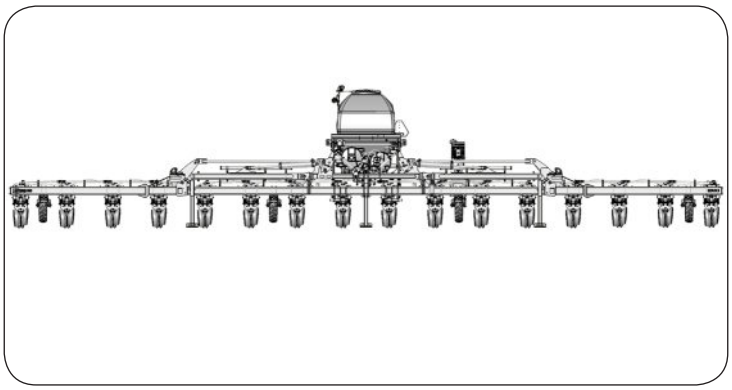


DR Planter Toolbar

16 Row 40” Spacing

Part No. 572105

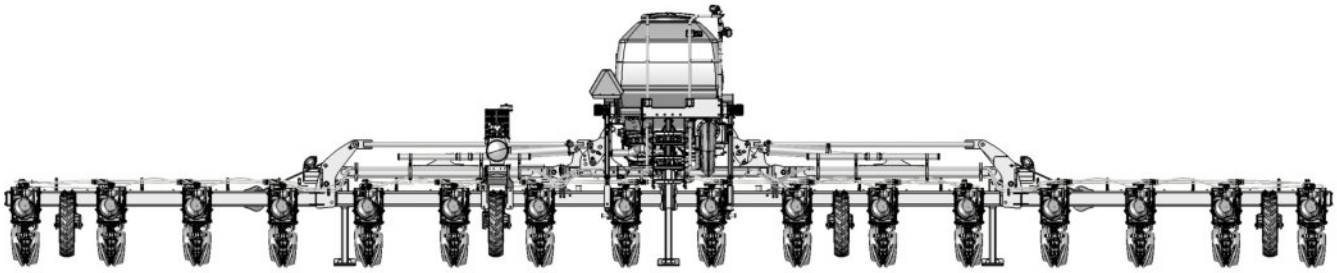
Foreword

This symbol identifies important safety messages. When you see it, read the message that follows and be alert to the possibility of personal injury.

Remember, safety instructions stated in this manual are for your protection. Read them carefully and follow them closely when working around or using this machine.

Read and study this manual completely before attempting to operate this implement. Take this manual to the field for handy reference when operating, adjusting, or servicing your machine.

When referenced, “Right-Hand” (RH) and “Left-Hand” (LH) side of the machine are determined by standing behind the machine and facing in the direction of travel.



Pre-Operation Checklist

- ☐ Wheel bolts tightened (recheck after initial use)
- ☐ Tire pressures checked
- ☐ Hardware tightened
- ☐ Machine lubricated
- ☐ Safety and operating procedures reviewed
- ☐ Field adjustment information reviewed
- ☐ Warranty information reviewed
- ☐ Hydraulic hoses properly routed/fittings tight

Product Information

IMPORTANT

The information, specifications, and illustrations in the manual are based on information available at the time it was written. Due to continuing improvements in the design and manufacture of Unverferth products, all specifications and information contained herein are subject to change without notice.

Please fill out and retain this portion for your records. All products manufactured by Unverferth Mfg. Co., Inc. are warranted to be free from material and workmanship defects for one full year from time of consumer delivery. Your local dealer will gladly assist you with any warranty questions.

The serial number plate is located as shown below.

Product _____

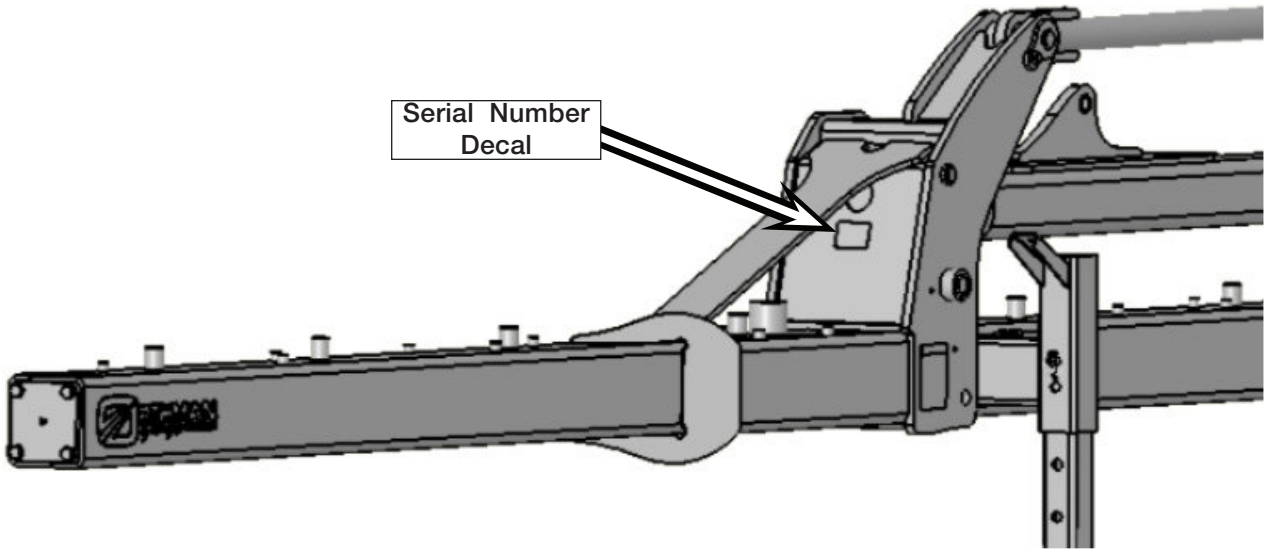
Serial Number _____

Date of Purchase _____

Dealer _____

City _____ **State** _____ **Zip** _____

Please supply this information when you have questions or when ordering repair or replacement parts. Your dealer needs this information to give you prompt, efficient service.



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SECTION I
Safety

General Hazard Information

No accident-prevention program can be successful without the wholehearted cooperation of the person who is directly responsible for the operation of the equipment.

A large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether it is on the highway, in the field, or in the industrial plant, can be safer than the person who is at the controls. If accidents are to be prevented--and they can be prevented--it will be done by the operators who accept the full measure of their responsibility.

It is true that the designer, the manufacturer, and the safety engineer can help; and they will help, but their combined efforts can be wiped out by a single careless act of the operator.

It is said that, “the best kind of a safety device is a careful operator.” We, at Unverferth Mfg. Co., Inc. ask that you be that kind of operator.

REMEMBER:

THINK SAFETY

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT!

SIGNAL WORDS

DANGER

INDICATES AN EXTREMELY HAZARDOUS SITUATION OR ACTION THAT WILL RESULT IN SERIOUS INJURY OR DEATH.

WARNING

INDICATES A HAZARDOUS SITUATION OR ACTION THAT COULD RESULT IN SERIOUS INJURY OR DEATH.

CAUTION

INDICATES AN UNSAFE SITUATION OR ACTION THAT MAY RESULT IN PERSONAL INJURY.

IMPORTANT

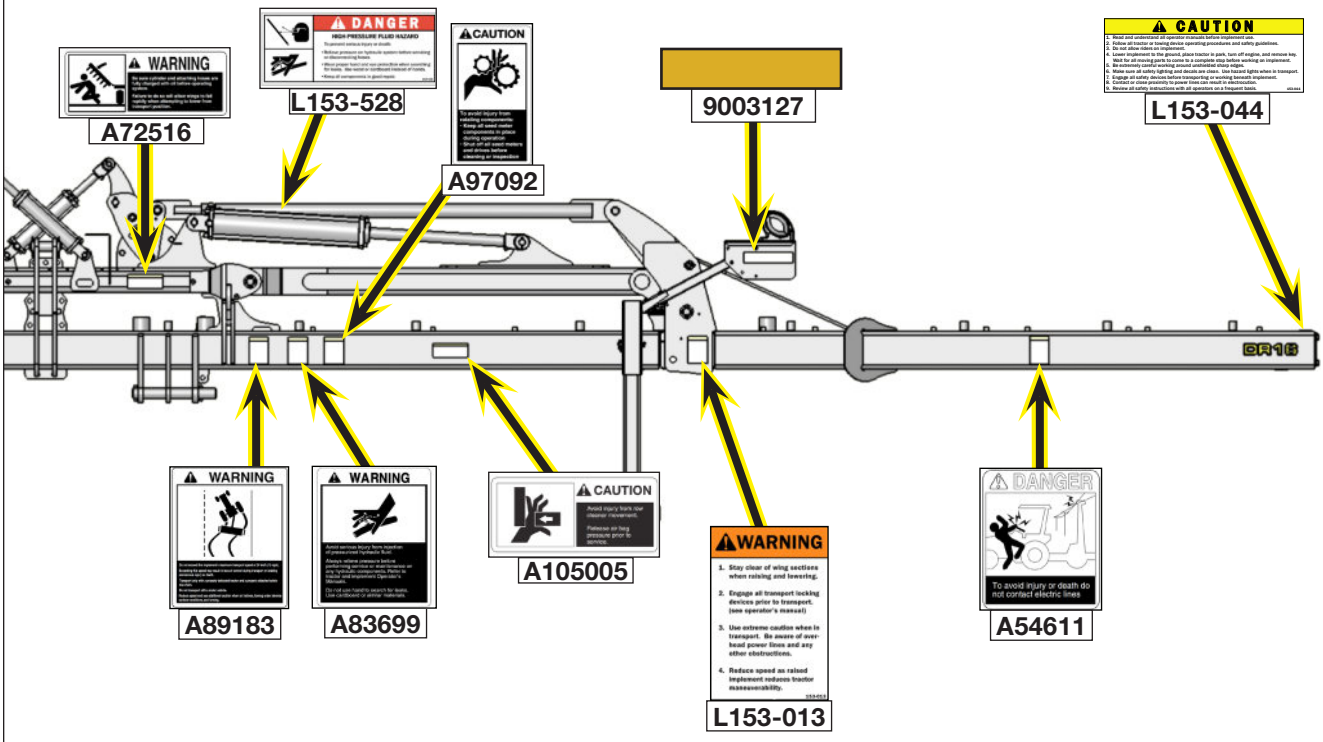
Is used for instruction on operating, adjusting, or servicing a machine.

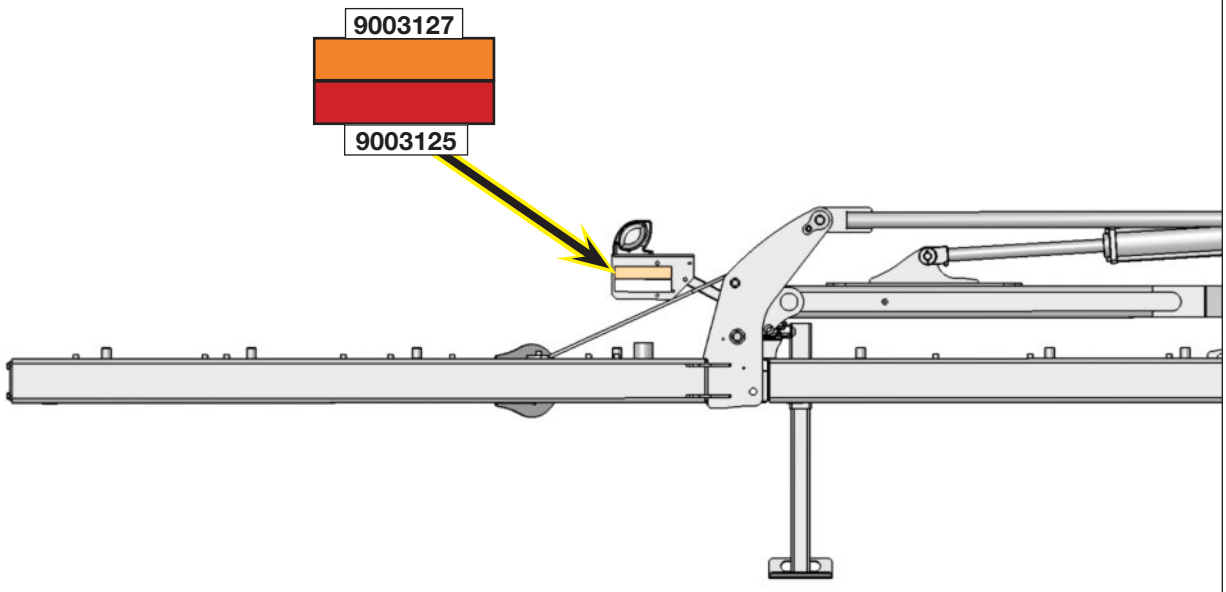
Safety Decals

WARNING

- **REPLACE LOST, DAMAGED, PAINTED, OR UNREADABLE DECALS IMMEDIATELY. IF PARTS THAT HAVE DECALS ARE REPLACED, ALSO MAKE SURE TO INSTALL NEW DECALS. THESE DECALS INFORM AND REMIND THE OPERATOR WITH OPERATIONAL INFORMATION AND SAFETY MESSAGES.**

NOTE: Part numbers with an “A” prefix are John Deere provided parts.





Following Safety Instructions

- Read and understand this operator's manual before operating.

- All machinery should be operated only by trained and authorized personnel.
- To prevent machine damage, use only attachments and service parts approved by the manufacturer.
- Always shut tractor engine off and remove key before servicing.

- Avoid personal attire such as loose fitting clothing, shoestrings, drawstrings, pants cuffs, long hair, etc., that may become entangled in moving parts.
- Do not allow anyone to ride on the implement. Make sure everyone is clear before operating machine or towing vehicle.

- Never attempt to operate implement unless you are in driver's seat.

Before Servicing or Operating

- Avoid working under an implement; however, if it becomes absolutely unavoidable, make sure the implement is safely blocked.

- Ensure that all applicable safety decals are installed and legible.
- When working around the implement, be careful not to be cut by sharp edges.
- Do not stand between towing vehicle and implement during hitching.
- Add sufficient ballast to tractor to maintain steering and braking control at all times. Do not exceed tractor's lift capacity or ballast capacity
- Hot parts can cause severe burns. Use caution when working around power system/ ground engaging components. Allow parts to cool before servicing.
- Always make certain everyone and everything is clear of the machine before beginning operation.

During Operation

- Regulate speed to working conditions. Maintain complete control at all times.
- Never service or lubricate equipment when in operation.
- Use extreme care when operating close to ditches, fences, or on hillsides.
- Keep away from overhead power lines. Electrical shock can cause serious injury or death.
- Do not leave towing vehicle unattended with engine running.

Before Transporting

- Check for proper function of all available transport lights. Make sure that all reflectors are clean and in place on machine. Make sure that the SMV emblem and SIS decal are visible to approaching traffic.

During Transport

- Comply with all laws governing highway safety when moving machinery.
- Use transport lights as required by all laws to adequately warn operators of other vehicles.
- Use good judgment when transporting equipment on highways. Regulate speed to road conditions and maintain complete control.
- Maximum transport speed of this implement should never exceed 20 mph as indicated on the machine. Maximum transport speed of any combination of implements must not exceed the lowest specified speed of the implements in combination. Do not exceed 10 MPH during off highway travel.
- Before transporting the planter, the machine must be folded and fully raised with the transport locks in place around the machine lift hydraulic cylinder rods.
- It is probable that this implement is taller, wider and longer than the towing vehicle. Become aware of and avoid all obstacles and hazards in the travel path of the equipment, such as power lines, ditches, etc.
- Slow down before making sharp turns to avoid tipping. Drive slowly over rough ground and side slopes.

Pressurized Oil

- Relieve the hydraulic system of all pressure before adjusting or servicing. See hydraulic power unit manual for procedure to relieve pressure.

- High-pressure fluids can penetrate the skin and cause serious injury or death. Leaks of high-pressure fluids may not be visible. Use cardboard or wood to detect leaks in the hydraulic system. Seek medical treatment immediately if injured by high-pressure fluids.

- Hydraulic system must be purged of air before operating to prevent serious injury or death.

- Do not bend or strike high-pressure lines. Do not install bent or damaged tubes or hoses.

- Repair all oil leaks. Leaks can cause fires, personal injury, and environmental damage.

- Route hoses and lines carefully to prevent premature failure due to kinking and rubbing against other parts. Make sure that all clamps, guards and shields are installed correctly.

- Check hydraulic hoses and tubes carefully. Replace components as necessary if any of the following conditions are found:
  - End fittings damaged, displaced, or leaking.
  - Outer covering chafed/cut or wire reinforcing exposed.
  - Outer covering ballooning locally.
  - Evidence of kinking or crushing of the flexible part of a hose.

Preparing for Emergencies

- Keep a first aid kit and properly rated fire extinguisher nearby.

- Keep emergency numbers for fire, rescue, and poison control personnel near the phone.

Wearing Protective Equipment

- Wear clothing and personal protective equipment appropriate for the job.

