PREMIER T-TANK SPRAYERS
MODELS TA1200, TA1600, & TA2400

Model 1200 = Serial Number B35870100 & Higher
Model 1600 = Serial Number B35870100 & Higher
Model 2400 = Serial Number B35870100 & Higher

Part No. 412341

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.

Product Information

When ordering parts or when requesting further information or assistance, always give the following information:

- Machine name
- Model number
- Serial number

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.

Please fill out and retain this portion for your records.

Purchase Date _____Model _____Serial No. _____

Dealer _____ City _____

Dealer Contact _____ Phone _____

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.*

Pre-Delivery Checklist

- ☐ Check wheel nut torque. Refer to Wheels and Tires/Wheel Nut Torque for torque setting.
- ☐ Check track alignment. Refer to Tracks (TA1600/TA2400) Adjustment and Alignment Procedure.
- ☐ Verify and/or adjust the sprayer hitch height before coupling to tractor. The sprayer hitch is adjusted by unbolting the hitch and reinstalling in a different set of holes.
- ☐ Lubricate all grease fittings.
- ☐ Ensure proper placement of safety decals.
- ☐ Ensure proper placement of reflective decals.
- ☐ Ensure proper placement of SMV emblem and SIS decals.
- ☐ Ensure proper placement of lights.
- ☐ Check all hardware for tightness.
- ☐ Check hydraulic components for leaks.
- ☐ Check all plumbing components for leaks.

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FOR TRACK INFORMATION, PLEASE REFER TO YOUR TRACK MANUAL.

Notes

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 be 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.**

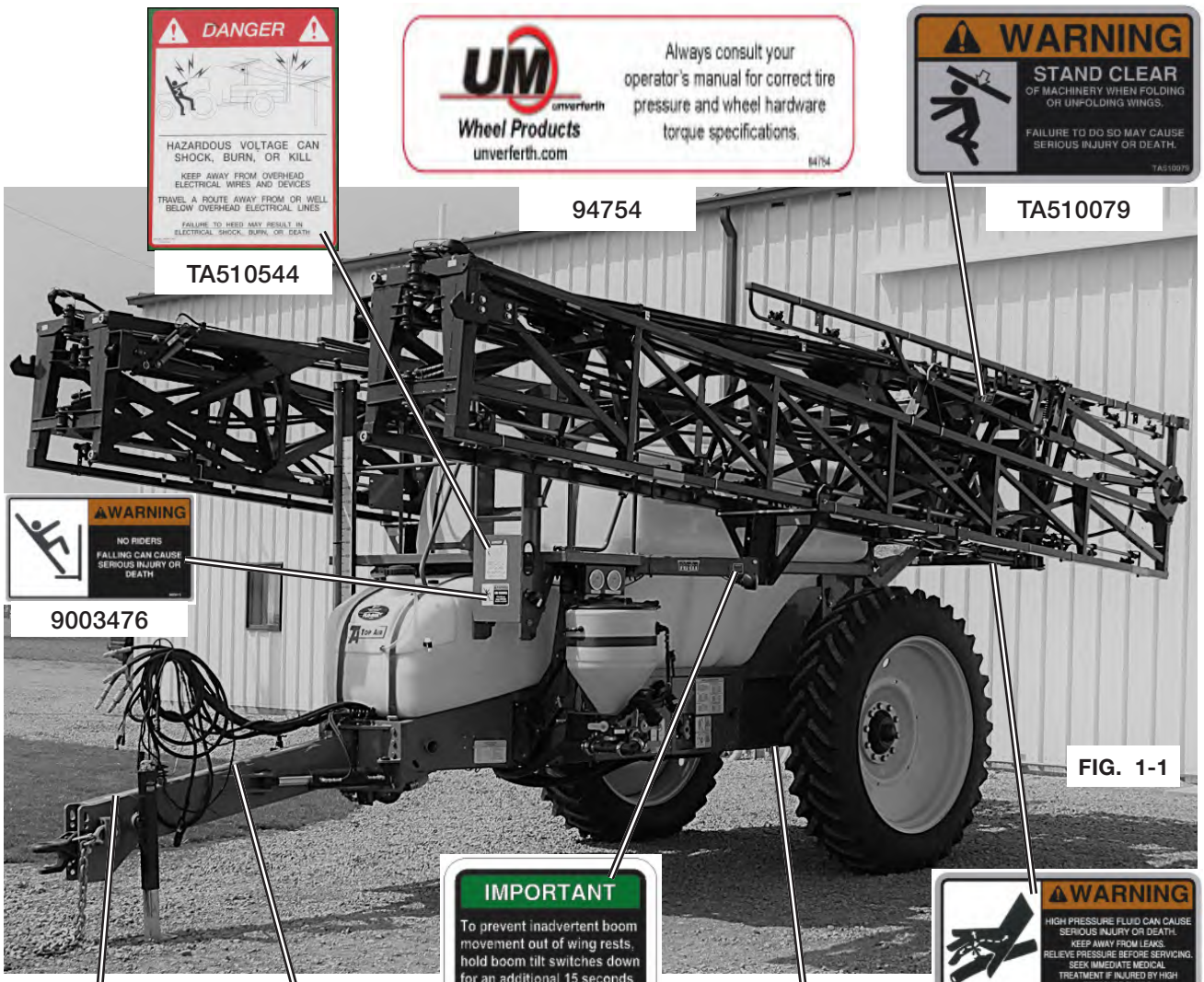
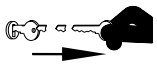


FIG. 1-1

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 the driver's seat.

Before Servicing

- 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.
- To prevent personal injury or death always ensure that there are people who remain outside the sprayer to assist the person working inside, and that all safe work place practices are followed. There is restricted mobility and limited exit paths when working inside the implement.
- Secure drawbar pin with safety lock and lock tractor drawbar in fixed position.
- Explosive separation of a tire and rim can cause serious injury or death. Only properly trained personnel should attempt to service a tire and wheel assembly.
- Add sufficient ballast to tractor to maintain steering and braking control at all times. Do not exceed tractor's lift capacity or ballast capacity.
- Hitch sprayer to towing vehicle and clear all personnel from the surrounding area before folding and unfolding wings.
- Check all spray equipment for leaks. Repair any leaks before beginning or resuming operation.
- Residual pressure may exist in sprayer plumbing even when unit is not in use. Remove pressure before servicing any plumbing.

Before Operating

- Do not stand between towing vehicle and implement during hitching.

- Always make certain everyone and everything is clear of the machine before beginning operation.
- Verify that all safety shields are in place and properly secured.

- Ensure that all applicable safety decals are installed and legible.
- Add sufficient ballast to tractor to maintain steering and braking control at all times. Do not exceed tractor's lift capacity or ballast capacity.
- This sprayer is intended to only spray agricultural chemicals. Attempting to spray other liquids may cause equipment damage and introduce unexpected personal hazards.
- When operating sprayers on sidehill conditions, it is recommended that the wheel spacing be set as wide as possible for stability.
- Hitch sprayer to towing vehicle and clear all personnel from the surrounding area before folding and unfolding wings.
- Ensure tank access covers are fully closed before beginning or resuming operation.
- Residual pressure may exist in sprayer plumbing even when unit is not in use. Remove pressure before servicing any plumbing.

During Operation

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

Before Transporting

- Secure transport chain to towing vehicle before transporting. DO NOT transport without chain.
- Check for proper function of all available transport lights. Make sure that all reflectors are clean and in place on machine. Make sure the SMV emblem and SIS decals are visible to approaching traffic.
- This sprayer is not equipped with brakes. Ensure that the towing vehicle has adequate weight and braking capacity to tow this unit.

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 speed of sprayer should never exceed 20 mph with wheels or 15 mph with tracks as indicated on the sprayer. 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.
- Slow down before making sharp turns to avoid tipping. Drive slowly over rough ground and side slopes.
- 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.

Pressurized Oil

- Relieve pressure before disconnecting hydraulic lines, loosening any hydraulic fittings or servicing hydraulic system. See the maintenance section of this manual for the 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.

- Accumulators used in this hydraulic system can retain fluid under pressure even after tractor hydraulic valve is placed in FLOAT. Remove residual pressure from wing tilt and main lift accumulators by holding wing tilt and main lift switches in DOWN position for at least 20 seconds after cylinders have stopped moving.

- 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:
    - o End fittings damaged, displaced, or leaking.
    - o Outer covering chafed/cut or wire reinforcing exposed.
    - o Outer covering ballooning locally.
    - o Evidence of kinking or crushing of the flexible part of a hose.

Chemical Hazards

- Always wear personal protective equipment when working with or near chemicals. This equipment includes, but is not limited to: protective eye wear, gloves, shoes, socks, long-sleeved shirt, and long pants. Additional protection may be required for many types of chemicals.
- Spray tanks may contain residual toxic chemicals. DO NOT ENTER SPRAY TANK FOR ANY REASON WITHOUT WEARING PROPER VENTILATION EQUIPMENT. Failure to do so may result in asphyxiation and death.
- Seek and receive chemical product training prior to using agricultural chemicals
- Read and understand the entire label of every chemical being applied with this sprayer.
- Avoid breathing spray mist or vapor.
- Wash hands before eating, drinking, chewing gum, or using the toilet.
- Remove clothing immediately if chemicals penetrate clothing and contact skin. Wash thoroughly and put on clean clothing.
- Dispose of unused chemical in accordance with chemical label directions and local/national regulations.

Access and Egress

- Mount and dismount the sprayer only where steps and/or hand holds are provided.
- Face the sprayer when mounting and dismounting.
- Inspect, and when necessary, clean and have repairs made to steps and hand holds before mounting and dismounting.
- Never get on or off a moving sprayer.
- Never jump off the sprayer.
- Do not try to climb on or off the sprayer when carrying tools or supplies.

Clean Water Tank

- A clean water tank is provided as standard equipment. It is equipped with a spigot for general washing and a hose for emergency eye washing.

- Always keep clean water in tank. Water in clean water tank is not suitable for human consumption.

- For emergency eyewash, pull hose off of the top fitting and flush affected area.

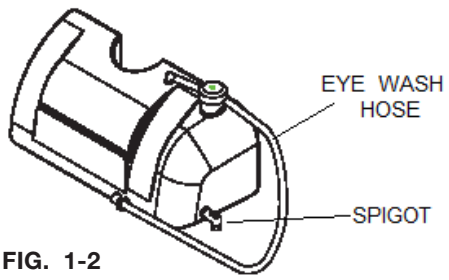


FIG. 1-2

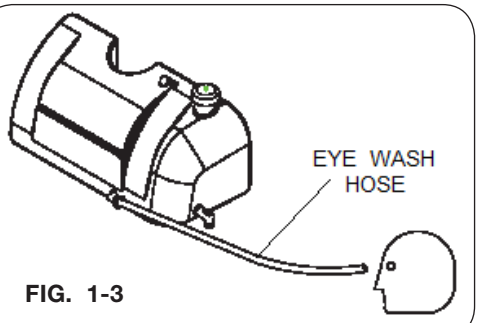


FIG. 1-3

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

Dealer Set Up

Installing Drain Plug

IMPORTANT

- *Install drain plug prior to operation.*

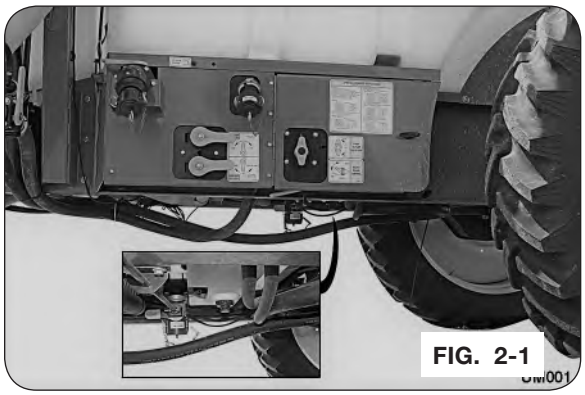


FIG. 2-1

Boom Rest Brackets for Model TA1600 Only

To minimize shipping height from the factory, the wing rests are installed in the lowest position as shown in FIG. 2-2. Use the following procedure to reposition the wing rests prior to first use.

1. Hitch sprayer to tractor and fully extend boom.
2. Remove four bolts indicated in FIG. 2-2.
3. Move wing rests to holes indicated in FIG. 2-3 and reinstall bolts.

FIG. 2-2

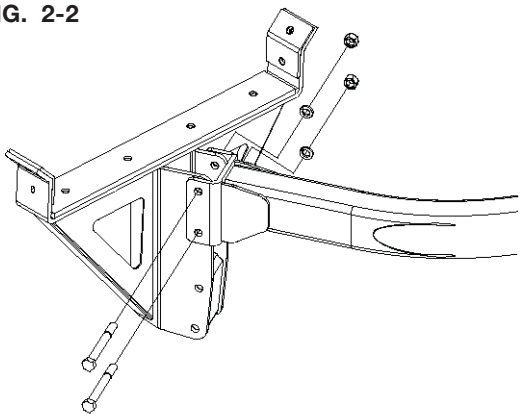
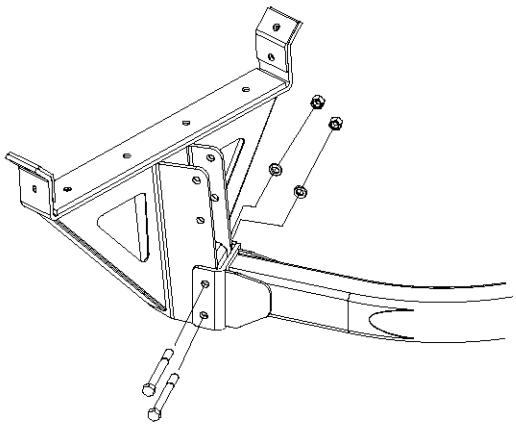


FIG. 2-3



Dealer Set Up (continued)

Rotate Wing Hose Brackets (120’ and 132’ Boom Only)

1. Rotate bracket vertically.
2. Run hoses through bracket.

FIG. 2-4

Preparing Tractor

- Before operating sprayer, read the tractor operator's manual and gain an understanding of its safe methods of operation.
- Check the tractor brakes and lights. Make sure they are in proper working order.
- Check the tractor hydraulic oil reservoir and add oil if needed.
- Verify that the tractor is adequately ballasted for drawbar operation at the anticipated draft and vertical tongue load. Vertical tongue load of a loaded sprayer (with booms folded to transport position) is approximately 5000 lbs. Ensure that the tractor's drawbar has sufficient strength to support this load.
- If possible, adjust the tractor drawbar vertically so the top side of the drawbar is at least 18 inches from the ground. Alternately, the sprayer hitch may be adjusted vertically by choosing other mounting holes provided.
- On sprayers equipped with a drawbar-style hitch, raise and secure all tractor 3-point hitch linkage to prevent interference with the implement tongue and hydraulic hoses during turning.
- Extra tractor ballast may be required for use with sprayers equipped with 2-point style hitch option. Shim or adjust tractor 3-point hitch to remove all side sway prior to operation of the sprayer.

Preparing Sprayer

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

Hardware

Check for loose bolts and nuts, and tighten as needed. Check again after the first half-day of operation.

Pivot Pins

Check that all pins are in place and in good condition. Replace any worn, damaged or missing pins.

Hitch

Check hitch wear plates for damage and wear. Be aware of the size of hitch adapter bushing that is being used. Select correct size for the hitch pin/draw bar you are using.

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.

Preparing Sprayer (continued)

Tires/Wheels

Check tire pressures and maintain at recommended values listed in the MAINTENANCE section of this manual.

⚠ CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. WHEEL NUTS/BOLTS MUST BE CHECKED REGULARLY. SEE TORQUE PAGE IN THE "MAINTENANCE" SECTION FOR PROPER WHEEL NUT/BOLT SPECIFICATIONS. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

IMPORTANT

- *Installing wheels without the proper inset/offset could result in hub or spindle failure. This will cause substantial damage to the sprayer and is not covered by warranty. Inset/offset will vary depending on tire size. Consult dealer for proper inset/offset.*

For questions regarding new tire warranty, please contact your local original equipment tire dealer. Used tires carry no warranty. Tire manufacturers' phone numbers and web sites are listed in the "MAINTENANCE" section of this manual for your convenience.

Lubrication

Lubricate the sprayer as outlined in the MAINTENANCE section of this manual.

Hitching to the Tractor

Drawbar Hitching

WARNING

- **DO NOT STAND BETWEEN THE SPRAYER AND TRACTOR WHEN HITCHING. ALWAYS ENGAGE PARKING BRAKE AND STOP ENGINE BEFORE INSERTING HITCH PIN.**

Connect the drawbar hitch only to the tractor drawbar. Do not attempt to hitch to any other location on the tractor.

Single Tang

- The sprayer is equipped standard with a single tang hitch which requires a 2" diameter drawbar pin.

Clevis Hitch

- To convert from single tang to clevis hitch, install clevis adapter located in right-side storage bin.
- When using a clevis hitch, a 1 1/4" drawbar pin must be used.

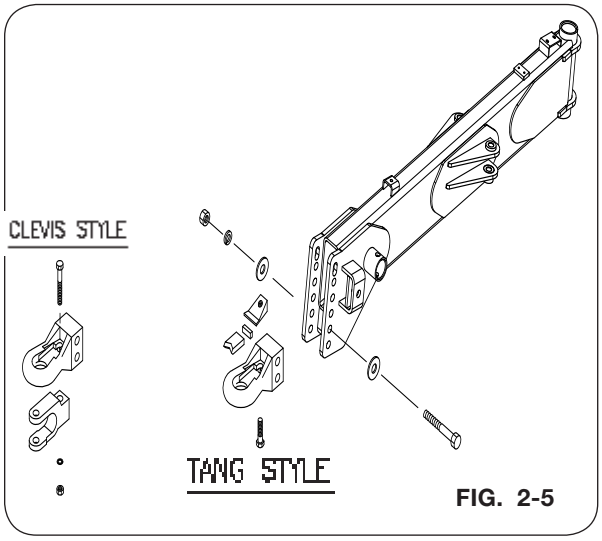


FIG. 2-5

IMPORTANT

- *The use of a smaller-diameter hitch pin will result in additional clearance between the implement hitch and pin. This additional clearance may cause accelerated pin and hitch wear, along with more pronounced jolting from the sprayer during operation.*
- *Verify and/or adjust the sprayer hitch height before coupling to the tractor. The sprayer hitch is adjusted by unbolting the hitch and reinstalling in a different set of holes provided.*
- *The sprayer must be relatively level in order for the tank volume indicator to read accurately.*
- *After inserting drawbar pin, secure with a locking device to help prevent uncoupling during use.*

Hitching to the Tractor (continued)

Jack Usage

⚠ WARNING

- **UNHITCHING A LOADED SPRAYER CAN CAUSE SERIOUS INJURY OR DEATH DUE TO TONGUE RISING OR FALLING. ALWAYS HAVE A LOADED SPRAYER ATTACHED TO A TRACTOR. THE JACK IS INTENDED TO SUPPORT AN EMPTY SPRAYER ONLY.**

IMPORTANT

- *Mount jack in storage location indicated after sprayer is hitched to tractor.*

FIG. 2-6

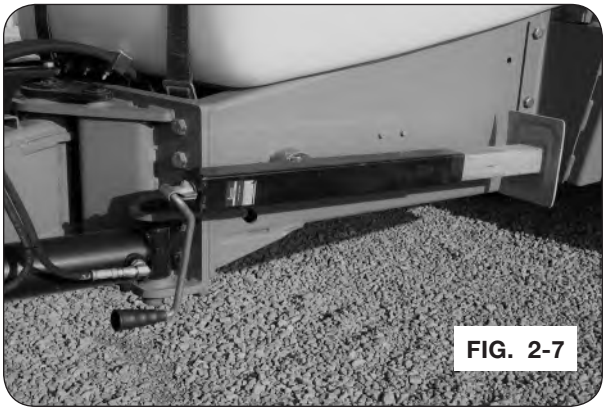


FIG. 2-7

Hitching to the Tractor (continued)

Transport Chain (Drawbar Style Hitch ONLY)

⚠ CAUTION

- **REPLACE TRANSPORT CHAIN IF ANY LINK OR END FITTING IS BROKEN, STRETCHED OR DAMAGED. DO NOT WELD TRANSPORT CHAIN.**

Always use intermediate chain support when connecting the sprayer directly to a tractor. DO NOT use the intermediate chain support as the chain attaching point. Photo to the right shows how the transport chain must be installed between the tractor and sprayer.

Transport chain should have a minimum rating equal to the gross weight of the implement and all attachments. Use only ASABE approved chains. Allow no more slack in the chain than necessary to permit turning.

Transport chain connection shown for illustration purposes only. Refer to tractor manufacturer for proper attachment.

FIG. 2-8

2-Point Hitch

⚠ CAUTION

- **IF A 3-POINT HITCH QUICK-COUPLER IS USED, ALWAYS VERIFY THAT THE PIN RETAINING LATCHES ARE FULLY ENGAGED BEFORE MOVING SPRAYER. FAILURE TO DO SO COULD RESULT IN LOSS OF SPRAYER CONTROL DUE TO HITCH UNCOUPLING.**

The optional 2-point hitch is compatible with Cat III-N, CAT III and CAT IV-N hitches. Verify hitch pin size compatibility prior to hitching.

After coupling to tractor, raise sprayer tongue high enough to allow hitch stands to be removed. Reinsert stands into the top of the receiver tubes for storage during sprayer use. Maintain the tractor hitch at a height that allows the sprayer to be reasonably level.

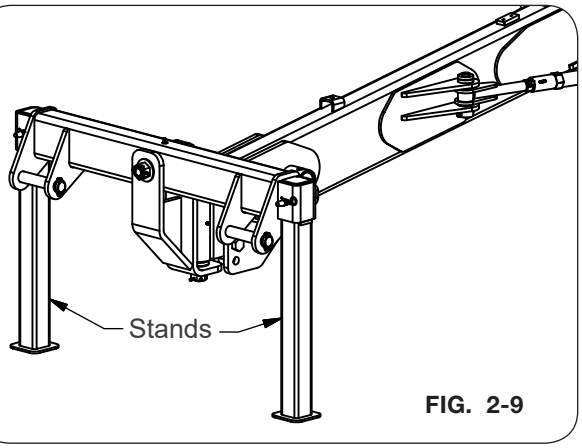


FIG. 2-9

Hitching to the Tractor (continued)

Hydraulic Connections

After cleaning hydraulic hose couplers, connect to tractor hydraulic circuits as follows:

Sprayer Pump Hydraulics

IMPORTANT

- *The sprayer pump is hydraulically driven, and needs to be configured correctly to match the type of hydraulic system on the tractor (closed center, open center, load-sensing, etc.). Failure to configure the pump correctly may permanently damage the pump through over-speeding or back pressure failure. Refer to the MAINTENANCE SECTION of this manual for guidelines on configuring the sprayer pump.*

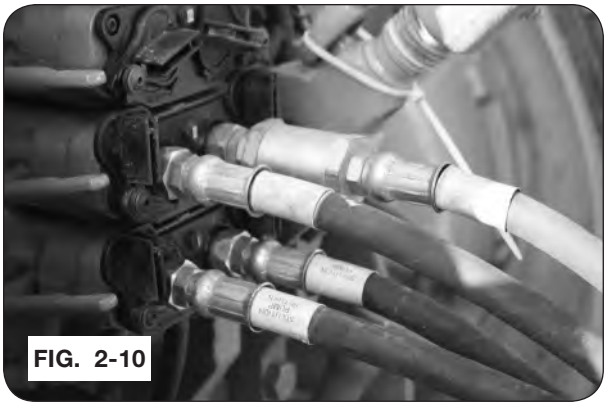


FIG. 2-10

Connect hoses from the sprayer pump to a tractor selective control valve (SCV) circuit. The pump inlet (marked PUMP PRESSURE) should be connected to the RETRACT port and the pump outlet (marked PUMP RETURN) to a low-pressure return port at the tractor (recommended) or to the EXTEND port.

