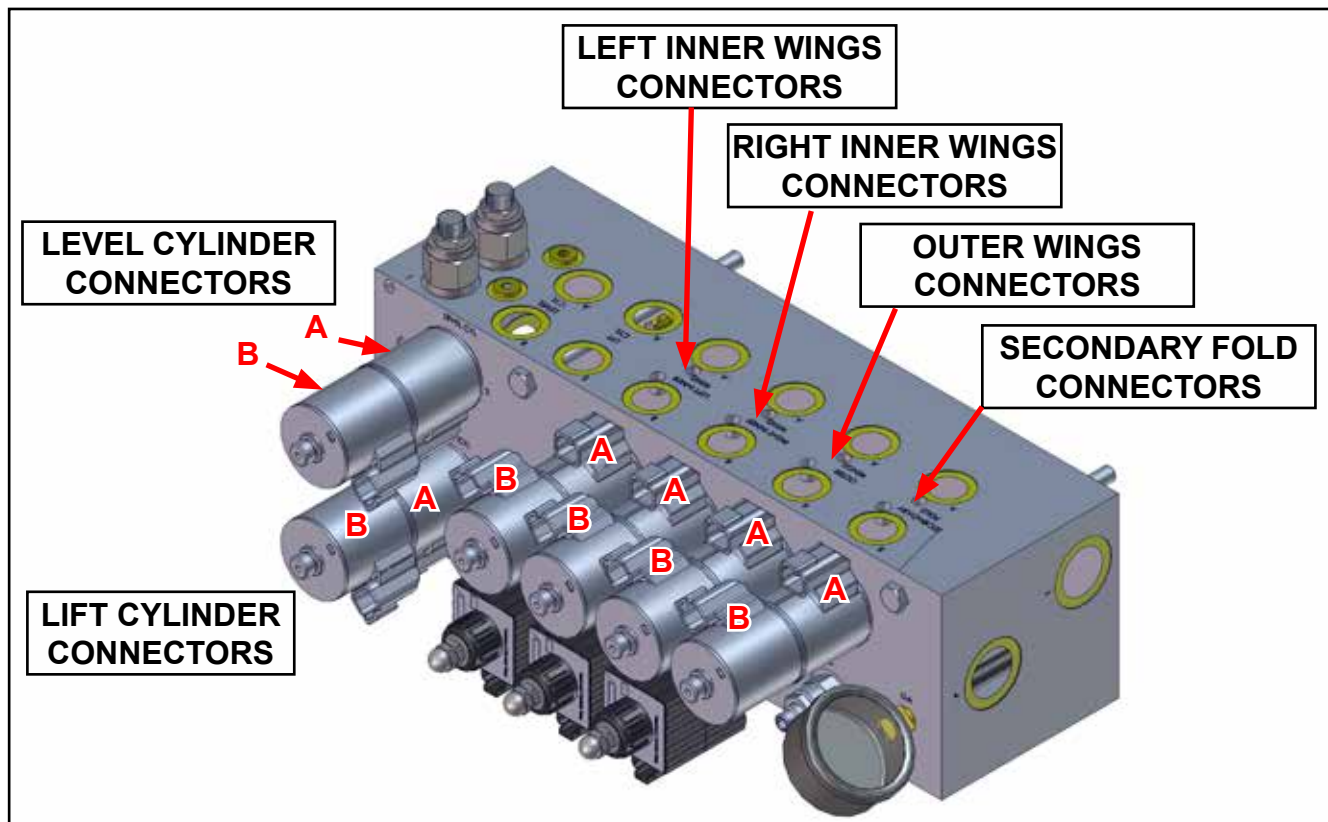
COMPLETE WIRING ASSEMBLY
PICTURED



HYDRAULIC CONTROLLER KIT
WIRING
PART OF BUNDLE 44200105,
HYDRAULIC CONTROLLED KIT



ASSEMBLY (HYDRAULIC CONTROLLED KIT WIRING)

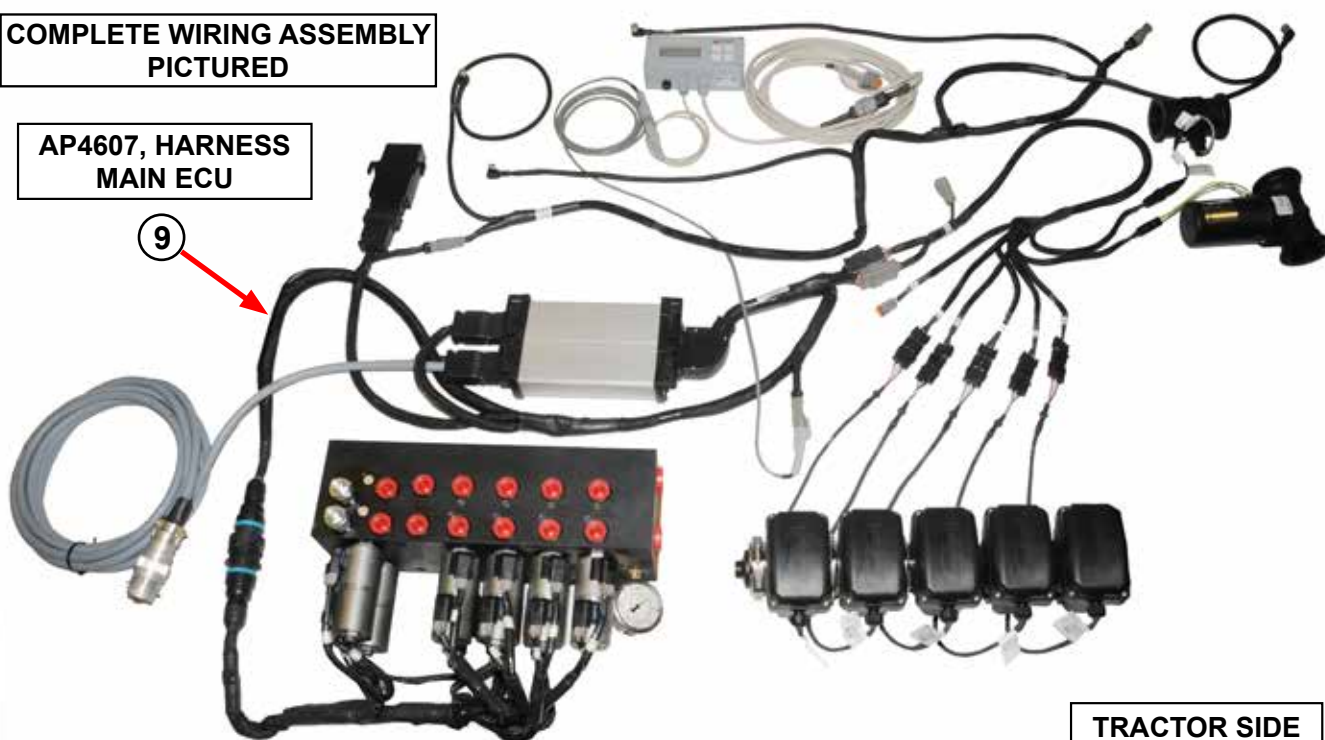


ASSEMBLY (WIRING HARNESS MAIN ECU)