- Wear steel-toed shoes when operating.

- Wear hearing protection when exposed to loud noises.

- Do not wear additional hearing impairing devices such as radio headphones, etc

SECTION II
Set Up

General Set Up Information

This section contains all of the instructions required for the complete assembly of the toolbar.

For your safety, and the safety of others, use proper tools and equipment and always use safe working procedures. Refer to these instructions before starting any work on your machine.

For ease of assembly, install all hardware loosely until assembly is complete and then tighten according to “Torque Chart” in MAINTENANCE section unless otherwise specified.

⚠ WARNING

- **KNOW AND UNDERSTAND SAFETY RULES BEFORE OPERATING OR SERVICING THIS MACHINE. REVIEW "SAFETY" SECTION IN YOUR MANUAL IF NECESSARY.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING THE IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 16,000 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**
- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE THE MACHINE IS SECURELY BLOCKED.**
- **MOVING PARTS CAN CRUSH AND CUT. KEEP AWAY FROM MOVING PARTS.**

Basic Set Up

Due to shipping requirements and various dealer-installed options, some initial implement set up will be required after it arrives from the factory. Use the following procedures as needed for initial implement set up.

Hydraulic System

Check all hoses and cylinders for signs of leakage. Hoses should not be kinked, twisted or rubbing against sharp edges. Re-route or repair hoses as necessary. Refer to SAFETY section for additional information on safe repair and inspection of hydraulic components.

SMV Emblem

Before the implement is used the reflective surface of the SMV must face rearward. This may require removal of film protecting the reflective surface or removing and reinstallation of the SMV.

When reinstalling the SMV make sure that it is mounted with the wide part of the SMV at the bottom. (Fig. 2-1)

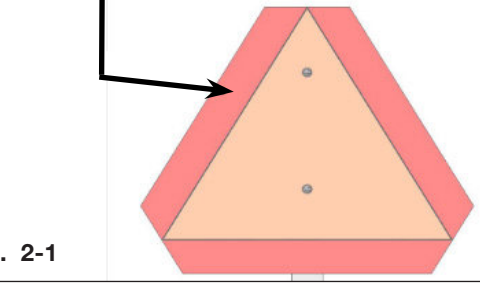


FIG. 2-1

Row Unit Set Up

Refer to the applicable John Deere operator manual for row unit set up information.

Purging Hydraulic System

⚠ WARNING

- **RELIEVE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE TRACTOR OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

IMPORTANT

- *Flex frame configuration, wings will go below center when BOTH pistons are fully extended on each cylinder. IF Machine is not raised into transport OR system is not properly operated (hyd. valve shifts to pressure reducing mode), damage could occur.*

Purge air from system as follows:

A. Disconnect the rod end of all cylinders in a circuit and block up cylinders so the rod can completely extend and retract without contacting any other component.

B. Pressurize the system and maintain system at full pressure for at least 5 seconds after cylinder rods stop moving. Check that all cylinders have fully extended or retracted.

C. Check oil reservoir in hydraulic power source and re-fill as needed.

D. Pressurize system again to reverse the motion of step B. Maintain pressure on system for at least 5 seconds after cylinder rods stop moving. Check that cylinders have fully extended or retracted.

E. Check for hydraulic leaks using cardboard or wood. Tighten connections according to directions in Torque Specifications in MAINTENANCE section.

F. Repeat steps B, C, D, and E 3-4 times.

G. De-pressurize hydraulic system and connect cylinder rod clevises to their mating lugs.

HYDRAULIC SYSTEM CHECKS ON ALL UNITS -- CHECK THE FOLLOWING:
ROUTING OF ALL HYDRAULIC HOSES: Hoses should not be kinked, twisted, or rubbing against sharp edges.

FITTINGS AND CONNECTIONS: Check for leaks. Refer to “Torque Chart” in MAINTENANCE section.

HOSES: Be sure hoses have room to “FLEX” (for folding) in hinge areas. Hoses must be secured with cable ties.

Notes

SECTION III
Operation

General Operation Information

WARNING

- **READ AND UNDERSTAND SAFETY RULES BEFORE OPERATING OR SERVICING THIS MACHINE. REVIEW "SAFETY" SECTION IN THIS MANUAL IF NECESSARY.**

Read this operation section thoroughly. Acquaint yourself with the adjustments required to obtain efficient and trouble-free operations.

Preparing Tractor

WARNING

- **TRANSPORTING THE IMPLEMENT SIGNIFICANTLY CHANGES THE WEIGHT AND BALANCE OF YOUR TRACTOR. MAKE SURE THE TRACTOR IS PROPERLY BALLASTED.**
- **DO NOT EXCEED THE TRACTOR'S LIFT CAPACITY OR BALLAST RECOMMENDATIONS.**

Read this operation section thoroughly. Acquaint yourself with the adjustments required to Before operating implement, refer to tractor operator's manual for information concerning safe methods of operation, hitch adjustment, tire inflation, wheel adjustments, and tractor weights.

Check tractor brakes and transport lights. Make sure they are in proper working order.

Preparing Implement

Perform the service checks as outlined below. Repair or replace any damaged or worn parts before operating.

• Bolts And Nuts

Before going to the field, check all hardware for tightness. Recheck all bolts for tightness, after the unit has been operated for several hours.

• Pins

Before going to the field, check that all pins are in place and are in good condition. Replace any worn, damaged, or missing pins.

Check that locking hardware for pins are in place and tight.

• Lubrication

Lubricate unit as outlined in MAINTENANCE section.

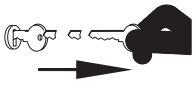
Hitching to Tractor

WARNING

- **CRUSHING CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT STAND BETWEEN TOWING VEHICLE AND IMPLEMENT WHEN HITCHING. ALWAYS ENGAGE PARKING BRAKE AND STOP ENGINE BEFORE INSERTING HITCH PINS OR SECURING LATCHES.**

3 Point Hitch Tractor Connection

1. Back up tractor to the implement hitch. Place the tractor in park. Injury or death can result from being trapped between the tractor and implement.



2. Set tractor's three-point hitch lateral float pins. Refer to the tractor OM.

4. Connect the tractor's lower three-point hitch points to the pins on the implement. (Fig. 3-1)

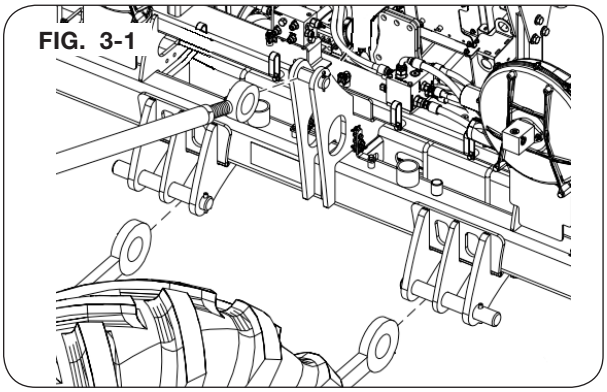


FIG. 3-1

Hitching to Tractor (Continued)

Quick Hitch Tractor Connection

1. Back up tractor to the implement hitch and place the tractor in park. Injury or death can result from being trapped between the tractor and implement.

2. Release the lower locks on the quick hitch. (Fig. 3-22)

3. Lower the tractor's 3-point until the center link hook and quick-hitch hooks are lower than the implement hitch pins.

4. Slowly back the tractor towards the toolbar until the quick-hitch hooks are aligned with the implement hitch pins.

5. Raise the rockshaft until the center link hook and quick-hitch hooks engage with the implement hitch pins. (Fig. 3-23)

6. Enage the lower locks of the quick hitch.

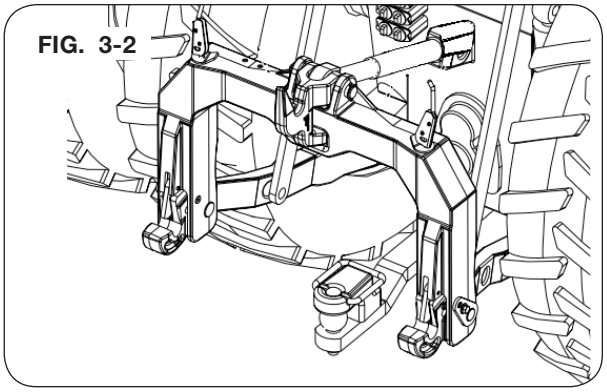


FIG. 3-2

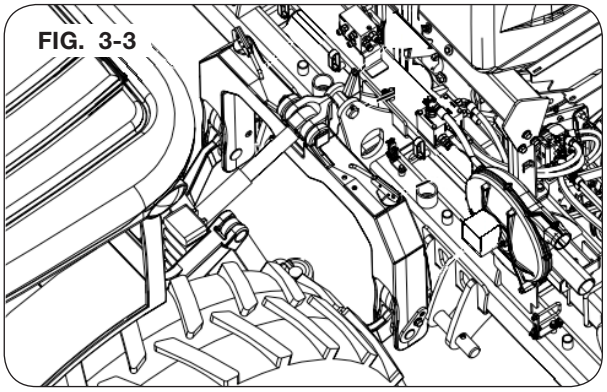
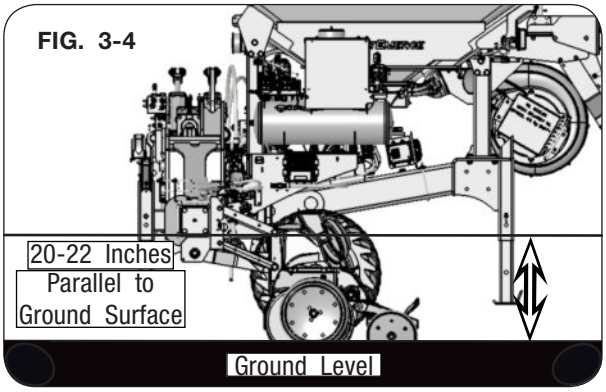


FIG. 3-3

Toolbar Height

- The proper operating height for the toolbar is 20-22” off of the ground surface. (Fig. 3-4)
- The toolbar must be be oriented parrellel to the ground surface. (Fig. 3-4)
- Use the tractors 3-point down stop and the lift assist cylinder stops to stop the toolbar at the point in which it is level with the ground surface. (Fig. 3-5)

FIG. 3-4



Toolbar Wing Leveling

- When weights are added to the toolbar wings, the additional weight may cause the wings to no longer be level with the center section. Check the the levelness of the wings over the life of the toolbar to ensure proper performance.

NOTE: Before adjusting the the wings, inspect the implement for damaged or broken parts and remove any built up dirt or grease.

1. Install the wing latch pin into the rigid position. (Fig. 3-6)

2. Park the unit on a firm level surface in the raised position, and check the levelness of the toolbar center section. This will be the reference point for leveling the wings.

NOTE: For greatest accuracy the toolbar wings should have all attachments installed while leveling.

3. Place a level or angle finder on the top of the wing and note the levelness. Compare this to the reference taken from the toolbar center section.

NOTE: The wing must be within 0 to 2 degrees above level in reference to the toolbar center section. If adjustment is required follow steps 4 through 9

4. Support the wing with a minimum 5 ton rated stand, then lower the implement onto the bar stands and wing support stand.

5. Remove the wing strut pin and capscrew, then remove the wing strut from the gullwing link. (Fig. 3-7 and 3-8)

FIG. 3-5

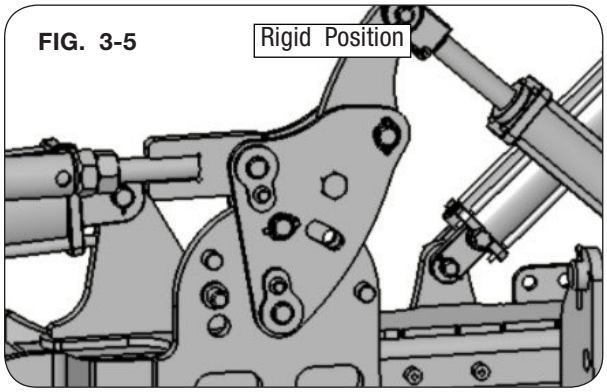


FIG. 3-6

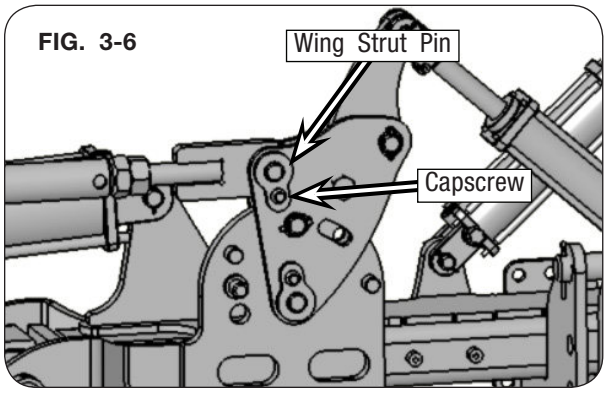
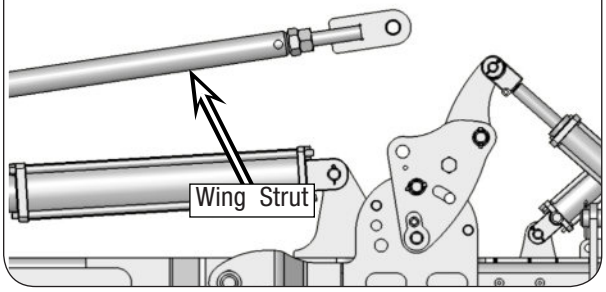


FIG. 3-7



Toolbar Wing Leveling

6. Loosen the jam nut and adjustment nut on the wing strut. (Fig. 3-9)

7. Screw the threaded end of the wing strut clockwise to raise the wing, or counter clockwise the lower the wing. Each full turn of the strut end will result in approximatley 0.5 degrees of change to the angle of the wing. (Fig. 3-10)

8. Re-install the wing strut into the gullwing link, then re-install the wing strut pin and capscrew. (Fig. 3-8 and 3-7)

9. Raise the implement and check the levelness of the toolbar wing in reference to the toolbar center section.

10. If the toolbar wing level is withing specification, tighten the adjustment nut and jam nut (Fig. 3-9).

NOTE: If the toolbar wing level is still out of specification, repeat steps 4 through 9.

FIG. 3-8

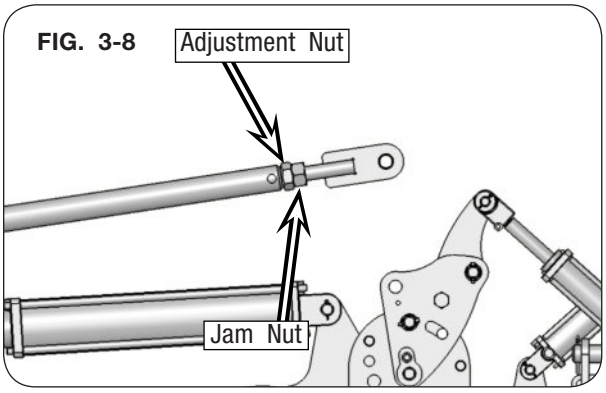
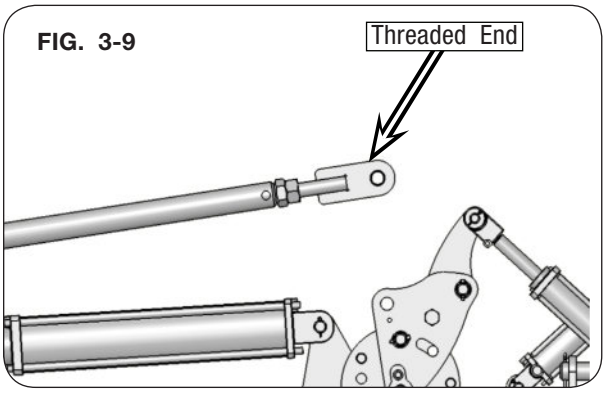


FIG. 3-9

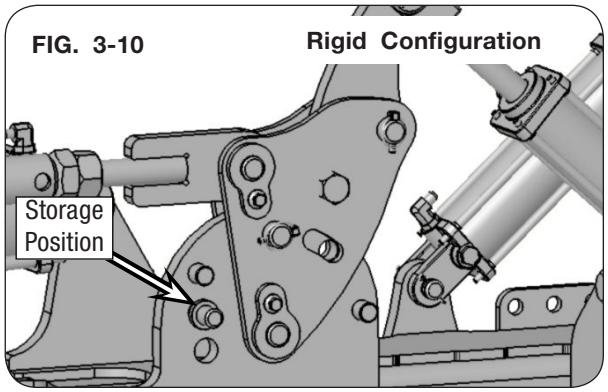


Wing Angle and Rigid Configurations

Rigid Configuration

1. Leave the unit attached to the tractor, raise the unit, then lower the support stands.
2. Lower the unit until it is supported by the stands, then set the tractors parking brake.
3. Completely unfold the toolbar.
4. Remove the lynch pin and flat washer from the small toolbar pin, then move it to the storage position. (Fig. 3-11)
5. Re-install the flat washer and lynch pin onto the small toolbar pin.
6. Keep the large toolbar pin in the rigid position. (Fig. 3-11)

FIG. 3-10 Rigid Configuration

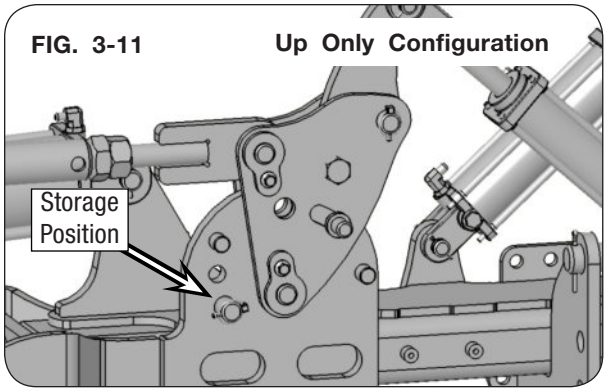


8 Degree Up Only Configuration

1. Leave the unit attached to the tractor, raise the unit, then lower the support stands.
2. Lower the unit until it is supported by the stands, then set the tractors parking brake.
3. Completely unfold the toolbar.
4. Remove the lynch pin from the large toolbar pin and move it to the storage position. (Fig. 3-12)
5. Re-install the lynch pin into the large toolbar pin.
6. Keep the small toolbar pin in the up-only position. (Fig. 3-12)

NOTE: This will allow the toolbar wing to have 8 degrees of upward movement, but no downward movement.