NOTE: It is recommended to pressurize all hydraulic circuits using the retract outlets on the SCVs. This allows all circuits to be shut-off by engaging the hydraulic float feature of the tractor hydraulic system.

To protect the sprayer pump from damage due to excessive speed, adjust circuit flow to minimum setting prior to operating circuit for the first time. When in operation, adjust flow per instructions listed under the “Basic Sprayer Settings” heading in this section.

IMPORTANT

- *Never operate sprayer pump dry, or with pump inlet selector valve closed. Pump damage may result.*

Boom Hydraulics

⚠ CAUTION

- **DO NOT UNFOLD OR FOLD BOOM WITHOUT HITCHING TO THE TRACTOR.**

The wing-fold hydraulic system on this sprayer is configured to connect to a tractor SCV valve, but can also be modified to operate with power beyond circuits of tractors with a load-sensing hydraulic system (Refer to the MAINTENANCE SECTION for information on converting to a power-beyond circuit).

Hitching to the Tractor (continued)

Boom Hydraulics (continued)

Connect the hose marked BOOM PRESSURE to the RETRACT port of one of the tractor SCV circuits, and the hose marked BOOM RETURN to the EXTEND port of the same circuit.

NOTE: It is recommended to pressurize all hydraulic circuits using the retract outlets on the SCVs. This allows all circuits to be shut-off by engaging the hydraulic float feature of the tractor hydraulic system.

IMPORTANT

- *If the SCV control lever kicks out prior to actuating any switch on the boom control box, the most likely reason is excessive hydraulic pressure. Try reducing the tractor's flow control setting. Excessive pressure can also occur if the hydraulic valve has been modified for use with power beyond systems. In this instance, attach to the three power beyond couplers on the tractor, or change the hydraulic valve attach to the three power beyond couplers on the tractor, or change the hydraulic valve setup for use with an SCV circuit.*

Refer to the MAINTENANCE SECTION for valve setup information.

Before disconnecting hoses from the tractor, relieve pressure from the lines. See tractor's operators manual for proper procedure to relieve pressure. Shut off engine and apply parking brake before disconnecting hoses.

⚠ WARNING

- **ACCUMULATORS USED IN THIS HYDRAULIC SYSTEM CAN RETAIN FLUID UNDER PRESSURE EVEN AFTER TRACTOR HYDRAULIC VALVE IS PLACED IN FLOAT. REMOVE RESIDUAL PRESSURE FROM WING TILT AND MAIN LIFT ACCUMULATORS BY HOLDING WING TILT AND MAIN LIFT SWITCHES IN DOWN POSITION FOR AT LEAST 20 SECONDS AFTER CYLINDERS HAVE STOPPED MOVING.**

- **AFTER INITIAL SET-UP OR REPLACEMENT OF ANY HYDRAULIC COMPONENT ON THE SPRAYER, AIR MUST BE REMOVED FROM THE WING-FOLD HYDRAULIC SYSTEM PRIOR TO ITS FIRST USE. FAILURE TO DO SO MAY RESULT IN DAMAGE TO BOOM COMPONENTS DUE TO RAPID MOVEMENT.**

Hitching to the Tractor (continued)

Electrical Connection

Compliance with all lighting and marking laws is the responsibility of the operator at the time of travel.

See federal regulation 49 CFR 562; available at www.govinfo.gov for US federal law requirements.

See your Unverferth dealer for additional brackets, reflectors, or lights to meet your requirements.

The main harness has a 7-pin (round) plug conforming to SAE standards that connects to tractor. If your tractor does not have the mating socket connector, contact your tractor dealer.

The wiring schematic for this sprayer as shown in the maintenance section complies with current ASABE standards. Always verify correct electrical function before using this sprayer.

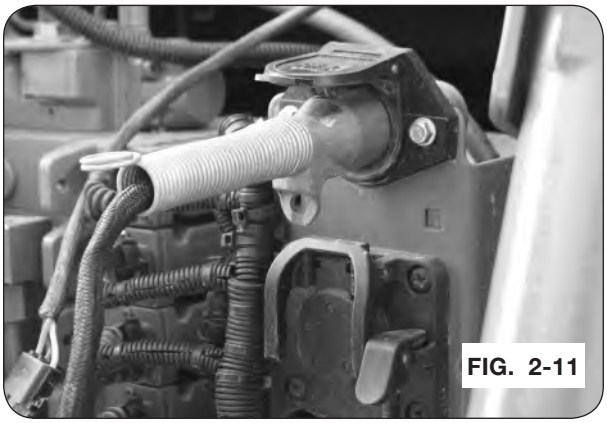


FIG. 2-11

Tongue Adjustment

Units with Fixed Position Hitch

1. Pull sprayer in a straight line for a few hundred feet to determine how the sprayer is trailing.

2. If unit is trailing to the left, lengthen the RH tongue turnbuckle and shorten the LH tongue turnbuckle.

3. If unit is trailing to the right, lengthen the LH tongue turnbuckle and shorten the RH tongue turnbuckle.

Units Equipped with Steerable Hitch

1. With the telescoping tongue transport locked (spring loaded lock pin in down position), pull sprayer in straight line for a few hundred feet to determine how the sprayer is trailing.

2. Set the manual bump rate to 0.5 degrees as follows:

4400 Console:

a. Push the down arrow to select TUNING and press ENTER.
b. Push the down arrow to select BUMP RATE and press ENTER.
c. Use the arrow keys to decrease the bump rate to 0.5 and press ENTER.

Stand Alone Console:

a. Select MAIN by pressing the button below MAIN.
b. Press the button beneath NEXT repeatedly until the SPEED/SENSITIVITY/BUMP RATE page comes up.
c. Press NEXT repeatedly to select BUMP RATE.
d. Press ENTER in the BUMP RATE field and decrease to 0.5 using the button beneath DEC.

ISO bus:

a. On the Steerable Hitch Page select TUNING.
b. Select BUMP RATE and decrease to 0.5.

3. Unlock the telescoping tongue transport lock by pulling up on the spring loaded lock pin and turn to secure pin in the up position.

4. If unit is trailing to the left push the manual control switch on the sprayer control box to R and release. If unit is trailing to the right push the manual control switch on the sprayer control box to L and release.

5. Pull sprayer in straight line for a few hundred feet to determine how the sprayer is trailing.

6. Repeat steps 4 & 5 until sprayer trails properly.

Tongue Adjustment (continued)

7. Release telescoping tongue lock pin by pulling up and turning to align roll pin with long vertical slot.
8. Loosen jam nut on the inner telescoping tongue lock tube.
9. Rotate the inner telescoping tongue lock tube until lock pin falls freely through hole engaging telescoping lock.
10. Tighten jam nut on the inner telescoping tongue lock tube.
11. Perform tongue set-up/calibration procedures described in the Raven Steerable Hitch Manual.
12. Repeat step 2 to reset the manual bump rate to the desired bump rate.

Axle Tread Setting

Wheel Spacing Combinations

⚠ WARNING

- **USE EXCEPTIONAL CARE WHEN OPERATING SPRAYER EQUIPPED WITH SINGLE TIRES AND SET AT NARROW WHEEL SPACING. THE POSSIBILITY OF TIPPING OVER DURING TURNS OR TRAVEL ON ROUGH ROADS IS INCREASED UNDER THESE CONDITIONS.**

The axle spacing is infinitely adjustable between minimum and maximum settings. Through a combination of wheel offset, axle adjustment, and hub spacers, a wide variety of single and dual wheel spacings is possible. A summary of the available wheel spacings for each tire and wheel combination is located on the next page.

Axle Tread Setting (continued)

WHEEL OFFSET TO OUTSIDE								
TIRE / WHEEL	1200 STANDARD AXLE		1200 w/AXLE SUSPENSION		1600		2400	
	MIN. SPACING (inches)	MAX. SPACING (inches)	MIN. SPACING (inches)	MAX. SPACING (inches)	MIN. SPACING (inches)	MAX. SPACING (inches)	MIN. SPACING (inches)	MAX. SPACING (inches)
320/90 x 46 Single	83	144	94	128	-	-	-	-
380/90 x 46 Single 5" Offset	76	136	87	121	89	121	-	-
480/80 x 42 Single	75	135	88	120	89	120	-	-
320/90 x 50 Single	-	-	-	-	96	136	-	-
320/90 x 46 Duals (20" Rows)	100 Outer Dual	162 Outer Dual	100 Outer Dual	144 Outer Dual	100 Outer Dual	141 Outer Dual	-	-
320/90 x 46 Duals (22" Rows)	104 Outer Dual	166 Outer Dual	104 Outer Dual	148 Outer Dual	104 Outer Dual	144 Outer Dual	-	-
320/90 x 46 Duals (30" Rows)	120 Outer Dual	182 Outer Dual	120 Outer Dual	164 Outer Dual	120 Outer Dual	160 Outer Dual	-	-
380/90 x 46 Duals (20" Rows)	-	-	-	-	100 Outer Dual	141 Outer Dual	-	-
380/90 x 46 Duals (22" Rows)	-	-	-	-	104 Outer Dual	144 Outer Dual	-	-
380/90 x 46 Duals (30" Rows)	120 Outer Dual	182 Outer Dual	120 Outer Dual	164 Outer Dual	120 Outer Dual	160 Outer Dual	-	-
320/90 x 50 Duals (22" Rows)	-	-	-	-	104 Outer Dual	144 Outer Dual	104 Outer Dual	144 Outer Dual
320/90 x 50 Duals (30" Rows)	-	-	-	-	120 Outer Dual	160 Outer Dual	-	-
480/80 x 42 Duals (30" Rows)	-	-	-	-	120 Outer Dual	160 Outer Dual	-	-
380/90 x 54 Duals (22" Rows)	-	-	-	-	104 Outer Dual	144 Outer Dual	104 Outer Dual	144 Outer Dual
380/90 x 54 Duals (30" Rows)	-	-	-	-	-	-	120 Outer Dual	160 Outer Dual
480/80 x 50 Duals (30" Rows)	-	-	-	-	-	-	120 Outer Dual	160 Outer Dual
Horizontal Tracks	-	-	-	-	88	132	88	132
WHEEL OFFSET TO INSIDE								
TIRE / WHEEL	1200 STANDARD AXLE		1200 w/AXLE SUSPENSION		1600		2400	
	MIN. SPACING (inches)	MAX. SPACING (inches)	MIN. SPACING (inches)	MAX. SPACING (inches)	MIN. SPACING (inches)	MAX. SPACING (inches)	MIN. SPACING (inches)	MAX. SPACING (inches)
320/90 x 46 Single	70	110	70	95	-	-	-	-
380/90 x 46 Single 5" Offset	70	116	70	102	70	101	-	-
480/80 x 42 Single	70	118	-	-	-	-	-	-
320/90 x 50 Single	-	-	-	-	70*	105	-	-
320/90 x 46 Duals	60 Inner Dual	122 Inner Dual	60 Inner Dual	104 Inner Dual	60 Inner Dual	101 Inner Dual	-	-
380/90 x 46 Duals	60 Inner Dual	122 Inner Dual	60 Inner Dual	104 Inner Dual	60 Inner Dual	101 Inner Dual	-	-
320/90 x 50 Duals	-	-	-	-	63 Inner Dual	104 Inner Dual	62 Inner Dual	103 Inner Dual
480/80 x 42 Duals	-	-	-	-	87 Inner Dual	128 Inner Dual	-	-
380/90 x 54 Duals	-	-	-	-	-	-	62 Inner Dual	103 Inner Dual
480/80 x 50 Duals	-	-	-	-	-	-	61 Inner Dual	102 Inner Dual
Horizontal Tracks	-	-	-	-	88	132	88	132

Axle Tread Setting (continued)

Adjustment

⚠ WARNING

- **IMPROPER AXLE ADJUSTMENT CAN CAUSE AXLE TO SEPARATE FROM SPRAYER, RESULTING IN PERSONAL INJURY OR DEATH DUE TO SPRAYER OR AXLE FALLING.**
- **USE CARE THAT SPRAYER DOES NOT FALL FROM SUPPORT STANDS DURING ADJUSTMENT. DO NOT ALLOW AXLE TO SEPARATE FROM SPRAYER DURING ADJUSTMENT PROCEDURE.**
- **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.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

⚠ CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. TORQUE WHEEL NUTS/BOLTS TO VALUES IN TABLE. CHECK TORQUE BEFORE USE, AFTER ONE HOUR OF UNLOADED USE OR AFTER FIRST LOAD, AND EACH LOAD UNTIL WHEEL NUTS/BOLTS MAINTAIN TORQUE VALUE. CHECK TORQUE EVERY 10 HOURS OF USE THERE-AFTER. AFTER EACH WHEEL REMOVAL START TORQUE PROCESS FROM BEGINNING. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

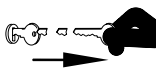
Axle Tread Setting (continued)

Adjustment (continued)

IMPORTANT

- *Always adjust axles equally.*

1. Set the tractor parking brake on a firm level surface, securely block the sprayer, turn off tractor engine, and remove ignition key.



2. Hitch sprayer to tractor to help stabilize unit.
3. Using a safe lifting device rated at 16,000 lbs. and safety stands rated at 16,000 lbs., raise sprayer and place on stands. Stands should be securely positioned under frame rails, as far toward the rear of the sprayer as practical.
4. **Units with tracks,** skip to step 5.

   Unit with wheels, if necessary for desired wheel spacing, change wheel dish direction by unbolting wheels and swap between left and right sides on sprayer. Refer to information in wheel spacing chart to see if wheel dish needs to be reversed. Tighten 7/8” wheel lug bolts to 440 ft-lbs. torque.
5. Loosen four 1” clamp bolts that hold one axle. Using a safe lifting device rated for 3000 lbs., lift the wheel slightly and slide axle out until desired adjustment is reached.
6. Verify that the axle is not over-extended. (The inner axle clamp should fully contact the axle.)
7. After adjustment, tighten 1” threaded fasteners to a torque of 500 ft-lbs.
8. Repeat steps 4 through 6 for other axle.

Axle Tread Setting (continued)

Track Tread Toolbar Widths

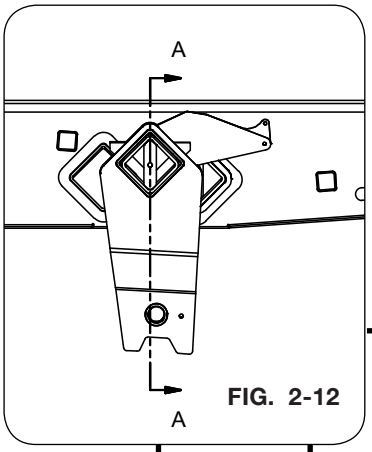


FIG. 2-12

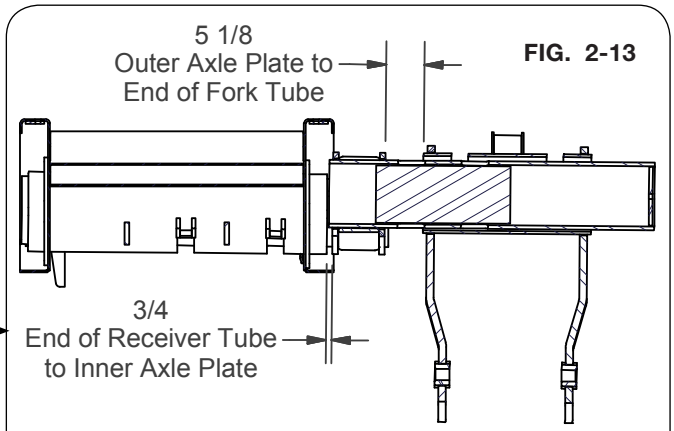


FIG. 2-13

88” Tread Width Section A-A Shown

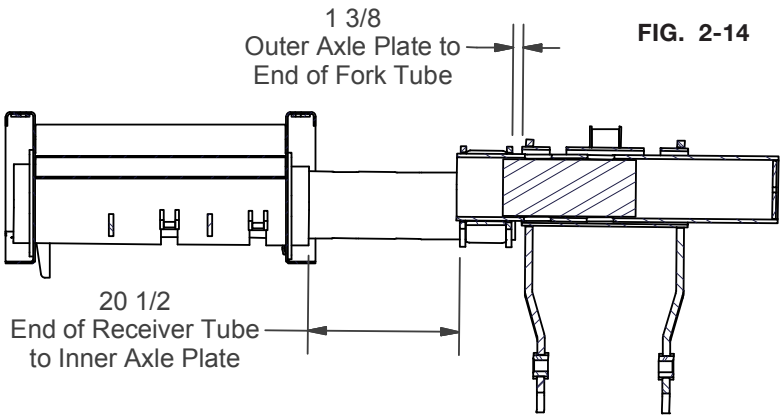


FIG. 2-14

120” Tread Width Section A-A Shown

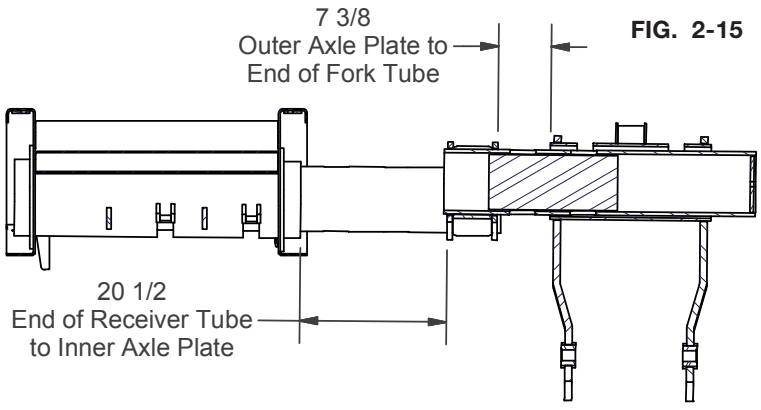


FIG. 2-15

132” Tread Width Section A-A Shown

Axle Tread Setting (continued)

Tracks Toe In Adjustment

⚠ WARNING

- **IMPROPER AXLE ADJUSTMENT CAN CAUSE AXLE TO SEPARATE FROM SPRAYER, RESULTING IN PERSONAL INJURY OR DEATH DUE TO APPLICATOR OR AXLE FALLING.**
- **USE CARE THAT SPRAYER DOES NOT FALL FROM SUPPORT STANDS DURING ADJUSTMENT. DO NOT ALLOW AXLE TO SEPARATE FROM SPRAYER DURING ADJUSTMENT PROCEDURE.**
- **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 30,000 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

⚠ CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. TORQUE WHEEL NUTS/BOLTS TO VALUES IN TABLE. CHECK TORQUE BEFORE USE, AFTER ONE HOUR OF UNLOADED USE OR AFTER FIRST LOAD, AND EACH LOAD UNTIL WHEEL NUTS/BOLTS MAINTAIN TORQUE VALUE. CHECK TORQUE EVERY 10 HOURS OF USE THERE-AFTER. AFTER EACH WHEEL REMOVAL START TORQUE PROCESS FROM BEGINNING. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

Axle Tread Setting (continued)

Tracks Toe In Adjustment (continued)

IMPORTANT

- *Always adjust axles equally.*

1. Hitch sprayer to tractor to help stabilize unit. Refer to "Hitching to the Tractor" in OPERATION section. Ensure tractor is in park and remove key.

2. Using a safe lifting device and supports rated at 30,000 lbs., raise one side of the empty sprayer and place on stands. Stands should be securely positioned under both frame rails, as far toward the rear of the sprayer as practical. (FIG. 2-16)

NOTE: Measure from one track to the other to determine if the track axle requires a shim.

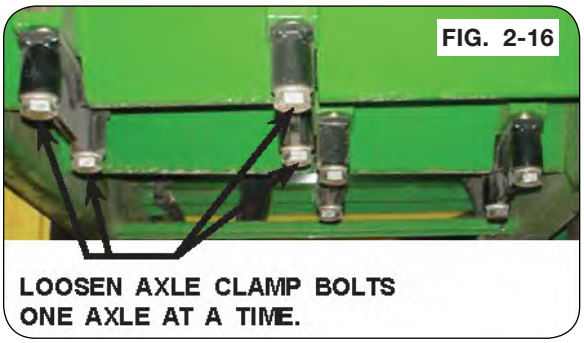
3. Measure from front idler to front idler on opposite side and from rear idler to rear idler on opposite side.

4. Next, measure from front left idler to rear right idler and then the opposite dimension.

NOTE: For a toe in adjustment, the front idler measurement will be slightly less than the rear idler measurement. However, the "X" measurement from step 4 will be equal.

5. To establish toe in, install 14 gauge, 12 gauge or 10 gauge shim (411103B, 411098B or 411105B) on the lower rear side of the track diamond axle between the axle and sprayer frame. (FIG. 2-17)

6. Using a safe lifting device rated for 3,000 lbs., loosen four 1" clamp bolts that hold one axle. Lift the axle slightly and slide in shim for desired toe in adjustment.



NOTE: Do not extend axle beyond the clamps.

7. After adjustment, tighten 1" clamp bolts to a torque of 500 ft-lbs.

8. Repeat steps 2 through 6 for other axle. Remove safe lifting devices and supports.

Equalizer® Track System

Refer to the Equalizer® Track System manual (411200) for information regarding the track.

Installing Boom Control Box

1. Mount the boom control box in the cab.
2. Connect wiring harness at the hitch.
3. Run harness into the cab.
4. Attach the other end of the wiring harness to the back of the boom control box.
5. Connect red and white wires to a 12V power source. Red is the positive and white is the ground.

Installing Rate Controller (If applicable)

1. Mount the controller in the cab.
2. Connect wiring harness at the hitch.
3. Run harness into the cab.
4. Attach the other end of the wiring harness to the back of the controller.
5. Connect red and white wires to a 12V power source. Red is the positive and white is the ground.

Boom Functions

Setting Flow

1. Adjust circuit flow to minimum setting prior to operating circuit for first time.
2. Turn on the fold box.
3. Move hydraulic lever to RETRACT to start oil flow.
4. Hold the left wing tilt switch in the up position.
5. Slowly increase the flow until the boom starts to move.
6. Release the wing tilt button.
7. Use the left wing tilt switch to lower the left wing back into the cradle.
8. Disengage hydraulics by pushing lever into float.

IMPORTANT

- *Flow will be approximately 2-4 gpm.*

Setting Up Rate Controller

Refer to the appropriate Raven manual or OEM rate controller manual if applicable.

Control Box

Using Switch Box to Operate Steerable Hitch

1. To calibrate follow all instructions provided in your Raven steerable hitch manual.

2. Boom must be unfolded for hitch to operate. A proximity switch located on the boom disables the unit when boom is folded and in transport position. This will be displayed on the Raven console as "prox".

3. After the steerable hitch is calibrated, the Top Air switch box will become the master and the Raven console will become the slave.

4. **ON / OFF Switch:** This switch must be in the "ON" position for the hitch to operate. When the hitch is centered by engaging the Transport function, the ON / OFF switch must be cycled by switching to "OFF" then back to "ON" again.

5. **AUTO / TRANSPORT:** By tapping the switch up to the "AUTO" mode, the hitch will automatically follow the tractor. The Raven console will display "AUTO". When the switch is tapped to "TRANSPORT", the hitch will center. The Raven console will display "CENTER". When the transport function is engaged, the ON / OFF switch must be cycled by switching to "OFF" then back to "ON" again to return to "AUTO".

6. **MANUAL:** This switch allows for "MANUAL" steering left or right. Each time the switch is tapped (pushed and released, it is not necessary to hold the switch) the hitch moves a pre set # of degrees to the right or left depending on the direction the switch is moved. The amount the hitch moves when using the "MANUAL" switch is pre-set to 5 degrees. The pre-set can be changed by referring to the steerable hitch manual. After the "MANUAL" steer is engaged, the Raven console will display "BUMP". To return to "AUTO" operation you will need to tap the "AUTO / TRANSPORT" switch up to "AUTO".