COMPLETE WIRING ASSEMBLY
PICTURED

AP4607, HARNESS
MAIN ECU

9

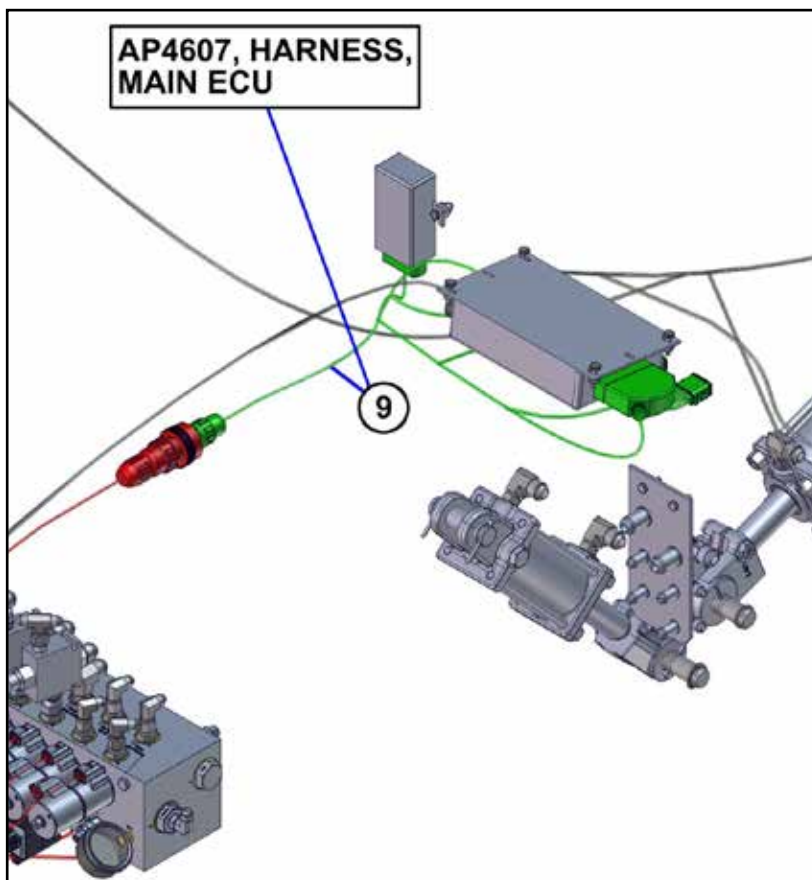


TRACTOR SIDE

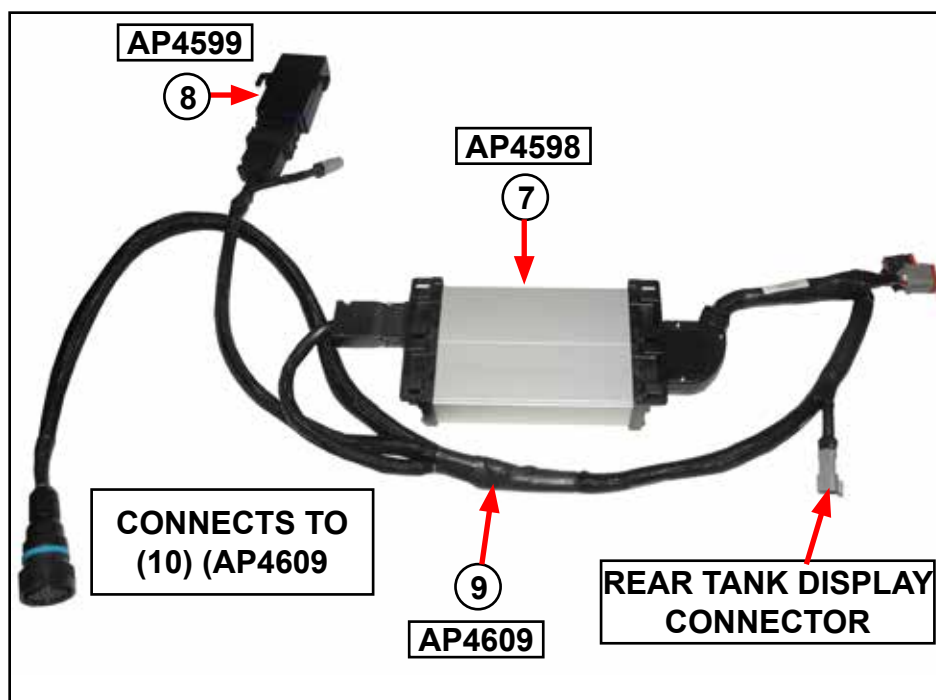
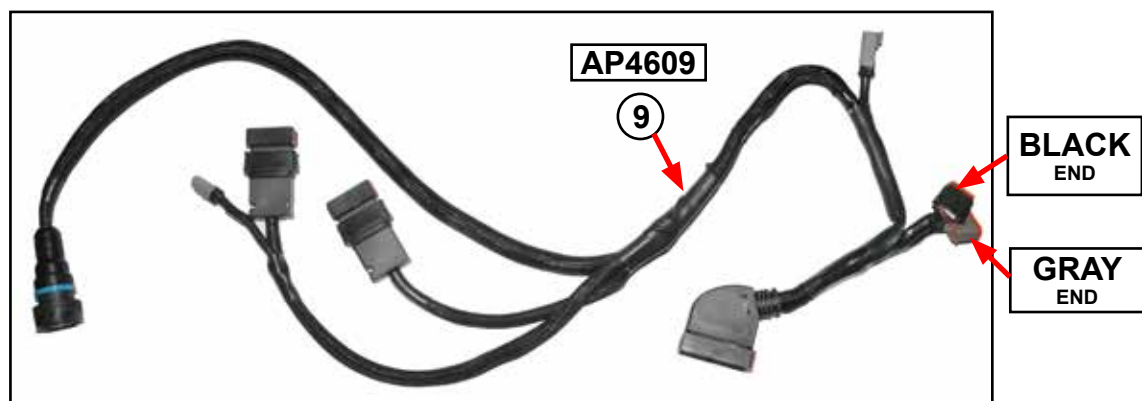
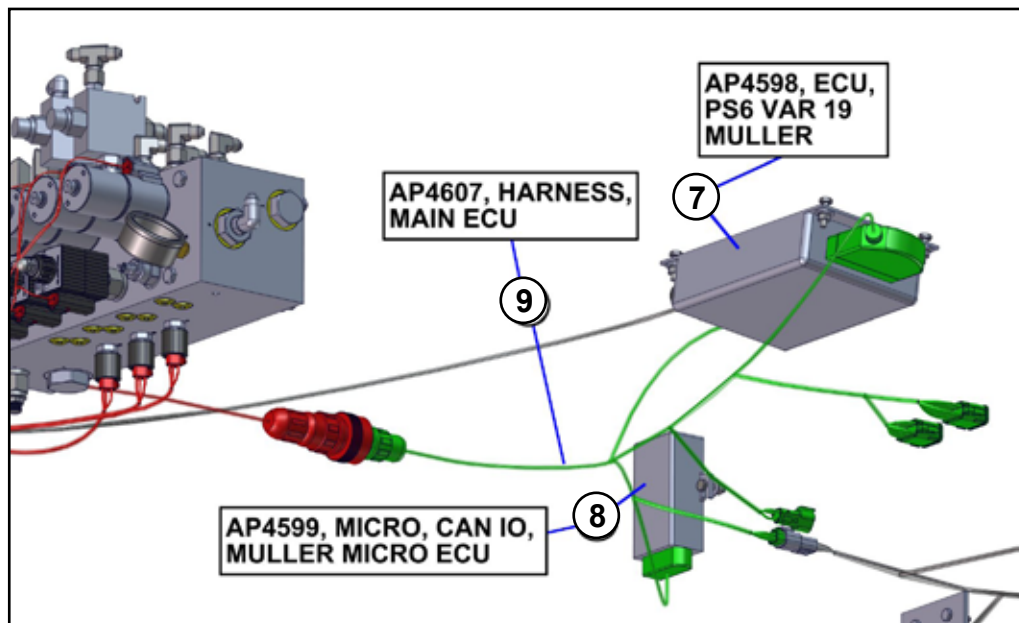
WIRING HARNESS MAIN ECU
PART OF BUNDLE 44200105,
HYDRAULIC CONTROLLED KIT

AP4607, HARNESS,
MAIN ECU

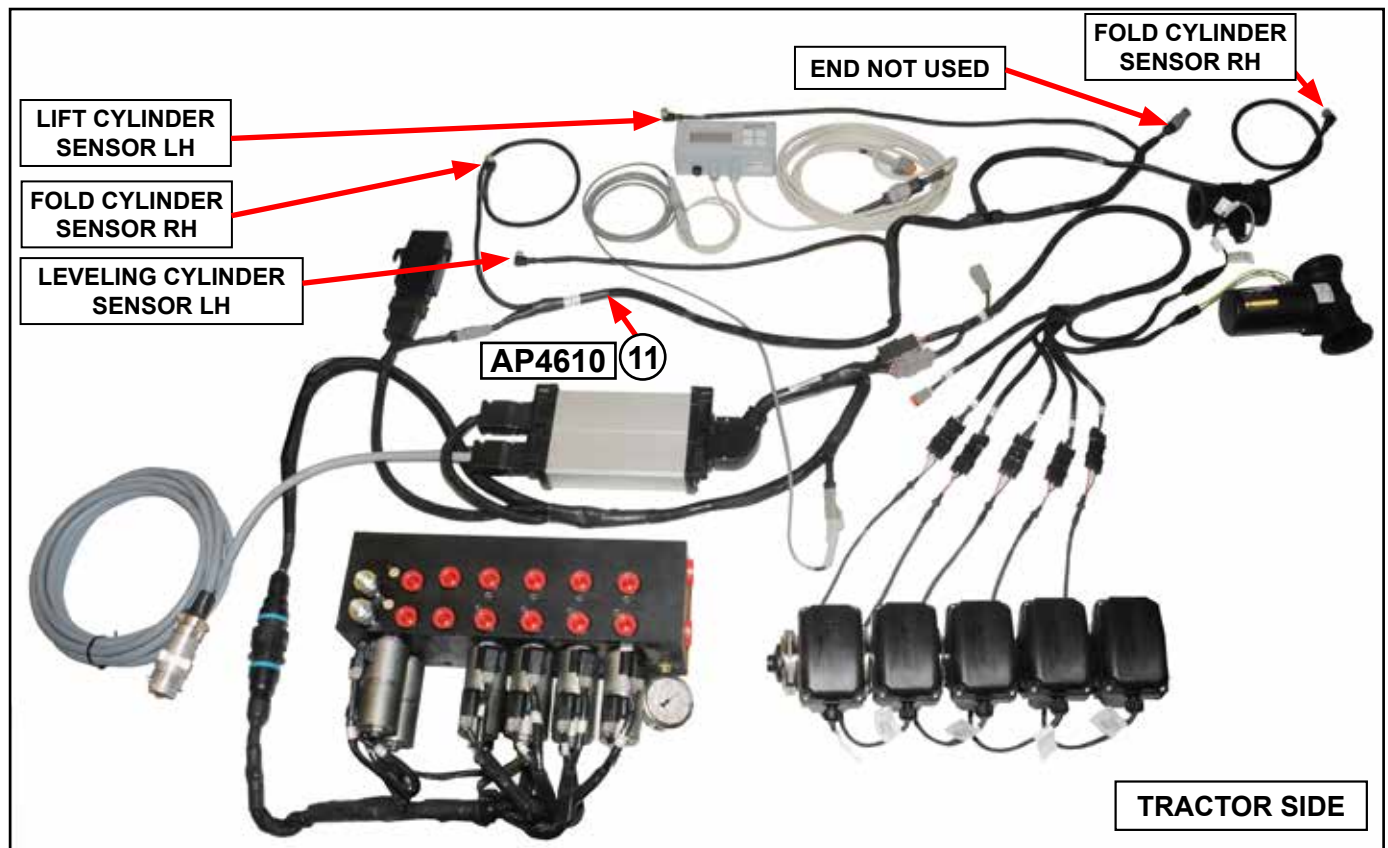
9



ASSEMBLY (WIRING HARNESS MAIN ECU)