FIG. 3-11 Up Only Configuration



Wing Angle and Rigid Configurations

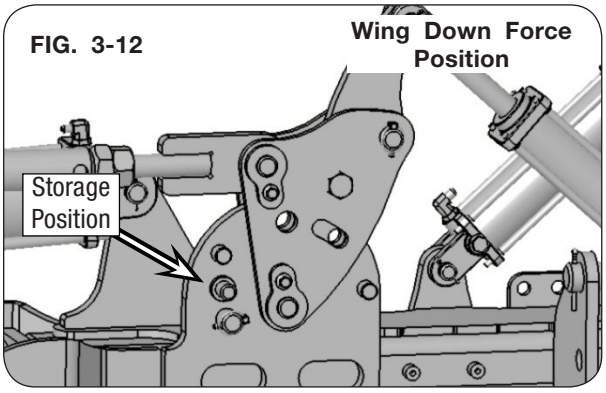
Wing Down Force Position

NOTE: Wing Downforce applies hydraulic pressure to the wings to keep them from riding up and with the Gull Wing Functionality they can be pitched 8 degrees upwards if needed.

NOTE: The wings must be unlocked for this system to function.

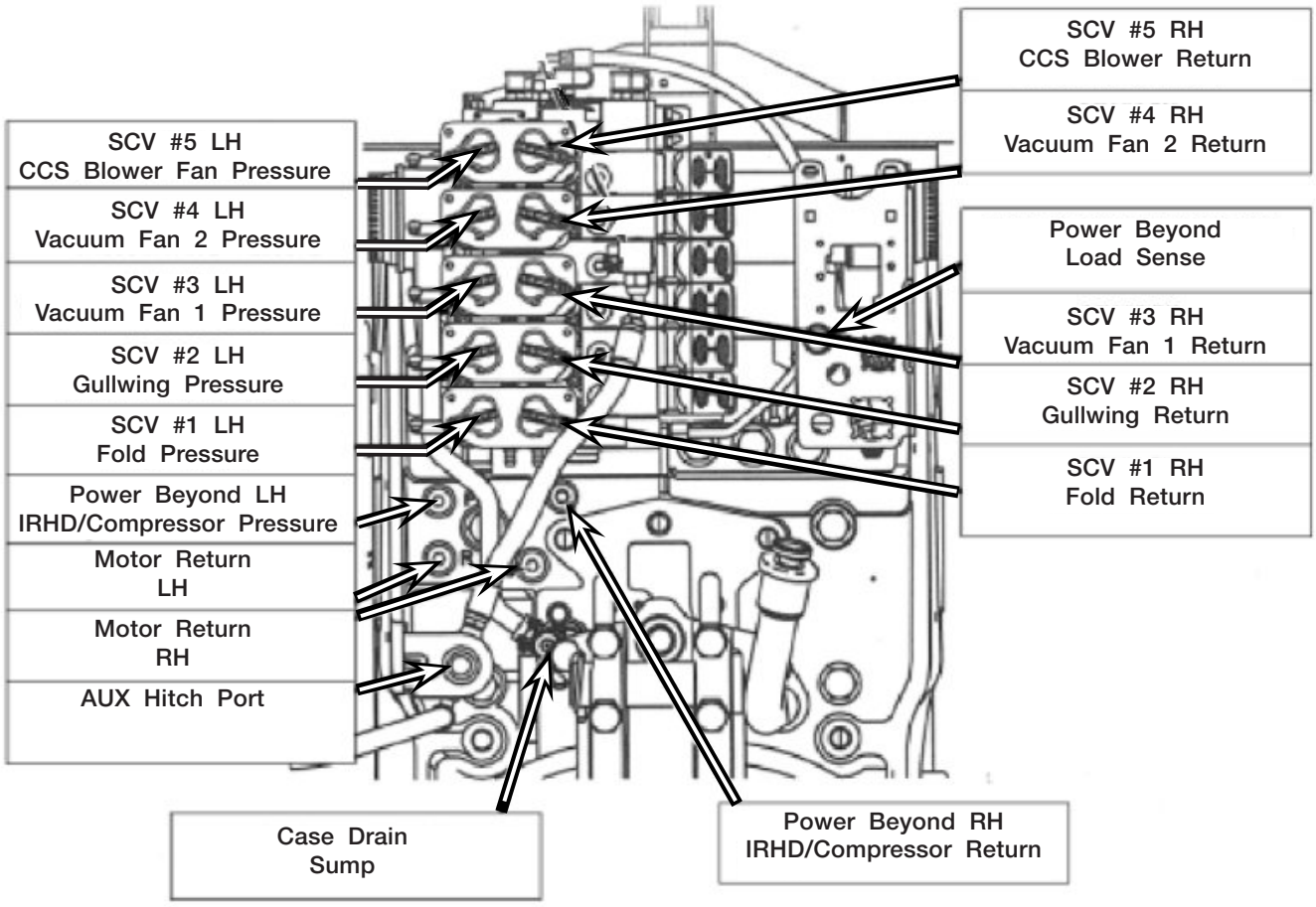
1. Leave the unit attached to the tractor, raise the unit, then lower the support stands.
2. Lower the unit until it is supported by the stands, then set the tractors parking brake.
3. Completely unfold the toolbar.
4. Remove the lynch pins and flat washers from both toolbar pins and place them in the storage position. (Fig. 3-13)
5. Re-install the flat washer and both lynch pins onto the toolbar pins. (Fig. 3-13)

FIG. 3-12 Wing Down Force Position



NOTE: Wing down force is not an active system and should not be adjusted by the operator.

Hydraulic Connections



Notes

SECTION IV
Maintenance

Daily Service

Beginning of Day

NOTE: Before initial use, ensure all lubrication points have been greased.

Check all hardware for tightness. This is especially important during the first days of operation. See "Torque Chart" in this section.

IMPORTANT

- *Inspect mast pins for any wear or damage. Replace any worn or damaged pins.*

Perform any daily lubrication outlined in "Lubrication" in this section.

Check stabilizer tire air pressure and inflate to correct pressure, if necessary.

IMPORTANT

- *To assure level row units, all tires must be inflated to the same pressure.*

End of Day

Clean off dirt and residue which may have accumulated on implement during operation.

Check implement for damage which could have occurred during operation, and repair.

Annual Service

Beginning of Season

WARNING

- **READ AND UNDERSTAND SAFETY RULES BEFORE OPERATING OR SERVICING THIS MACHINE. REVIEW "SAFETY" SECTION IN THIS MANUAL IF NECESSARY.**

Check all bolts, U-bolts, and wheel bolts for tightness. Refer to "Torque Chart" in this section.

Lubricate implement (see "Lubrication" in this section).

Check air pressure in tires and inflate to correct pressure if necessary (see "Daily Service" in this section).

End of Season

Your implement is an important investment. Spend a little time to protect it from destructive rust and corrosion. You will be repaid in longer service life and better performance.

Perform the following before placing the implement in storage:

1. Remove dirt and residue which could cause rusting.
2. Repaint any chipped or scraped areas.
3. Lubricate implement (see "Lubrication" in this section).
4. Coat all earth moving surfaces with grease or suitable rust preventatives.
5. Inspect for damaged parts. Replace before next season.
6. Store implement inside, away from livestock.
7. Use support stands to keep implement tires and points up off bare ground.
8. Replace all worn, torn or faded decals and reflectors.

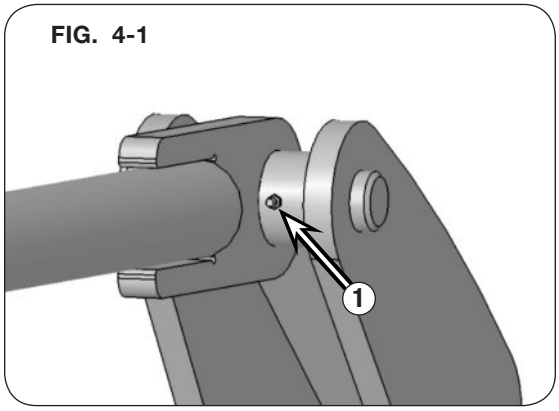
Lubrication

Grease all zerks using a high-quality, multi-purpose grease. Follow the recommended hourly service intervals illustrated below.

Lubrication Service Intervals			
Item		# of Grease Points	Interval (Hours)
1	Outer End of Strut Arms	2	50
2	Inner Ends of Swing Truss	2	50
3	Outer Ends of Swing Truss	2	50

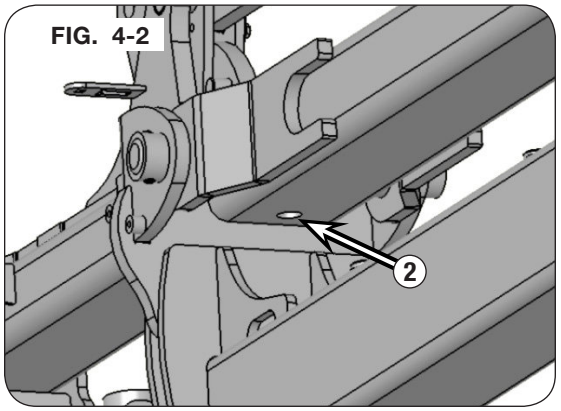
Outer End of Strut Arms

FIG. 4-1



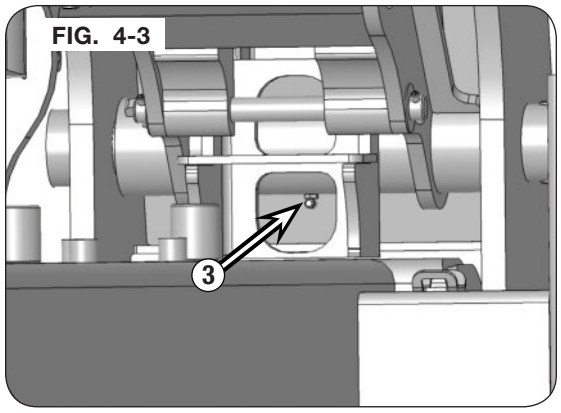
Inner Swing Truss

FIG. 4-2



Outer Swing Truss

FIG. 4-3

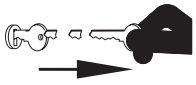


Toolbar Hydraulic Cylinder Removal and Installation

⚠ WARNING

- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. LEAKS OF HIGH-PRESSURE FLUIDS MAY NOT BE VISIBLE. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**
- **FALLING OR LOWERING EQUIPMENT CAN CAUSE SERIOUS INJURY OR DEATH. KEEP EVERYONE AWAY FROM EQUIPMENT WHEN SUSPENDED, RAISING, OR LOWERING.**

1. Park the unit on a firm level surface, leave the unit attached to the tractor, then raise the unit, and lower the support stands.
2. Lower the unit until it is supported by the stands, then set the tractor's parking brake and remove the key.



3. Relieve hydraulic pressure from the system. See Tractor Operator Manual. Disconnect and store hydraulic hoses.
4. Remove the hydraulic hoses from the toolbar hydraulic cylinders.
5. Secure the hydraulic clyinder with a safe lifting device rated for a miniumum of 150 lbs.
6. Remove the cotter pins from the cylinder pins. (Fig. 4-10)
7. Remove the cylinder pins from the hydraulic cylinder, then remove the hydraulic cylinder from the toolbar. (Fig. 4-11)
8. Inspect parts for wear or damage and replace if neccesary.
9. Using a safe lifting device rated for a minimum of 150 lbs. install the hydraulic cylinder and cylinder pins onto the toolbar. (Fig. 4-11)
10. Install the cotter pins into the cylinder pins. (Fig. 4-10)

FIG. 4-4

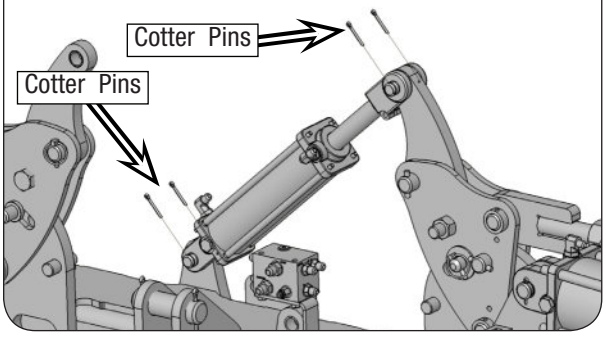
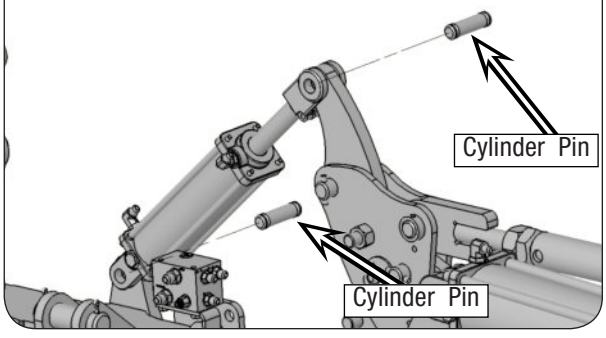
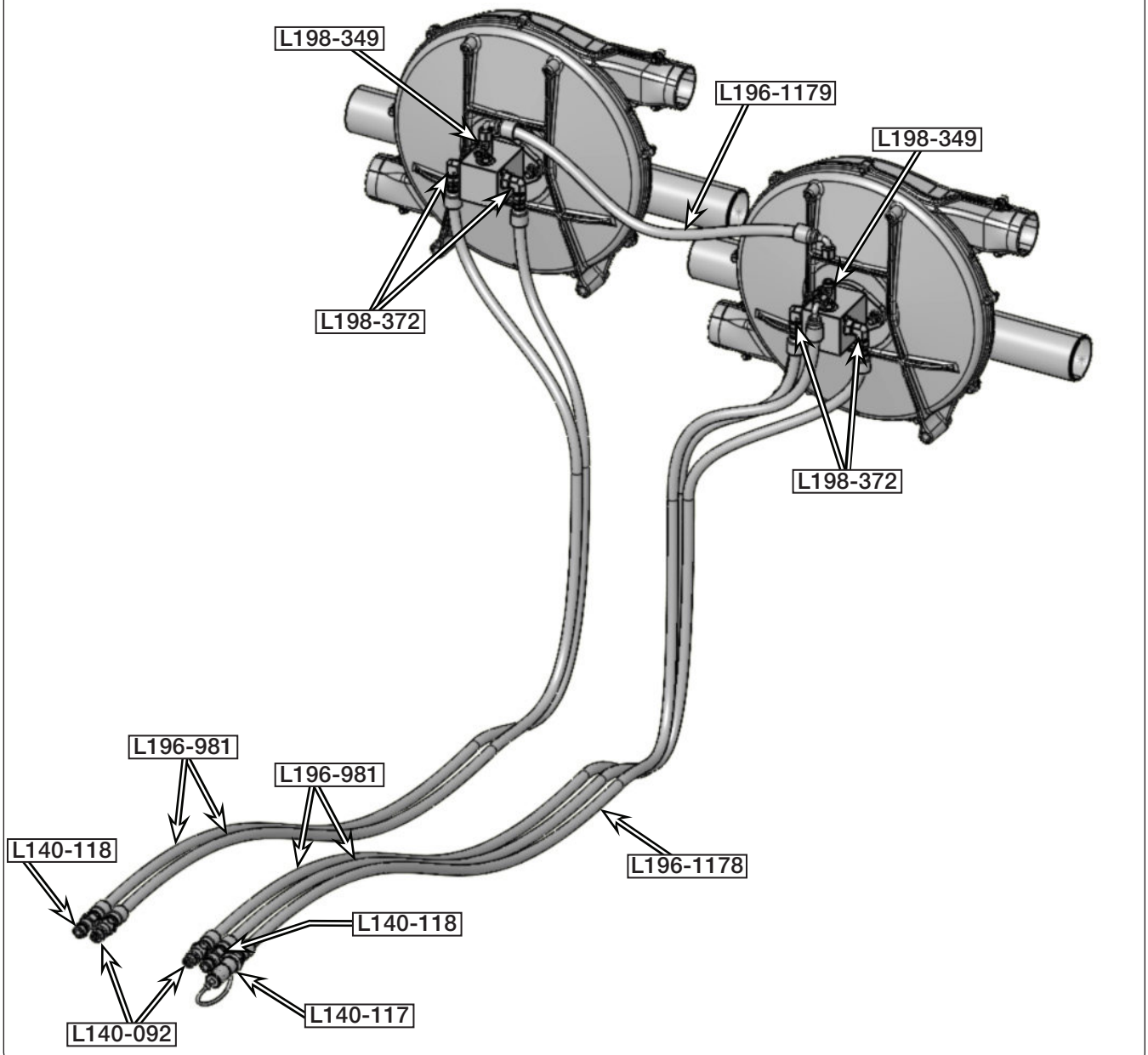