Command Center 4 System Set Up

Procedure for Linking Radio and Receiver

NOTE: Do the following steps to teach the address to the receiver without using the Pocket PC.

1. Apply power to both transmitter and receiver.
2. Activate the toggle switch on transmitter that corresponds to RH tilt up.
3. With the toggle switch on transmitter still activated, push and release the Address Learn Button on the receiver, then release switch on the transmitter.
4. When the green RF Signal LED on the receiver flashes, the receiver has learned the address.
5. Activate any toggle switch on the transmitter and verify that the RF Signal LED on the receiver is still flashing green. This indicates that communication has been established between the two units.

FIG. 2-19

Hydraulic Manifold Set Up

Set Up for Power Beyond Connection

The hydraulic manifold is configured from the factory to be compatible with connection to standard tractor hydraulic control (SCV) circuits. To convert for use with power-beyond circuits of load-sensing closed-center hydraulic systems, use kit number 402406 and the following procedure:

IMPORTANT

- *Tractor must be equipped with a load-sense port.*

1. Relieve all hydraulic system pressure.
2. Unscrew retaining nut at end of 2-way cartridge valve and remove electric coil.
3. Remove 2-way cartridge valve by unscrewing valve from manifold.
4. Install “normally-closed” valve in manifold (Identified by WS08Z stamped on valve).
5. Reinstall electric coil and hand-tighten supplied plastic knob to secure.
6. Remove short hose from LS port and tee fitting.
7. Install cap on open end of tee fitting.
8. Unscrew fittings from LS port on manifold.
9. Remove existing hollow hex plug in bottom of LS port cavity.
10. Using a hex wrench, install orifice plug in bottom of LS port cavity. Reinstall fittings on LS port.
11. Install high-pressure hose from LS port to tractor load-sense port.

Hydraulic Manifold Set Up (continued)

Closed-Center Conversion Kit

The closed-center conversion kit 406107 needs to be installed for pressure-compensating closed-center tractors. Load-sense closed-center tractors do not need this kit.

1. Relieve all hydraulic system pressure.
2. Unscrew retaining nut at end of 2-way cartridge valve and remove electric coil.
3. Remove 2-way cartridge valve by unscrewing valve from manifold.
4. Install supplied cavity plug in manifold.
5. Remove pressure hose from P port.
6. Install supplied orifice in P port.
7. Reinstall pressure hose on end of orifice installed in previous step.

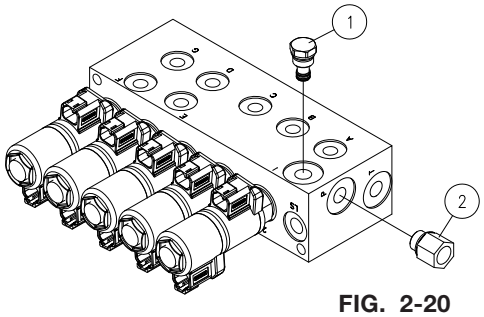


FIG. 2-20

CLOSED CENTER CONVERSION			
ITEM	DESCRIPTION	PART NO.	QTY.
	Kit Includes:	406107	1
1	Cavity Plug	9006486	1
2	Port Reducer O-Ring Orifice	9006531	1

Setting the Pump Pressure

IMPORTANT

- *Water must be in the Solution Tank. Refer to Filling the Tank in the Operation Section.*
- *Booms should be unfolded when setting the pump pressure. Refer to unfolding booms section of the Maintenance Section.*
- *The Pump inlet selector should be pointed to Solution Tank. The pump outlet selector should be pointed to Boom.*

FIG. 2-21

1. Adjust circuit flow to minimum setting prior to operating for the first time.
2. Hold the Agitation button located on the Command Center to close for 7 seconds so the agitation is completely closed.
3. Close the filter purge valve.
4. Engage hydraulic lever to RETRACT position.
5. Increase the flow in the tractor until the filter inlet or pump pressure is 100 psi.
6. Increase the agitation so the filter inlet or pump pressure drops by 5 psi. The gauge should now read 95 psi.
7. Units equipped with an agitation gauge will see the agitation pressure increase to 5 PSI.
8. Open the filter purge valve so that the filter inlet or pump pressure drops by another 5 psi. The gauge should now read 90 psi.

Setting the Pump Pressure - PWM

IMPORTANT

- *Water must be in the Solution Tank. Refer to Filling the Tank in the Operation Section.*
- *Booms should be unfolded when setting the pump pressure. Refer to unfolding booms section of the Maintenance Section.*
- *The Pump Inlet selector should be pointed to Solution Tank. The pump outlet selector should be pointed to Boom.*

FIG. 2-22

1. Rate controller must be calibrated.
2. Select manual control on the console and turn the master switch on. Press and hold the Inc. button for 5 seconds to verify cartridge valve is fully open.
3. Turn off section valves, agitation valve and filter purge valve.
4. Turn the hydraulic flow dial to 10. The cartridge valve is sized to not allow more than 11GPM to the pump. Decrease the hydraulic flow on dial until pressure starts to drop, approximately around 100 PSI.
6. Increase the agitation until the pump pressure drops by 5 PSI. For units equipped with an agitation gauge, increase agitation until the agitation pressure increases to 5 PSI.
7. Then, open the filter purge valve until the pump pressure drops another 5 PSI.

PWM Pump Start Up Procedure - Gen I Rate Control

Whenever the tractor is turned off or the ECU for the PWM Pump loses power, the following steps will have to be performed in order for the PWM Pump to function properly right away.

1. Initial start-up screen.

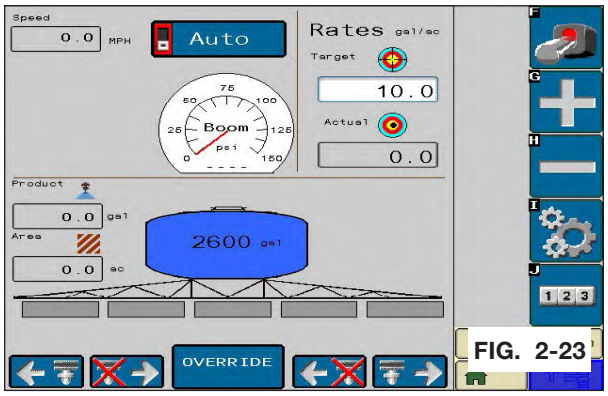


FIG. 2-23

2. Turn the Master Switch to the on position.

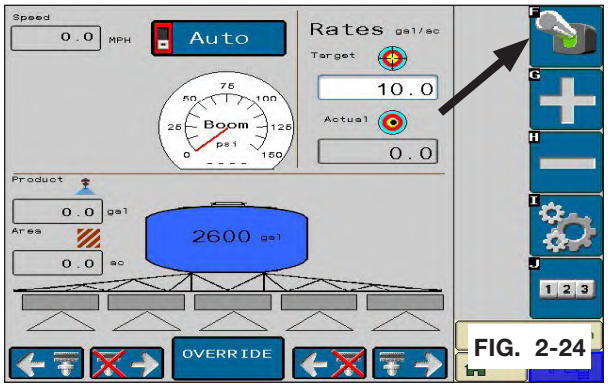


FIG. 2-24

3. Turn the system from Auto to Manual.
4. Go to the Settings page – the 3 gears tab.

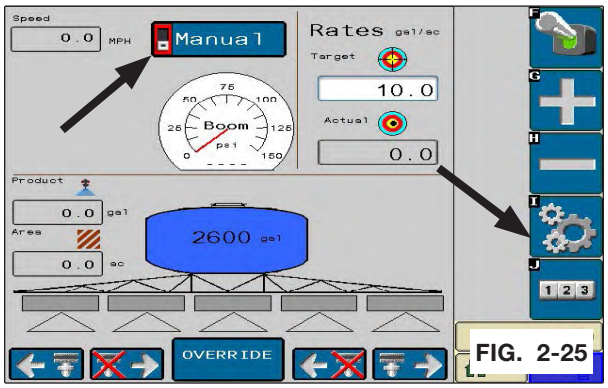


FIG. 2-25

5. In the settings page, locate the Valve Cal button and click on it.

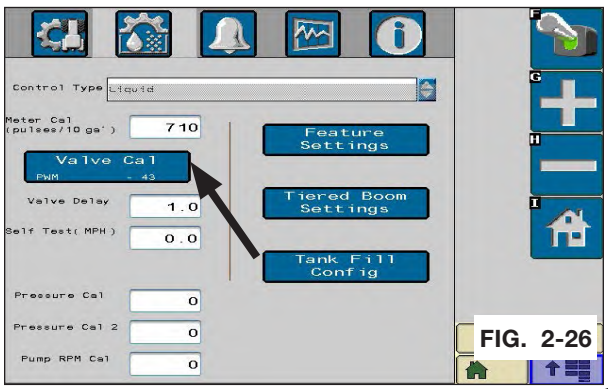


FIG. 2-26

PWM Pump Start Up Procedure - Gen I Rate Control (continued)

6. Once in the Valve Calibration page, notice that the PWM output is 1.

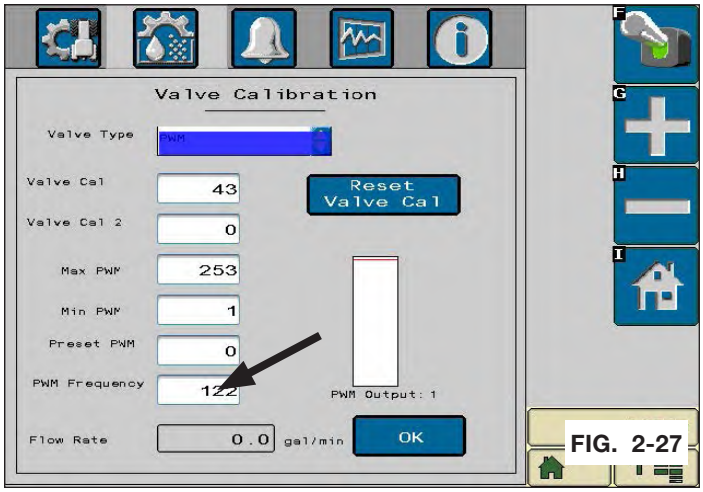


FIG. 2-27

7. Hold the "+" button to increase the PWM output to the max output of 253.

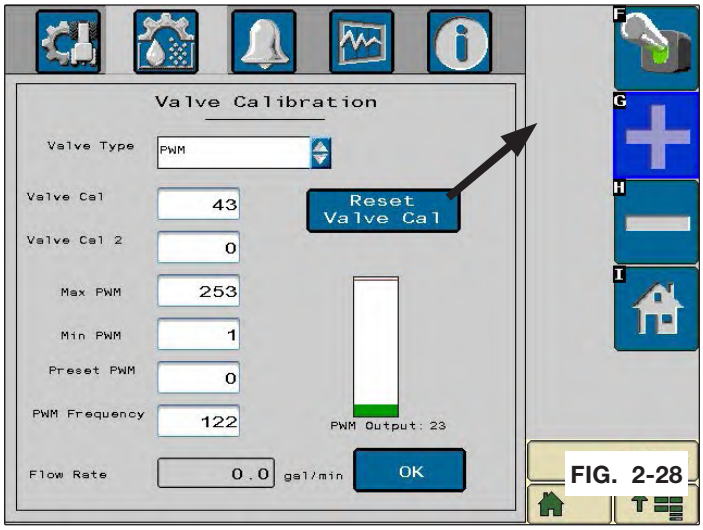


FIG. 2-28

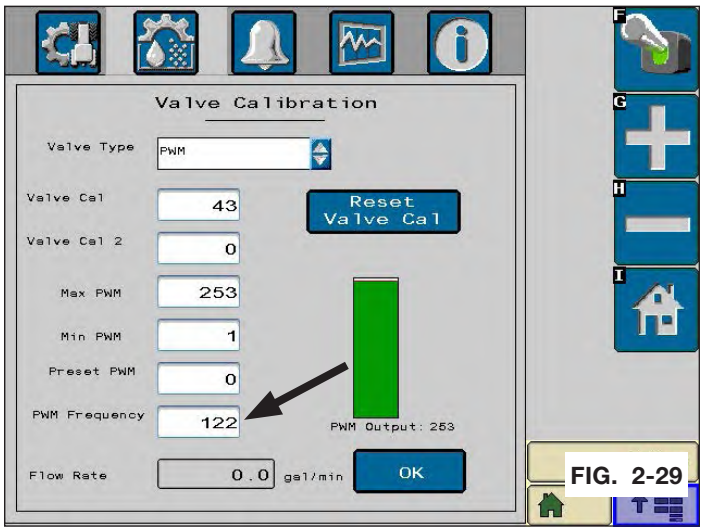


FIG. 2-29

PWM Pump Start Up Procedure - Gen I Rate Control (continued)

8. Touch the “House” button to go back to the home screen

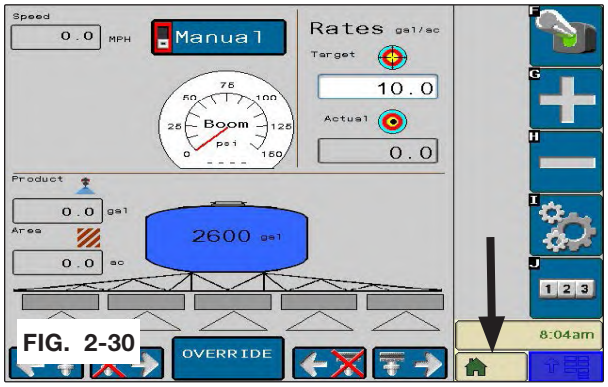


FIG. 2-30

9. Turn the system from Manual back to Auto.

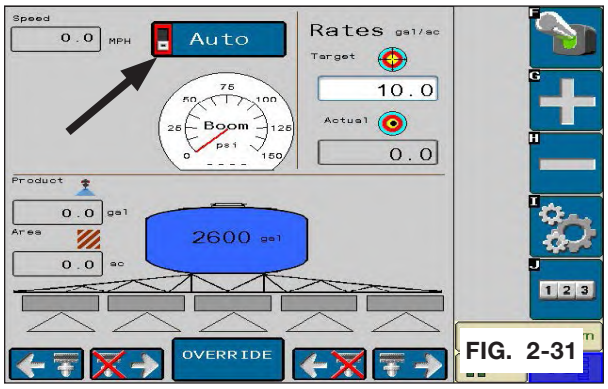


FIG. 2-31

10. The pump output is now set up and ready for operation.

11. Make sure liquid is in the tank and engage hydraulics for the pump.

Hawkeye Node Calibration

1. Initial calibration wizard screen when node is turned on for the first time. If not equipped with fence row markers, leave the box unchecked (FIG. 2-32). Then click next page.

FIG. 2-32

2. Enter the number of sections the machine is equipped with (FIG. 2-33). Then click next.

FIG. 2-33

3. Enter the width of each section in inches (FIG. 2-34). Refer to operator's manual for section width. Click next.

FIG. 2-34

4. Enter a boom offset if it applies (FIG. 2-35). Only applies when using full Hawkeye. Click next.

FIG. 2-35

Hawkeye Node Calibration (continued)

5. Enter the meter cal (FIG. 2-36). Meter cal is found on the tag on the flow meter. Click next.

FIG. 2-36

6. Enter a target rate in gallons per acre (FIG. 2-37). Click next.

FIG. 2-37

7. The main run page now comes up (FIG. 2-38). Now go to the settings page - the 3 gears tab.

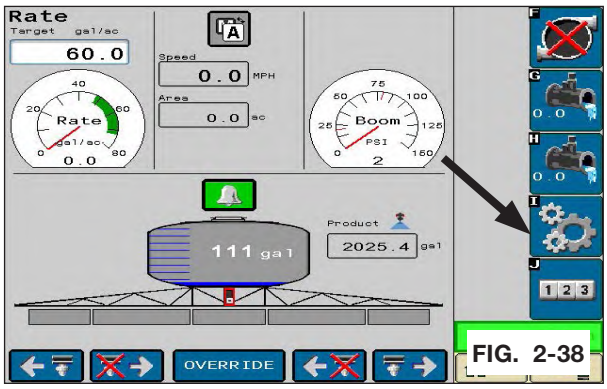


FIG. 2-38

8. Go to the calibration summary page (FIG. 2-39).

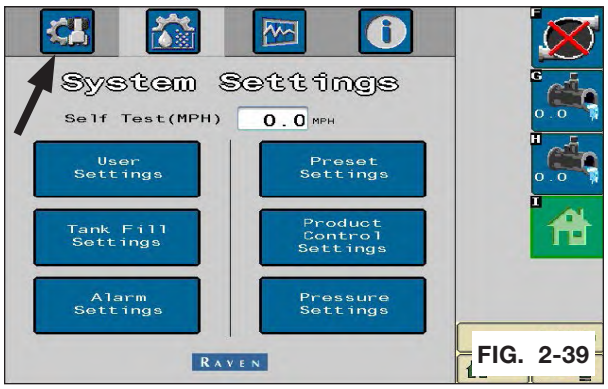


FIG. 2-39

Hawkeye Node Calibration (continued)

9. Choose the size of nozzle/tip being used from the dropdown box (FIG. 2-40). Click system settings.

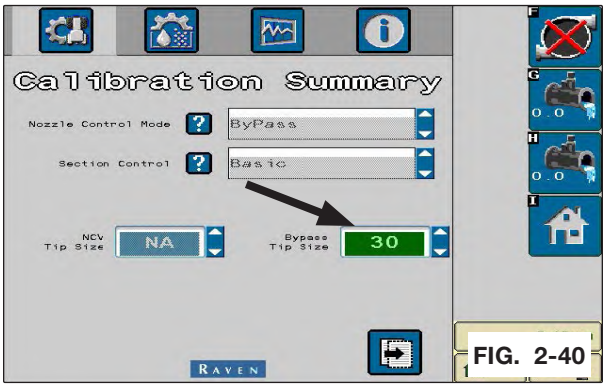


FIG. 2-40

10. Go to the user settings page. (FIG. 2-41).

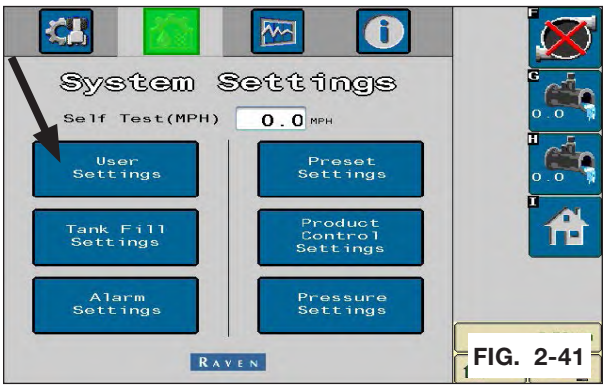


FIG. 2-41

11. Display smoothing needs to be checked. Then, if equipped with swath control the "Auto Section Control" box needs to be checked. If equipped with a map based prescription rate, the "External/Rx Control" box needs to be checked. (FIG. 2-42). Then click ok.

FIG. 2-42

12. Go to the tank fill settings page. (FIG. 2-43).

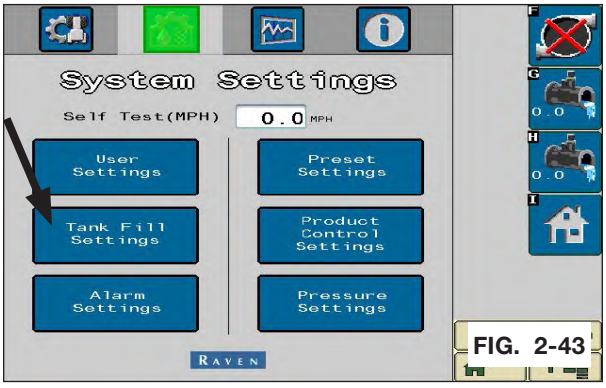


FIG. 2-43

Hawkeye Node Calibration (continued)

13. Enter the appropriate tank capacity. Enter a low tank limit. If machine is equipped with an ISO fill meter option, enter the fill flowmeter cal number here. The cal number is located on the tag on the flowmeter (FIG. 2-44). Click ok.

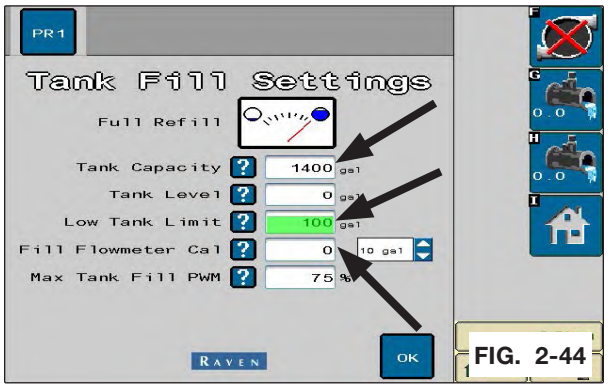


FIG. 2-44

14. Go to the alarm settings page. (FIG. 2-45).

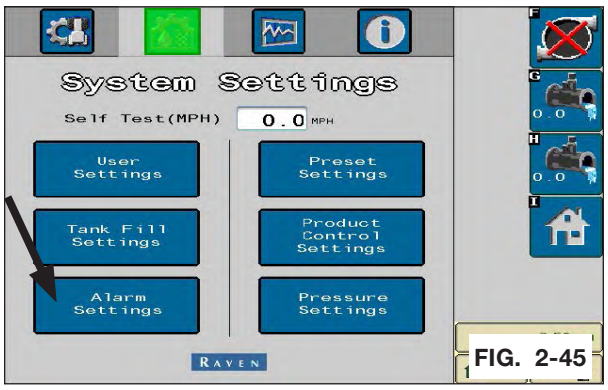


FIG. 2-45

15. Ensure all the appropriate boxes are checked. The percentages can change, if desired. (FIG. 2-46). Click ok.

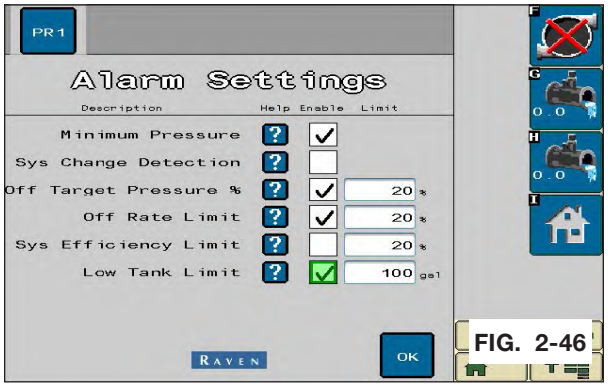


FIG. 2-46

16. Go to the preset settings page. (FIG. 2-47).

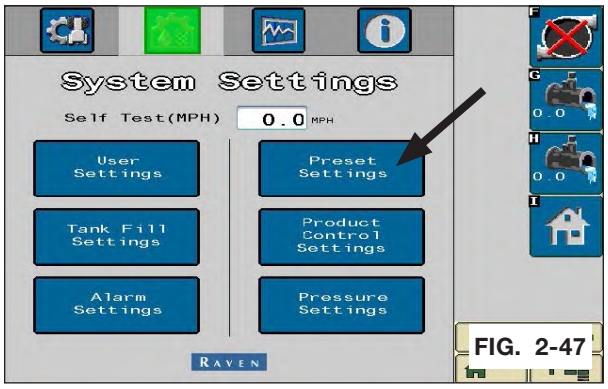


FIG. 2-47

Hawkeye Node Calibration (continued)

17. Enter desired rates to apply. Also enter a rate change amount for bumping rate. Change Quick Key Select from “Rate Preset” to “Rate +/-“ if desired to bump rate up and down. (FIG. 2-48). Click ok.