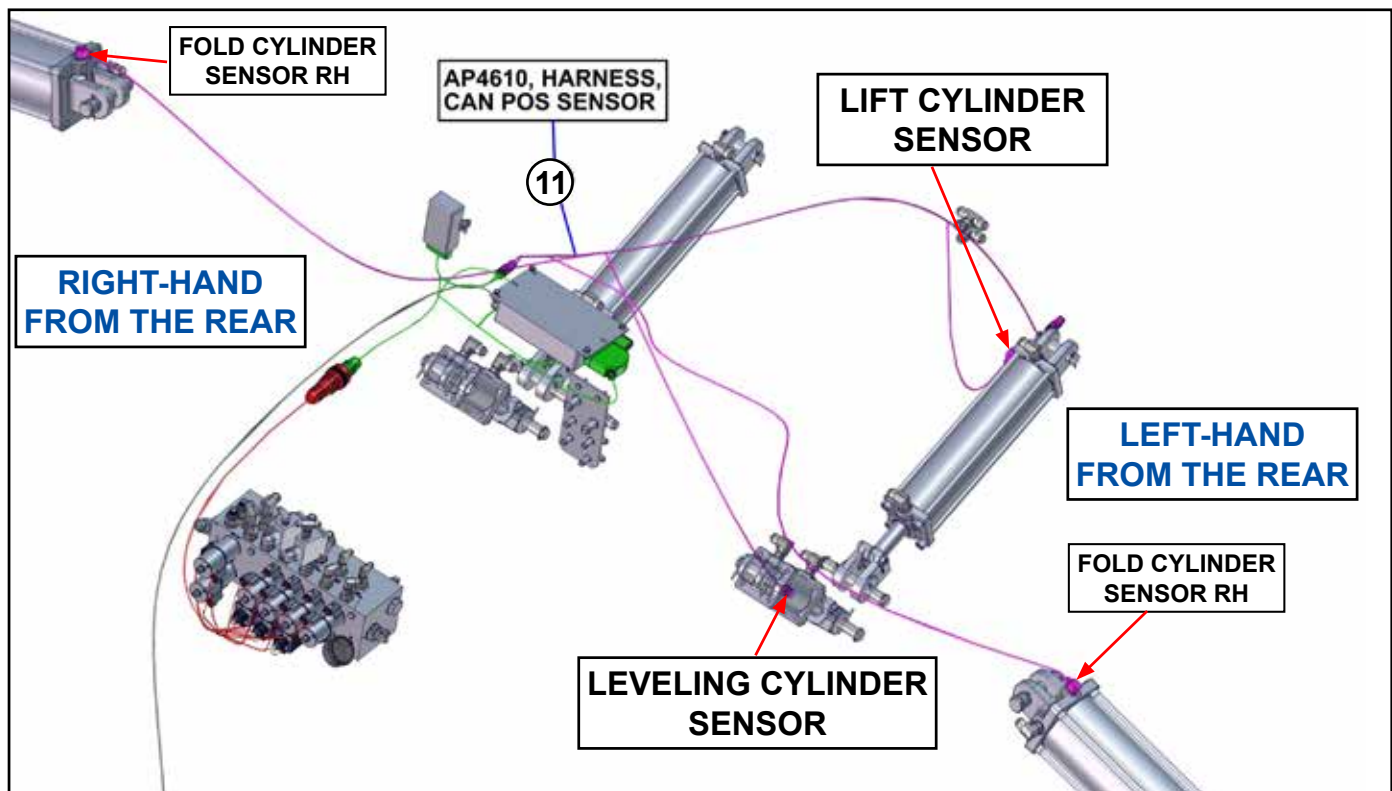
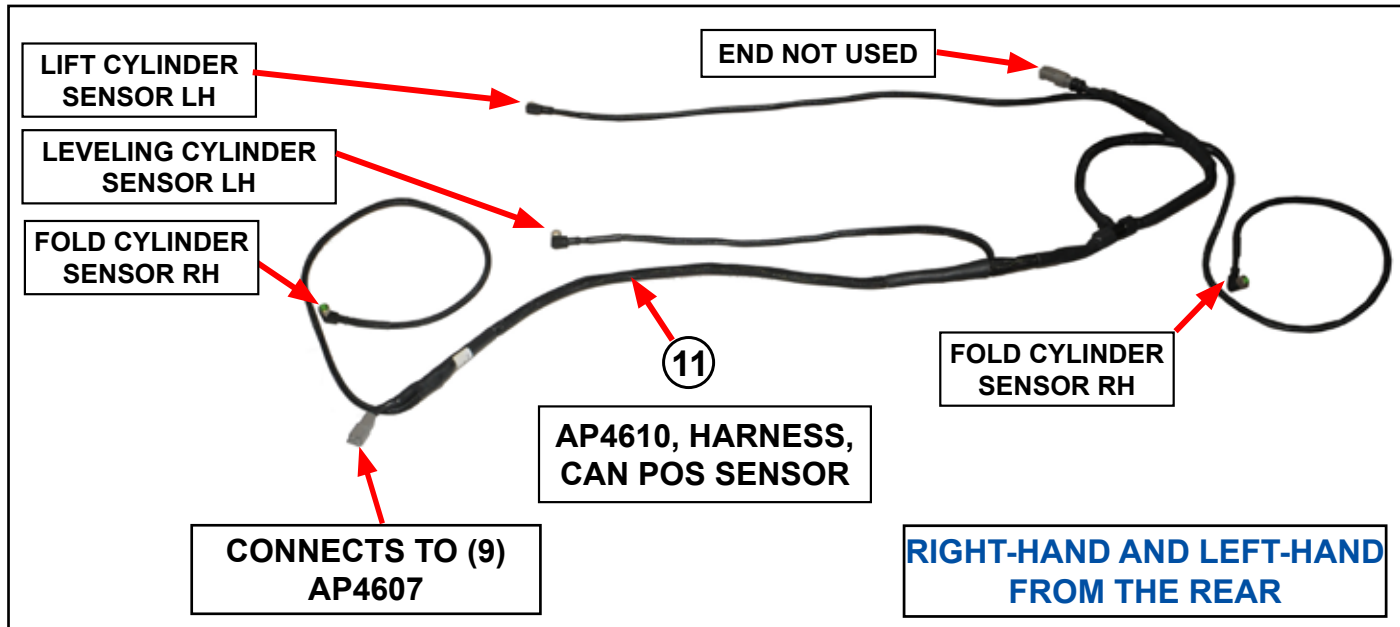
ASSEMBLY (WIRING CYLINDER SENSOR)



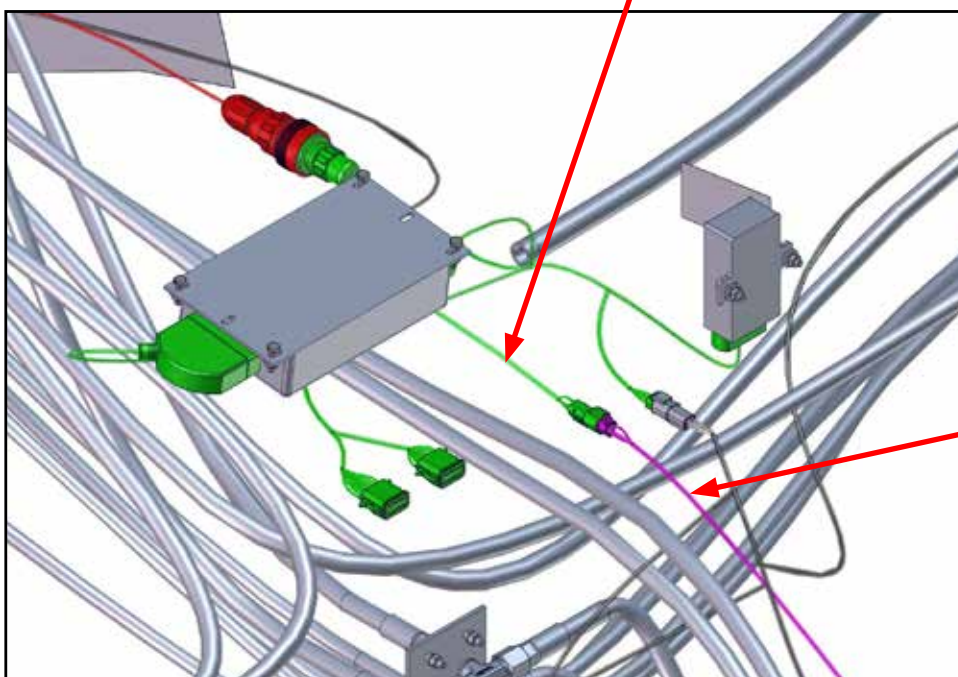
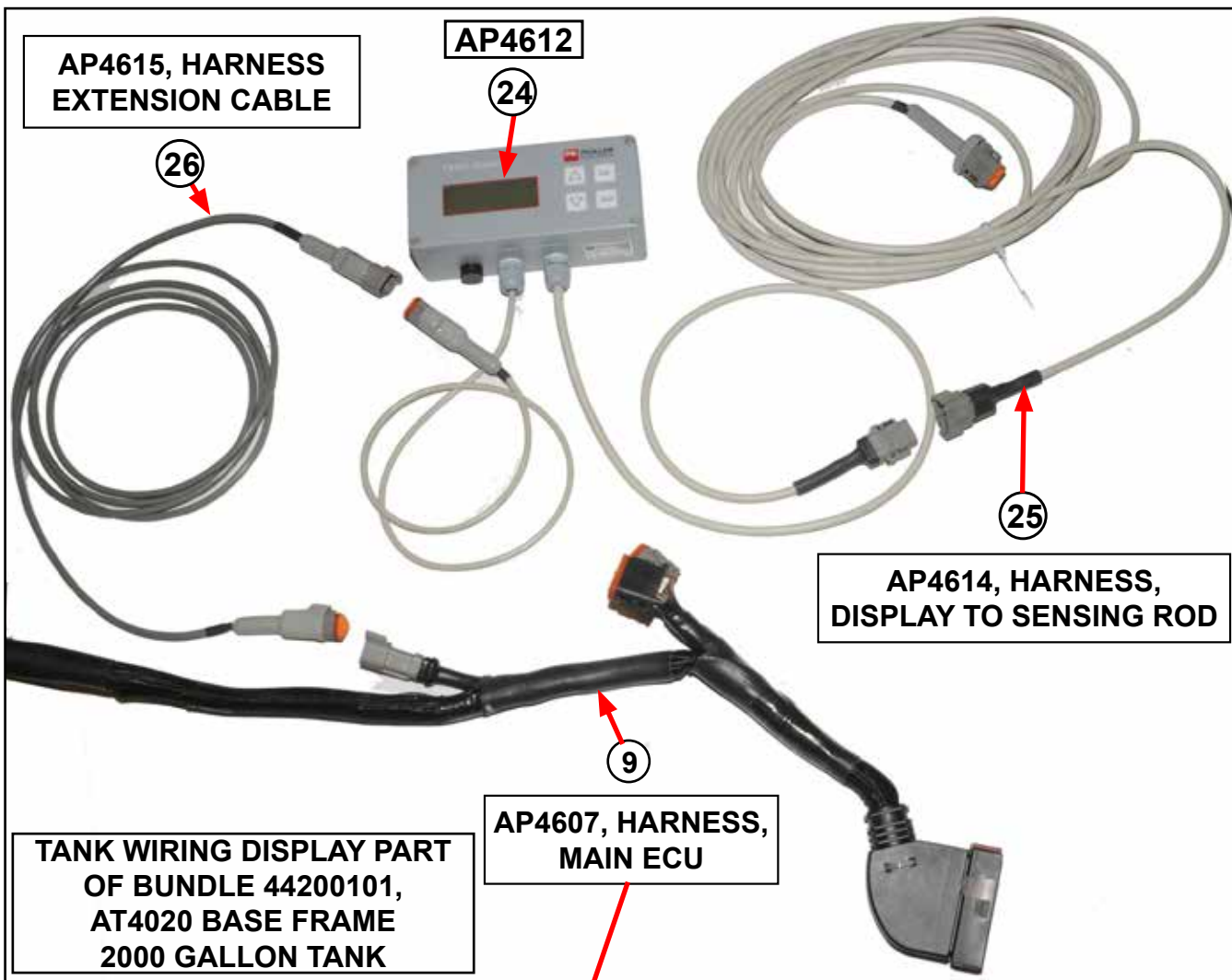
CYLINDER SENOR WIRING
PART OF BUNDLE 44200105,
HYDRAULIC CONTROLLED KIT