FIG. 4-5

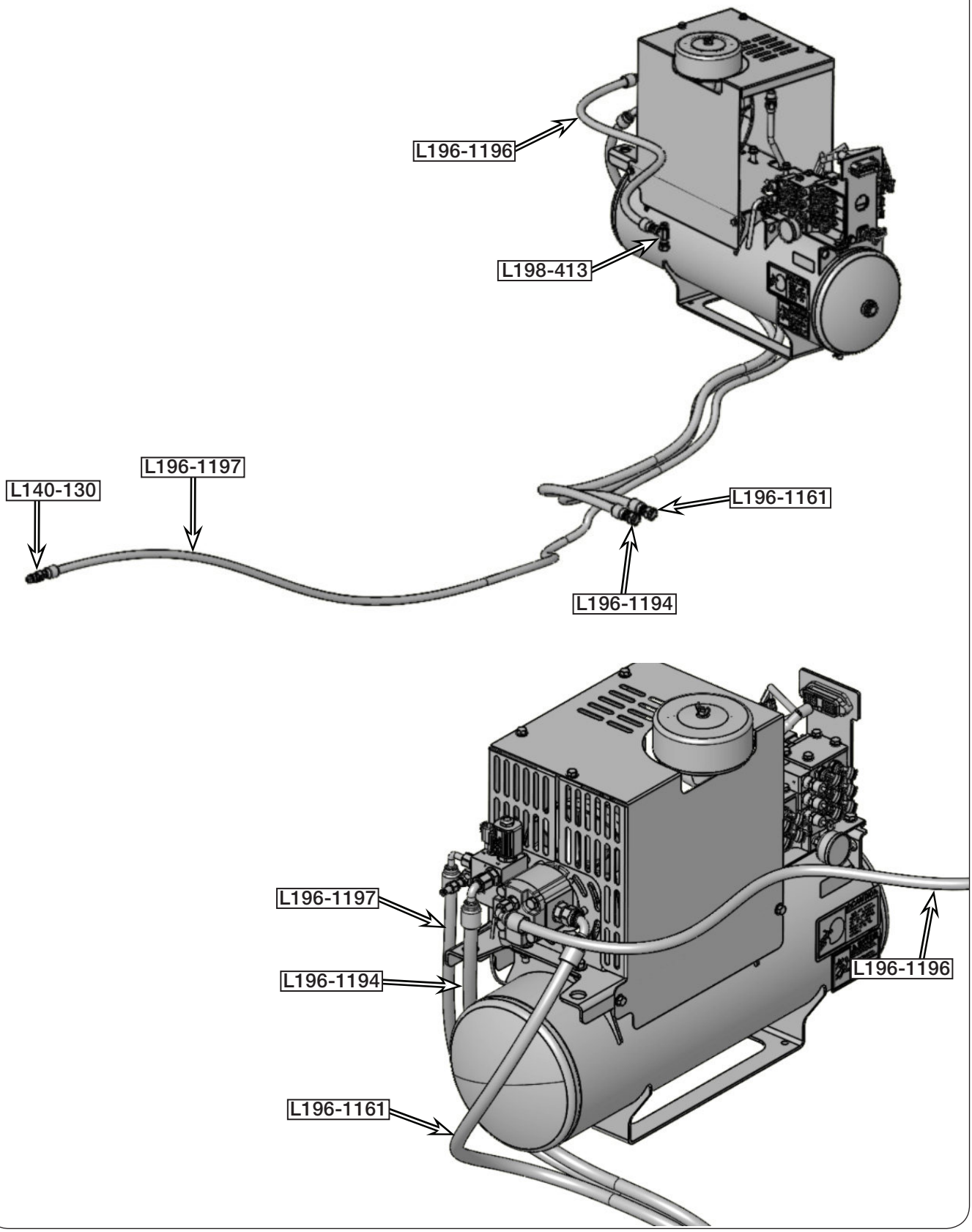


11. Re-connect the hydraulic hoses, then purge the hydraulic system and test for proper function. See "Purging Hydraulic System" in the Set Up section.

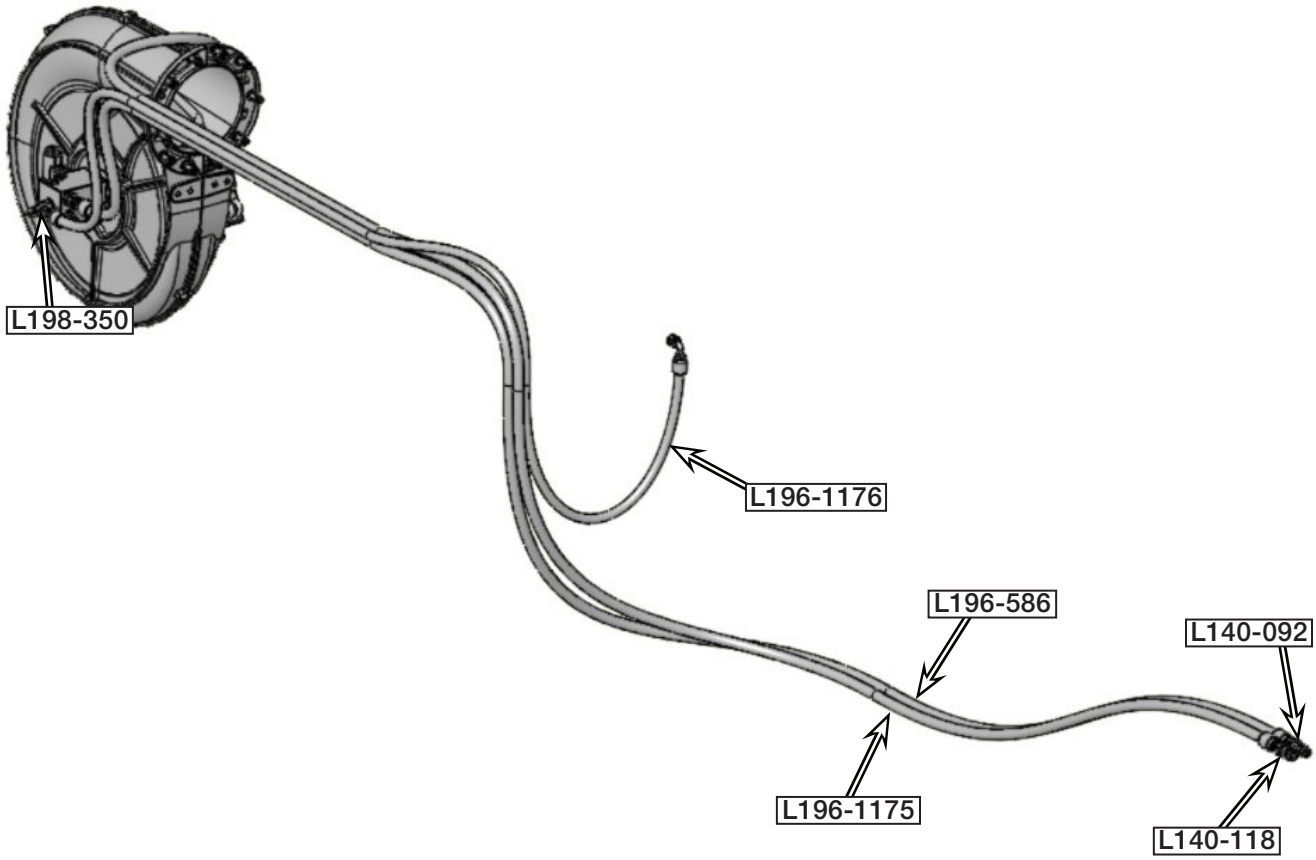
Hydraulic Layout - Vacuum Fan



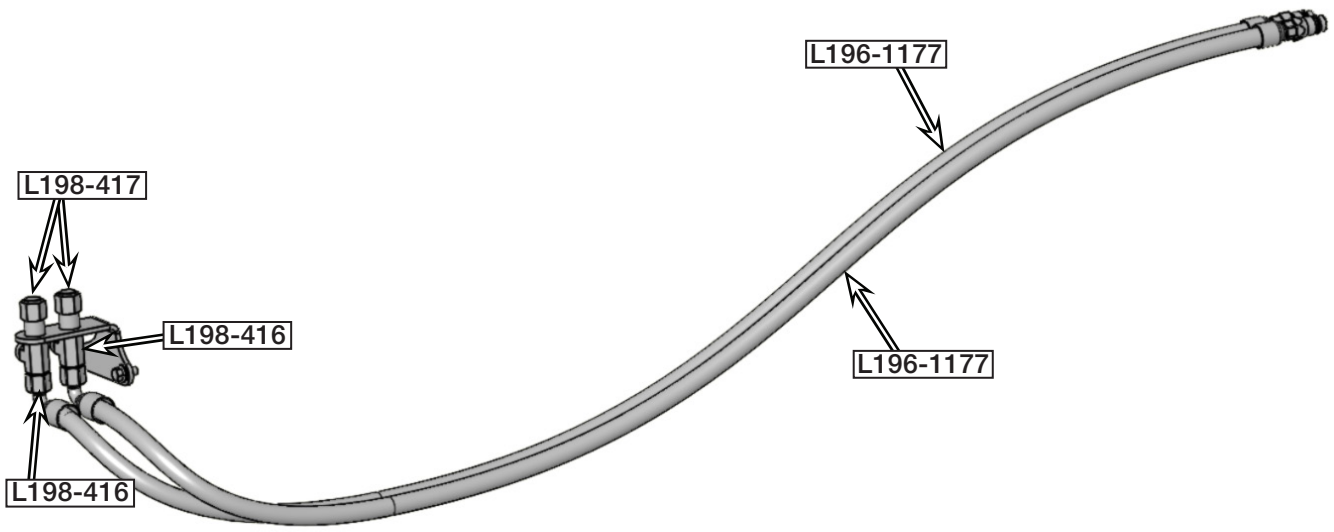
Hydraulic Layout - Air Compressor (For EE and ME5E Row Units