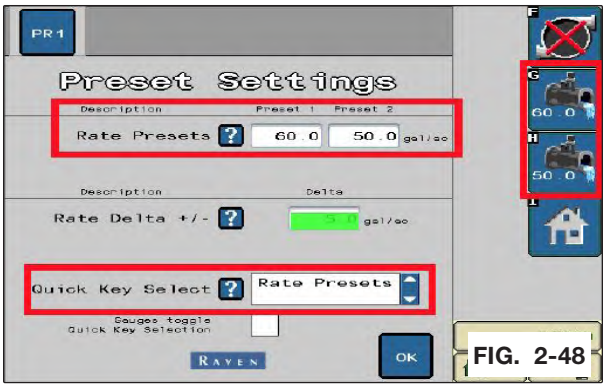


FIG. 2-48

18. Go to the product control settings page. (FIG. 2-49).

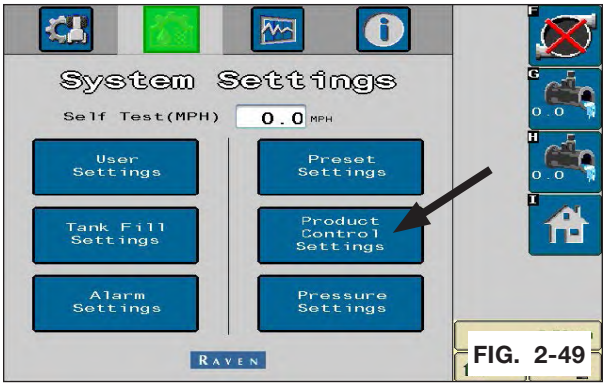


FIG. 2-49

19. Make sure to check mark the box for Stand-by Pump PWM. Default is unchecked. Do not go over 50%. Ensure Pump PWM Frequency is 122. Default is usually 60. (FIG. 2-50). Click next page.

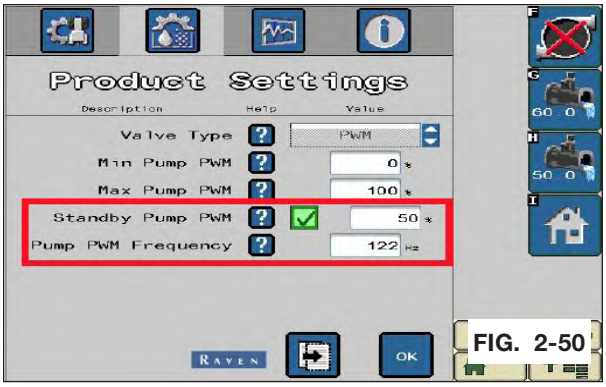


FIG. 2-50

20. Change the product type to fertilizer. Default is water based. (FIG. 2-51). Click ok.

    Note: If checking with water, have product type set to water based.

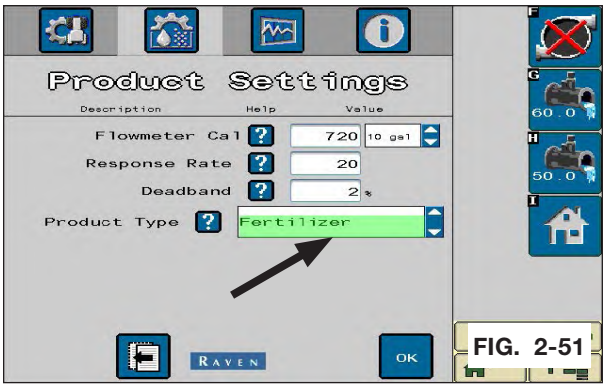


FIG. 2-51

Hawkeye Node Calibration (continued)

21. Go to the pressure settings page (FIG. 2-52).

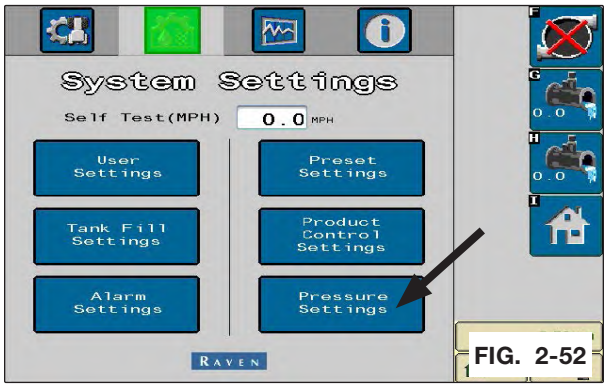


FIG. 2-52

22. Set a min pressure. DO NOT go under 20 psi. Set a max pressure. DO NOT go over 100 psi. (FIG. 2-53).

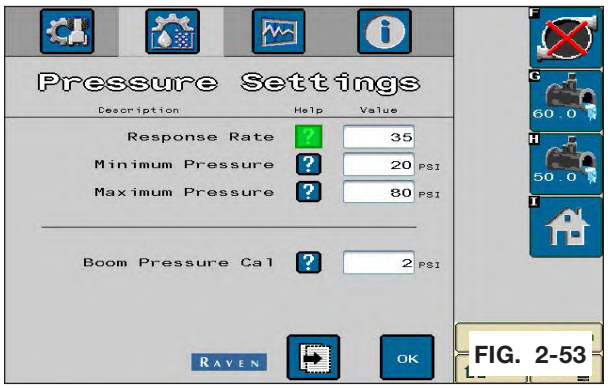


FIG. 2-53

23. Go back to the home screen. (FIG. 2-54).

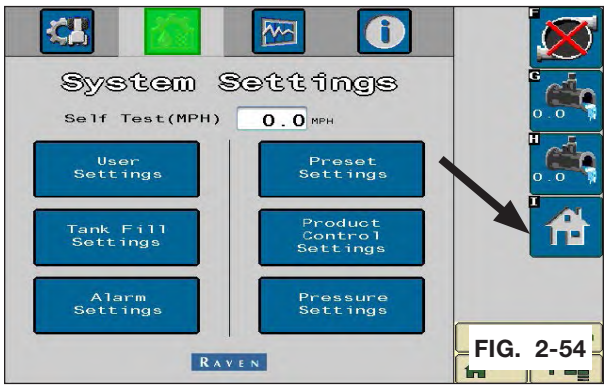


FIG. 2-54

24. The controller is now setup and ready to set the pressure of the pump. (FIG. 2-55).

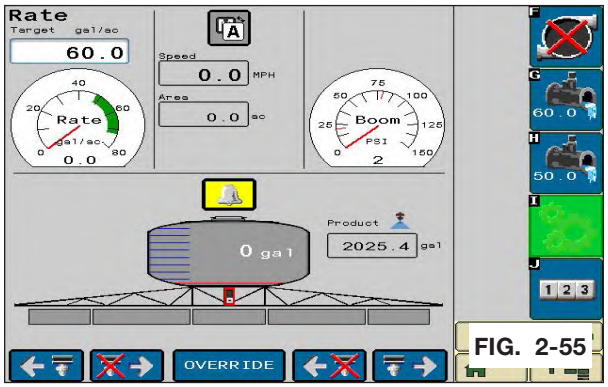


FIG. 2-55

PWM Pump Start Up Procedure - Hawkeye Node

Whenever the tractor is turned off or the ECU for the PWM Pump loses power, the following steps will have to be performed in order for the PWM Pump to function properly right away.

1. Fill solution tank with desired product and reduce the flow on the remote to 25% for the PWM pump before engaging.

   Initial start-up screen.

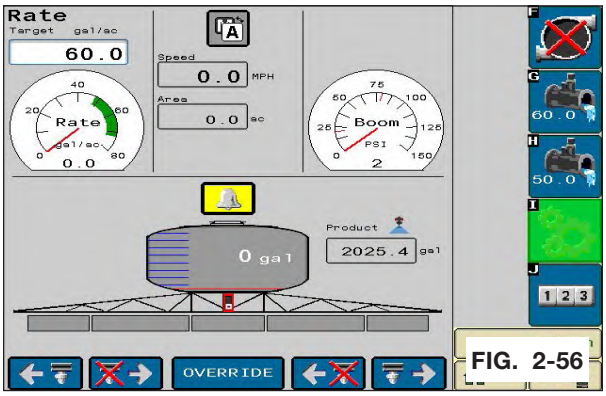


FIG. 2-56

2. Switch the system from Auto to Manual.

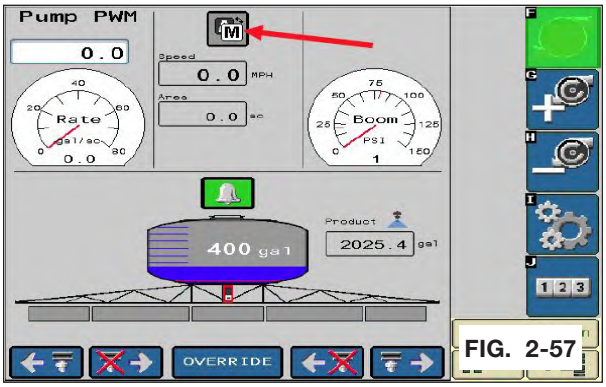


FIG. 2-57

3. Engage the remote for the pump on the tractor. Locate and click the pump icon on the screen.

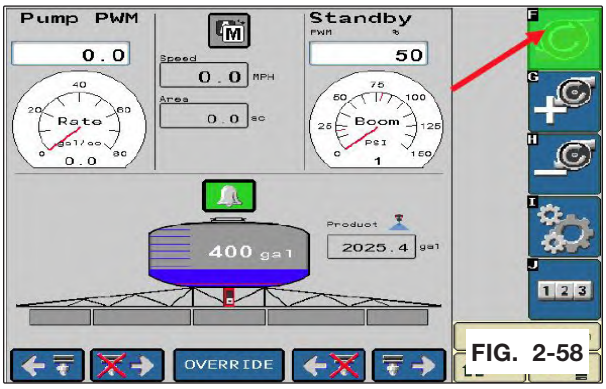


FIG. 2-58

PWM Pump Start Up Procedure - Hawkeye Node (continued)

4. Click the manual "+" button to increase the Pump PWM value to 100.

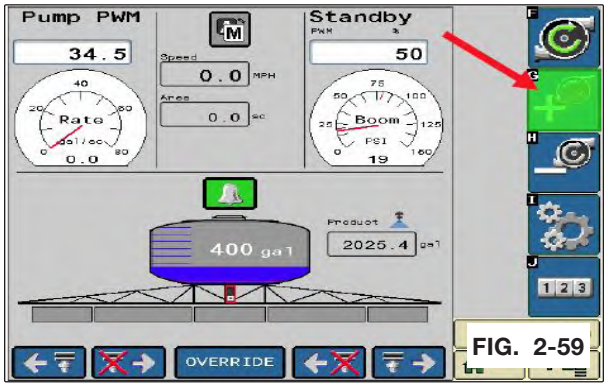


FIG. 2-59

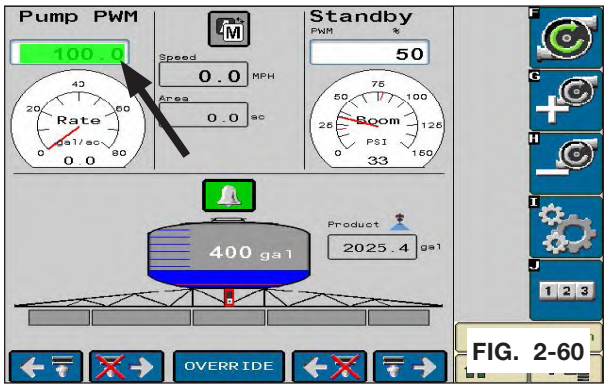


FIG. 2-60

5. Increase the hydraulic flow on the tractor until the pressure reaches 100 psi.

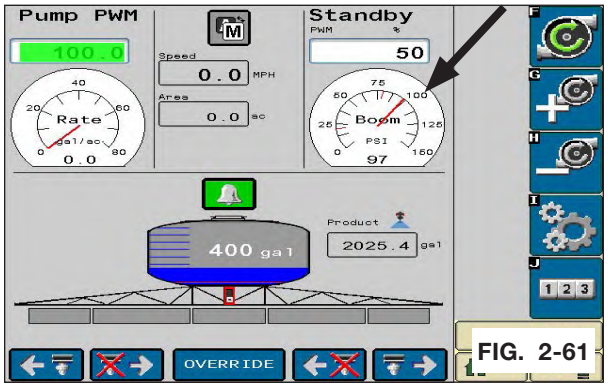


FIG. 2-61

6. Switch the system from Manual back to Auto. The pump will go into Standby mode, and the pressure should drop.

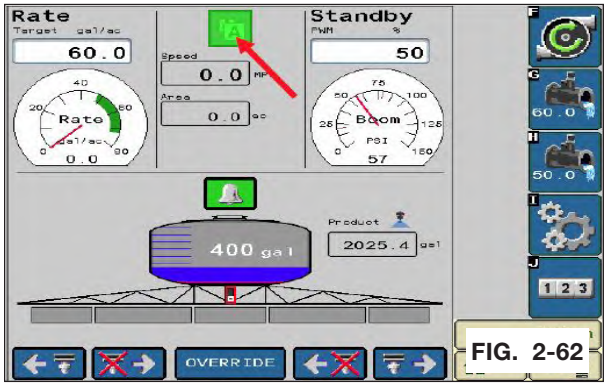


FIG. 2-62

By-Pass Plumbing Kit

#407467 for Model 2400; #407466 for Models 1200 & 1600

IMPORTANT

- *For units with by-pass plumbing installed, use the following steps.*

1. Use ball valve located after line strainer to establish dead head pressure.
2. Adjust ball valve for desired flow rate. Lower GPA (5) will have the valve mostly closed; higher GPA (20) will have the valve mostly open.

Sprayer Calibration

Determine Required Nozzle Size

Use the following procedure to assist with sizing the spray nozzle and calibrating the sprayer. Additional information can be found in the spray controller owner's manual and also obtained from spray nozzle manufacturers.

The following procedure assumes that an electronic spray rate controller is being used.

1. Decide the typical operating speed (in MPH) and coverage rate (in GPA) that will be used.

2. Calculate nozzle flow:

$$\text{Nozzle GPM} = \frac{\text{MPH x GPA x Nozzle Spacing x DCF*}}{5940}$$

*DCF = Density Conversion Factor

Weight of Solution	Specific Gravity	Density Conversion Factor (DCF)
8.34 lb./gal. (Water)	1.00	1.00
10.65 lb./gal. (28% Nitrogen)	1.28	1.13

Example:
Speed = 8 miles per hour
Rate = 10 gallons per acre
Nozzle Spacing = 20 inches
Liquid = Water

$$\text{Nozzle GPM} = \frac{\text{MPH x GPA x Nozzle Spacing x DCF*}}{5940} = 0.27 \text{ GPM}$$

3. Go to the Top Air Tip Catalog to select a tip.

   Choose a nozzle that will provide the calculated GPM within the nozzle's operating pressure range. Typically, 2 or 3 nozzle sizes will be found that meet the calculated GPM. However, it is usually a good practice to choose a flow size that lists this GPM in the mid-portion of the nozzle's advertised ratings.

4. Choose a type of tip for the given application. Ex. XRC, AIC.

5. Determine a spraying pressure required for the chemical being used.

6. Match up the spraying pressure needed in column 2 and the gpm calculated in column 3. This determines the color of tip required.

Electric Command Center

1. Pull down wires located behind the command center on the frame rail. (FIG. 2-61)
2. Remove black cover. (FIG. 2-62 & 2-63)
3. Remove hose from bottom of outlet selector. (FIG. 2-64)
4. Remove clamp from top side of outlet selector. (FIG. 2-64)
5. Remove clamp from back side of outlet selector. (FIG. 2-64)
6. Remove outlet selector. (FIG. 2-65)
7. Attach electric valve (9003955). (FIG. 2-66)

IMPORTANT

- *Note the orientation.*

8. Finish attaching electric valve.
9. Attach 3-pin weather pack from electric valve to the 3-pin weather pack with the pink and white wire to the sprayer.
10. Remove the 3” quick fill.
11. Remove the front panel. (FIG. 2-67)
12. Remove black cover. (FIG. 2-68)


FIG. 2-61

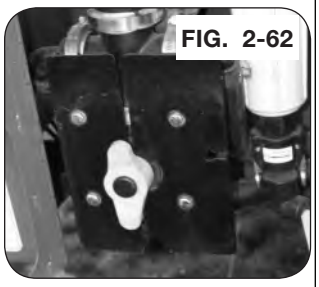


FIG. 2-62


FIG. 2-63


FIG. 2-64

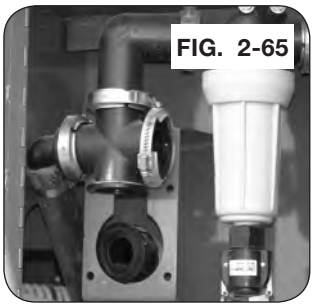


FIG. 2-65


FIG. 2-66

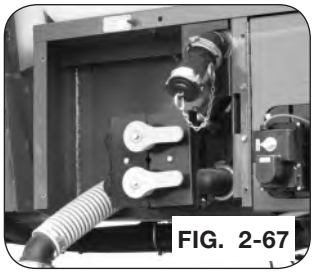


FIG. 2-67


FIG. 2-68

Electric Command Center (continued)

13. Remove all fittings connected to the two ball valves. (FIG. 2-69)

IMPORTANT

- *Note the position of the fittings.*

14. Separate the two ball valves, by removing the clamp.

15. Slide the two ball valves off the mounting plate, while keeping the top ball valve. (FIG. 2-70)

16. Slide the electric ball (9003956) valve into position first. (FIG. 2-71)

17. Slide the top ball valve back into place. (FIG. 2-71)

18. Attach fittings to electric and top ball valves into the same position.

19. Plug wire from electric ball valve into the 3-pin weather pack with the orange wire on the sprayer. (FIG. 2-72)

20. Remove the cam-lock fitting from the bottom of the filter. (FIG. 2-73)

21. Remove the hose from the tank.

22. Attach elbows, using the clamps, to the electric ball valve (9003957). (FIG. 2-74)

23. Mount the electric ball valve in the pre-drilled holes on the underside of the sprayer, use the u-bolts to secure. (FIG. 2-75)

24. Thread the elbow into the cam-lock fitting.

25. Attach the hose to the elbow.

26. Attach the cam-lock fitting to the bottom of the filter. (FIG. 2-76)

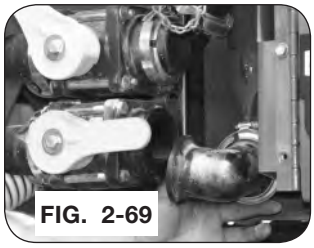


FIG. 2-69

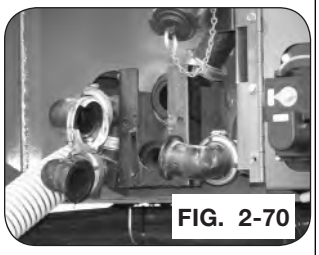


FIG. 2-70

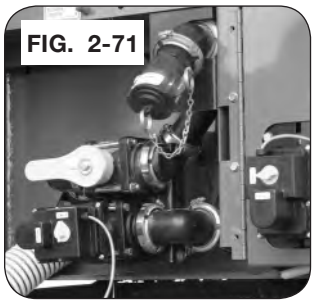


FIG. 2-71

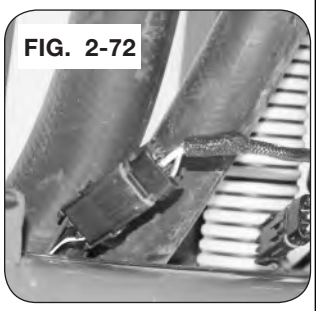


FIG. 2-72

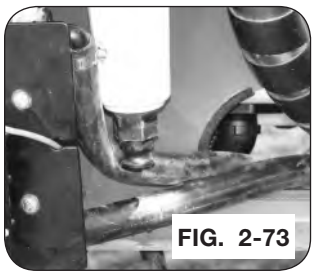


FIG. 2-73

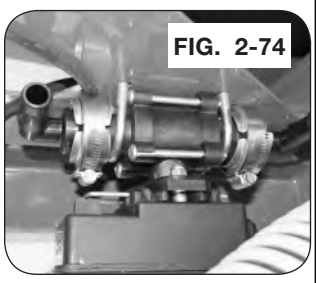


FIG. 2-74

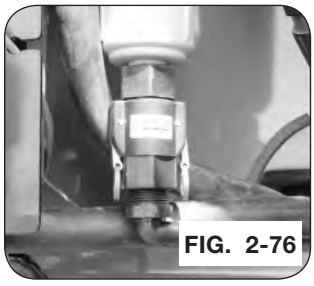


FIG. 2-76

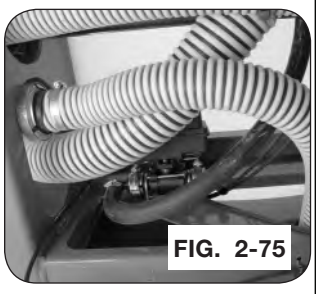


FIG. 2-75

Electric Command Center (continued)

27. Route the hose to the electric ball valve and cut to length and attach to electric ball valve. (FIG. 2-77)

28. Attach remaining hose to other end of electric ball valve.

29. Route hose to the tank fitting, cut to length and attach the hose.

30. Plug in two-pin weather pack from the electric ball valve to the 2-pin weather pack from the sprayer. (FIG. 2-78)

31. Route the 4 wires up to the switches.

32. Attach wire to the switch, note the orientation.

33. Insert switch into hole, secure nut and attach rubber end, reattach front panel. (FIG. 2-79)

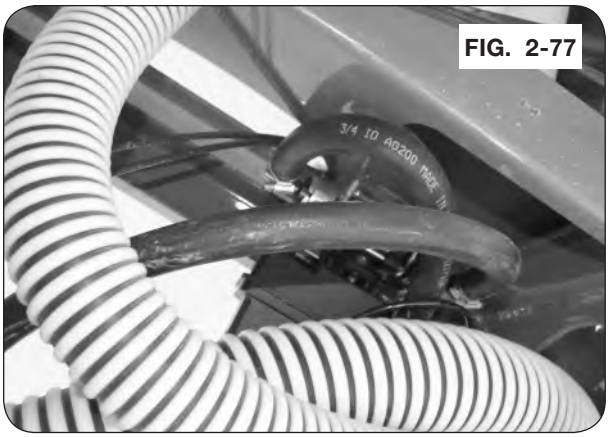


FIG. 2-77

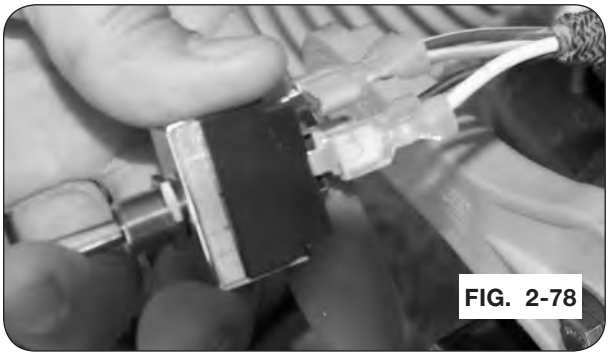


FIG. 2-78

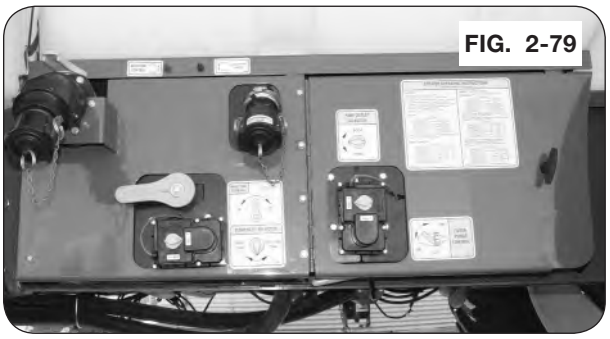


FIG. 2-79

750 PWM Pump Assembly

1. Using the diagram below, install all components to the pump before mounting on unit. The hydraulic hoses and hydraulic fittings will be installed in a later step. The air valve removed will be used in installation later; do not discard.