RIGHT-HAND AND LEFT-HAND
FROM THE REAR

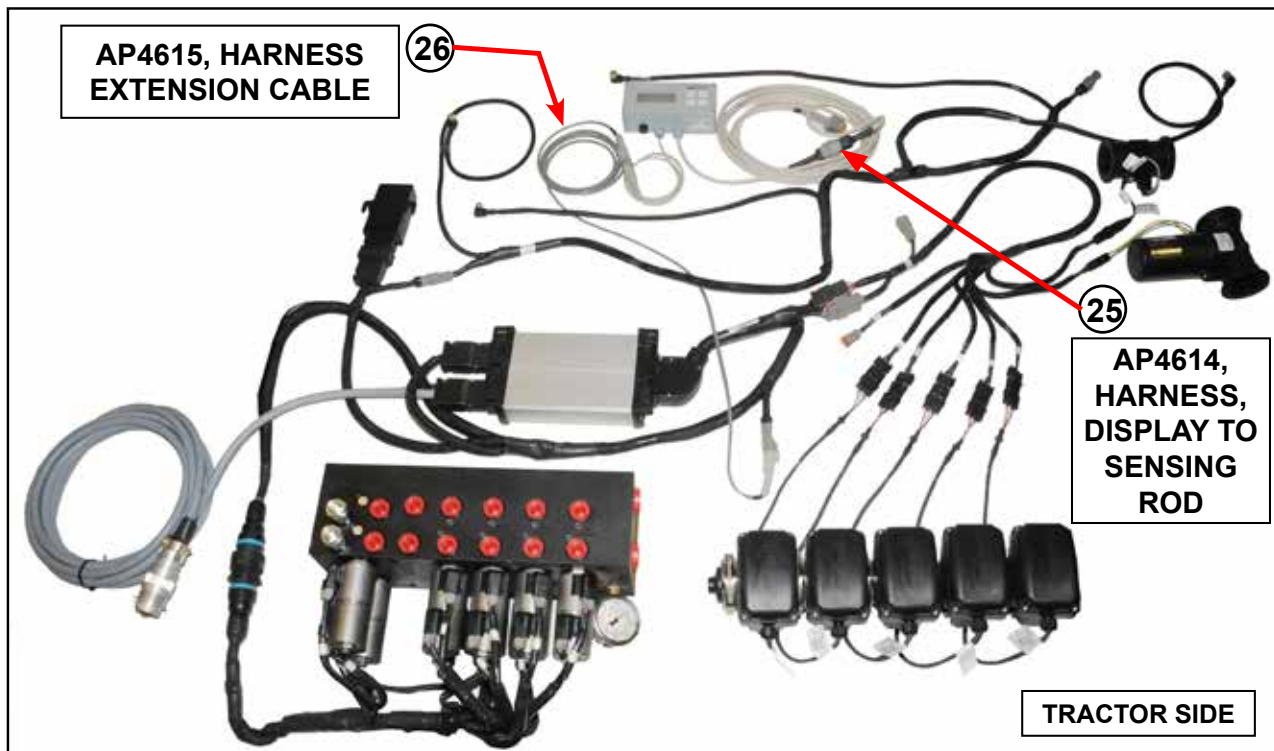
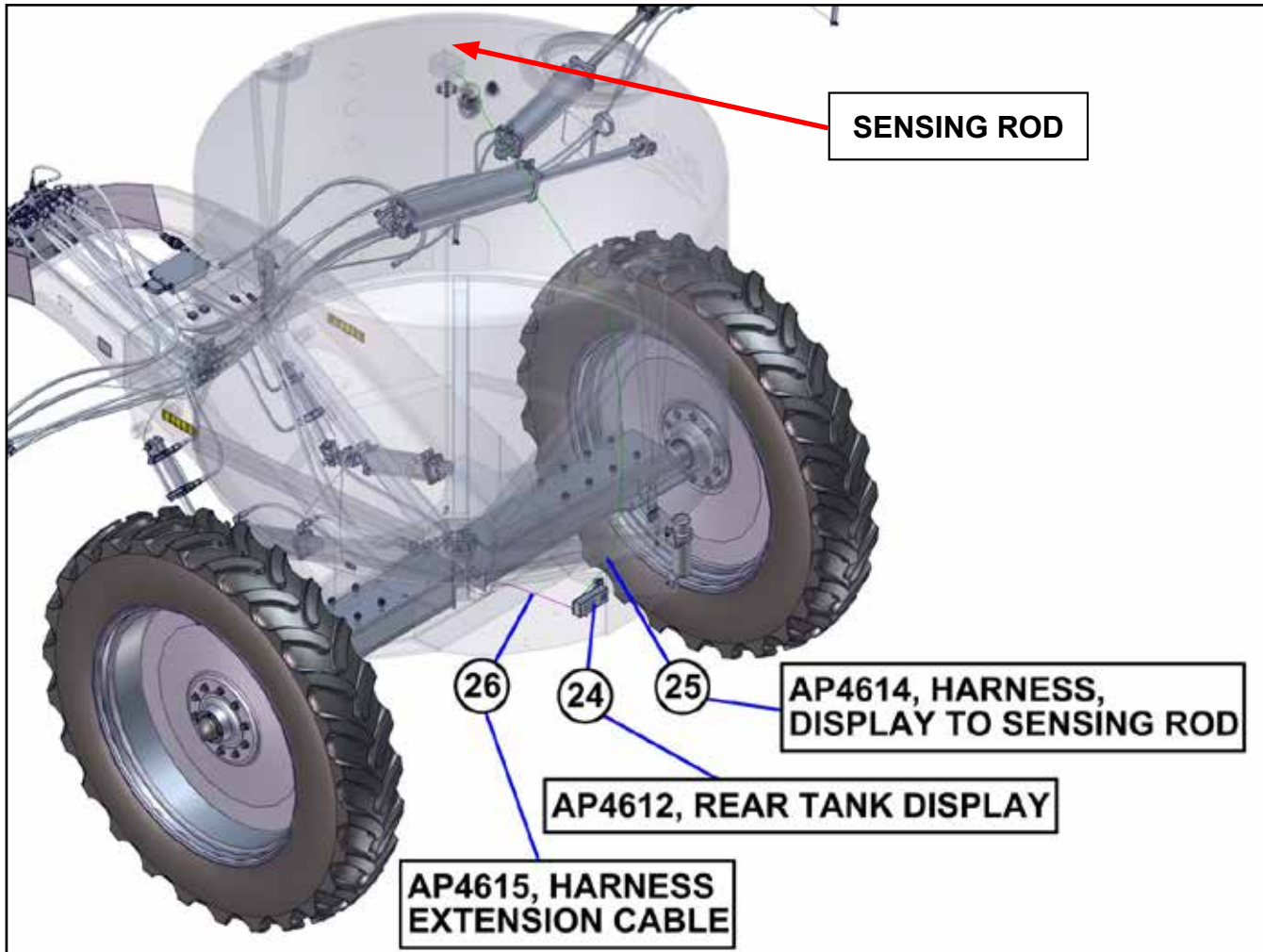
ASSEMBLY (WIRING CYLINDER SENSOR)