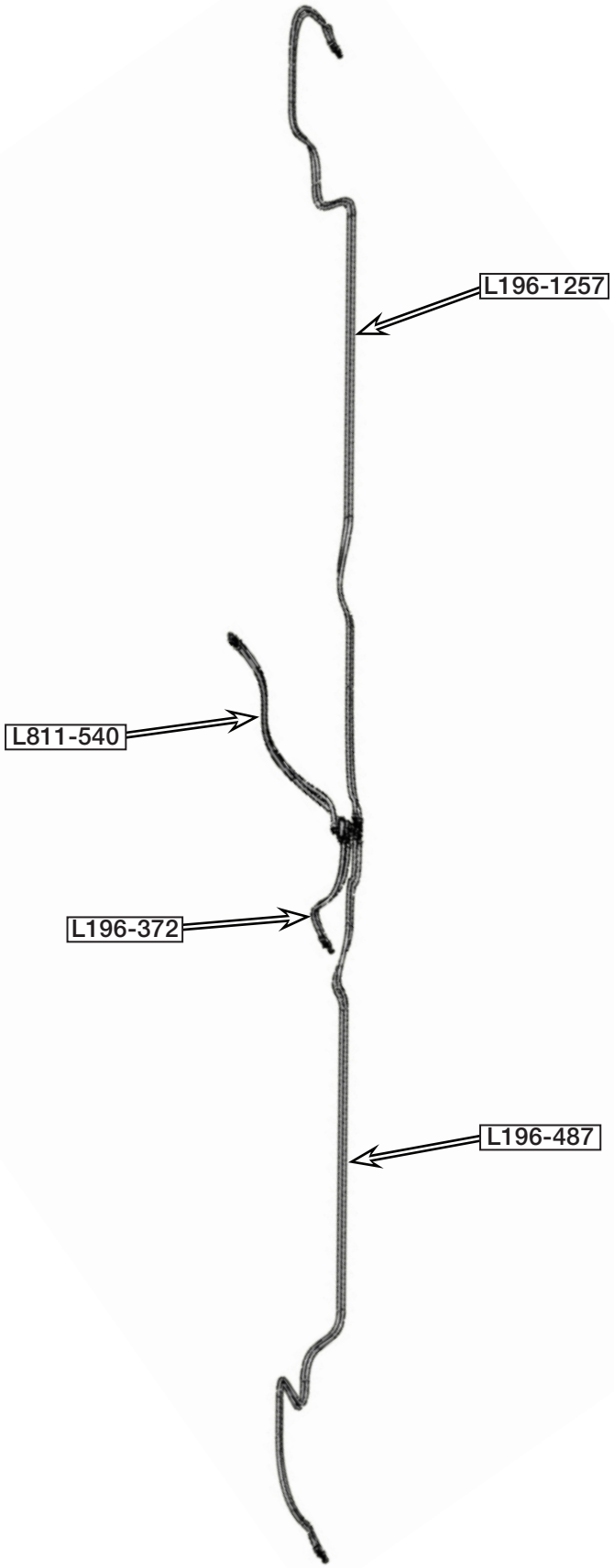
Hydraulic Layout - CCS Fan



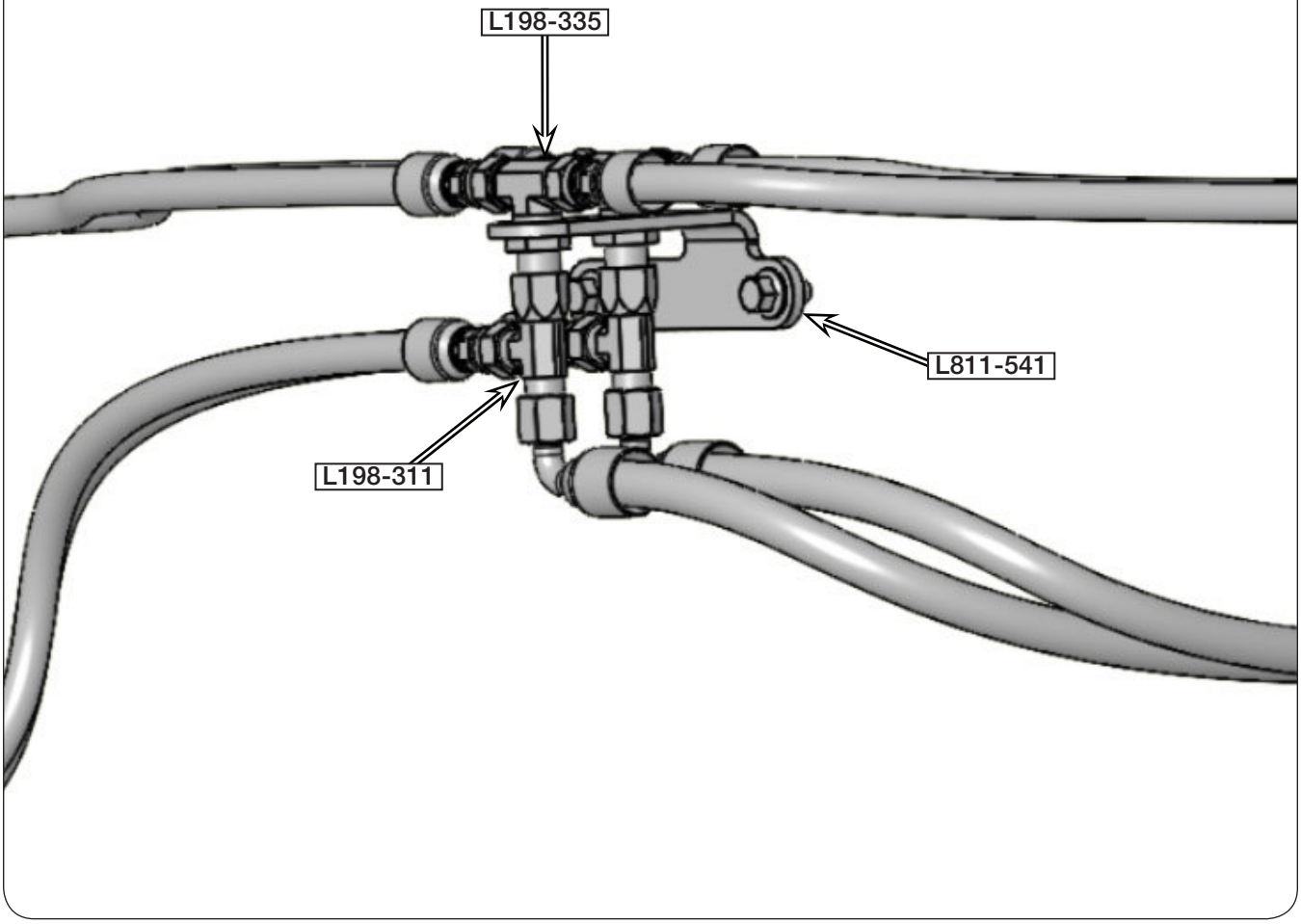
Hydraulic Layout - Power Beyond



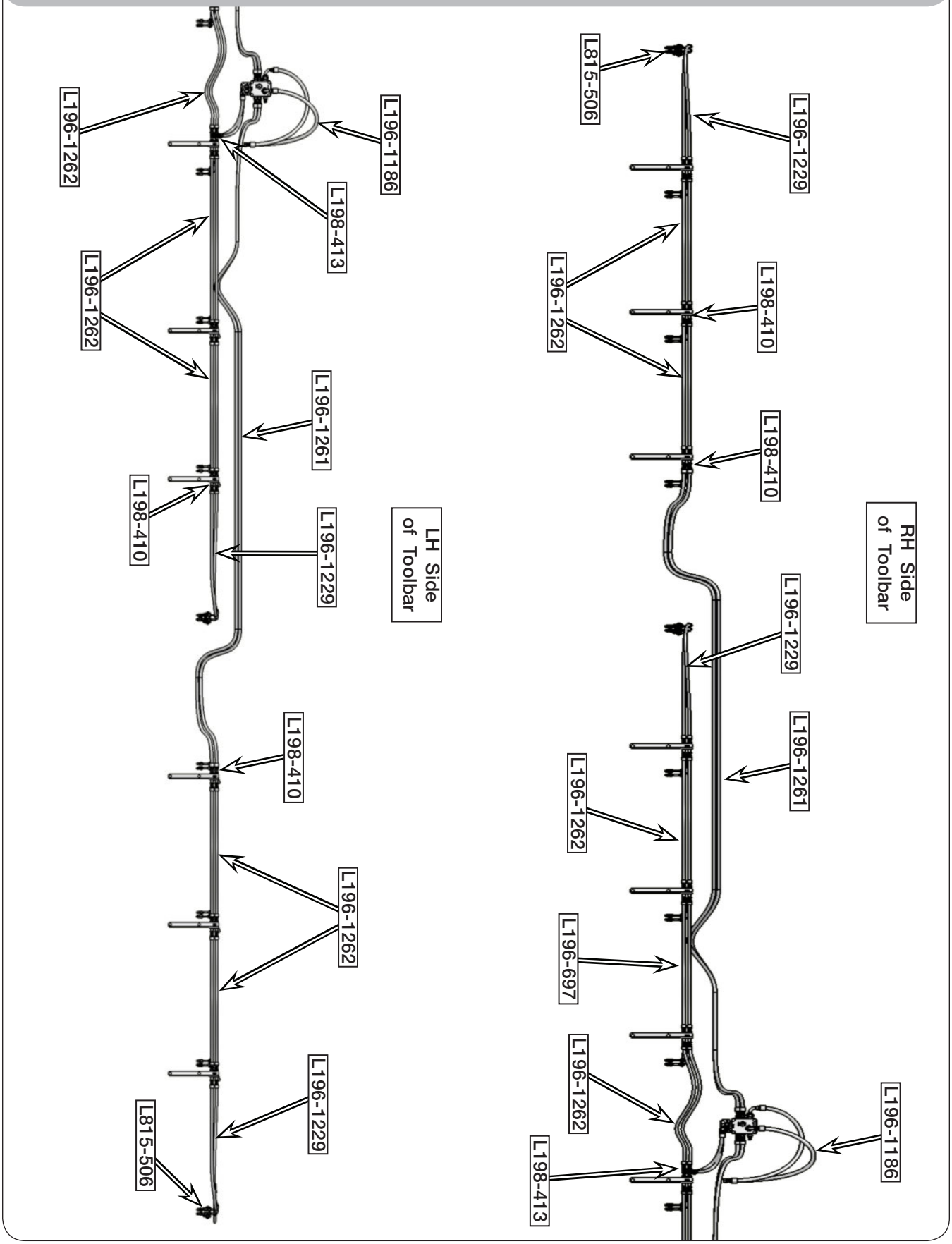
Hydraulic Layout - Variable Rate Drive



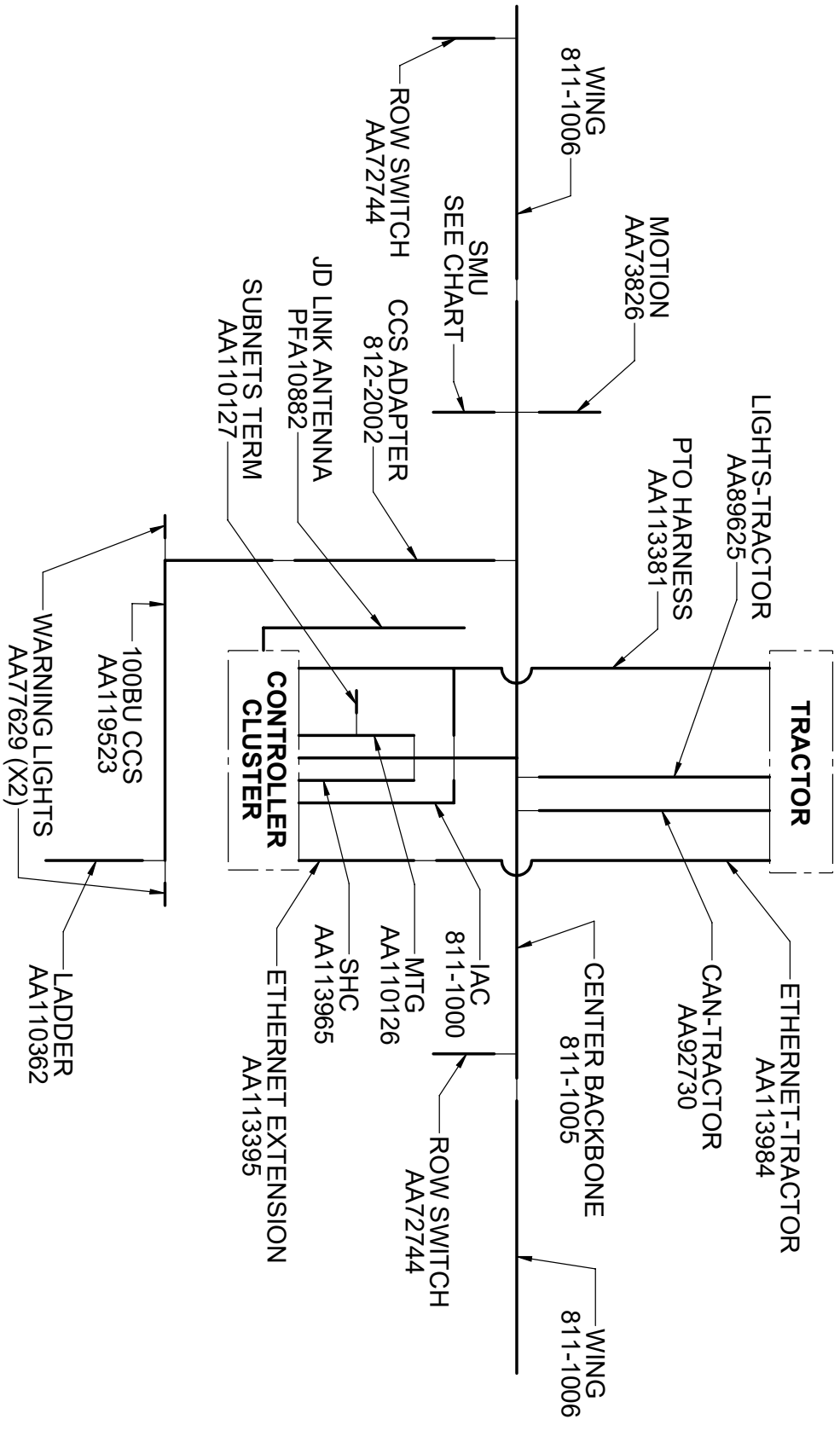
Hydraulic Layout - Variable Rate Drive (Continued)



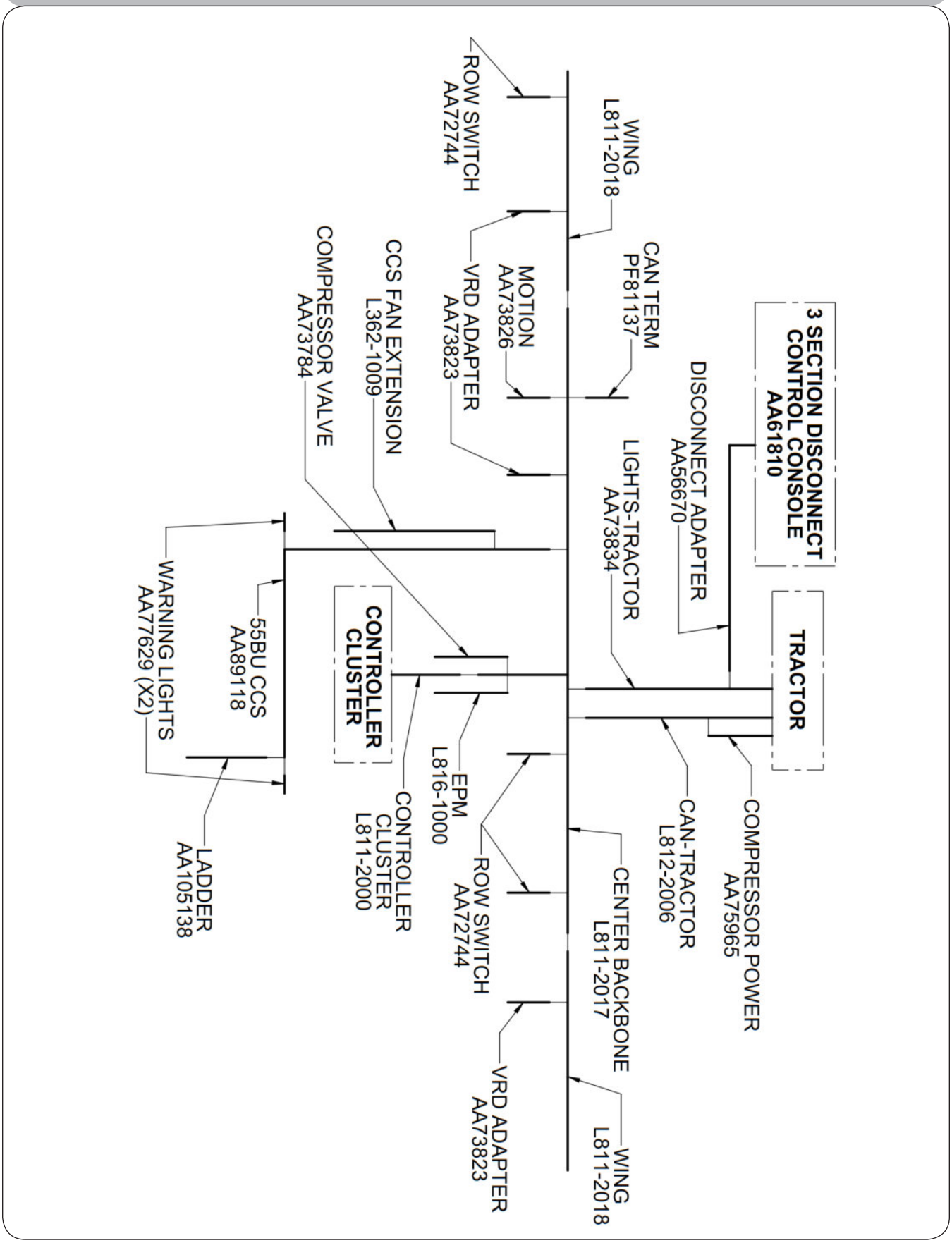
Hydraulic Layout - Individual Row Hydraulic Downforce



Electrical Layout



Electrical Layout (ME5)



Storage

Do the following before placing the implement in storage:

1. Remove dirt and trash which could cause rusting.
2. Repaint any chipped or scraped areas.
3. Coat all earth moving surfaces with grease or suitable rust preventative.
4. Inspect for damage or worn parts, replace before next season.
5. Store implement inside, away from livestock.
6. Block up implement to keep tires and ground tools off ground.
7. Replace all worn, torn or faded decals and reflectors.

Troubleshooting

Problem	Possible Cause	Corrective Action
Toolbar Will Not Fold or Unfold	Toolbar wing lock pins installed	Ensure the toolbar wing lock pins are in the storage position
	Hydraulic pressure too low	Refer to your tractors operators maual
	Hydraulic cylinder seals bad	See “Toolbar Hydraulic Cylinder Removal and Installation” in this section, then inspect hydraulic cylinders for bad seals
	Hydraulic cylinder restrictors plugged	See “Toolbar Hydraulic Cylinder Removal and Installation” in this section, then inspect hydraulic cylinders for plugged restrictor
Toolbar Does Not Operate at the Proper Height	Support stand not completly raised	Ensure that the support stands are fully raised and their pin is installed
	Tractor 3 point hitch not adjusted correctly	See Tractor Operator Manual for 3 point adjustments

Complete Torque Chart

Capscrews - Grade 5

NOTE:

- Grade 5 capscrews can be identified by three radial dashes on the head.
- For wheel torque requirements, refer to Wheels and Tires.
- Tighten U-bolts evenly and equally to have the same number of threads exposed on each end.

SIZE	FOOT POUNDS	NEWTON METERS
1/4-20 1/4-28	8-10 9-11	11-13 12-15
5/16-18 5/16-24	15-17 17-19	20-23 23-26
3/8-16 3/8-24	25-28 28-31	34-38 38-42
7/16-14 7/16-20	40-45 45-50	54-61 61-68
1/2-13 1/2-20	62-68 68-75	84-92 92-102
9/16-12 9/16-18	90-98 100-110	122-133 134-148
5/8-11 5/8-18	120-135 124-137	162-183 168-186
3/4-10 3/4-16	200-220 210-230	270-300 285-310
7/8-9 7/8-14	330-350 360-380	425-475 460-515
1-8 1-14	500-525 540-560	675-710 730-760
1 1/8-7 1 1/8-12	600-635 665-700	815-860 920-950
1 1/4-7 1 1/4-12	850-895 940-990	1150-1215 1275-1340
1 3/8-6 1 3/8-12	1125-1175 1280-1335	1525-1590 1735-1810
1 1/2-6 1 1/2-12	1500-1560 1685-1755	2035-2115 2285-2380

IMPORTANT

- *Follow these torque recommendations except when specified in text.*

Complete Torque Chart (continued)

Capscrews - Grade 8

NOTE:

- Grade 8 capscrews can be identified by six radial dashes on the head.
- For wheel torque requirements, refer to Wheels and Tires.
- Tighten U-bolts evenly and equally to have the same number of threads exposed on each end.

SIZE	FOOT POUNDS	NEWTON METERS
5/16-18 5/16-24	20-22 21-23	27-30 28-31
3/8-16 3/8-24	35-39 36-41	47-53 49-55
7/16-14 7/16-20	54-58 55-60	73-78 75-80
1/2-13 1/2-20	82-88 94-99	110-120 125-135
9/16-12 9/16-18	127-134 147-155	170-180 199-210
5/8-11 5/8-18	160-170 165-175	215-230 225-235
3/4-10 3/4-16	280-295 330-365	380-400 445-495
7/8-9 7/8-14	410-430 420-440	555-580 570-595
1-8 1-14	630-650 680-700	850-880 920-950
1 1/8-7 1 1/8-12	900-930 930-950	1220-1260 1260-1290
1 1/4-7 1 1/4-12	1250-1300 1280-1320	1695-1760 1735-1790

IMPORTANT

- *Follow these torque recommendations except when specified in text.*

Complete Torque Chart (continued)

Metric Capscrews - Class 10.9

NOTE:

- For wheel torque requirements, refer to Wheels and Tires.
- Capscrews have a yellow or clear appearance.