Note: Use thread sealant for all pipe threaded connections.

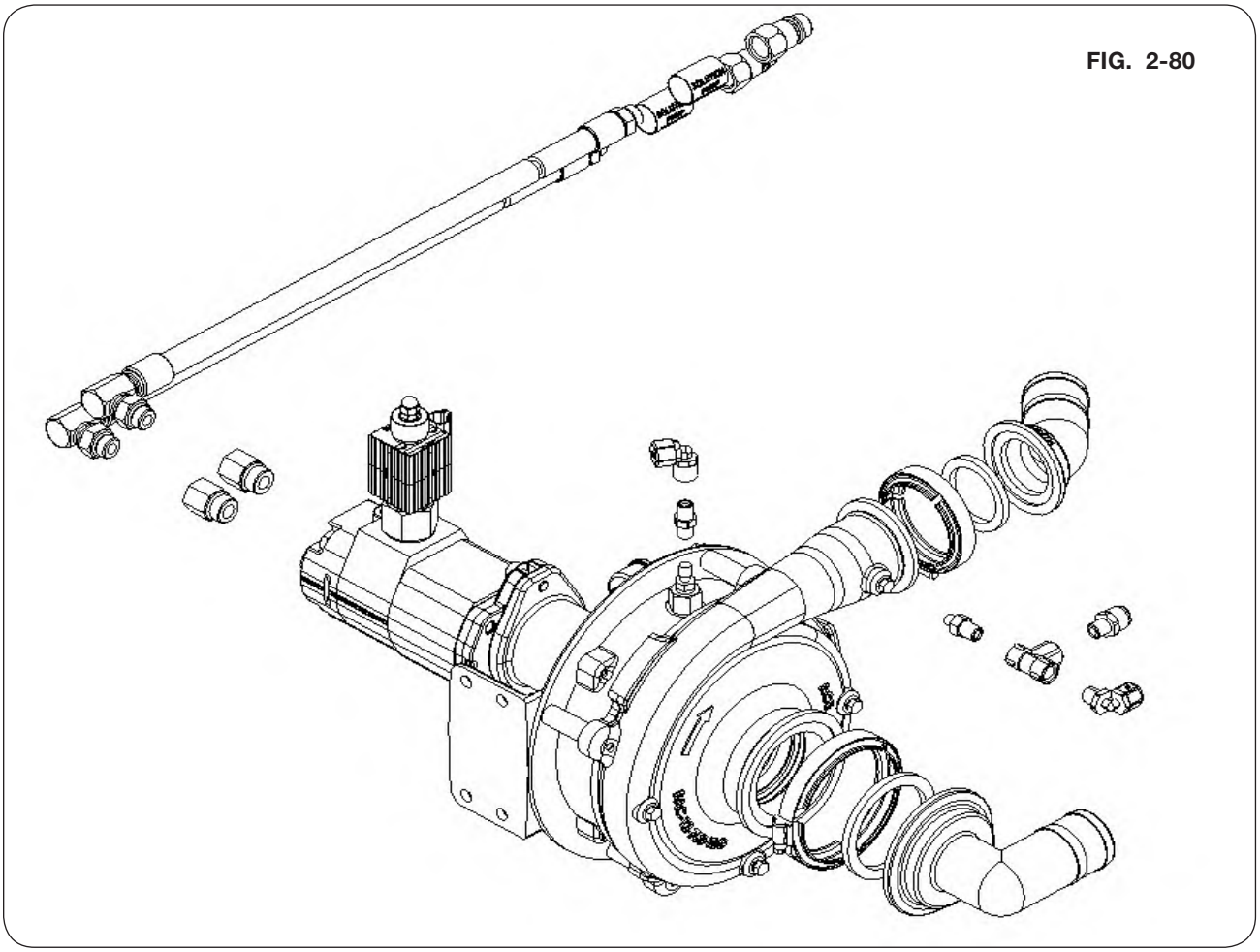


FIG. 2-80

750 PWM Pump Installation

Note: For units prior to Serial Number B37240100, an adapter plate (414046B) will be used to provide additional clearance between the pump assembly and the main frame. For units with Serial Number B37240100 and higher, proceed to step 2B.

1. Mount pump adapter plate 414046B to existing pump mount bracket using (4) countersunk socket cap screws 902703-041 and (4) serrated flange nuts 91263, (FIG. 2-81 and 2-82)

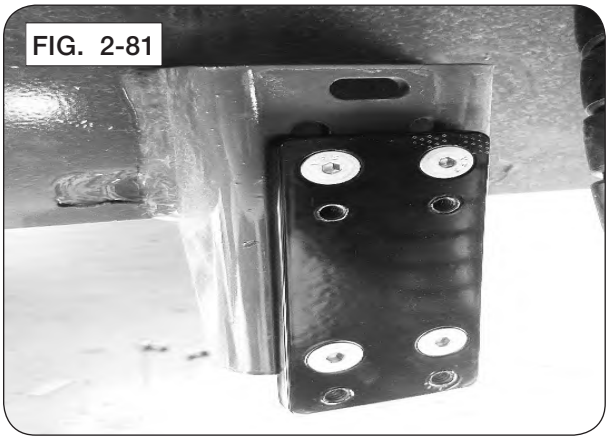


FIG. 2-81

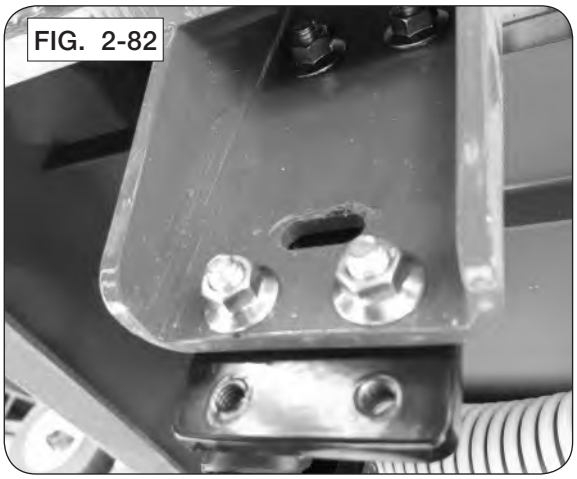


FIG. 2-82

2A. Mount 750 PWM pump assembly to the threaded holes on the adapter plate using (4) 3/8”-16UNC x 3/4” hex cap screws 9390-053 and (4) 3/8” lock washers 9404-021, (FIG. 2-83 and 2-84)

2B. Mount 750 PWM pump assembly directly to pump mount bracket using (4) 3/8”-16UNC x 1 1/4” hex cap screws 9390-056 and (4) 3/8”-16UNC serrated flange nuts 91263.

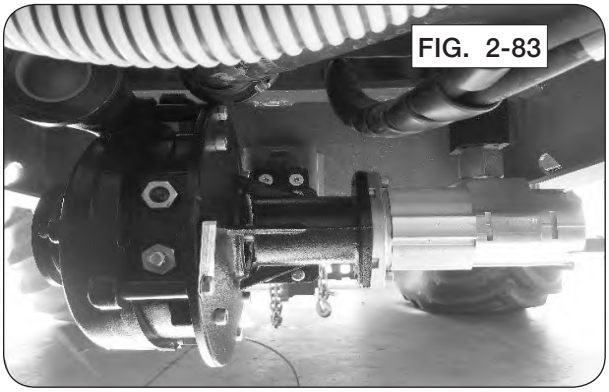


FIG. 2-83

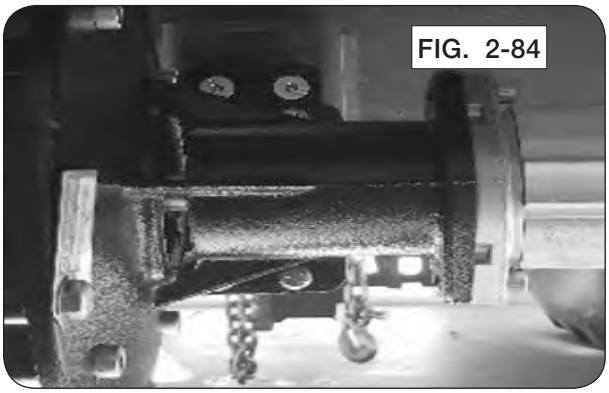


FIG. 2-84

750 PWM Pump Installation (continued)

3. Install hydraulic hoses into hydraulic ports, pressure line on top and return line on bottom. The pressure line will utilize adapter fitting 98801, and the return line will have a reverse flow check valve coupled with another adapter fitting 98801. (FIG. 2-85)

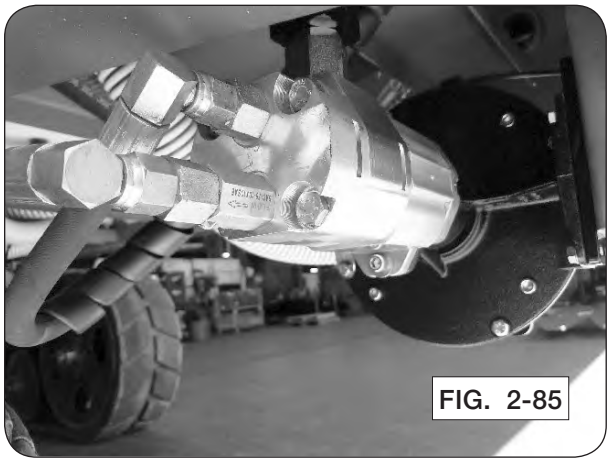


FIG. 2-85

4. Install the inlet and outlet hoses onto the pump flanges. Install the 1/4” gauge tubing (pressure gauge) and 3/8” gauge tubing (primer lines) into the fittings near the outlet of the pump. (FIG. 2-86)

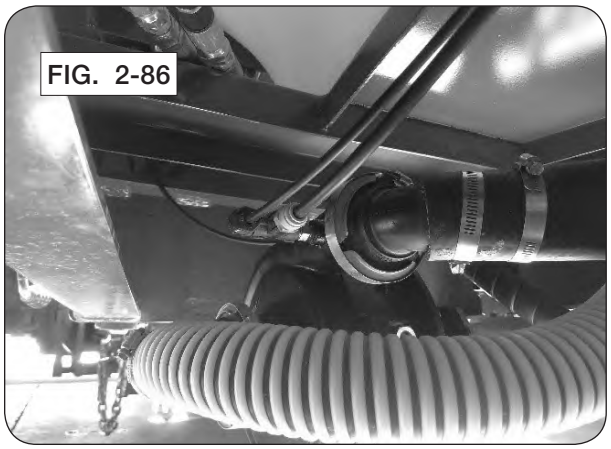


FIG. 2-86

5. Install another 1/4” gauge tubing to the top of the pump and route to the tongue for coupling to the provided regulator. This will be used to maintain pressure on the barrier fluid and seal. (FIG. 2-87)

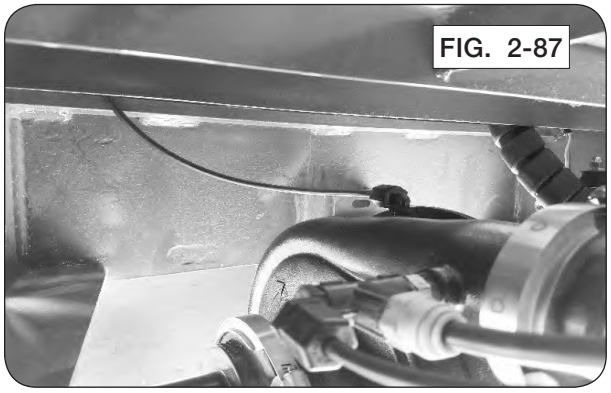


FIG. 2-87

750 PWM Pump Installation (continued)

6. Mount the supplied air regulator bracket onto the tongue weldment using (2) 3/8”-16 flange capscrews 9006040. (FIG. 2-88)

NOTE: Use thread sealant on all pipe threaded connections.

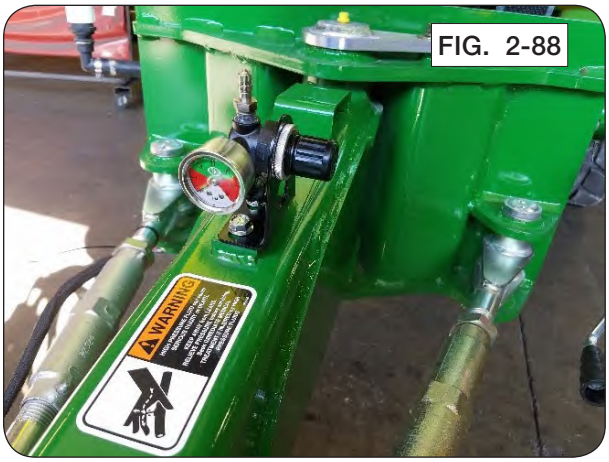


FIG. 2-88

7. Assemble regulator assembly using the air valve removed from 750 pump, supplied air gauge, gauge tubing adapter fitting, regulator and panel nut. The air valve must be installed in the “IN” port of the regulating valve. Insert 1/4 gauge tubing from the pump into regulator outlet fitting. (FIG. 2-89)

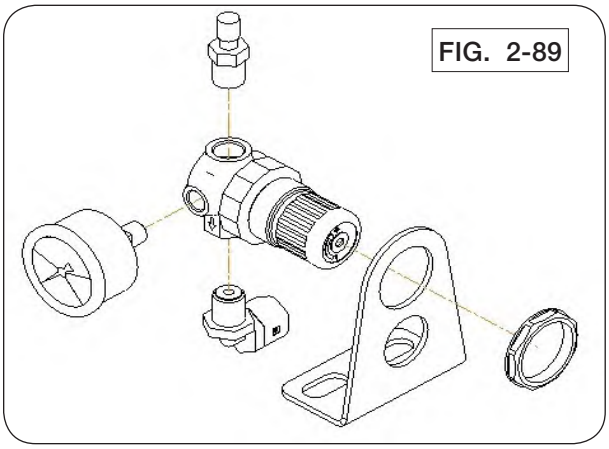


FIG. 2-89

8. Insert 2-pin pump power harness supplied from the rate control harness into the coil provided on the PWM valve, (FIG. 2-90 and 2-91).

9. Continue with steps 10 through 12, to pressurize the fluid barrier system.

10. Turn regulating valve adjusting knob counter clockwise until it is at the minimum pressure setting.

11. Attach air chuck to air valve.

12. Turn adjustment knob on regulating valve clockwise until gauge reads 30 psi.

NOTE: If gauge loses pressure, recheck all air fittings for leaks.

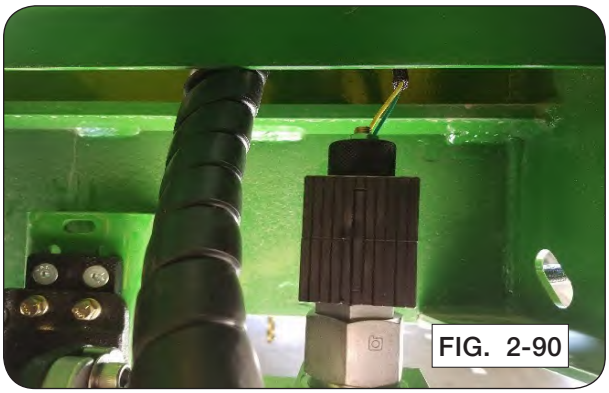


FIG. 2-90

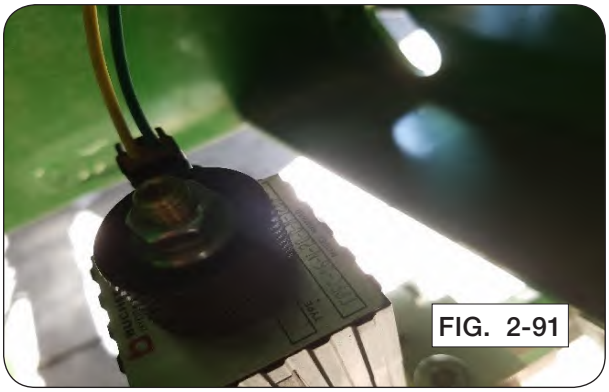


FIG. 2-91

Auto-Height Control

Refer to Raven Auto-Height Installation Manual.

Steerable Hitch

Refer to Raven Auto-Steer Hitch Installation Manual.

Mounting of Height Control Gauge Wheels

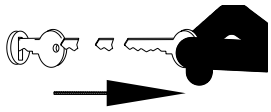
⚠ WARNING

- **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 100 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

The following instructions depict mounting a right-hand gauge wheel onto a 120' / 132' sprayer boom. Instructions for mounting onto a 80' / 90' / 100' sprayer boom may vary slightly and will be noted. Repeat the steps for mounting on the left hand side of the boom.

NOTE: Hardware used for mounting the gauge wheel is made of stainless steel material. It is recommended to use a thread lubricant during installation to prevent thread damage.

1. Park the unit on a firm, level surface. Block the wheels/tracks on the machine to keep it from moving. Set the vehicle parking brake, shut off the engine and remove the ignition key.



Mounting of Height Control Gauge Wheels (continued)

2. Using a safe lifting device rated for 100 lbs., mount the right hand gauge wheel assembly (411071B) to the front of the bottom tube using two U-bolts (9004684) and four flange nuts (9005640). Position the wheel as far out as practical on the intermediate wing.

FIG. 2-92

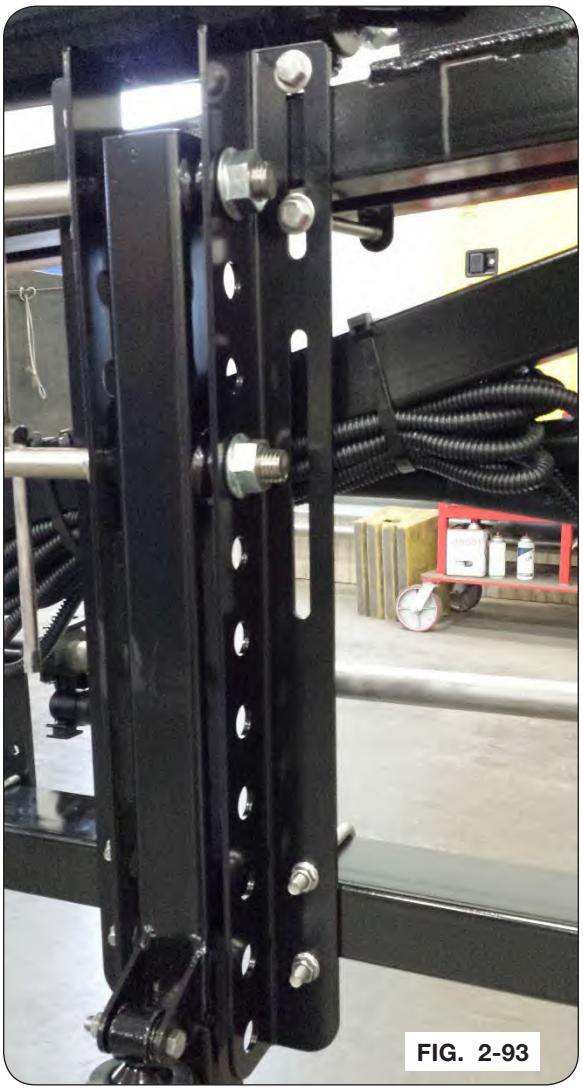


FIG. 2-93

Mounting of Height Control Gauge Wheels (continued)

3. For 120/132' booms:
   Secure to the upper tube using four bolts (900900-073), four washers (900902-038), four flange nuts (9005640) and two bolt plates (0.164 thick).

   For 80/90/100' booms:
   Secure to the diagonal cross tube using four bolts (900900-066), four washers (900902-038), four flange nuts (9005640), two bolt plates (0.164 thick) and two spacer bolt plates (0.5" thick). Install the spacer plate between the mount bracket and the diagonal tube as shown in Figure 2-94.

4. The instructions above mount the gauge wheels on the outside of the mount brackets. Depending on row spacing and location, it may be necessary to remove the two retainer pins from the gauge tube and switch the left and right wheel assemblies.

FIG. 2-94

Section III
Operation

Transporting

Drawbar Connection

WARNING

- **USE EXCEPTIONAL CARE WHEN OPERATING SPRAYER EQUIPPED WITH SINGLE TIRES AND SET AT NARROW WHEEL SPACING. THE POSSIBILITY OF TIPPING OVER DURING TURNS OR TRAVEL ON ROUGH ROADS IS INCREASED UNDER THESE CONDITIONS.**

CAUTION

- **THIS IMPLEMENT IS NOT EQUIPPED WITH BRAKES. ENSURE THAT THE TOWING VEHICLE HAS ADEQUATE WEIGHT AND BRAKING CAPACITY TO TOW THIS IMPLEMENT.**

IMPORTANT

- *It is strongly recommended to use the 120" wheel spacing while running single tires.*

See towing vehicle manual for towing and braking capacity. Maximum speed of sprayer should not exceed 20 m.p.h..

Secure drawbar pin with a locking device and lock tractor drawbar in centered position.

Secure transport chain to tractor chain support before transporting. Use good judgment when transporting equipment on highways. Regulate speed to road conditions and maintain complete control.

It is probable that this implement is taller, wider, and longer than the towing tractor. 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.

Boom Operation

DANGER

- **PERFORM BOOM UNFOLDING AND FOLDING OPERATIONS ONLY IN AREAS WITH ADEQUATE HEIGHT, WIDTH AND LENGTH CLEARANCES. IN PARTICULAR, BE MINDFUL OF LOCATION OF OVERHEAD POWER LINES. FAILURE TO DO SO CAN RESULT IN PERSONAL INJURY AND PROPERTY DAMAGE.**

WARNING

- **KEEP ALL PERSONNEL A SAFE DISTANCE AWAY FROM THE SPRAYER WHEN UNFOLDING OR FOLDING THE BOOM. PERSONAL INJURY CAN RESULT FROM IMPACT WITH BOOM.**

Unfolding

1. Press top of ON/OFF switch to turn power on. (Red LED lamp on rocker switch should illuminate. Green LED lamp is provided to indicate circuit continuity when ever any other switch is pressed.) (FIG. 3-1)
2. Engage hydraulic lever to <RETRACT>.
3. Press and hold MAIN BOOM switch in <RAISE> position until boom is fully raised. This ensures that the transport latch is not supporting the weight of the boom.

FIG. 3-1

4. Press and hold RH WING TILT and LH WING TILT switches in <UP> position until wings are fully tilted upward.

IMPORTANT

- *Wing tilt function may require several seconds of use before wings begin to move.*

5. Press and hold INNER WING switch in <EXTEND> position until wings are fully extended and wing locks are engaged on lock pins.
6. Momentarily press WING TILT switches either <UP> or <DOWN> as required to approximately level the wings horizontally.
7. Press and hold OUTER WING switch in <EXTEND> position until outer wings are fully extended.
8. Momentarily press WING TILT switches either <UP> or <DOWN> as required to level the wings horizontally. (Observe the tilt indicators located near the tilt cylinders to assist with leveling the wings.)
9. Press and hold MAIN BOOM switch in <LOWER> position until boom is at desired spray height.

IMPORTANT

- *Never unfold the unit without attaching to tractor first. For proper boom suspension operation, do not operate boom in the fully lowered position. The minimum spray height is attained by lowering the boom fully, then raising it approximately 4 inches to permit adequate suspension travel.*

Boom Operation (continued)

Folding

1. Press top of ON/OFF switch to turn power on. (Red LED lamp on rocker switch should illuminate. Green LED lamp is provided to indicate circuit continuity when ever any other switch is pressed.) (FIG. 3-2)
2. Engage hydraulic lever to <RETRACT>
3. Press and hold OUTER WING switch in <RETRACT> position until outer wings are fully retracted.
4. Press and hold MAIN BOOM switch in <RAISE> position until boom is fully raised.