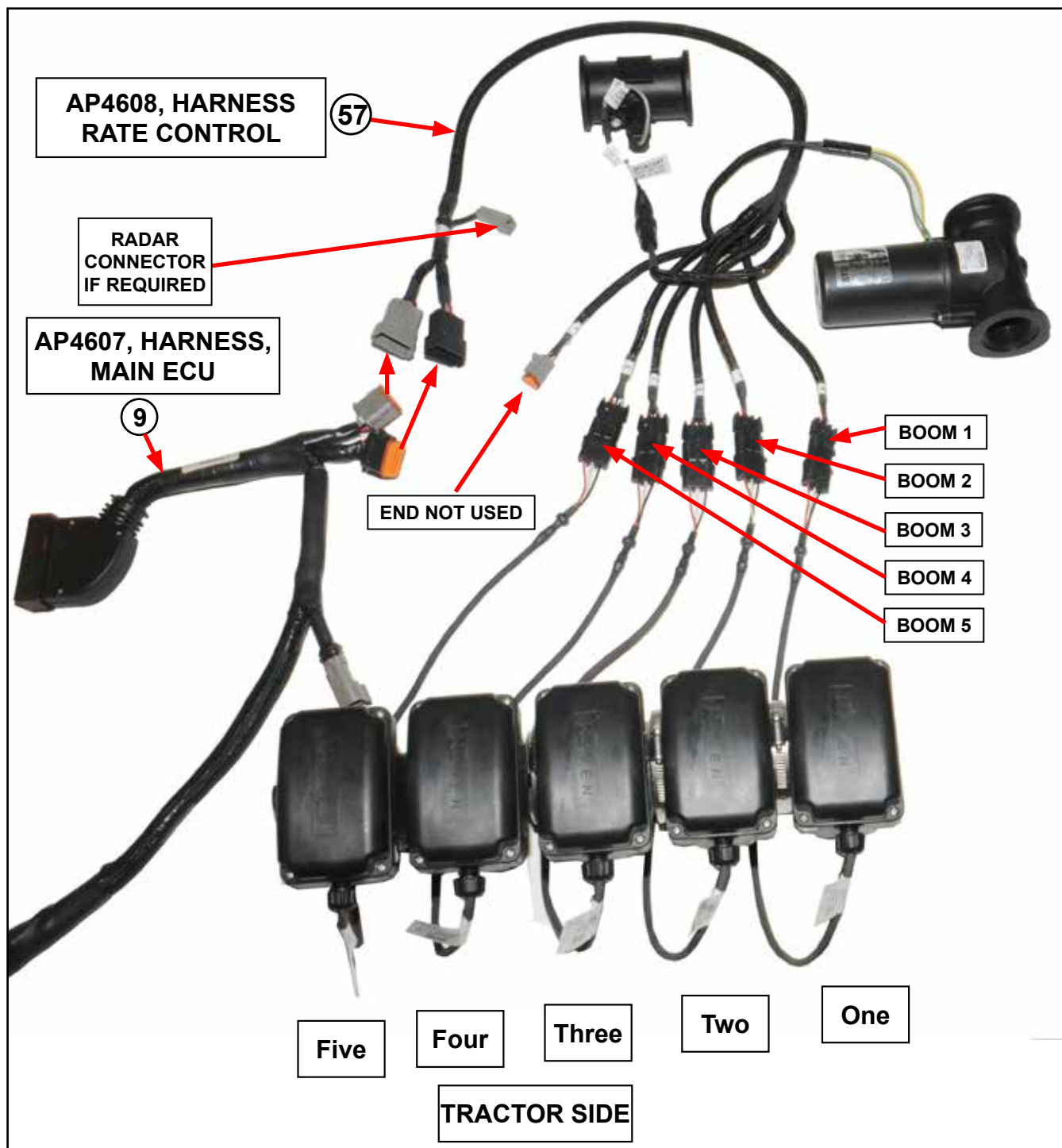
ASSEMBLY (WIRING TANK DISPLAY)



ASSEMBLY (WIRING TANK DISPLAY)

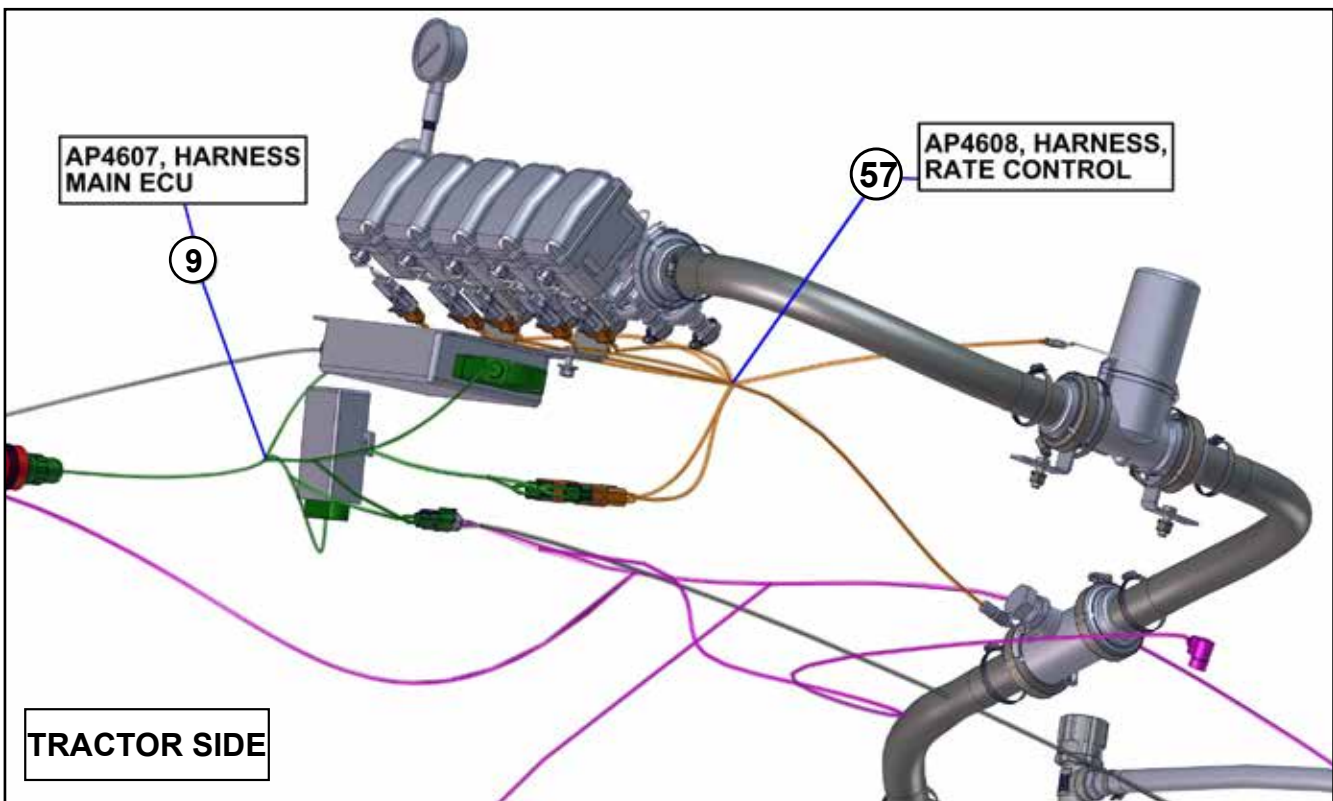
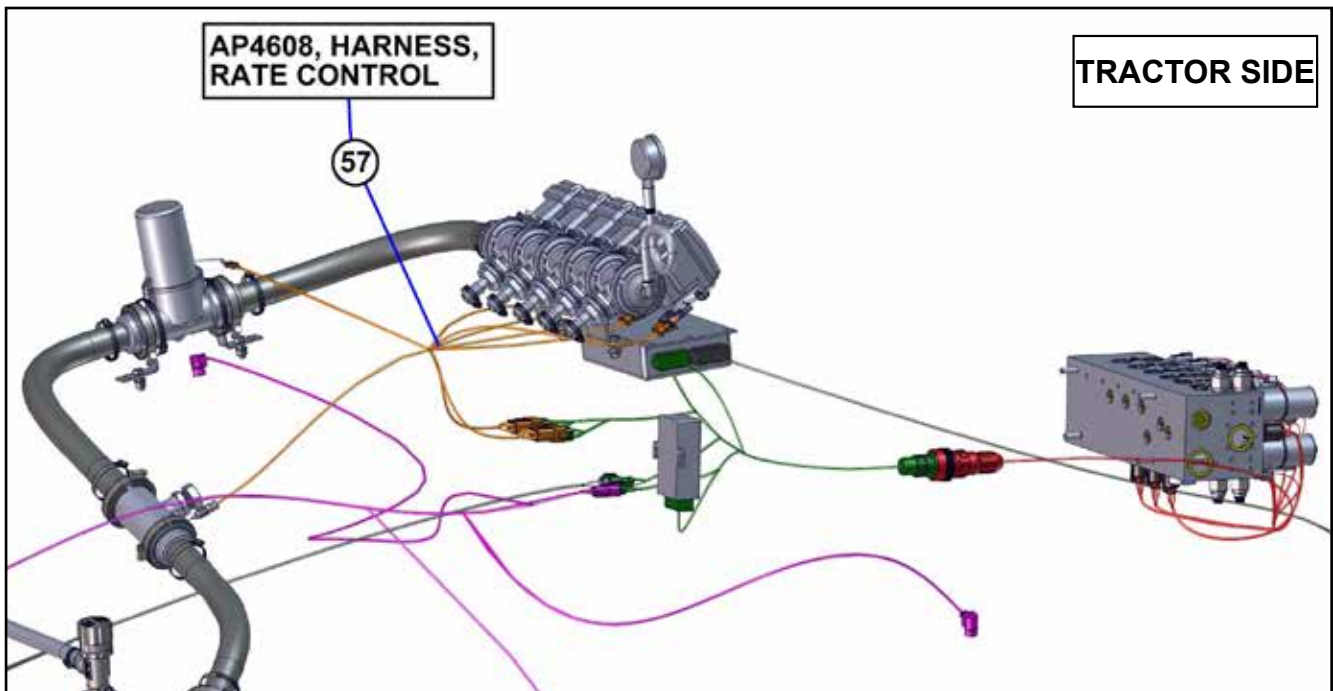


ASSEMBLY (RATE CONTROL WIRING)