SIZE	FOOT POUNDS	NEWTON METERS
M5 X 0.8	6.5	8.8
M6 X 1	11.1	15.0
M7 X 1	18.6	25.2
M8 X 1.25	26.9	36.5
M10 X 1.5	53.3	72.2
M12 X 1.75	92.9	126
M14 X 2	148	200
M16 X 2	231	313
M18 X 2.5	317	430
M20 X 2.5	450	610
M22 x 1.5	475	644
M22 X 2.5	612	830
M24 X 3	778	1055
M27 X 3	1138	1543
M30 X 3.5	1546	2095
M33 X 3.5	2103	2851
M36 X 4	2701	3662
M39 X 4	3495	4739
M42 X 4.5	4324	5862

IMPORTANT

- *Follow these torque recommendations except when specified in text.*

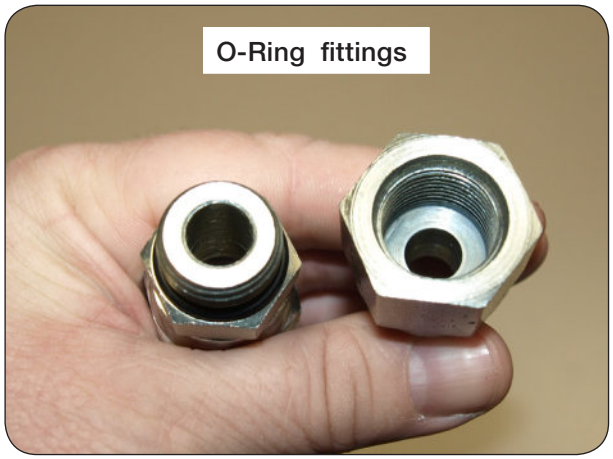
Hydraulic Fittings - Torque and Installation

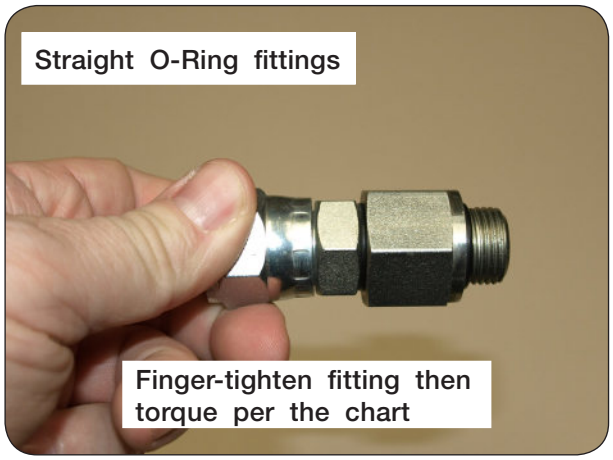
Tightening O-Ring Fittings

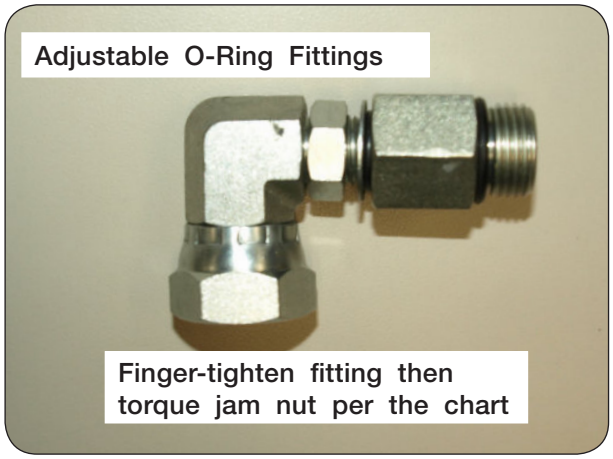
1. Inspect components for damage or contamination. Do not connect any other type of fitting to an O-ring fitting.
2. For adjustable fittings, insure the jam nut and washer are fully backed up.
3. Lubricate the O-ring and threads on the fitting.
4. Turn the fitting into the port until it is finger tight.
5. For adjustable fittings, set in the desired position.
6. Using a wrench, torque the fitting to the value in the below table. For adjustable fittings the jam nut will be tightened.

Note: Never use a power tool to install a fitting.

Dash Size	Thread Size	Straight Stud Torque (Ft-Lbs)	Adjustable Stud Torque (Ft-Lbs)
-5	1/2-20	14-19	10-14
-6	9/16-18	18-24	12-16
-8	3/4-16	27-43	20-30
-10	7/8-14	36-48	30-36
-12	1-1/16-12	65-75	44-54
-14	1-3/16-12	75-99	53-70
-16	1-5/16-12	85-123	59-80
-20	1-5/8”-12	115-161	75-100
-24	1-7/8”-12	125-170	105-125







Hydraulic Fittings – Torque and Installation

Tightening JIC Fittings

1. Inspect all components for damage or contamination. Do not connect any other type of fitting to a JIC fitting.

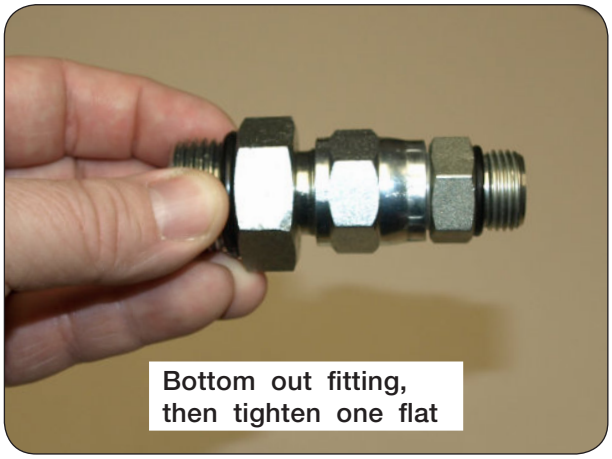
2. Lubricate the threads.

3. Turn the fitting into the port until it bottoms out.

4. Use one wrench on the fixed hex on the hose to prevent twisting and a second on the swivel. Tighten the fitting another 60 degrees (or one flat)

Note: Never use a power tool to install a fitting


JIC fittings


Bottom out fitting, then tighten one flat

Hydraulic Fittings - Torque and Installation

Tightening O-Ring Face Seal Fittings

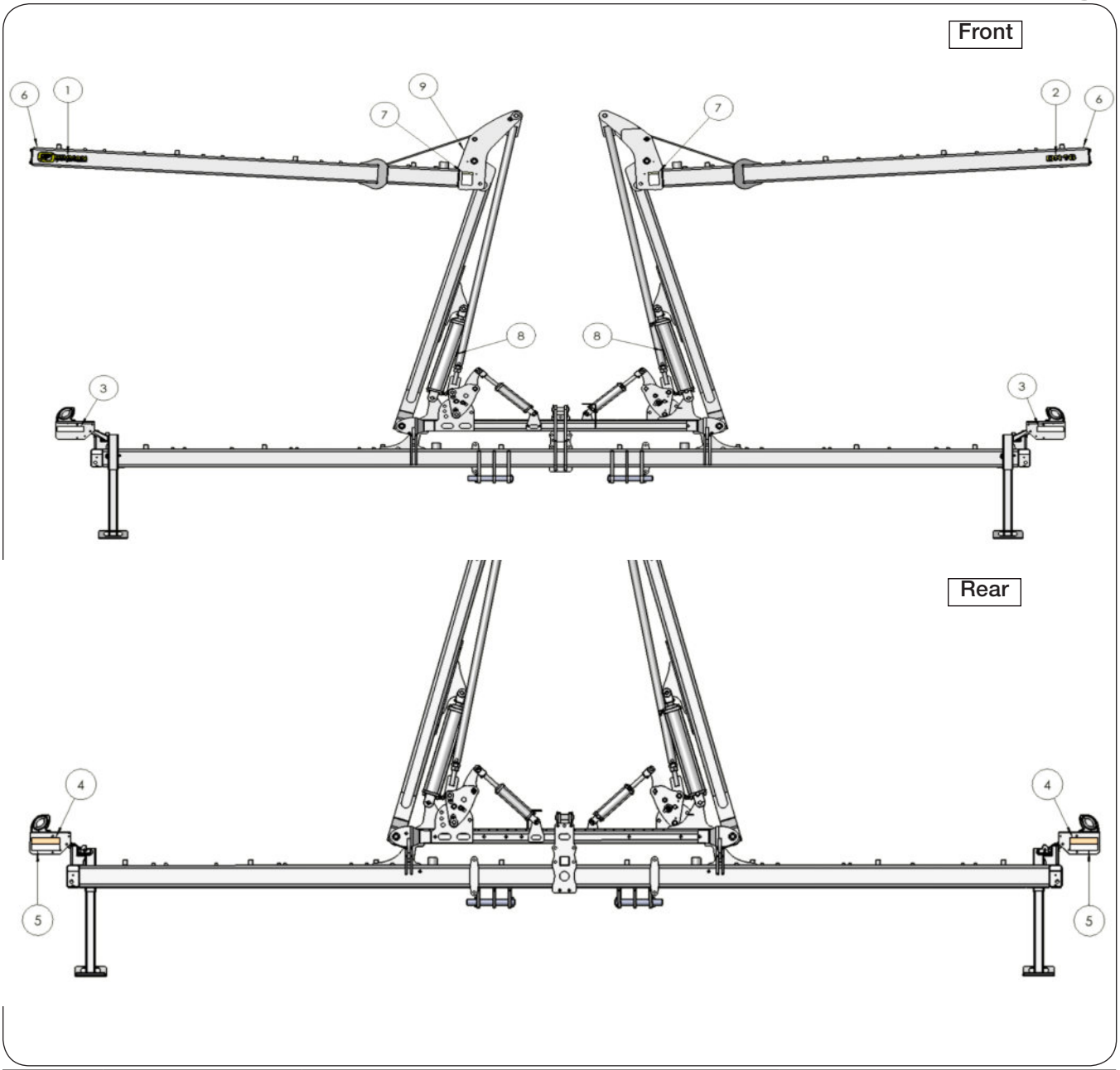
1. Confirm face seal o-ring is properly installed and inspect components for damage or contamination. Do not connect any other type of fitting to an o-ring face seal fitting.
2. Lubricate the threads and the o-ring.
3. Align mating face seal flange against o-ring. Finger tighten the face seal flange nut.
4. Torque the flange nut to the value in the below table.

Dash Size	Face Seal Thread Size	Torque (Ft-Lbs)
-4	9/16-20	10-12
-6	11/16-16	18-20
-8	13/16-16	32-35
-10	1-14	45-50
-12	1-3/16-12	65-70
-16	1-7/16-12	92-100
-20	1-7/8-12	125-140
-24	2-12	150-165

SECTION V
Parts

Toolbar Decals

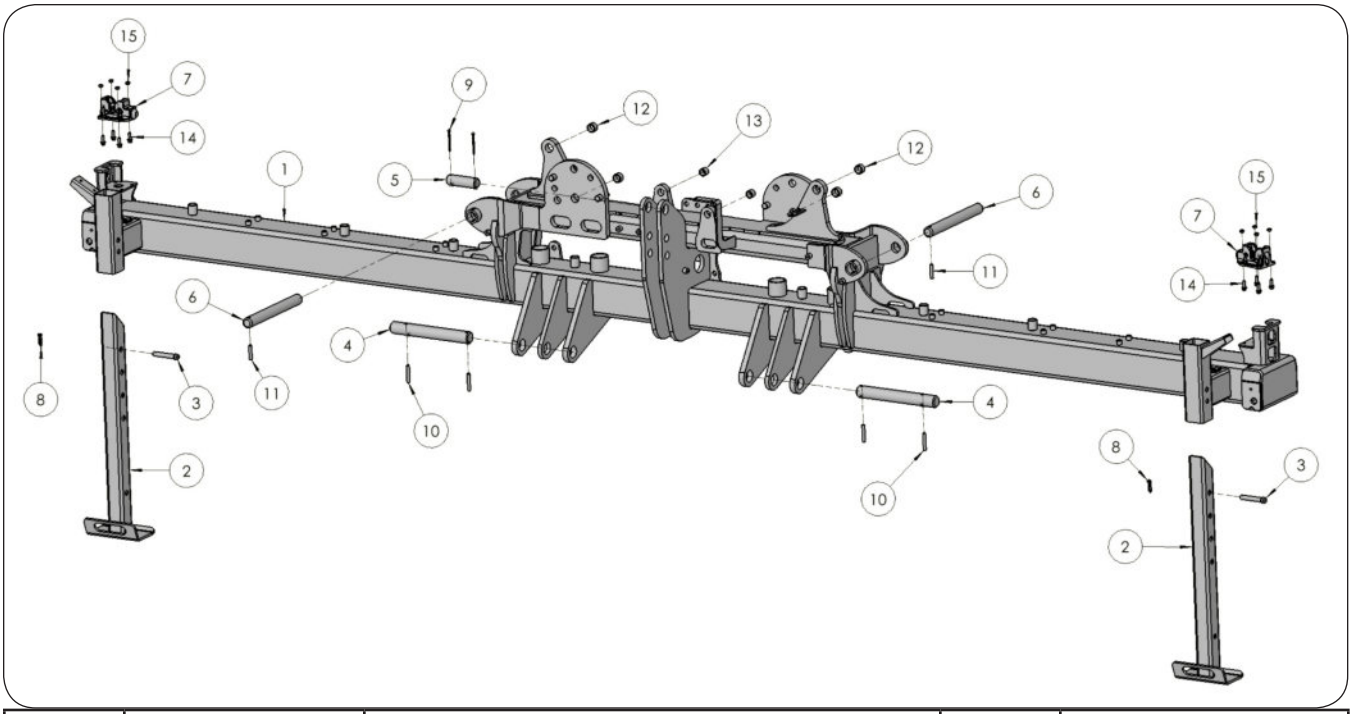
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	L153-430	Orthman by Unverferth Decal	1	
2	L153-464	Model Decal, DR16	1	
3	9003127	Yellow Reflective Decal	2	
4	9003125	Orange Reflective Decal	2	
5	9003126	Red Reflective Decal	2	
6	L153-044	Operation Checklist Decal	2	
7	L153-013	Wing Hinge Warning Decal	2	
8	L153-528	Hydraulic Pressure Warning Decal	2	
9	L153-011	Serial Number Tag	1	

Toolbar Center Components

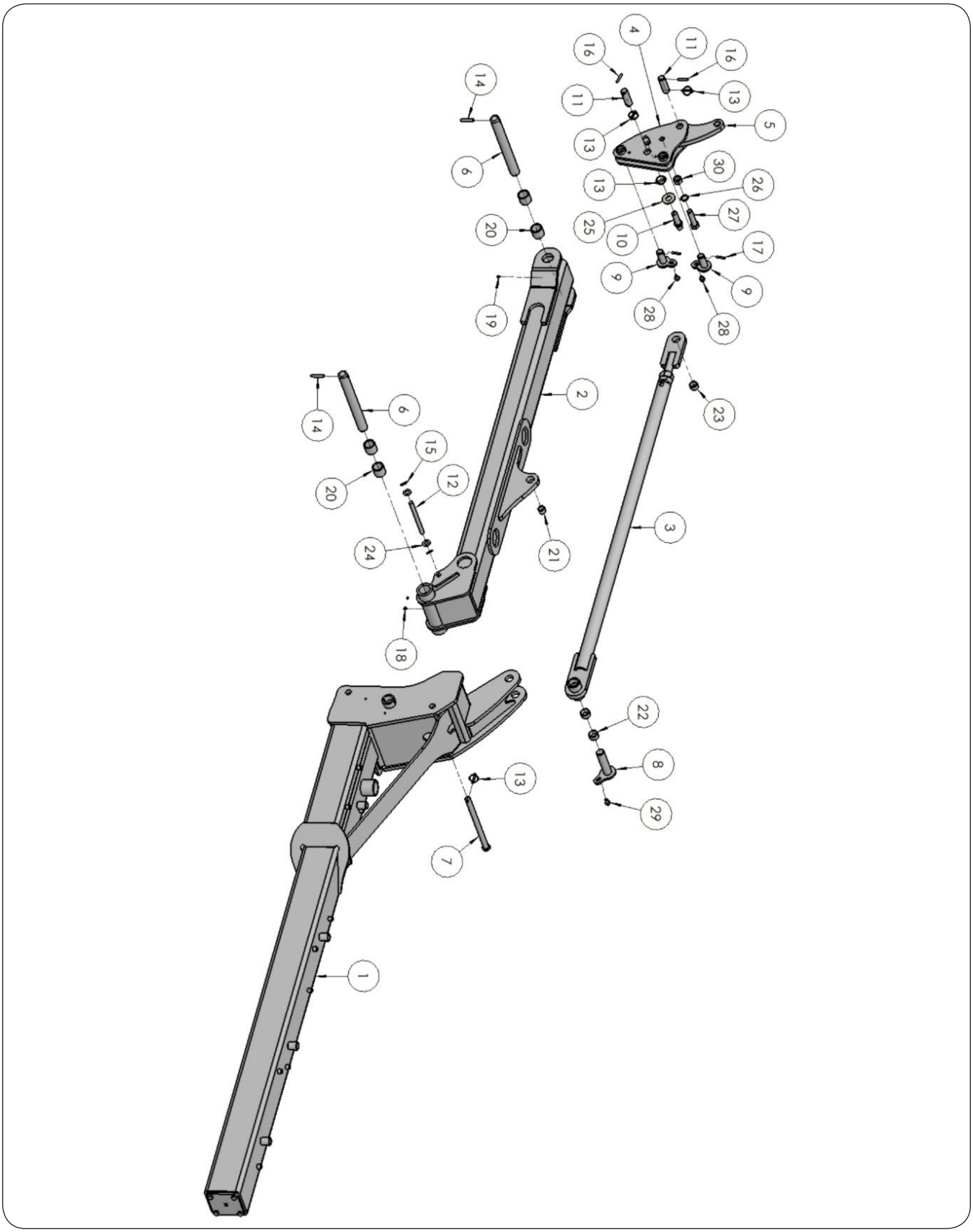
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	L808-018	Toolbar Center Section	1	
2	L362-494	Bar Stand	2	
3	L303-846	Bar Stand Pin	2	
4	L321-513	Lower Hitch Pin	2	
5	L321-514	Upper Hitch Pin	1	
6	L301-146	Swing Truss Pin	2	
7	L152-825	Toolbar Wing Latch	2	
8	L104-065	Lynch Pin, 5/16" x 1 11/16"	2	
9	L104-184	Cotter Pin, 1/4" x 3"	2	
10	L104-091	Roll Pin, 1/2" x 3"	4	
11	L104-005	Roll Pin, 1/2" x 2 1/2"	2	
12	L134-044	Bushing, 1 1/2" OD x 1 1/4" ID x 1"	4	
13	L134-034	Bushing, 1 1/4" OD x 1" x 1"	2	
14	L100-438	Flanged Capscrew, M10 x 1.5 x 30mm Grade 8.8	8	
15	L102-176	Hex Nut, M10 x 1.5	8	

Toolbar Wing Components

Please visit www.unverferth.com/parts/ for the most current parts listing.