FIG. 3-2

5. Press and hold RH WING TILT and LH WING TILT switches in <UP> position until wings are fully tilted upward.
6. Press and hold INNER WING switch in <RETRACT> position until wings are fully retracted.
7. Press and hold either RH WING TILT or LH WING TILT switch in <DOWN> position until each wing is seated in its wing rest. Repeat for opposite wing.

IMPORTANT

- *Hold switch in <DOWN> position after wing is seated for 10 seconds to allow the accumulators to drain.*

8. Press and hold MAIN BOOM switch in <LOWER> position to allow boom to lower approximately 6 inches until transport lock is engaged.

IMPORTANT

- *If boom does not engage transport lock, raise boom fully, press and hold INNER WING switch in <RETRACT> position for 5 seconds, and then repeat step 8.*
- *Hold switch in <DOWN> position after wing is seated for 10 seconds to allow the accumulators to drain.*

Filling Sprayer

Quick Fill

1. Assure that QUICK-FILL VALVES are <OFF>.
2. Turn PUMP INLET SELECTOR VALVE to <SOLUTION TANK>. (FIG. 3-3)
3. To fill Rinse Tank, attach hose to the 2” right side quick fill coupler. Turn rinse tank quick-fill valve on the sprayer frame <ON>.
4. To fill Solution Tank, attach hose to the 3” left side quick fill coupler. Turn quick-fill valve on the solution tank <ON>.

FIG. 3-3

⚠ CAUTION

- **NEVER LEAVE SPRAYER UNATTENDED WHILE FILLING. TANK CONTENTS MAY SPILL OUT OF AIR VENTS IF OVERFILLED.**

5. Return valve to <OFF> when filling is complete.

IMPORTANT

- *The solution tank is designed with additional air expansion space in excess of the rated capacity. The full capacity can be reached with the level approximately 6”- 8” below the top surface of the tank access hatch (lid opened).*

Tank Mixing

Spray chemicals can be added to the solution tank by either pouring directly into the top tank access hatch, or through the use of an optional inductor. Before adding chemicals, ensure that the tank contains at least 50 gallons of water.

⚠ WARNING

- **ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT WHEN WORKING WITH OR NEAR CHEMICALS. THIS EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO: PROTECTIVE EYE WEAR, GLOVES, SHOES, SOCKS, LONG-SLEEVED SHIRT, AND LONG PANTS. ADDITIONAL PROTECTION MAY BE REQUIRED FOR MANY TYPES OF CHEMICALS.**

The solution tank is equipped with dual mixing inductors for agitation, which use a fraction of the pump output to keep chemicals in solution. Always allow enough time for complete mixing of the tank contents before starting any spraying operation.

Rinsing Sprayer

Solution Tank

1. Engage hydraulic circuit to RETRACT position.

2. Rinse Flo-Bak return line by running pump with the following settings:

VALVE SETTINGS

PUMP INLET SELECTOR	<RINSE TANK>
INDUCTOR FLOW (OPT)	<OFF>
FILTER PURGE CONTROL	<PARTIALLY OPEN>
PUMP OUTLET SELECTOR	<BOOM>
AGITATION CONTROL	<PARTIALLY OPEN>

3. Rinse main tank by running pump with the following settings, using approximately 1/2 of available rinse water:

VALVE SETTINGS

PUMP INLET SELECTOR	<RINSE TANK>
INDUCTOR FLOW (OPT)	<OFF>
FILTER PURGE CONTROL	<OFF>
PUMP OUTLET SELECTOR	<RINSE>
AGITATION CONTROL	<OFF>

4. Make sure all the boom sections are on. Turn on the master switch. Allow water to spray for 5 seconds. Shut master switch off . Repeat sequence twice.

VALVE SETTINGS

PUMP INLET SELECTOR	<SOLUTION TANK>
INDUCTOR FLOW (OPT)	<OFF>
FILTER PURGE CONTROL	<OFF>
PUMP OUTLET SELECTOR	<BOOM>
AGITATION CONTROL	<OFF>

4. Repeat Steps 3 and 4.

IMPORTANT

- *Do not allow pump to run dry. Pump damage will result.*

Boom Only Tank

IMPORTANT

- *Turn on master switch to activate boom.*

VALVE SETTINGS

PUMP INLET SELECTOR	<RINSE TANK>
INDUCTOR FLOW (OPT)	<OFF>
FILTER PURGE CONTROL	<OFF>
PUMP OUTLET SELECTOR	<BOOM>
AGITATION CONTROL	<OFF>

IMPORTANT

- *Do not allow pump to run dry. Pump damage will result.*

Rinsing - By-Pass Plumbing Kit

Solution Tank

IMPORTANT

- *For units with by-pass plumbing, use the following steps.*

Put the rate control console into manual, hold the increase switch for 15 seconds. This will minimize the amount of rinse water flowing into your solution tank.

Reduce the flow of the ball valve located after the primary filter. This will restrict the gallons flowing to the boom allowing for a more thorough rinse, and not drain the rinse tank as quickly.

Follow normal rinsing procedures.

Foam Marker

The optional foam marker for this sprayer automatically mixes foam concentrate and water. Clean water is taken directly from the rinse tank, and foam concentrate is drawn from a separate tank.

Filling

Since the water used comes directly from the rinse tank, ensure that the rinse tank is full before starting spray operation. This tank can be filled either through the fill cap or the quick-fill connector.

To fill the foam concentrate tank (located on service platform) (FIG. 3-4), remove the cap and add diluted foam concentrate. Dilute concentrate 50/50 with water to ensure good flow characteristics.

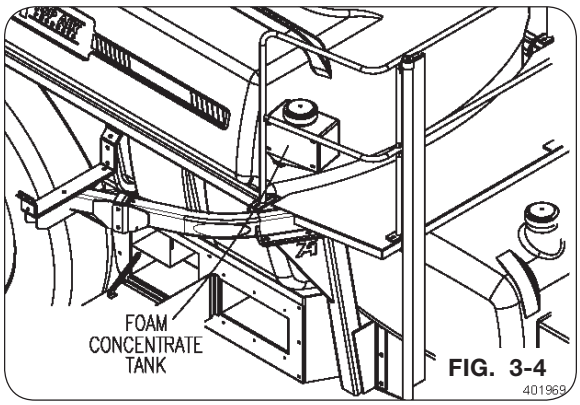


FIG. 3-4

Foam Collector Height

Adjust foam collector drop hose until collector is at least one foot above the ground, or to desired length.

Basic Operation

Before starting spray operation, test foam output to ensure that foam density and delivery rate are acceptable. (Additional information on troubleshooting foam output can be found in the MAINTENANCE SECTION)

1. Press switch LEFT or RIGHT to activate system. Foam should begin to drop from foam heads within approximately 1 to 3 minutes. (FIG. 3-5)

2. Move switch to center position to stop flow of foam.

FIG. 3-5

Chemical Inductor

Basic Operation

IMPORTANT

- *Solution tank should contain at least 50 gallons of liquid.*

1. Unlatch inductor lift mechanism and lower to "fill" position. (FIG. 3-6)

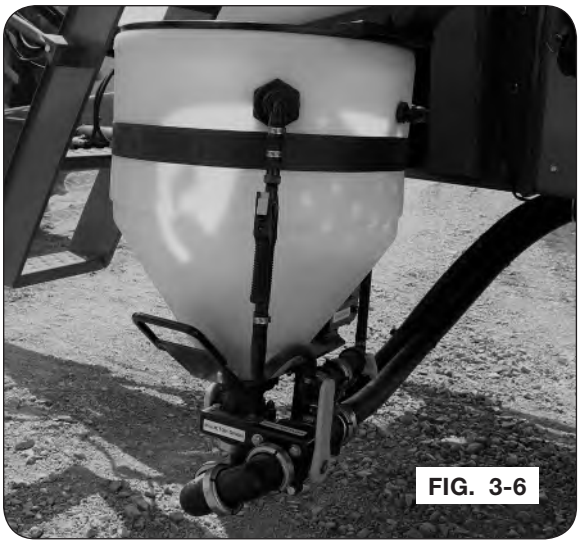


FIG. 3-6

2. Set valves:

VALVE SETTINGS

PUMP INLET SELECTOR	<SOLUTION TANK>
AGITATION CONTROL	<OFF>
FILTER PURGE CONTROL	<OFF>
PUMP OUTLET SELECTOR	<BOOM>
INDUCTOR MIX	<OFF>
INDUCTOR DRAIN	<OFF>
INDUCTOR FLOW	<ON>

3. Start pump.
4. Open INDUCTOR DRAIN valve.
5. Open lid and pour chemical into inductor tank. (If using dry chemical, open INDUCTOR MIX valve to mix chemical, using care not to overfill inductor tank.)
6. Close INDUCTOR DRAIN valve when tank is completely empty.
7. Close INDUCTOR FLOW valve then set AGITATION CONTROL and FILTER PURGE CONTROL to proper settings.
8. Close lid.
9. Raise tank to storage position.

FIG. 3-7

⚠ WARNING

- **WHEN USING JUG RINSER, BE CAREFUL NOT TO SPRAY SOLUTION INTO EYES OR FACE.**

Chemical Inductor (continued)

Chemical Container and Inductor Tank Rinsing

Both chemical containers and the inductor tank itself can be rinsed by using clean water from the rinse tank. To do so, ensure that the rinse tank is at least 1/2 full, and use the following procedure:

1. Perform steps 1 through 4 under “Basic Operation” of inductor.
2. Quickly move PUMP INLET SELECTOR valve from <SOLUTION TANK> to <RINSE TANK>.

IMPORTANT

- *It is recommended to work efficiently while the sprayer pump is drawing from the rinse tank, as the rinse water is returned to the solution tank not the rinse tank, and therefore the rinse tank will eventually become empty.*
- *Do not allow pump to run dry. Pump damage will result.*

3. To rinse a chemical container, place container upside down on rinse nozzle and squeeze handle on rinse wand.
4. To rinse inductor tank, close lid, open INDUCTOR MIX valve and squeeze rinse wand handle for approximately 10 seconds.
5. Close INDUCTOR MIX valve and release rinse wand when rinsing is complete.
6. Repeat steps 4 and 5 for additional rinsing, if desired.
7. When inductor tank is empty, close INDUCTOR DRAIN valve, and quickly move PUMP INLET SELECTOR valve from <RINSE TANK> to <SOLUTION TANK> to minimize the amount of rinse water used.
8. Close INDUCTOR FLOW valve then set AGITATION CONTROL and FILTER PURGE CONTROL to proper settings.
9. Raise tank to storage position.

Electric Command Center

The optional electric command center allows remote operation of rinse system, agitation control, and filter purge control. Basic sprayer operation and tank rinsing is similar to the procedure outlined previously, with the following exceptions:

Filter Purge Controls

This control is operated by momentarily actuating the appropriate switch on the control box, instead of using the manual lever located behind the Command Center access door. The control valve cycles from fully closed to fully open in about 7 seconds. The valve setting for each control is determined by monitoring the pressure drop while actuating the switches.

FIG. 3-8

Pump Inlet/Outlet Controls

Pump Inlet and Pump Outlet control switches are “circuit selectors” and do not modulate flow like the Agitation and Filter Purge switches. Although their function is nearly identical to the manual valves of the standard Command Center, it should be noted that there is no <OFF> position with either valve. Because of this, a manual shut-off valve is provided on the Command Center to isolate the tank during plumbing service, or to restrict the pump inlet flow during use of the optional inductor system.

Fence Row Nozzle

The fence row is controlled by two switches on the Electric Command Center/switch box (9007776) (FIG. 3-9). The left-hand (LH) switch turns the left nozzle on; the right-hand (RH) turns the right nozzle on.

FIG. 3-9

Auto-Height Control (409277, 409278, 409279, 409881, 409882)

Refer to Raven Auto-Height Operations Manual.

Steerable Hitch (409276, 409884)

Refer to Raven Steerable Hitch Operations Manual.

Hydraulic Instructions

HYPRO Pump

As the signal current increases, the hydraulic flow control valve opens.

To ensure proper hydraulic oil flow metering, follow the calibration procedure described by the manufacturer of the controller that is being used as each controller's procedure is different. In general, balancing reaction time and system stability are key to proper calibration.

The hydraulic flow control valve has a manual override option fitted from the factory. This feature can be used to open or close the valve in the event that the digital controller has an error or fails. To use this feature, remove the override cover on the top of the valve to reveal the red override toggle. The override is engaged by turning the toggle clockwise. One full turn is required to start opening the valve and full open is achieved with 6 full turns. To close the valve, turn the toggle counter clockwise 6 turns until a stop is reached.

Connections to the control assembly are SAE #10 (7/8-14 UNF-2B) O-ring boss ports. Ensure that the mating fitting has an O-ring free of any debris or damage before installation.

Match the high pressure line to the port labelled "IN" and the low pressure line back to tank to the port labelled "OUT".

The port labelled "BYPASS" is a SAE #8 (3/4-16 UNF-2B) port intended return excess oil flow back to the reservoir. This port comes plugged from the factory. When plugged, the hydraulic control assembly can be used with hydraulic circuits that have a variable displacement pump. If the hydraulic circuit uses a fixed displacement pump, the plug must be removed and a line should be run from the bypass port to the reservoir. The maximum input flow is 30 GPM (114 LPM) for the bypass configuration.

Notes

Section IV
Maintenance

Sprayer Maintenance

DANGER

- **ELECTROCUTION WILL CAUSE SERIOUS INJURY OR DEATH. THE SPRAYER IS NOT INSULATED. KEEP AWAY FROM ALL ELECTRICAL LINES AND DEVICES. ELECTROCUTION CAN OCCUR WITHOUT DIRECT CONTACT.**

WARNING

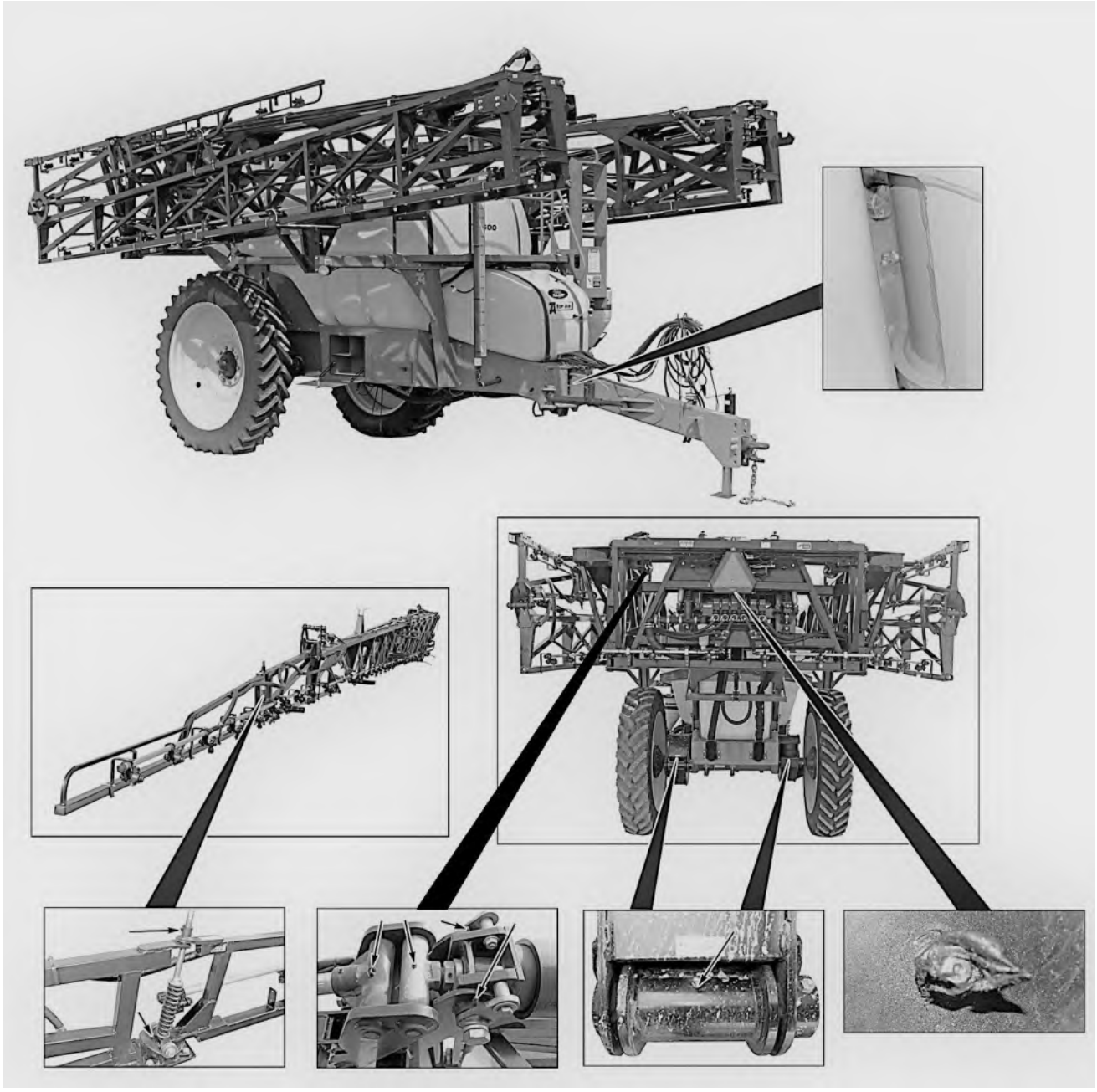
- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE MACHINE IS SECURELY BLOCKED.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **MOVING WINGS CAN CAUSE SERIOUS INJURY OR DEATH. KEEP AWAY FROM FOLDING AND UNFOLDING WINGS.**
- **TIPPING OR MOVEMENT OF SPRAYER CAN CAUSE SERIOUS INJURY OR DEATH. SPRAYER MUST BE HITCHED TO THE TRACTOR BEFORE OPERATING BOOM.**
- **ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT WHEN WORKING WITH OR NEAR CHEMICALS. THIS EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO: PROTECTIVE EYE WEAR, GLOVES, SHOES, SOCKS, LONG-SLEEVED SHIRT, AND LONG PANTS. ADDITIONAL PROTECTION MAY BE REQUIRED FOR MANY TYPES OF CHEMICALS.**
- **RESIDUAL PRESSURE MAY EXIST IN SPRAYER PLUMBING EVEN WHEN UNIT IS NOT IN USE. RELIEVE PRESSURE BEFORE SERVICING ANY PLUMBING.**

Lubrication

To keep your sprayer in top operating condition and to assure its proper performance and reliability for a long period of time, periodic inspection and lubrication is a must.

Use EP-2 lubricant at the locations described in the chart.

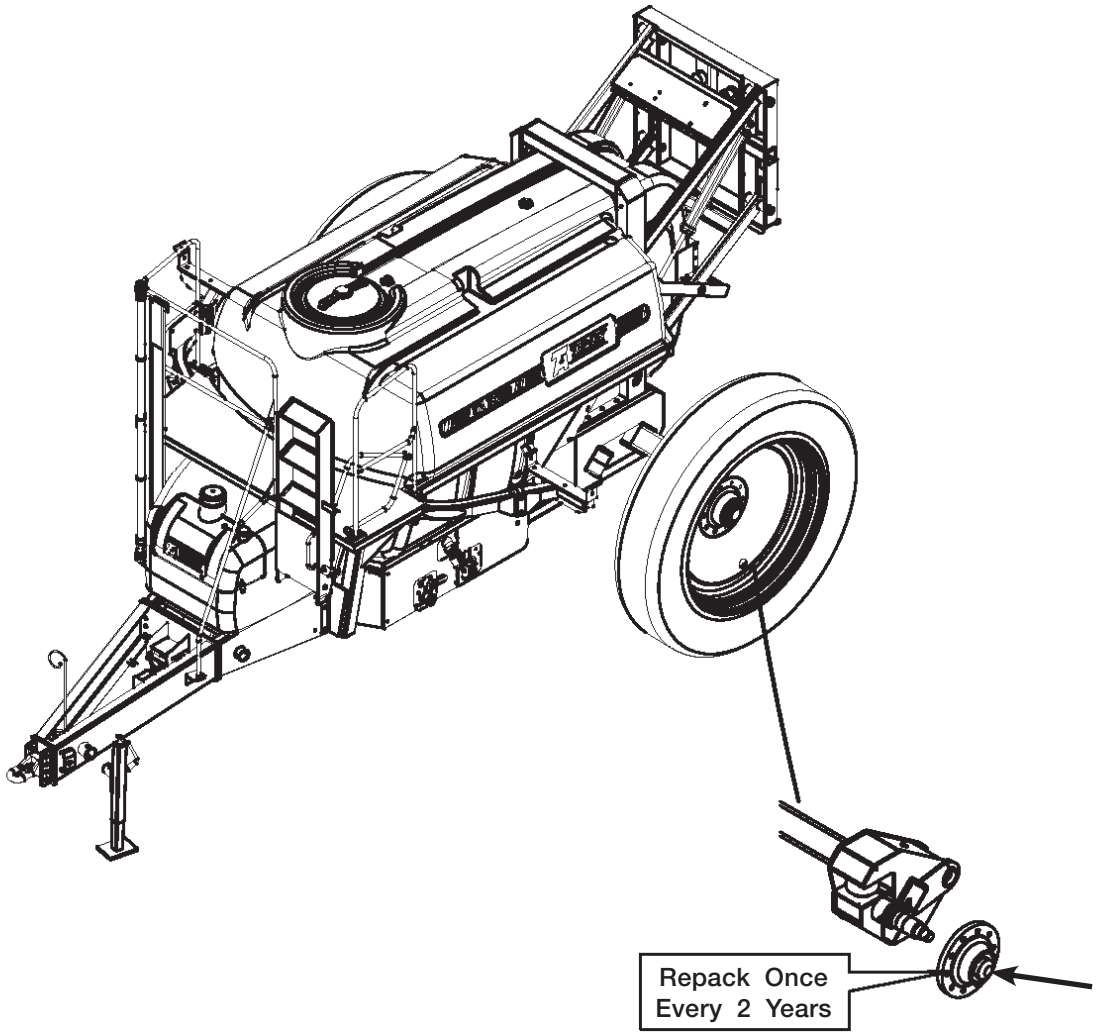
Lubricate the sprayer daily in areas shown below:



(Continued on next page)

Lubrication (continued)

Lubricate the hubs in area shown below:



Spray Pump

ACE HYD 750 Inflation

IMPORTANT

- *Inflation valve must be assembled in the "IN" port of the regulating valve.*

1. Turn regulating valve adjusting knob counter-clockwise until it is at the minimum pressure setting. (FIG. 4-1)

2. Attach air chuck to air valve.

3. Turn adjusting knob on regulating valve clockwise until gauge reads 30 psi. (FIG. 4-1)

4. Remove the air pressure before disconnecting the hose. To add barrier fluid to the fluid chamber, disconnect the hose from the fitting on top of the hydraulically driven centrifugal pump. Remove the fitting on top of the pump. (FIG. 4-2)

5. Fill the fluid chamber by either attaching a 1/8" hose to the barrier fluid and using the hose to fill the fluid chamber where fitting was removed. (FIG. 4-3)

6. Add fluid until level is half-way up the sight gauge on the side of the pump.

NOTE: Any 1/8" hose will attach to the nipple of the barrier fluid bottle (9005518) to ease filling of the sight gauge. (FIG. 4-3)

At the end of each season, it is recommended to change/check the barrier fluid and seal. Follow the guidlines below.

- The pump requires pressure and/or fluid more frequently. Change barrier fluid and seal.

- The barrier fluid becomes cloudy, discolored, or water mixes with barrier fluid. Change barrier fluid and seal.

- The barrier fluid is clear. No service needed. Refill and store for the winter.

Refer to ACE pump manual and operating instructions.