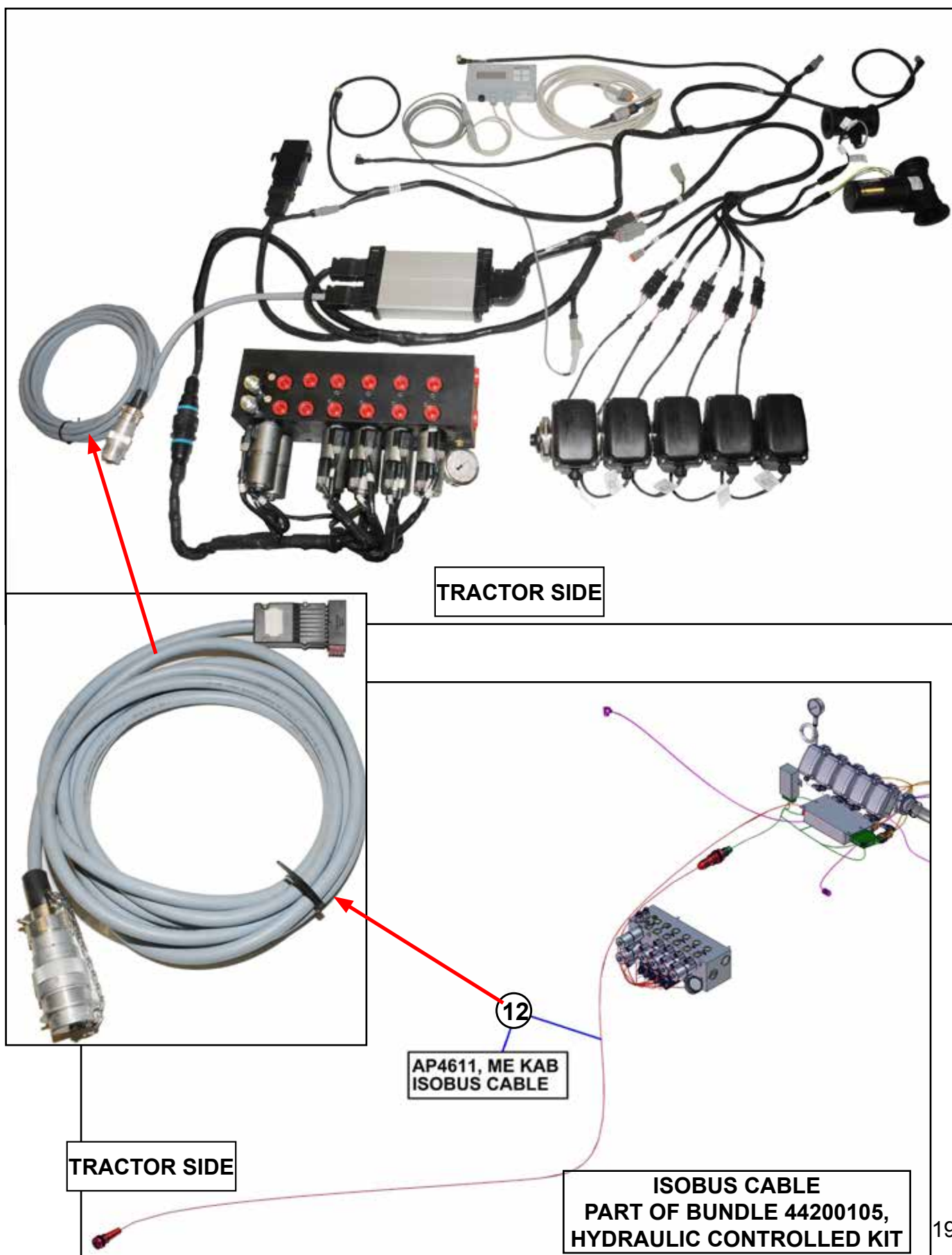


RATE CONTROL WIRING PART
OF BUNDLE 44200107,
CENTRIFUGAL PUMP PACKAGE

ASSEMBLY (RATE CONTROL WIRING)



ASSEMBLY (ISOBUS CABLE TO TRACTOR)



Installation and Operating Instructions

draft

TANK-Control



Last update: 20140324



30395592-02-US

Read and follow these operating instructions.
Keep these operating instructions for future reference.

Document

Installation and Operating Instructions

Product: TANK-Control

Document number: 30395592-02-US

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For your safety

Basic safety instructions

For your safety

1.1

Basic safety instructions



Please read the following safety instructions carefully before using the product for the first time.

- Please read these Installation and Operating Instructions carefully and follow all the safety instructions.
- Keep children away from the control unit and sensor.
- Do not make any unauthorized modifications to the product. Unauthorized modifications or use may impair safety and reduce the service life or operability of the unit. Modifications are considered unauthorized if they are not described in the product documentation.
- Never remove any safety mechanisms or stickers from the product.
- Before performing any welding operations on the tractor or a trailed machine, always disconnect the power supply to the display.

1.2

Intended use

The product may only be used for agricultural purposes.

Intended use also includes the adherence to the conditions for operation and repairs prescribed by the manufacturer.

The manufacturer cannot be held liable for any personal injury or property damage resulting from

such non-compliance. All risk involved during improper use lies with the user.

1.3

Layout and meaning of warnings

All safety instructions found in these Operating Instructions are composed in accordance with the following pattern:

	WARNING
	<p>This signal word identifies medium-risk hazards, which could potentially cause death or serious physical injury, if not avoided.</p>



CAUTION

This signal word identifies low-risk hazards, which could potentially cause minor or moderate physical injury or damage to property, if not avoided.

NOTICE

This signal word identifies actions which could lead to operational malfunctions if performed incorrectly. These actions require that you operate in a precise and cautious manner in order to produce optimum work results.

There are some actions that need to be performed in several steps. If there is a risk involved in carrying out any of these steps, a safety warning will appear in the instructions themselves.

For your safety

Disposal

Safety instructions always directly precede the step involving risk and can be identified by their bold font type and a signal word.

Example

- 1. NOTICE! This is a notice. It warns that there is a risk involved in the next step.**
2. Step involving risk.

1.4

Disposal



When it has reached the end of its service life, please dispose of this product as electronic scrap in accordance with all applicable waste management laws.

About these Operating Instructions

Who should use the Operating Instructions?

About these Operating Instructions

2.1 Who should use the Operating Instructions?

These Operating Instructions are intended for:

- People who use the sprayer.
- People who install the sensor.
- People who install and use the control unit.

2.2 Layout of operating instructions

The operating instructions explain step by step how you can perform certain operations with the product.

We use the following symbols throughout these Operating Instructions to identify different operating instructions:

Type of depiction	Meaning
1. 2.	Actions that must be performed in succession.
⇒	Result of the action. This will happen when you perform an action.
⇒	Result of an operating instruction. This will happen when you have completed all steps.
☑	Requirements. In the event that any requirements have been specified, these must be met before an action can be performed.

2.3 Layout of references

If any references are given in these Operating Instructions, they will appear as:

Example of a reference : [→ 7]

References can be identified by their square brackets and an arrow. The number following the arrow shows you on what page the chapter starts where you can find further information.

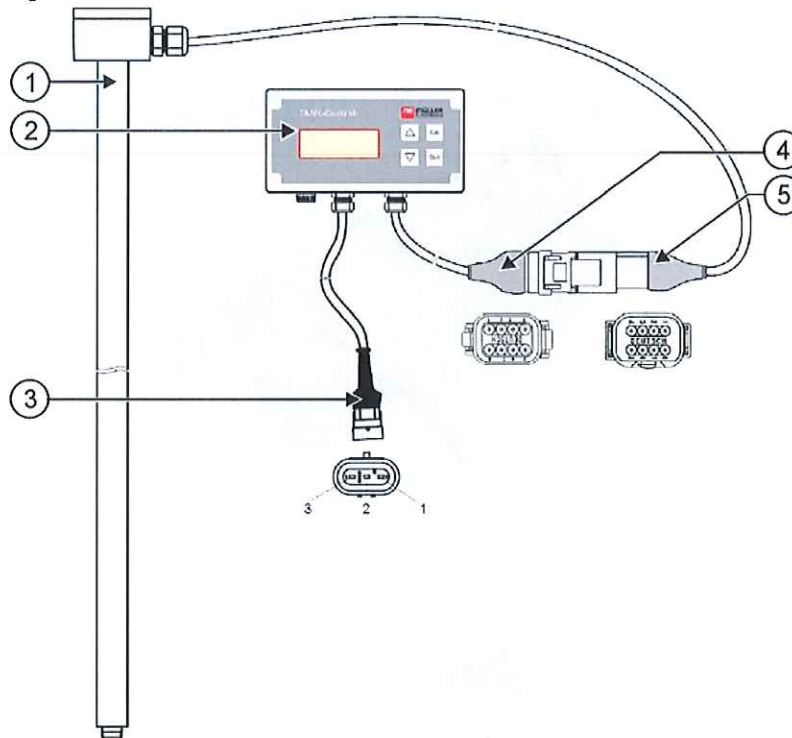
Product description

System overview

Product description

3.1

System overview



①	Sensor	④	Connection socket
②	Control unit	⑤	Connection plug
③	Plug for connection to the on-board computer		

3.2

What is TANK-Control?

TANK-Control is a system which consists of a computer and a sensor:

3.4

Understanding the information on the nameplate

You will find a nameplate sticker on the control unit. On this sticker you can find all the information you need to identify the product.

Have these details ready when you contact Customer Services.



Information on the nameplate

Product description

Understanding the information on the
nameplate

①	Client's item number If the product was manufactured for an agricultural machinery manufacturer, the agricultural machinery manufacturer's item number will be shown here.	④	Operating voltage The product may only be connected to voltages within this range.
②	Hardware version	⑤	Software version at the time of delivery. If you update the software, this version will no longer be up-to-date.
③	Mueller-Electronics item number	⑥	Serial number

Assembly instructions

4.1

Safety during installation

This chapter is intended for specialists and agricultural machinery manufacturers who install the sensor and control unit.

- Please read these installation instructions carefully and follow all the instructions.
- Do not install the product unless you know how to install it on agricultural machines.
- Only install the sensor when the tank is new.
- Take safety measures to ensure that you do not fall if you climb onto the tank while installing the sensor.
- If you climb into the tank, ensure that a second person is watching you and can

help you in an emergency.

4.2

Installing the sensor

To install the sensor, you will need to carry out the following steps independently of one another:

Step 1: Drill holes into the tank


Step 2: Install the tube socket


Step 3: Prepare the sensor tube

Step 4: Install the sensor tube











Before installation





Check that you have all the parts:

	Num- ber	Part
	1	Float

	1 Flange 140
---	--------------

Installing the sensor

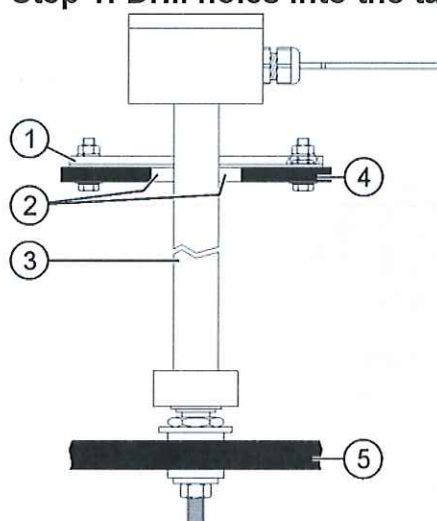
	Num- ber	Part
	1	Viton gasket 140
	4	Viton gasket 25x8x3
	4	Hexagonal screw M8x35
	4	Nut M8
	4	Nut M8 flat
	8	Spring washer B8
	8	Washer A8.4 (large)
	4	Washer A8.4
	1	Tube socket
	2	Viton gasket 25x6

	1 Nut M6 (self-locking)
	1 Washer 24.2x12.2
	1 Washer A6.4
	1 Locking ring

Installing the sensor

4.2.1

Step 1: Drill holes into the tank



Drill holes into the tank

① Flange 140	④ Top of tank
② Opening	⑤ Base of tank
③ Sensor tube	

Procedure

- ☒ The sprayer must be standing on level ground.