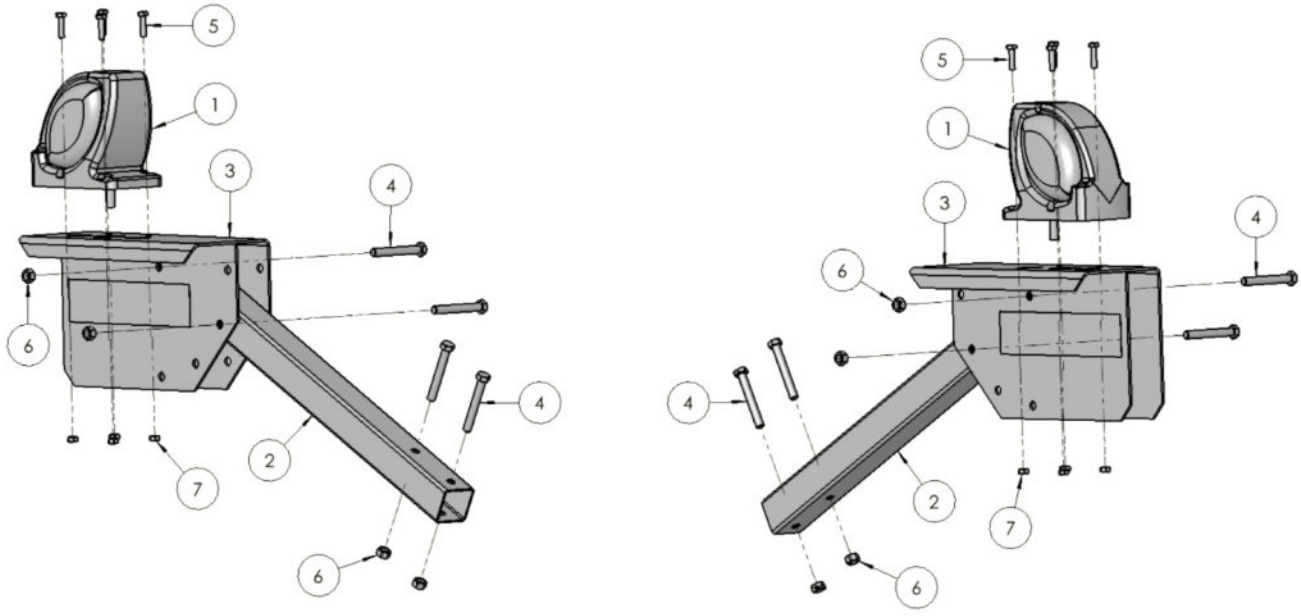
Toolbar Wing Components

Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	L804-004	Toolbar Wing Weldment, LH	1	
	L804-003	Toolbar Wing Weldment, RH		
2	L806-004	Swing Truss, LH	1	
	L806-003	Swing Truss, RH		
3	L806-101	Strut Assembly	2	
4	L805-001	Float Plate Assembly	2	
5	L362-233	Toolabr Wing Fold Link	2	
6	L301-146	Swing Truss Pin	4	
7	L301-156	Toolbar Wing Locking Pin	2	
8	L321-670	Outer Wing Strut Pin	2	
9	L321-665	Inner Wing Strut Pin	4	
10	L321-668	Toolbar Wing Level Adjusment Pin	2	
11	L321-667	Float Link Pin	4	
12	L362-1523	Swing Truss Latch Pin	2	
13	L104-065	Lynch Pin, 5/16" x 1 11/16"	8	
14	L104-005	Roll Pin, 1/2" x 1 1/2"	4	
15	L104-118	Roll Pin, 1/4" x 1 1/4"	4	
16	L104-103	Roll Pin, 3/8" x 2"	4	
17	L104-008	Roll Pin, 5/16" x 1 3/4"	4	
18	L110-008	Grease Zerk, 90 Degree	2	
19	L110-001	Grease Zerk	1	
20	L134-005	Bushing, 2 1/8" OD x 1 3/4" ID x 2"	8	
21	L134-034	Bushing, 1 1/4" OD x 1"	1	
22	L134-017	Bushing, 1 3/4" OD x 1 1/2" ID x 1"	4	
23	L134-044	Bushing, 1 1/2" OD x 1 1/4" ID x 1"	2	
24	L134-154	Washer, 1 1/2" OD x 3/4" ID x 18 Ga.	4	
25	L108-004	Falt Washer, 2" SAE	2	
26	L134-013	Bushing, 1 1/2" OD x 1" ID x 14 Ga.	2	
27	L100-381	Capscrew, M24 x 3 x 100mm Grade 10.9	2	
28	L100-442	Flanged Capscrew, M12 x 1.75 x 20mm Grade 8.8	4	
29	L100-441	Flanged Capscrew, M12 x 1.75 x 25mm Grade 8.8	2	
30	L102-193	Lock Nut, M24 x 3	2	

Light and Light Mount Components

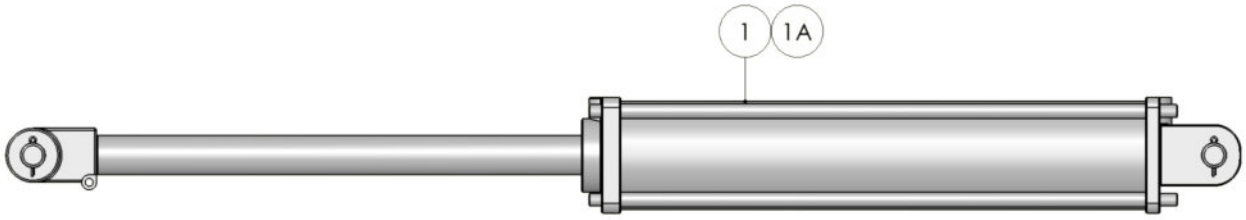
Please visit www.unverferth.com/parts/ for the most current parts listing.



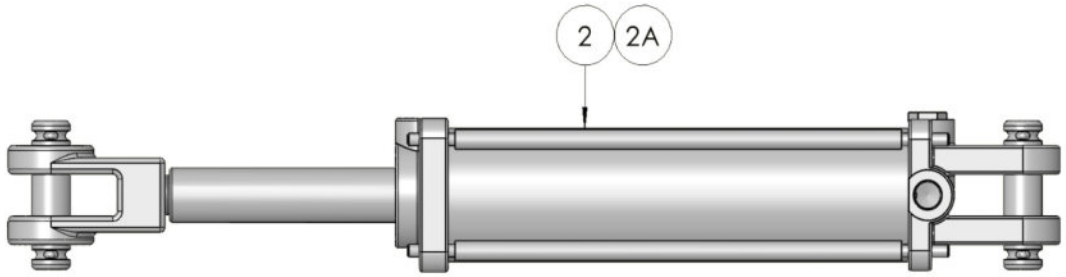
ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	L152-953	Amber Safety Light	2	
2	L366-586	Light Mount Arm	2	
3	L301-567	Light Mount	2	
4	L100-113	Capscrew, 3/8"-16UNC x 2 3/4" Grade 5	8	
5	L100-249	Capscrew, 1/4"-20UNC x 1" Grade 5	8	
6	L102-056	Lock Nut, 3/8"-16UNC Grade 2	8	
7	L102-023	Lock Nut, 1/4"-20UNC Grade 2	8	

Hydraulic Cylinders

Please visit www.unverferth.com/parts/ for the most current parts listing.



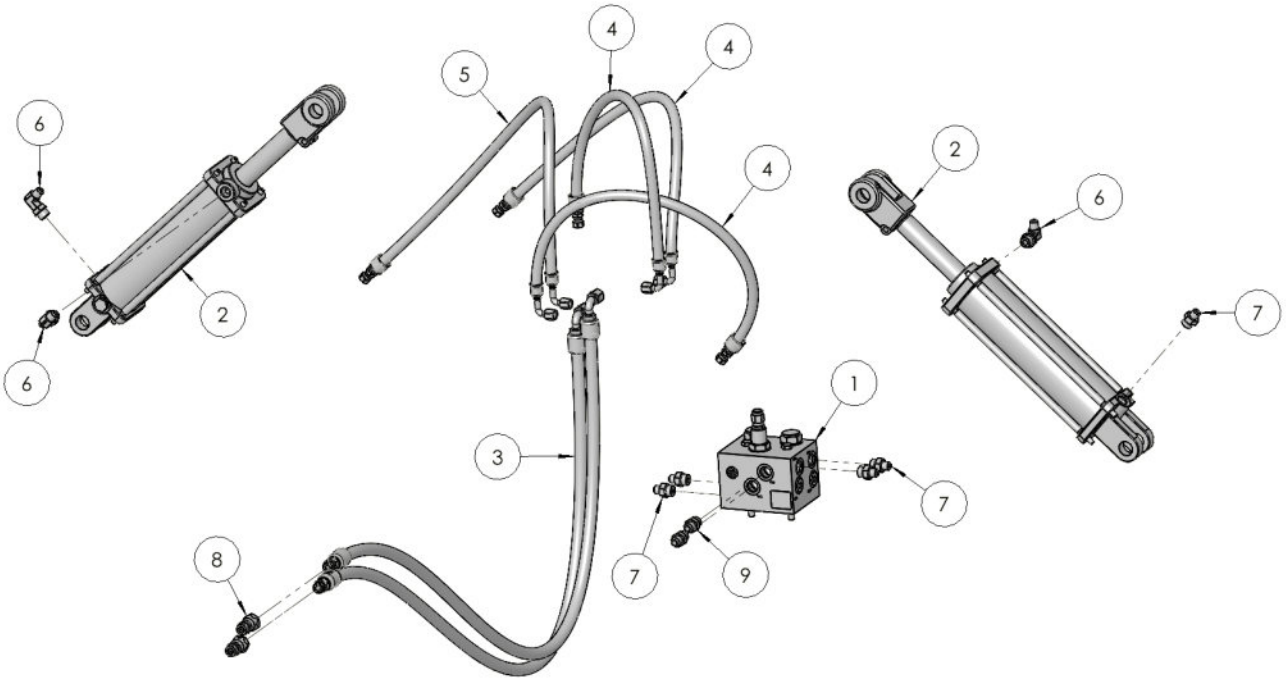
ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	L194-194	Hydraulic Cylinder, 5”x24” 3000 PSI	2	Wing Fold Cylinder
1A	L194-210	Seal Kit	-	



ITEM	PART NO.	DESCRIPTION	QTY	NOTES
2	L194-000	Hydraulic Cylinder, 3”x10” 3000 PSI	2	Gullwing Cylinder
2A	L194-309	Seal Kit	-	

Gullwing Hydraulic Components

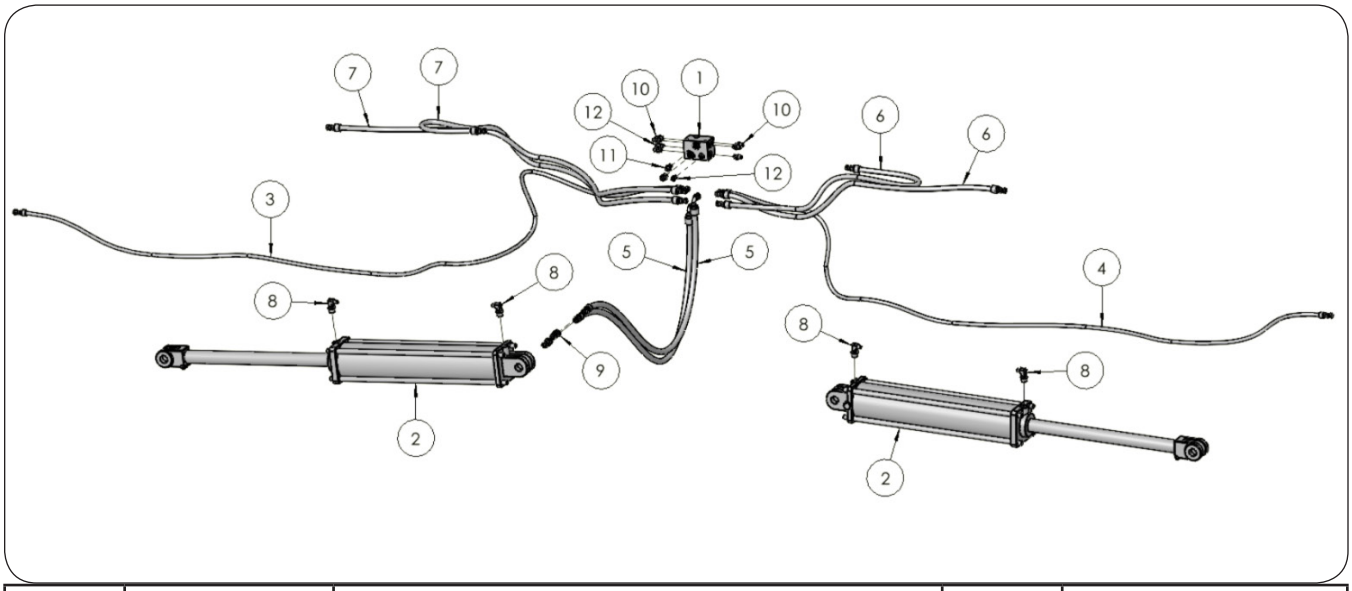
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	L180-349	Gull Wing Hydraulic Manifold	1	
2	L194-000	Hydraulic Cylinder, 3" x 10"	2	
3	L196-1218	Hydraulic Hose, 1/2" x 62" 3000 PSI 3/4"-16 ORMB x 3/4"-16 JICF	2	
4	L196-1239	Hydraulic Hose, 3/8" x 25" 3000 PSI 9/16"-18 JICF x 9/16"-18 JICF	3	
5	L196-1238	Hydraulic Hose, 3/8" x 48" 3000 PSI 9/16"18 JICF x 9/16"-18 JICF	1	
6	L198-064	90 Degree Fitting, 9/16"-18 MB x 9/16"-18 MJ	3	
7	L198-078	Adapter, 3/4"-16 MB x 9/16"-18 MJ	5	
8	L140-092	ISO Tip, 3/4"-16 F BOSS	2	
9	L198-128	Adapter, 3/4"-16 MB x 3/4"-16 MJ	2	