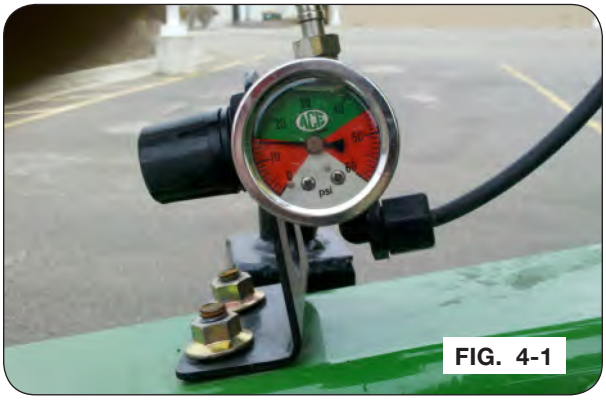


FIG. 4-1

FIG. 4-2

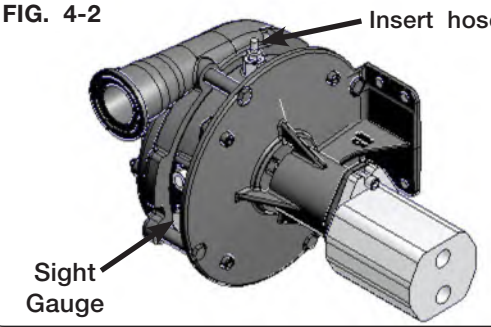


FIG. 4-3

Sprayer Calibration

Verify Nozzle Flow

The following procedure should be repeated periodically to verify the flow rate of the spray nozzles.

IMPORTANT

- *Use water when verifying nozzle flow rate.*

1. Turn on sprayer and set flow such that tip pressure is within the nozzles' pressure range. Choose a pressure setting that coincides with a listing for nozzle being used, in order to have a comparison to the advertised flow value.

2. Using a calibrated container (TA890020), collect flow from new tip for exactly 1 minute. Compare with advertised value at the pressure setting chosen. (Divide by 128 to obtain GPM, if ounces are being measured.)

3. Measure flow from several other nozzles for the same 1-minute interval.

4. Compare flow rate of other tips with flow rate from the new tip. If flow rate from any tip varies by more than 10% from the new tip, replacement is necessary. If more than one tip has an incorrect flow rate, replace all tips.

Equalizer® Track System

Refer to the Equalizer® Track System manual 411200 for information regarding the horizontal track.

Wing Adjustments - 60’ / 80’ / 90’ / 100’ Booms

Outer Wing Adjustments

The outer wing contacts a rubber bumper when fully extended. Periodically inspect bumper for deterioration and replace if necessary.

To adjust levelness of outer wing, add or remove washers behind rubber bumper.

An additional area of level adjustment can be obtained by loosening the bolts securing the ramp casting on the breakaway mechanism, and sliding the casting along its mounting slots. (FIG. 4-4)

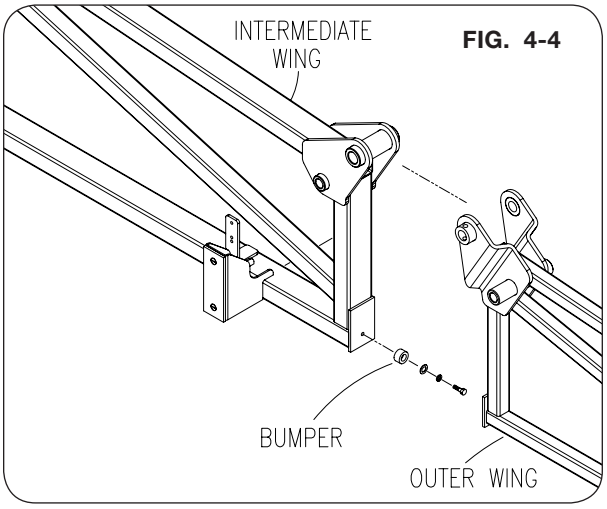


FIG. 4-4

Wing Tilt Indicator Adjustment

The wing tilt indicators (mounted on the inner wings) are adjustable to accurately indicate level orientation.

1. Park sprayer on level surface.
2. Fully extend boom, leveling the wings visually.
3. Using a level on the lower tubes of the three inner wing sections, fine-tune the tilt cylinder lengths until the boom sections are as level as possible.
4. Loosen the tilt indicator bracket on either inner wing and slide until the indicator pointer lines up with the primary mark on the indicator. (FIG. 4-5)
5. Tighten tilt indicator brackets.

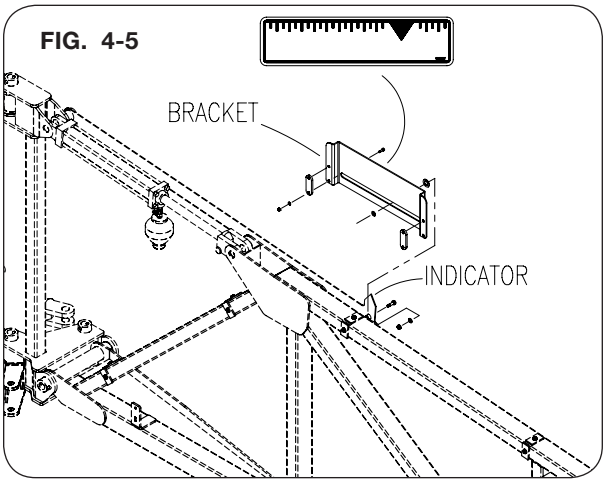


FIG. 4-5

Wing Adjustments - 60’ / 80’ / 90’ / 100’ Booms (continued)

Wing Tip Breakaway Mechanism

The force required to operate the wing tip breakaway section is adjustable. The nominal setting is obtained when the spring length is adjusted to X, as shown in (FIG. 4-6)

X = 7 1/8” for 60’/80’ Boom
X = 6 1/2” for 90’/100’ Boom

Use the 3/4” jam nuts at the bottom of the pivot shaft to adjust the spring installed height.

If an excessive amount of force is required to break the wings away, lengthen spring until a reasonable amount of force required to break wing away is achieved. The breakaway force should always be less than the amount of force required to damage the wing.

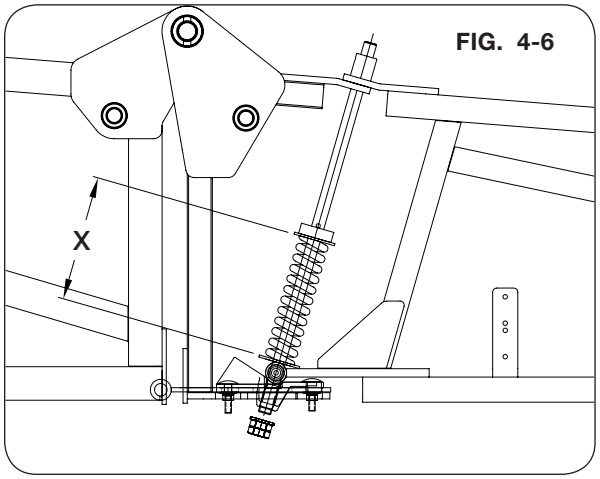


FIG. 4-6

To service the rollers on the breakaway mechanism, use the following procedure:

1. Fully loosen 3/4” jam nuts at bottom of the pivot shaft to remove spring pressure.
2. Loosen setscrews that lock roller wheel bolts in place.
3. Remove roller wheel bolts to disassemble rollers. Replace components as needed.
4. During reassembly, tighten the wheel bolts until all measurable clearance is removed. The wheel should spin freely. Always apply anti-seize to roller bushings and roller ID to ensure rollers do not seize up.
5. Tighten setscrews to lock wheel bolts in place.

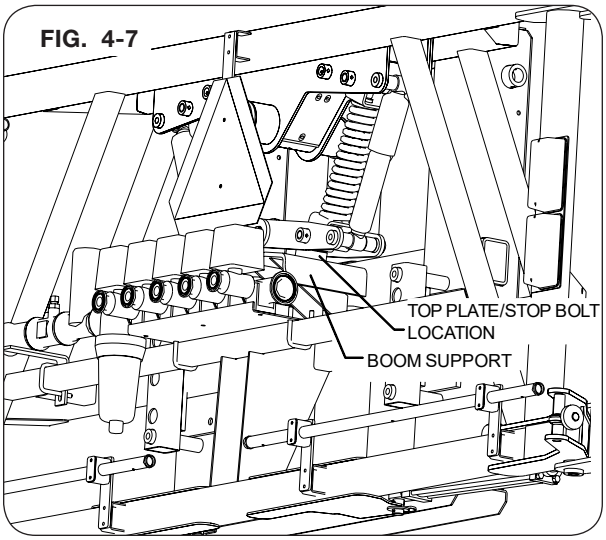
Wing Adjustments - 60’ / 80’ / 90’ / 100’ Booms (continued)

Boom Twin Link Suspension Adjustment

The side-to-side sway feature, (Twin Link suspension) of the boom must be adjusted correctly to maximize boom stability during operation.

1. Park sprayer on level surface.
2. Fully extend and lower boom. Use tilt controls to adjust both wings as straight as possible with each other and the center section.
3. Place a level on lower horizontal tube of boom center section. Raise and support either end of boom as necessary to achieve level condition.
4. Adjust both stop bolts until a clearance exists between bolt heads and boom support. Readjust stop bolts until bolt head begins to touch boom support. (FIG. 4-7)
5. Loosen stop bolt lock nuts. Loosen each stop bolt 5 full turns for 80’/90’/100’ booms and 2 full turns for 60’ booms.
6. Tighten locknuts.

FIG. 4-7



IMPORTANT

- *The optimum adjustment is achieved when both stop bolts are fully contacting boom support when level but clearance is obtained with a* **minimum** *amount of lift distance at tip of boom.*

Wing Adjustments - 80' / 90' / 100' Booms

Several areas of adjustment have been designed into the booms to maintain proper wing folding operation throughout the life of the booms.

Inner Wing Adjustments

Due to the interrelated nature of the adjustments of the inner wings, these steps should be verified or adjusted in the sequence presented.

Inner Wing Alignment

1. Hitch sprayer to tractor and fully extend boom.

2. Verify that steel bumper on inner wing is in firm contact with intermediate wing. If wing motion is insufficient to allow steel bumper to contact intermediate wing, perform the following preliminary gull wing link adjustment: (FIG. 4-8)
   a. Remove the two 3/8" x 1" bolts on the gull wing link at its flange joint.
   b. Loosen tie rod jam nut on gull wing link.
   c. Rotate gull wing link tube until bumper on inner wing contacts intermediate wing. Continue to rotate tube as necessary to align holes at flange joint.
   d. Install bolts and tighten jam nut.

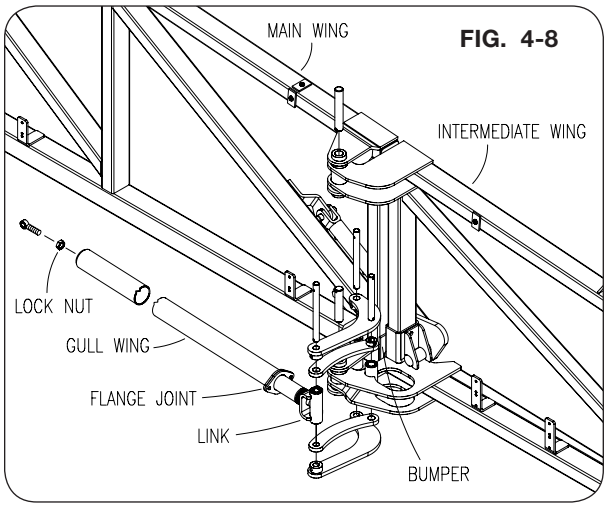


FIG. 4-8

5. Vary amount of washers under bumper until desired degree of straightness between wing sections is achieved.

Wing Latch Pin

1. Hitch sprayer to tractor and fully extend boom.

2. Verify that the steel bumper on the inner wing is in firm contact with intermediate wing. If necessary for bumper to contact intermediate wing, perform preliminary Gull Wing Link adjustment. (FIG. 4-9)

3. The latch pin is correctly adjusted when latch fully engages pin, but does not allow pin to bottom-out in latch slot. Remove or add shims behind pin weldment as necessary to achieve correct adjustment. (FIG. 4-9)

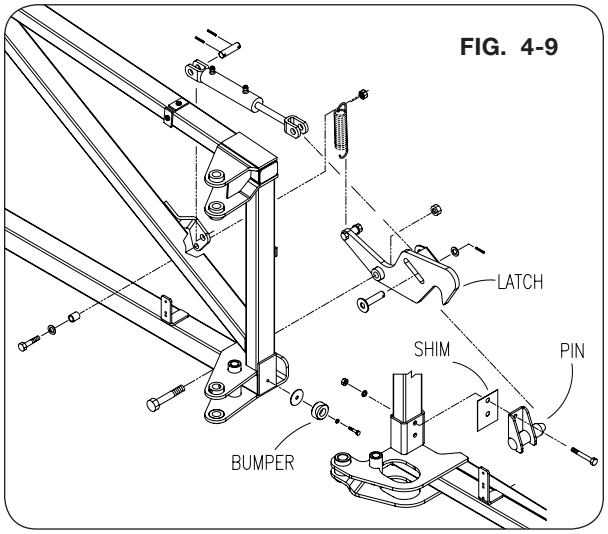


FIG. 4-9

Wing Adjustments - 80’ / 90’ / 100’ Booms (continued)

Main Wing Fold Cylinder (60’ Boom Included)

Use the following procedure on these booms:

1. Beginning with wings fully extended and relatively level, adjust jam nuts near head of cylinder until each inner wing section is aligned with the center wing section.

2. Perform steps 1-5 from previous procedure.

3. Inspect position of wings, relative to wing rests. If wings do not line up reasonably well with wing rests, adjust main wing fold cylinder stop bolts as needed until wings align correctly with wing rests. (FIG. 4-10)

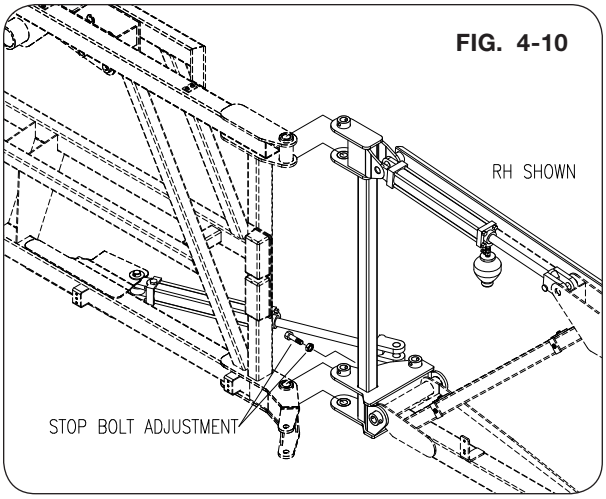


FIG. 4-10

Gull Wing Link

Lastly, the adjustment of the gull wing link should be verified. The correct adjustment of this link allows the wing latch to engage the latch pin when the wing is fully extended, while permitting the intermediate wing to fully fold against the inner wing when fully retracted.

1. Fully extend main wings. If either wing latch does not engage its latch pin, lengthen the gull wing link on that wing 1/2 turn, using the preliminary Gull Wing Link adjustment procedure previously described.

2. Fully raise main lift and retract tilt cylinders to fully tilt wings upward.

3. Fully retract, then extend main wings.

4. If either wing latch still does not engage its latch pin, lengthen the gull wing link on that wing an additional 1/2 turn and repeat steps 2 and 3 until both latches engage their latch pins when wings are extended.

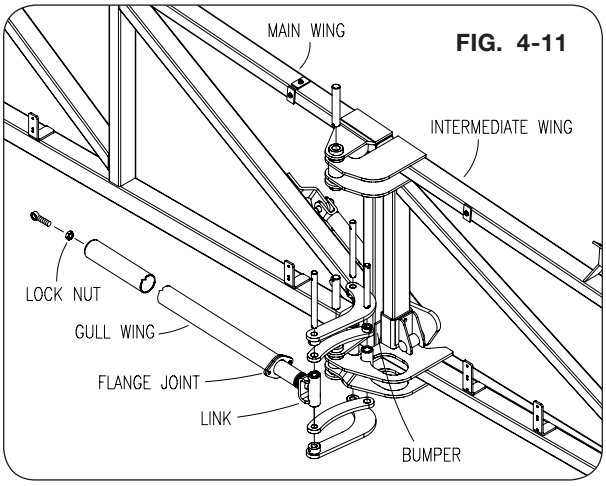


FIG. 4-11

5. Fully retract main wings, then lower onto wing rests. If either intermediate wing does not fold completely, extend main wings and shorten the gull wing link on that side a half turn at a time until wing latches will no longer engage when the wings are extended. When this is achieved, lengthen gull wing link 1/2 turn to complete adjustment.

IMPORTANT

- *If the above procedure cannot achieve a satisfactory wing adjustment, check for lost motion from worn or damaged linkage pins and/or bushings. Also check for deteriorated yaw control bushings. Repair as necessary and repeat adjustment procedure.*

Wing Adjustments - 120’ / 132’ Booms

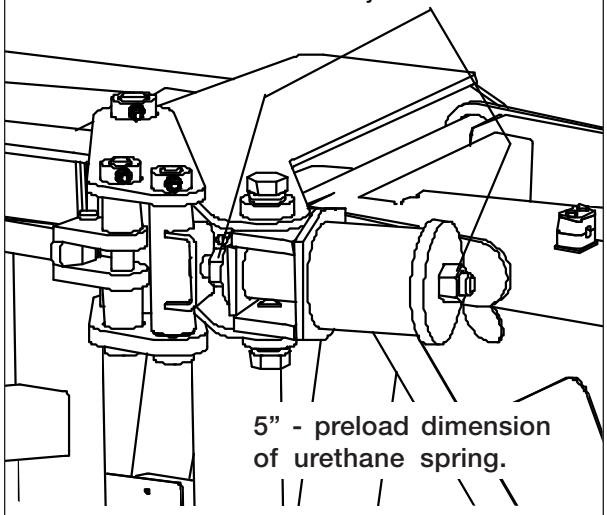
Several areas of adjustment have been designed into the booms to maintain proper wing folding operation throughout the life of the booms.

Inner Wing Adjustments

Use the following procedure to align main wings with center section:

1. Hitch sprayer to tractor and fully extend boom.
2. Front-to-rear angle of each main wing section is adjusted by loosening one of two nuts indicated in (FIG. 4-12), followed by fully tightening opposite nut.

FIG. 4-12



When adjusting wings, nuts should be tightened until spring length is 5” to have proper amount of pre-load on spring.

Intermediate Wing Adjustment

For proper boom performance, the intermediate wing latch must fit tightly to the latch pin.

1. Hitch sprayer to tractor and fully extend boom.
2. Loosen four bolts on side of latch plate. (FIG. 4-13)
3. Using stop bolt, adjust latch plate until all clearance to latch pin is removed. (FIG. 4-13)
4. Tighten bolts loosened in Step 2. Tighten bolt and jam nut.
5. Fully fold and unfold main wings. Readjust latch plate if necessary for correct operation.

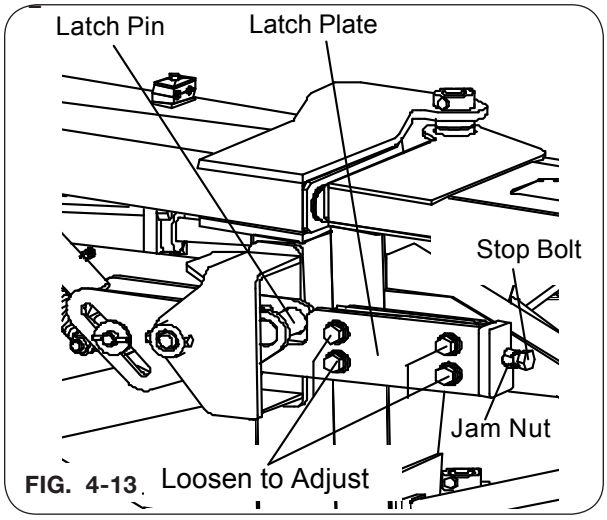


FIG. 4-13

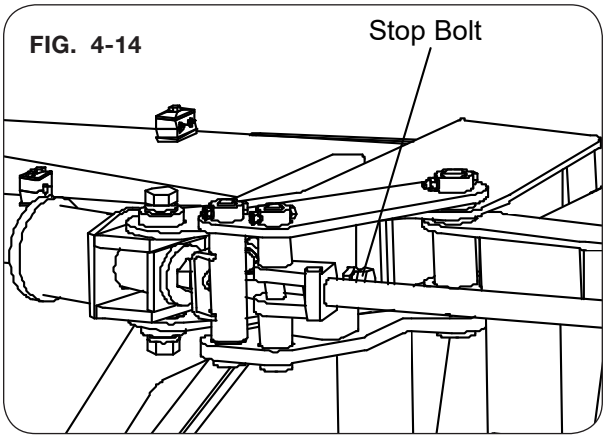
Wing Adjustments - 120' / 132' Booms (continued)

Main Wing Fold Cylinder

Use the following procedure to adjust the alignment of the boom with the wing rests:

1. Begin with the wings in the unfolded position.
2. Retract outer wings and extend tilt cylinders to fully tilt wings upward.
3. Fully raise the main lift.
4. Fully retract main wings.
5. Carefully lower main wings by retracting tilt cylinders. (It may take several seconds before wings begin lowering.) Stop lowering wings just before they enter wing rests.
6. Inspect position of wings, relative to wing rests. If wings do not line up reasonably well with wing rests, adjust main wing fold cylinder stop bolts as needed until wings align correctly with wing rests. (FIG. 4-14)

FIG. 4-14



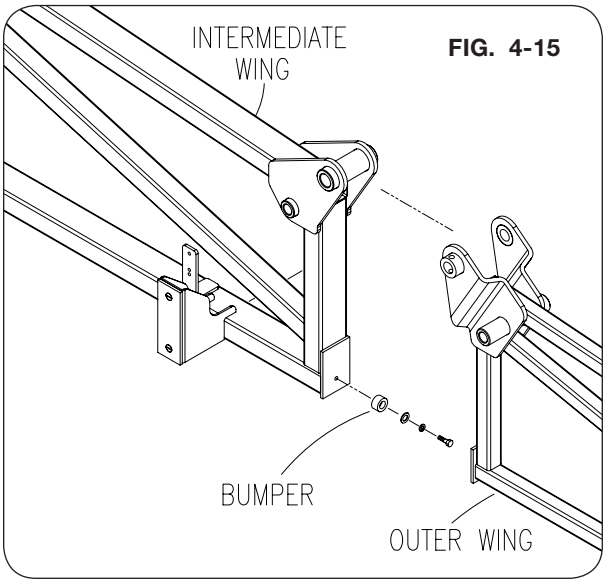
Outer Wing Adjustments

The outer wing contacts a rubber bumper when fully extended. Periodically inspect bumper for deterioration and replace if necessary. (FIG. 4-15)

To adjust levelness of outer wing, add or remove washers behind rubber bumper.

An additional area of level adjustment can be obtained by loosening the bolts securing the ramp casting on the breakaway mechanism, and sliding the casting along its mounting slots.

FIG. 4-15



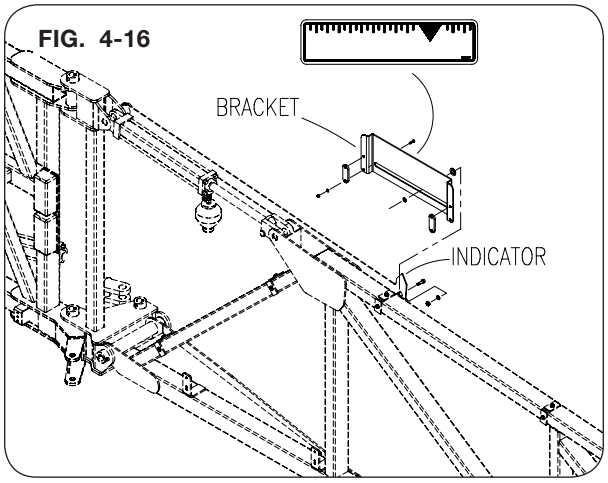
Wing Adjustments - 120' / 132' Booms (continued)

Wing Tilt Indicator Adjustment

The wing tilt indicators (mounted on the inner wings) are adjustable to accurately indicate level orientation.