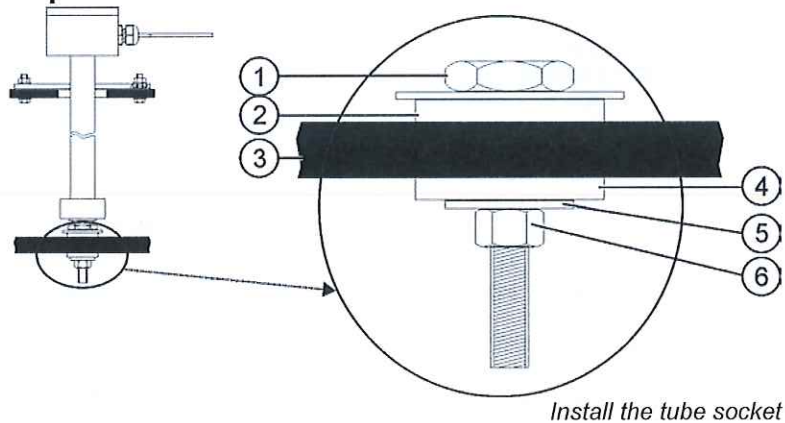
1. Drill a hole (55 mm diameter) in the top of the tank for the sensor tube opening.
2. Mark the drilling positions. To do this, push the sensor tube and flange through the hole. Using the flange 140 as a drilling template, mark the screw positions on the tank.
3. Drill 4 holes (8.5 mm diameter) at the positions marked; they will be used to attach the flange.
4. Pull the sensor tube out of the tank.
5. Use a plumb-line to identify a point directly below the hole on the base of the tank.

6. Mark the position for the hole.
7. Drill a hole (6.2 mm diameter) at the point you have marked so that you can install the tube socket.
8. You can now install the tube socket.

Installing the sensor

4.2.2

Step 2: Install the tube socket



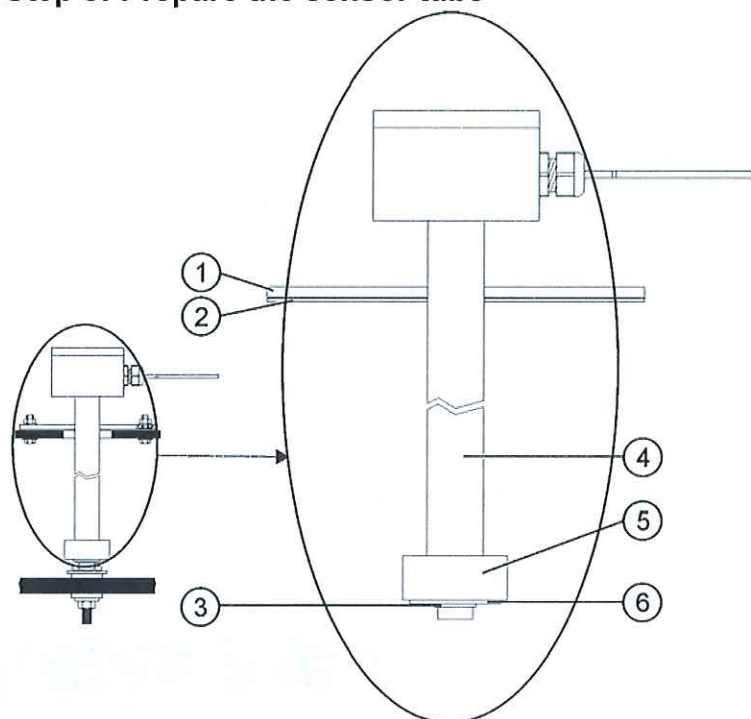
①	Tube socket	④	Viton gasket 25x6
②	Viton gasket 25x6	⑤	Washer A6.4
③	Base of tank	⑥	Nut M6

Procedure

1. Push a Viton gasket 25x6 onto the tube socket.
2. Push the tube socket through the hole in the tank base from above.
3. Push the second Viton gasket 25x6 onto the tube socket from below.
4. Push the washer A6.4 onto the tube socket.
5. Fix the tube socket in place using nut M6.
6. You can now prepare the sensor tube.

Installing the sensor

4.2.3

Step 3: Prepare the sensor tube*Prepare the sensor tube*

①	Flange 140	④	Sensor tube
②	Viton gasket 140	⑤	Float
③	Locking ring	⑥	Washer 24.2x12.2

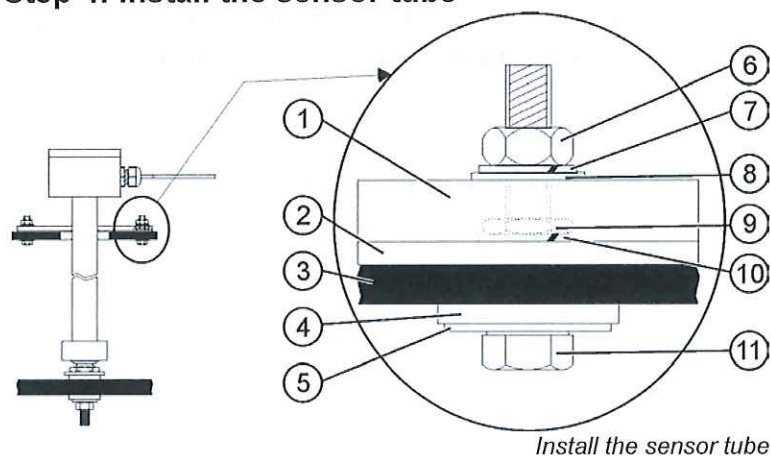
Procedure

1. Push the flange 140 onto the sensor tube from below.
2. Push the Viton gasket 140 onto the sensor tube from below.
3. Push the float onto the sensor tube. The "0" marking on the float must point upwards.
4. Push the washer 24.2x12.2 onto the sensor tube.
5. Secure the washer 24.2x12.2 with the locking ring.
6. Carefully loosen the locking ring so that you can turn it over the thread.
7. You can now install the sensor tube.

Installing the control unit

4.2.4

Step 4: Install the sensor tube



①	Flange 140	⑥	Nut M8
②	Viton gasket 140	⑦	Spring washer B8
③	Top of tank	⑧	Washer A8.4
④	Viton gasket 25x8x3	⑨	Nut M8 flat
⑤	Washer A8.4, large	⑩	Spring washer B8
		⑪	Hexagonal screw M8

Procedure

1. Push the prepared sensor tube through the opening at the top of the tank.
2. Screw the sensor tube into the tube socket on the tank base. As you will need to rotate the sensor tube, make sure that the sensor tube cable does not become entangled.
3. Push a washer A8.4 (large) and a Viton gasket 25x8x3 onto each of the 4 hexagonal screws M8.
4. Push the screws upwards through the tank cover.
5. Push a spring washer B8 onto the screws from above.
6. Secure the screws using the nuts M8 flat.
7. Push the Viton gasket 140 and the flange 140 downward.
8. Push a washer A8.4 and a spring washer B8 onto the screws.
9. Secure the screws using the nuts M8.
10. You have completed the installation.

4.3

Installing the control unit

When installing the control unit, you should note the following:

- When connecting the control unit to the on-board power supply, ensure that the maximum output voltage (13.8 V) is not exceeded.
- Attach the control unit in such a way that the lettering "TANK-Control" is legible in the horizontal position. You can use the supplied securing screws, for example



- Leave enough room for the cables.

Pin assignment



Installing the control unit

Pin	Cable color	Identification
1	white	ground
2	brown	12 V
3	green	signal

Carrying out a 100 gallon calibration



Configuration and Calibration

You must configure and calibrate the sensor before working with TANK-Control for the first time. **Who configures what?**

Configuration	Purpose	Who does it?	When?
100 gallon calibration	To equalize installation tolerances	User	Prior to initial startup.
Basic initialization	To recognize the sensor	Installer	After installation of the sensor.
Calibration	To determine sensor values	Sprayer manufacturer	After the first sensor has been installed on a new model of sprayer.

5.1

Carrying out a 100 gallon calibration

	 WARNING
	Danger of poisoning from spray liquid residues When configuring the tank: <ul style="list-style-type: none">◦ Always use clean water.

NOTICE

Inaccurate calibration due to incorrect fill volume

If the configuration is wrong the fill level cannot be measured accurately. This makes all calculations imprecise.

When calibrating the tank:

- Use a flow meter or a weighbridge.

The purpose of the 100 gallon calibration is:

- To equalize manufacturing tolerances.

Procedure

- To correct changes in accuracy over time.

Perform the 100 gallon calibration as follows:

1. Empty the tank completely.
2. Add exactly 100 gallons of water to the tank.
3. Wait a short time until the water has settled.



4. - press at the same time.

⇒ A correction value and finally the volume display 100 gallons will be shown on the display.

⇒ You have successfully completed the 100 gallon calibration.

Carrying out basic initialization

5.2**Carrying out basic initialization**

During basic initialization, the TANK-Control control unit activates the sensor once using a signal in order to ensure that all of the connections are correct. You will need to perform a basic initialization:

- Prior to initial startup.
- When "0000" is shown on the display.

Procedure

This is how to plan the calibration:

1. Empty the tank or withdraw the sensor tube from the tank.
- ⇒ The float is located in the lowest end position.



2. - press and hold at the same time for approx. 3 seconds until the display shows "8888".

3. Release the buttons.

4. Install the sensor tube if you removed this from the tank.

⇒ You have initialized the sensor.

⇒ To test whether the initialization was successful, switch the control unit off and on again. If

"0000" is shown, you will need to repeat the initialization.