Toolbar Fold Hydraulic Components

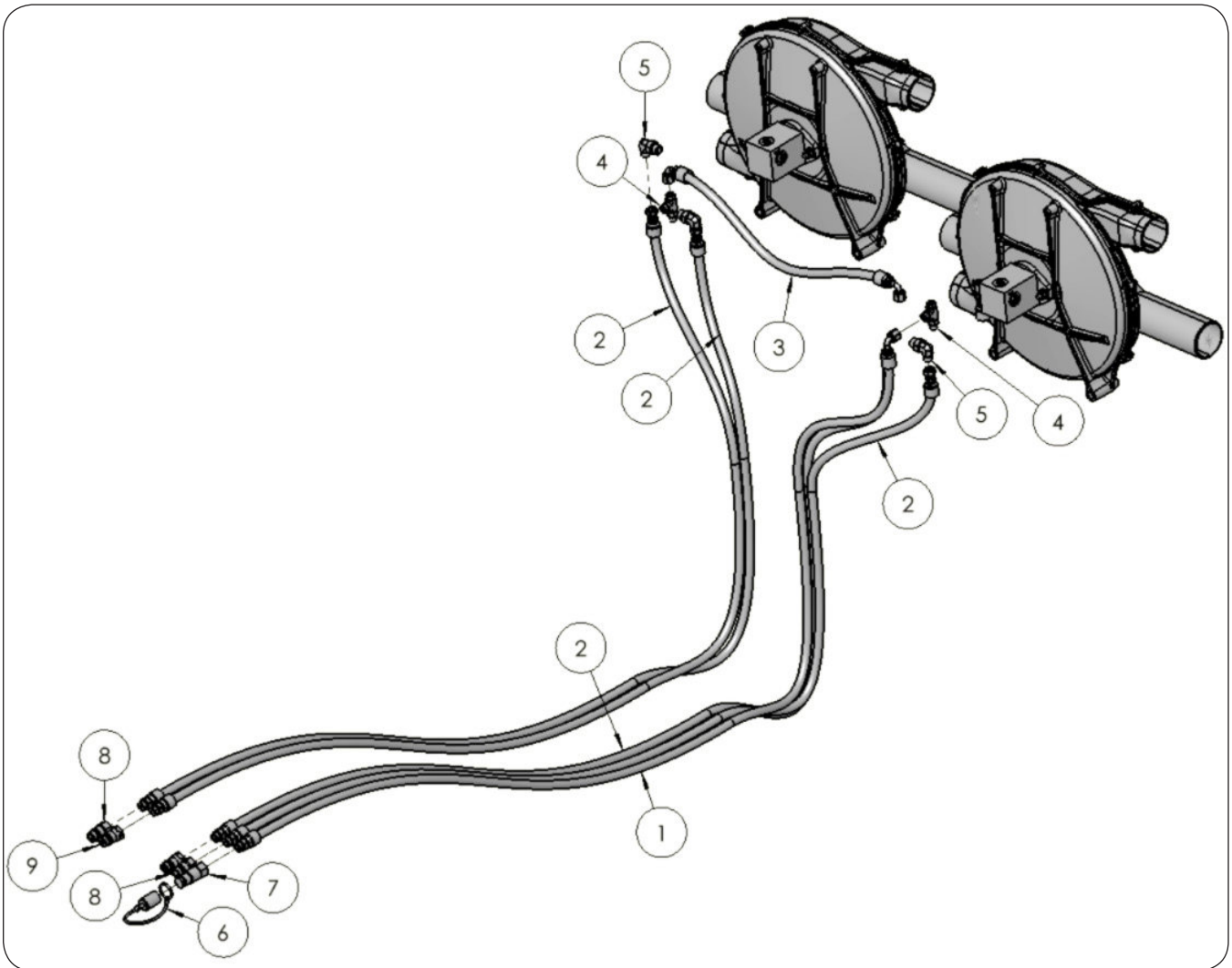
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	L180-350	Toolbar Fold Hydraulic Manifold	1	
2	L194-194	Hydraulic Cylinder, 5" x 24" 3000 PSI	2	
3	L196-1241	Hydraulic Hose, 1/4" x 186" 3000 PSI 9/16"-18 JICF	1	
4	L196-1240	Hydraulic Hose, 1/4" x 152" 3000 PSI 9/16"-18 JICF	1	
5	L196-1218	Hydraulic Hose, 1/2" x 62" 3000 PSI 3/4"-16 ORMB x 3/4"-16 JICF	2	
6	L196-1242	Hydraulic Hose, 3/8" x 66" 3000 PSI 9/16"-18 JICF	2	
7	L196-1243	Hydraulic Hose, 3/8" x 90" 3000 PSI 9/16"-18 JICF	2	
8	L198-080	90 Degree Fitting, 9/16"-18 JIC x 7/8"-14 MOR	4	
9	L140-092	ISO Tip, 3/4"-16 F BOSS	2	
10	L198-031	Adapter, 9/16"-18 MB x 9/16"-18 MJ	6	
11	L198-128	Adapter, 3/4"-16 MB x 3/4"-16 MJ	2	
12	L180-188	Thermal Relief Fitting	2	

Vacuum Fan Hydraulic Components

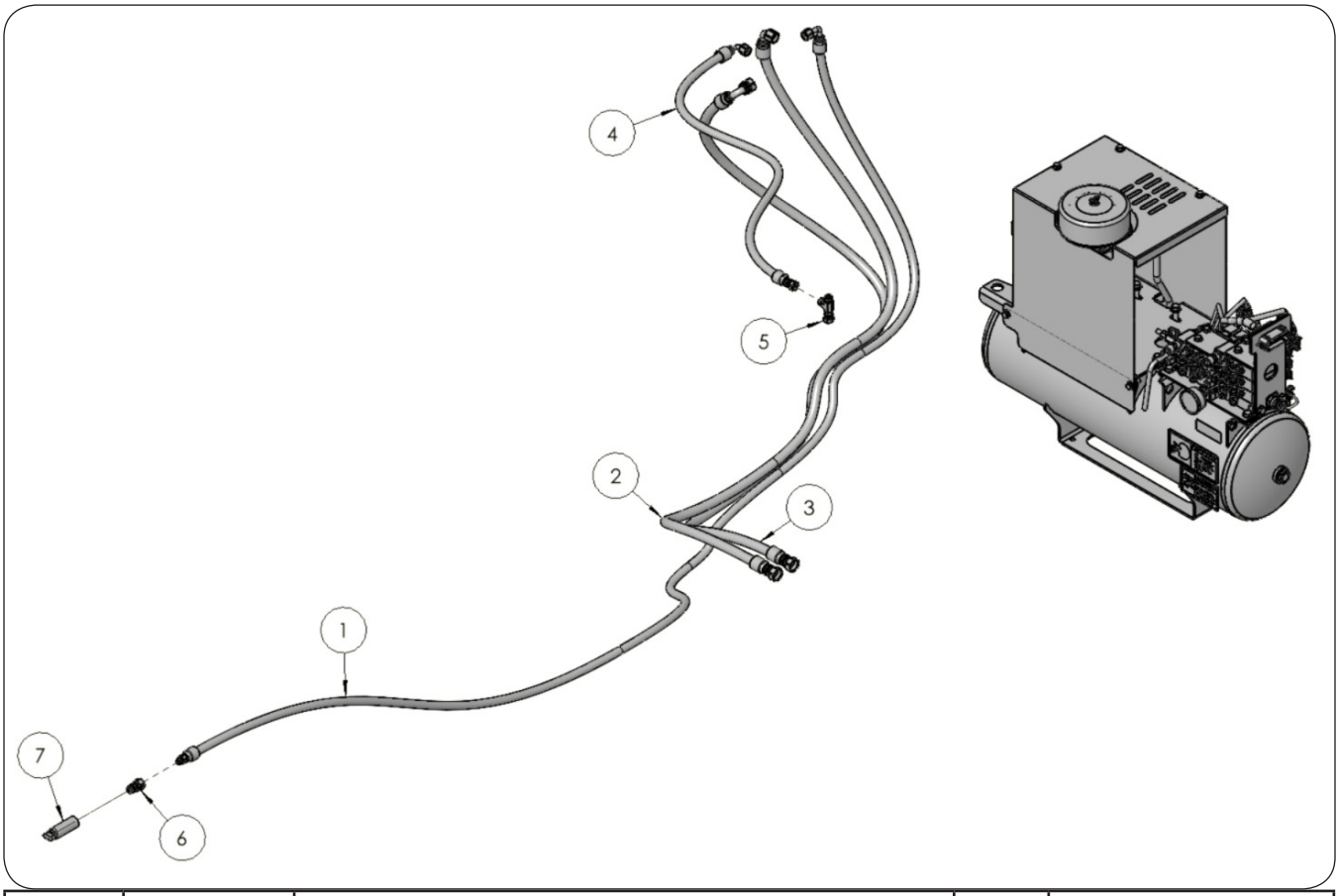
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	L196-1185	Hydraulic Hose, 3/8" x 100" 11/16" FORFS x 3/4" MORB	1	
2	L196-986	Hydraulic Hose, 3/8" x 100" 11/16" FORFS x 90* x 3/4" MORB	4	
3	L196-1179	Hydraulic Hose, 3/8" x 24" 11/16" FORFS x 11/16" FORFS x 90*	1	
4	L198-349	T-Fitting, 9/16" MB x 11/16" MORS x 11/16" MORS	2	
5	L198-372	90 Degree Fitting, 3/4" MB x 11/16" MORFS	3	
6	L152-830	Dust Cap	1	
7	L140-117	Case Drain Coupler	1	
8	L140-118	Free Return Coupler	2	
9	L140-092	ISO Tip, 3/4"-16 F BOSS	2	

Air Compressor Hydraulic Components

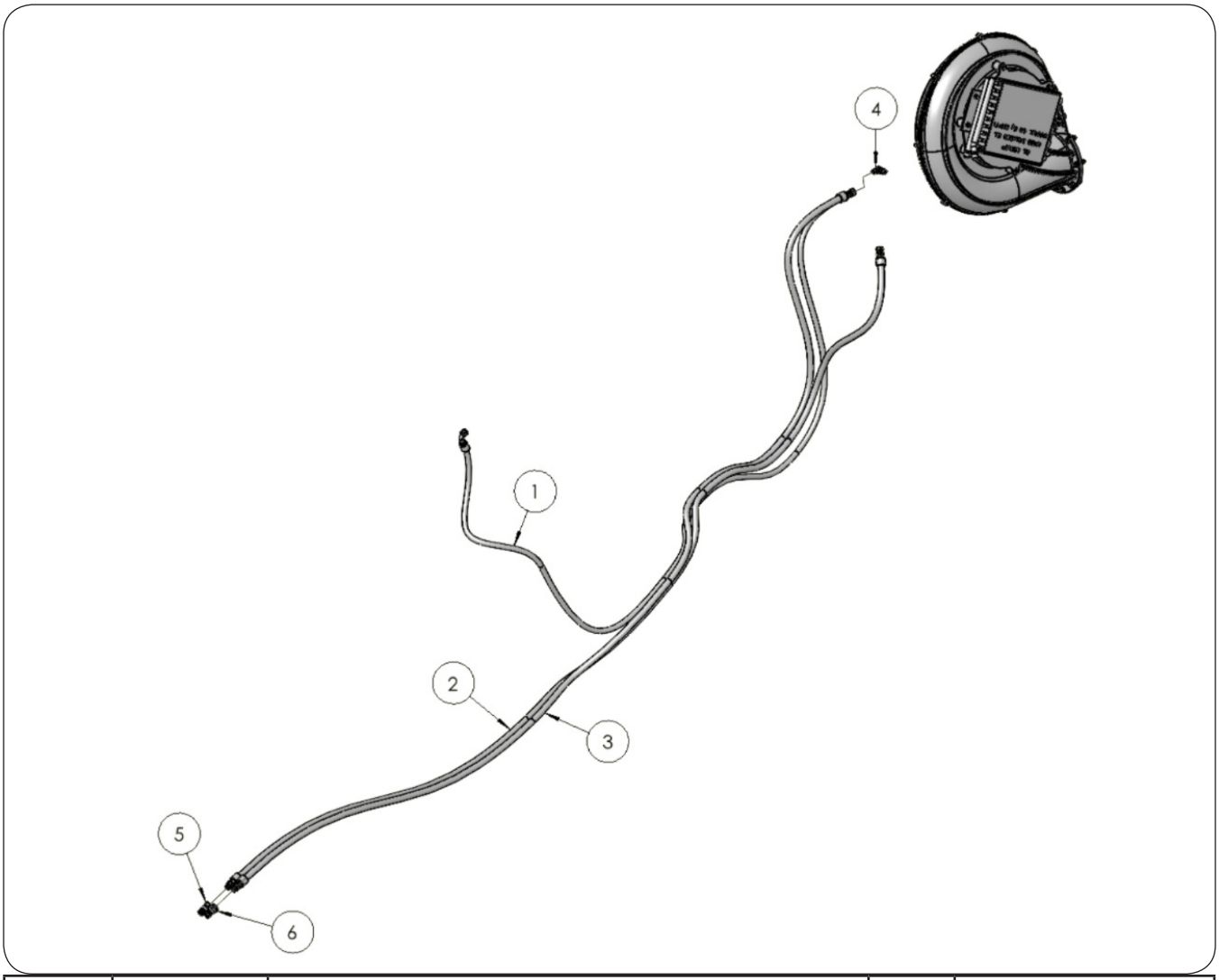
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	L196-1197	Hydraulic Hose, 3/8" x 135" 11/16" FORFS x 90* x 9/16" MORB	1	
2	L196-1194	Hydraulic Hose, 1/2" x 75" 1" FORFS x 13/16" FORFS x 90*	1	
3	L196-1161	Hydraulic Hose, 1/2" x 80" 1" FORFS x 1" FORFS x 90*	1	
4	L196-1196	Hydraulic Hose, 3/8" x 40" 11/16" FORFS x 11/16" FORFS x 90*	1	
5	L198-413	T-Fitting, 11/16" FORFS x 11/16" MORFS x 11/16" MORFS	1	
6	L140-130	ISO Tip, 3/4"-16 F BOSS	1	
7	L152-1044	Dust Cap	1	

CCS Fan Hydraulic Components

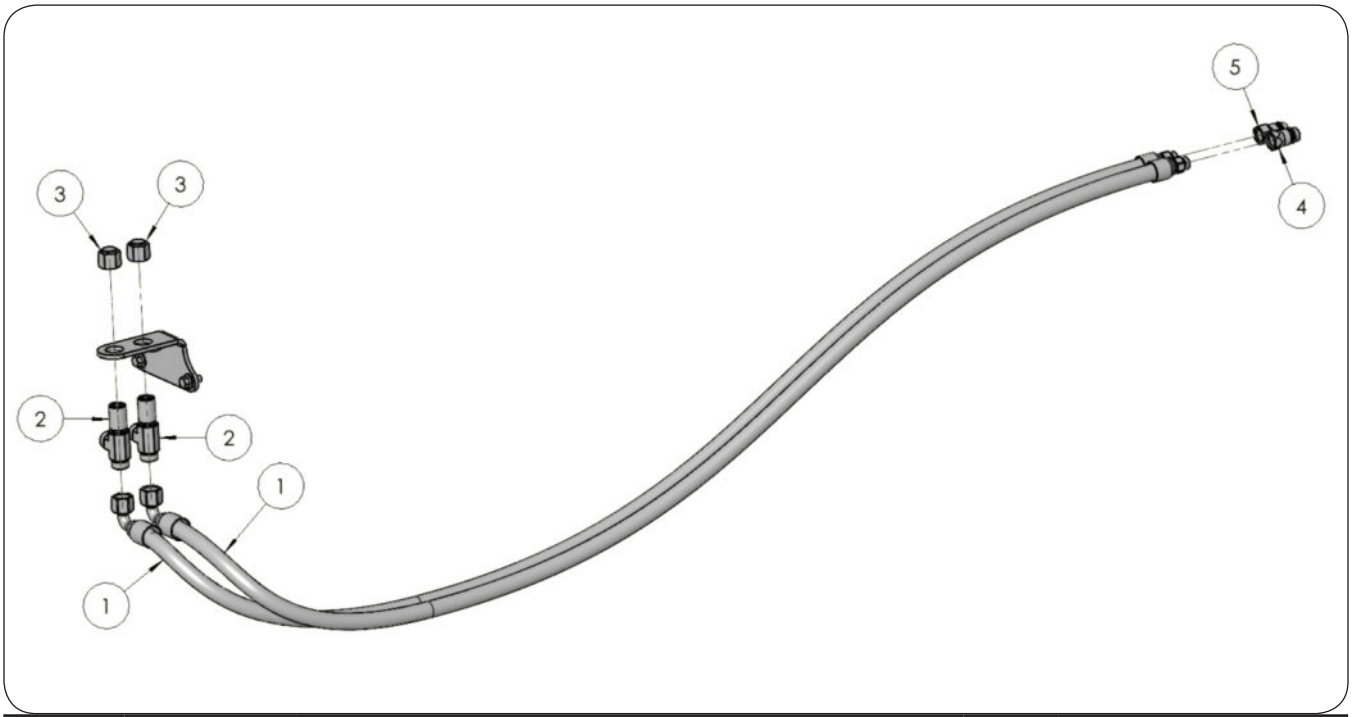
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	L196-1184	Hydraulic Hose, 3/8" x 125" 11/16" FORFS x 11/16" FORFS x 90*	1	
2	L196-1183	Hydraulic Hose, 1/2" x 150" 3/4" FJX x 3/4" MORB	1	
3	L196-585	Hydraulic Hose, 1/2" x 156" 13/16" FORFS x 3/4" MORB	1	
4	L198-350	90 Degree Fitting, 9/16" MB x 11/16" MORS	1	
5	L140-118	Free Return Coupler	1	
6	L140-092	ISO Tip, 3/4"- 16 F BOSS	1	

Power Beyond Hydraulic Components

Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	L811-520	Hydraulic Hose, 5/8" x 75" 1"FORFS x 90* x 3/4" MORB	2	
2	L198-416	Bulkhead T-Fitting, 1"-14UNF	2	
3	L198-417	Cap, 1"-14UNF ORFS	2	
4	L140-092	ISO Tlp, 3/4"-16 F BOSS	1	
5	L140-118	Free Return Coupler	1	
6	L811-521	Bulkhead Bracket	1	
7	L100-436	Capscrew, M10 x 1.5 x 20mm Grade 8.8	2	

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