5.3**Carrying out the calibration**

The calibration process measures the height of the sensor float. The float height rises as the fill level increases.

During calibration, the tank is filled with water in several steps. The exact position of the float is measured at each step. The computer then knows the position of the float at every fill level.

These values are stored in the memory. The following types of calibration are available:

- Select a preset tank [→ 20]
- Calibrate the tank manually [→ 22]

5.3.1

Preparing the tank

Procedure

Prepare your tank for calibration as follows:

1. Position the sprayer horizontally.
2. Open the tank outlet.
3. Fill the tank with water until it escapes from the tank outlet.
4. Turn off the water supply.
5. Wait until no further liquid escapes from the tank outlet.
6. Close the tank outlet.

⇒ You can now calibrate the tank.

Carrying out the calibration

5.3.2

Selecting a preset tank

If attaching TANK-Control to a sprayer model whose tank characteristics are included in the summary table at the end of these instructions, you can skip the calibration and simply select the number of the tank.

To select a preset tank from the summary table:

☒ You have prepared the tank. [→ 19]

1. Switch on the control unit.

2.  - Press and hold.

3.  - Press.

4. Release the buttons.

⇒ A "C", a small circle and an arrow will appear on the left of the display.

⇒ A number will flash on the right of the display. This number corresponds to the number of the set tank.



- Confirm.

5. Select the number of your tank from the summary table.

6. - Set the correct tank

number.

7.

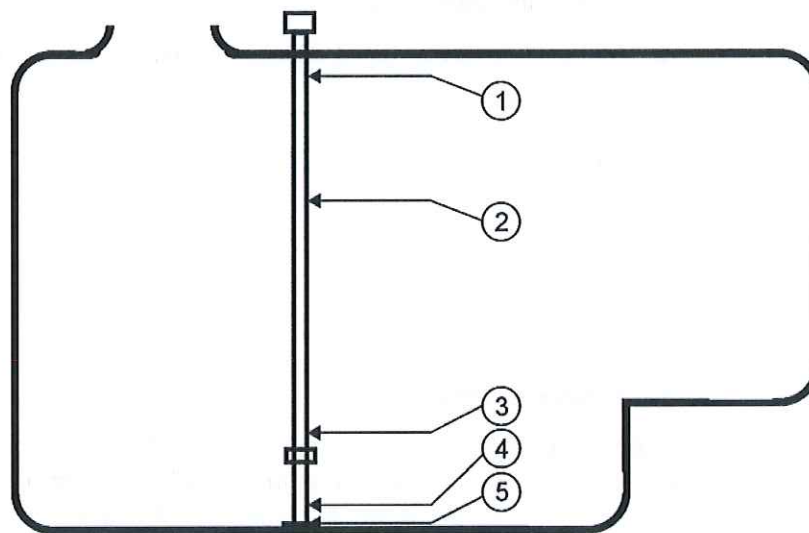
⇒ The icons on the left of the display will be greyed out.

⇒ The tank capacity will be shown on the display.

5.3.3

Planning calibration

Before starting the calibration, you will need to plan the fill levels for which you want to enter the respective float heights.



Carrying out the calibration

①	Maximum fill level Calibration point 19	④	Calibration point 1
②	E.g. Calibration point 14	⑤	Calibration point 0
③	Calibration point 2		

The table below shows an example of what a planned calibration may look like. The values may be different for every tank. You cannot plan of the float heights for the respective fill levels. The float height will be dependent on the size and shape of the tank. In the example, the tank has a capacity of 1300 gallons. There is a table in the Appendix into which you can enter the values which you obtained during your calibration. [→ 27]

NOTICE

Entering incorrect values

Make sure that the measurement unit system is correct during calibration.

- During calibration, enter all values in the metric system.

Calibration point	Fill level	Possible float height	Calibration point	Fill level	Possible float height
0	0 gallons (tank must be empty)	10 mm	10	620 gallons	915 mm
1	15 gallons (first float movement is registered)	15 mm	11	705 gallons	985 mm
2	85 gallons	185 mm	12	780 gallons	1065 mm
3	150 gallons	295 mm	13	865 gallons	1135 mm
4	215 gallons	395 mm	14	945 gallons	1205 mm
5	280 gallons	495 mm	15	1015 gallons	1275 mm
6	350 gallons	585 mm	16	1075 gallons	1325 mm
7	420 gallons	685 mm	17	1145 gallons	1395 mm
8	485 gallons	765 mm	18	1220 gallons	1470 mm
9	555 gallons	845 mm	19	1320 gallons	1645 mm

Procedure This is how to plan the calibration:

1. Check whether your tank has any bulges as they can affect the float height.
2. Note that the tank must be completely empty at calibration point 0. You cannot choose the fill level yourself.

Carrying out the calibration

3. Note that the fill level at which the float registers the first movement must be entered at calibration point 1. You cannot choose the fill level yourself.
4. Note that the tank must be filled to the maximum fill level at the last calibration point. The maximum fill level is specified by the tank manufacturer. You cannot choose the fill level yourself.
5. Decide how many calibration points you want to use. You can use a maximum of 20 calibration points.
6. Think about the fill levels for which you want to save the float heights. Use intervals which are as uniform as possible.

⇒ You can now prepare the tank for calibration. [→ 19]

5.3.4

Calibrate the tank manually

NOTICE

Entering incorrect values

Make sure that the measurement unit system is correct during calibration.

- During calibration, enter all values in the metric system.

Proceed as follows to calibrate your tank manually:

- ☐ You have completed the 100 gallon calibration. [→ 18]
 - ☐ You have prepared the tank. [→ 19]
 - ☐ You have planned the calibration. [→ 20]
 - ☐ You have the table of values available. [→ 27]
1. Select tank number "0" as the preset tank. Find out how to do this here: [→ 20]
 2. Switch the control unit off and on again.



3. - Press and hold.



4. - Press.

5. Release the buttons.
 ⇒ A "C" will appear on the left of the display.
 ⇒ A blinking "0" will appear on the right of the display.

6. Empty the tank completely.



7. - Press.
 ⇒ A "0" (0 gallon tank content) will appear on the display.



8. - Press.
 ⇒ The float height for calibration point 0 will appear on the display.

9. Enter the float height in the table of values.

Carrying out the calibration



10. - Press.
 ⇒ A "0" (calibration point 0) will appear on the display.



11. - Press.
 ⇒ A flashing "1" (calibration point 1) will appear on the display.



12. - Press.
 ⇒ A "0" (0 gallon tank content) will appear on the display.

13. Fill the tank until a "C" will



appear on the display.



- Press.

14. - Set the current tank

capacity in gallons.

15. ⇒ The float height in mm will appear on the display.

16. Enter the float height in the table of values.



17. - Press.
 ⇒ A flashing "1" (calibration point 1) will appear on the display.



18. - Press.

⇒ A flashing "2" (calibration point 2) will appear on the display.

19.  - Press.

⇒ The current tank capacity will appear on the display.

20. Fill the tank with the planned



amount of water.



- Press.

21. - Set the current tank

capacity in gallons.

22.

⇒ The float height in mm will appear on the display.

23. Enter the float height in the table of values.



24. - Press.

⇒ A flashing "2" (calibration point 2) will appear on the display.

25. Repeat steps 18 to 24 for a maximum total of 20 calibration points.



26. - Press and **hold** when you have obtained all of the calibration points.
The tank must be completely filled at the last obtained calibration point.



27. - Press.

⇒ The "C" will be greyed out on the display.

After calibration

⇒ The tank capacity will be displayed.

⇒ You have calibrated the tank manually.

5.4 After calibration

When you switch on the control unit after calibration, you may see the following displays:

- The current measurement range of the sensor and then the tank capacity.
- "9999" – the maximum permissible fill level has been exceeded.

The on-board computer will switch off the filling process in order to prevent overflows.

Maintenance and technical data

6.1 Troubleshooting

The measured sensor length does not match the actual sensor length

- Cause: There is a problem with the cable connection between the control unit and the sensor. Remedy: Check the cable connection and replace if necessary.
- Cause: The control unit or the sensor is faulty.

Remedy: Replace the sensor tube. If the error persists, return the complete product for repair.

The display reads "9999"

- Cause: The float is not in the sensor tube or the float has been installed with its upper side facing downwards.
Remedy: Install the float correctly.
- Cause: The magnets in the float have become demagnetized.
Remedy: Replace the float.

After switching on, the display reads "0000"

- Cause: The values in EEPROM are faulty.
Remedy: Perform a basic initialization. If the error persists, return the complete product for repair.

The values at the calibration points are lower than the previous values

- Cause: The float is moving on the sensor.
Remedy: Wait until the water has settled.

6.2 Technical data for the control unit

Input voltage	10.5 – 16 V
Temperature range	-4°F – 122°F

Housing	Hardened aluminum
Protection rating	IP 65
Dimensions	6.9 in x 4.3 in x 2.4 in

List of spare parts

List of spare parts

Item number	Item name
222I2000	TANK-Control Display Kit
222I10-160	TANK-Control 1600/1780 Sensing Rod Kit
222I10-184	TANK-Control 1840/2020 Sensing Rod Kit
222I10-208	TANK-Control 2080/2260 Sensing Rod Kit
30395590	Mounting materials (flange, gaskets)
31252100	TANK-Control, stamping foil
31252125	TANK-Control, float
NA200013A	TANK-Control, Flex pipe support

Attachment

Job computers which support TANK-Control

Attachment

8.1 Job computers which support TANK-Control

Fill level indicator

- MIDI job computer for sprayers

Fill level indicator and filling cut-off

- MAXI job computer for sprayers

8.2 Table of values template

Tank name:

Calibration point	Fill level	Float height
0	0 gallons	
1		
2	100 gallons	
3		
4		
5		
6		
7		
8		
9		

10		
11		
12		
13		
14		
15		
16		

Attachment

Summary table

Calibration point	Fill level	Float height
17		
18		
19		

8.3

Summary table

Tank number	Manufacturer	Capacity (gallons)
0	Manual calibration	
1	FAST	1300
2	FAST	1800
3	FAST	2400

4	DEMCO	1350
5	Blujet	2000
6	Blujet	1500 TBD