1. Park sprayer on level surface.
2. Fully extend boom, leveling the wings visually.
3. Using a level on the lower tubes of the three inner wing sections, fine-tune the tilt cylinder lengths until the boom sections are as level as possible.
4. Loosen the tilt indicator bracket on either inner wing and slide until the indicator pointer lines up with the primary mark on the indicator. (FIG. 4-16)
5. Tighten tilt indicator brackets.

FIG. 4-16



Wing Tip Breakaway Mechanism

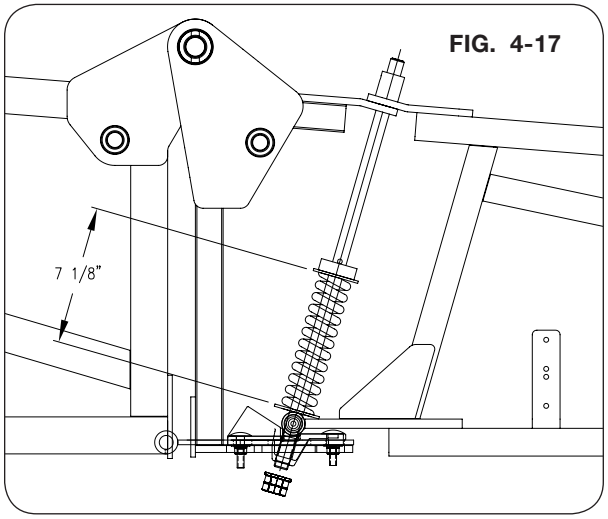
The force required to operate the wing tip breakaway section is adjustable. The nominal setting is obtained when the spring length is adjusted to 7-1/8", as shown in (FIG. 4-17). Use the 3/4" jam nuts at the bottom of the pivot shaft to adjust the spring installed height.

If an excessive amount of force is required to break the wings away, lengthen spring until a reasonable amount of force required to break wing away is achieved. The breakaway force should always be less than the amount of force required to damage the wing.

To service the rollers on the breakaway mechanism, use the following procedure:

1. Fully loosen 3/4" jam nuts at bottom of the pivot shaft to remove spring pressure.
2. Loosen setscrews that lock roller wheel bolts in place.
3. Remove roller wheel bolts to disassemble rollers. Replace components as needed.
4. During reassembly, tighten the wheel bolts until all measurable clearance is removed. The wheel should spin freely. Always apply anti-seize to roller bushings and roller ID to ensure rollers do not seize up.
5. Tighten setscrews to lock wheel bolts in place.

FIG. 4-17



Wing Adjustments - 120’ / 132’ Booms (continued)

Boom Twin Link Suspension Adjustment

1. Park sprayer on level surface.
2. Fully extend and lower boom. Use tilt controls to adjust both wings as straight as possible with each other and the center section.
3. Loosen jam nut under adjustment shaft bushing. Remove spring yoke set screw. (FIG. 4-18)
4. Place a level on lower horizontal tube of boom center section. Turn adjustment shaft to level boom.
5. Reinsert spring yoke set screw and tighten. Fully tighten adjustment shaft jam nut beneath adjustment shaft bushing.

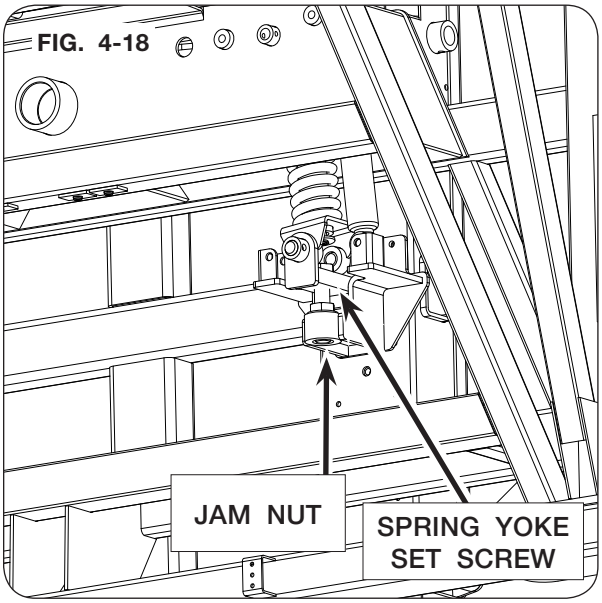


FIG. 4-18

Filters

Self-Cleaning (Primary) Filter

This sprayer uses two filters to help ensure proper spraying operation. These filters will need to be cleaned periodically during use and prior to sprayer storage.

⚠ WARNING

- **ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT WHEN WORKING WITH OR NEAR CHEMICALS. THIS EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO: PROTECTIVE EYE WEAR, GLOVES, SHOES, SOCKS, LONG-SLEEVED SHIRT, AND LONG PANTS. ADDITIONAL PROTECTION MAY BE REQUIRED FOR MANY TYPES OF CHEMICALS.**

- **RESIDUAL PRESSURE MAY EXIST IN SPRAYER PLUMBING EVEN WHEN UNIT IS NOT IN USE. RELIEVE PRESSURE BEFORE SERVICING ANY PLUMBING.**

The strainer in this filter is continually flushed during use, forcing larger contaminates that cannot pass through the filter screen to be sent back to the solution tank. Since most of these larger contaminates are simply undissolved chemicals, the agitation action in the tank will break down most of this material and allow it to become dissolved. However, some foreign material will not break down, such as rocks, paper labels, etc., and eventually the filter will need to be removed for cleaning.

To clean the filter located at the rear of the command center on the left side of the sprayer, refer to (FIG. 4-19):

1. Rotate the pump outlet valve to <OFF>.
2. Remove the clamp at the bottom of the filter to disconnect the flush hose.
3. Unscrew the filter housing by turning counter-clockwise and remove the filter screen.
4. Clean filter by flushing strainer element with water.
5. Reassemble filter and check for leaks.

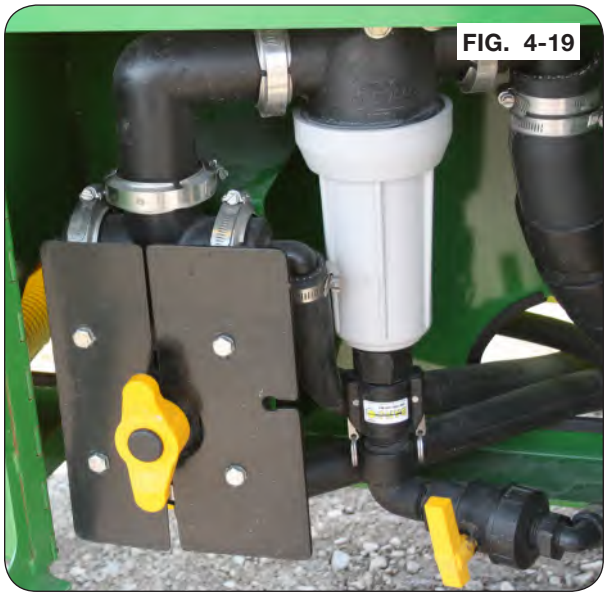


FIG. 4-19

Filters (continued)

Secondary Filter

This sprayer uses two filters to help ensure proper spraying operation. These filters will need to be cleaned periodically during use and prior to sprayer storage.

⚠ WARNING

- **ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT WHEN WORKING WITH OR NEAR CHEMICALS. THIS EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO: PROTECTIVE EYE WEAR, GLOVES, SHOES, SOCKS, LONG-SLEEVED SHIRT, AND LONG PANTS. ADDITIONAL PROTECTION MAY BE REQUIRED FOR MANY TYPES OF CHEMICALS.**
- **RESIDUAL PRESSURE MAY EXIST IN SPRAYER PLUMBING EVEN WHEN UNIT IS NOT IN USE. RELIEVE PRESSURE BEFORE SERVICING ANY PLUMBING.**

A secondary filter is located on the boom center section, just prior to the boom electric valves, (FIG. 4-20). This filter, similar in construction to the primary filter, is used to eliminate the need for strainers at the spray tips. To clean this filter, unscrew the filter housing and remove the screen. Flush the strainer element with water. After cleaning, reassemble filter and check for leaks.

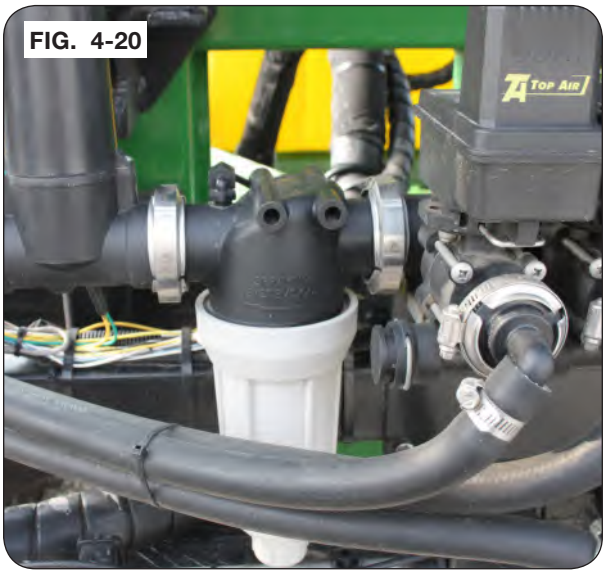


FIG. 4-20

Foam Marker

Filter Maintenance

Air Filters

Clean the primary filter pad, (located behind the louvered openings on the power unit box) after every 100 hours of use. To clean filter, remove from power unit box and wash in warm soapy water or blow dust-free with compressed air.

An additional cylindrical filter is located on the air compressor inlet. Clean filter by removing and blowing compressed air from inside filter. Replace with a new filter if it cannot be cleaned adequately with compressed air.

Water Filter

An in-line water strainer is located under the sprayer frame, in the water line between the rinse tank and power unit box. To clean strainer, unscrew filter halves and flush strainer element with water.

Foam Concentrate Tank Filter

A screen is installed at the outlet of the tank. To clean screen, drain tank, then remove fitting and screen assembly for cleaning.

Foam Head Screens

The foam head screens, located on the outer wings, can be cleaned by disassembling and washing with hot water.

Chemical Inductor

Chemical Container and Inductor Tank Rinsing

WARNING

- **ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT WHEN WORKING WITH OR NEAR CHEMICALS. THIS EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO: PROTECTIVE EYE WEAR, GLOVES, SHOES, SOCKS, LONG-SLEEVED SHIRT, AND LONG PANTS. ADDITIONAL PROTECTION MAY BE REQUIRED FOR MANY TYPES OF CHEMICALS.**

Both chemical containers and the inductor tank itself can be rinsed by using clean water from the rinse tank. To do so, ensure that the rinse tank is at least 1/2 full, and use the following procedure and refer to (FIG. 4-21):

1. Perform steps 1 through 4 under “Basic Operation” of inductor.
2. Quickly move PUMP INLET SELECTOR valve from <SOLUTION TANK> to <RINSE TANK>.

IMPORTANT

- *It is recommended to work efficiently while the sprayer pump is drawing from the rinse tank, as the rinse water is returned to the solution tank not the rinse tank, and therefore the rinse tank will eventually become empty.*
- *Do not allow pump to run dry. Pump damage will result.*

3. To rinse a chemical container, place container upside down on rinse nozzle and squeeze handle on rinse wand.
4. To rinse inductor tank, close lid, open INDUCTOR MIX valve and squeeze rinse wand handle for approximately 10 seconds.
5. To rinse out jug rinser close lid, and activate jug rinser for approximately 10 seconds.
6. Close INDUCTOR MIX valve and release rinse wand when rinsing is complete.
7. Repeat steps 4 and 5 for additional rinsing, if desired.

FIG. 4-21

Chemical Inductor (continued)

Chemical Container and Inductor Tank Rinsing (continued)

8. When inductor tank is empty, close INDUCTOR DRAIN valve, and quickly move PUMP INLET SELECTOR valve from <RINSE TANK> to <SOLUTION TANK> to minimize the amount of rinse water used. (FIG. 4-22)

9. Close INDUCTOR FLOW valve then set AGITATION CONTROL and FILTER PURGE CONTROL to proper settings.

10. Raise tank to storage position.

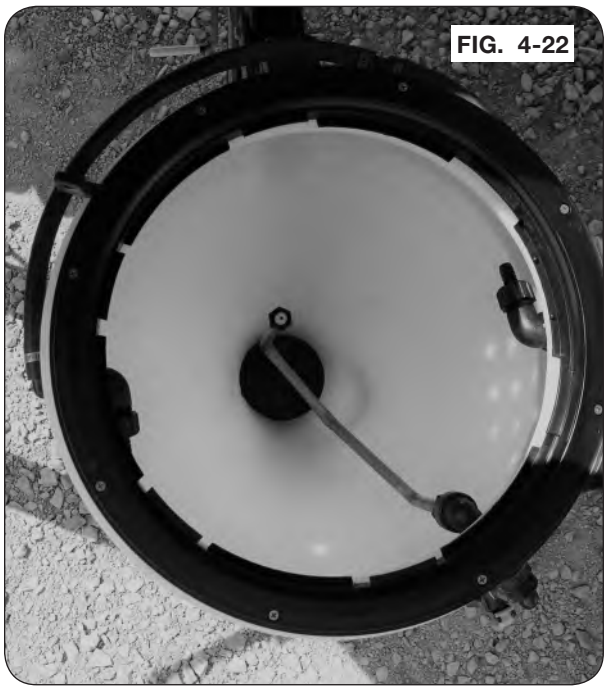


FIG. 4-22

Winterizing

Sprayer Plumbing

⚠ WARNING

- **ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT WHEN WORKING WITH OR NEAR CHEMICALS. THIS EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO: PROTECTIVE EYE WEAR, GLOVES, SHOES, SOCKS, LONG-SLEEVED SHIRT, AND LONG PANTS. ADDITIONAL PROTECTION MAY BE REQUIRED FOR MANY TYPES OF CHEMICALS.**

IMPORTANT

- *Do not allow pump to run dry. Pump damage will result.*

Before storing the sprayer in freezing climates, perform the following winterizing procedure:

NOTE: If unit is equipped with an optional chemical injection system, rinse water supplied from the main sprayer pump is required.

1. Perform a complete system rinse using procedure in the OPERATION SECTION of this manual.
2. Wash the sprayer thoroughly inside and out with a high-pressure washer.
3. Remove as much water from solution and rinse tanks as possible. Close drain valve on solution tank after draining.
4. Pour approximately 50 gallons of R.V. antifreeze into rinse tank.
5. Perform a tank rinse, using procedure in the OPERATION SECTION of this manual.
6. Run the pump with the following valve settings to flush antifreeze solution throughout system. Discharge spray through boom.

   Valve Settings:
   - Pump Inlet = Rinse
   - Agitation Control = Fully Open
   - Filter Purge = Fully Open
   - Pump Outlet = Boom

7. Loosen diaphragm caps on nozzle bodies to relieve pressure and allow excess antifreeze to drain from boom.

Winterizing (continued)

Foam Marker (Optional)

The liquid lines and tank must be drained completely prior to storage. If liquid in the system is allowed to freeze, several components may be damaged. Use the following procedure to winterize the foam marking system:

1. Drain the foam concentrate tank and line by disconnecting at the bulkhead connector on the power unit box. Disconnect the line by pushing the hose fully into the fitting. Then while pushing the inner collar firmly onto the connector, pull the hose from the connector.
2. Flush out concentrate tank with warm water.
3. Reconnect hose by pushing fully into bulkhead connector. Pull carefully on hose near connector to verify that proper connection has been made.
4. Add approximately ½ pint of RV antifreeze solution to concentrate tank.
5. Disconnect liquid line at rinse tank.
6. Attach hose to a suitable temporary container. Fill container with approximately 1 pint of RV antifreeze solution.
7. Run foamer unit until antifreeze solution from temporary container is empty.
8. Reconnect liquid line to rinse tank.

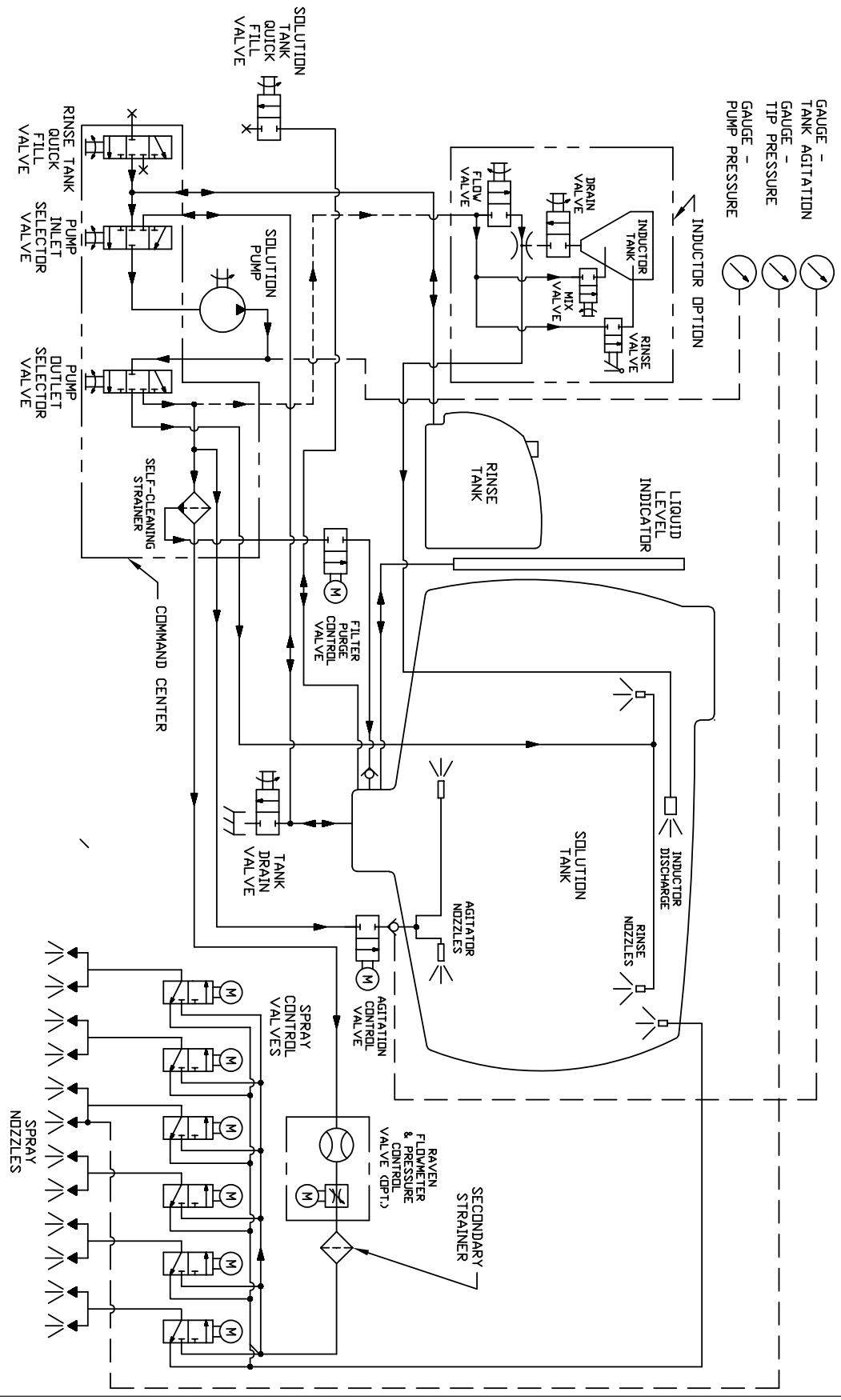
Chemical Inductor (Optional)

1. Refer to the rinsing procedure in this section.

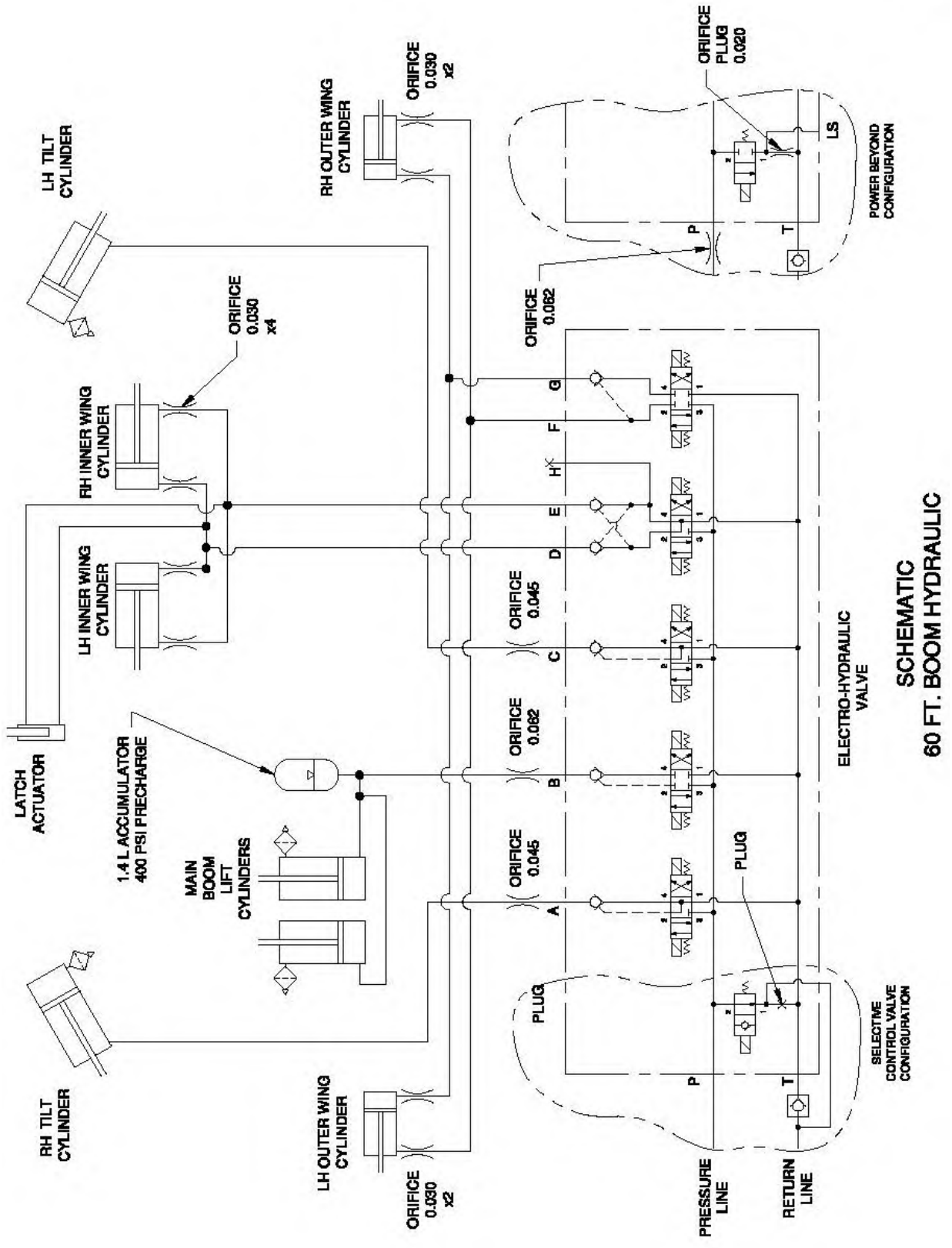
Gauge Panel

1. Uncouple tubes from gauge panel.
2. Allow tubes to fully drain.

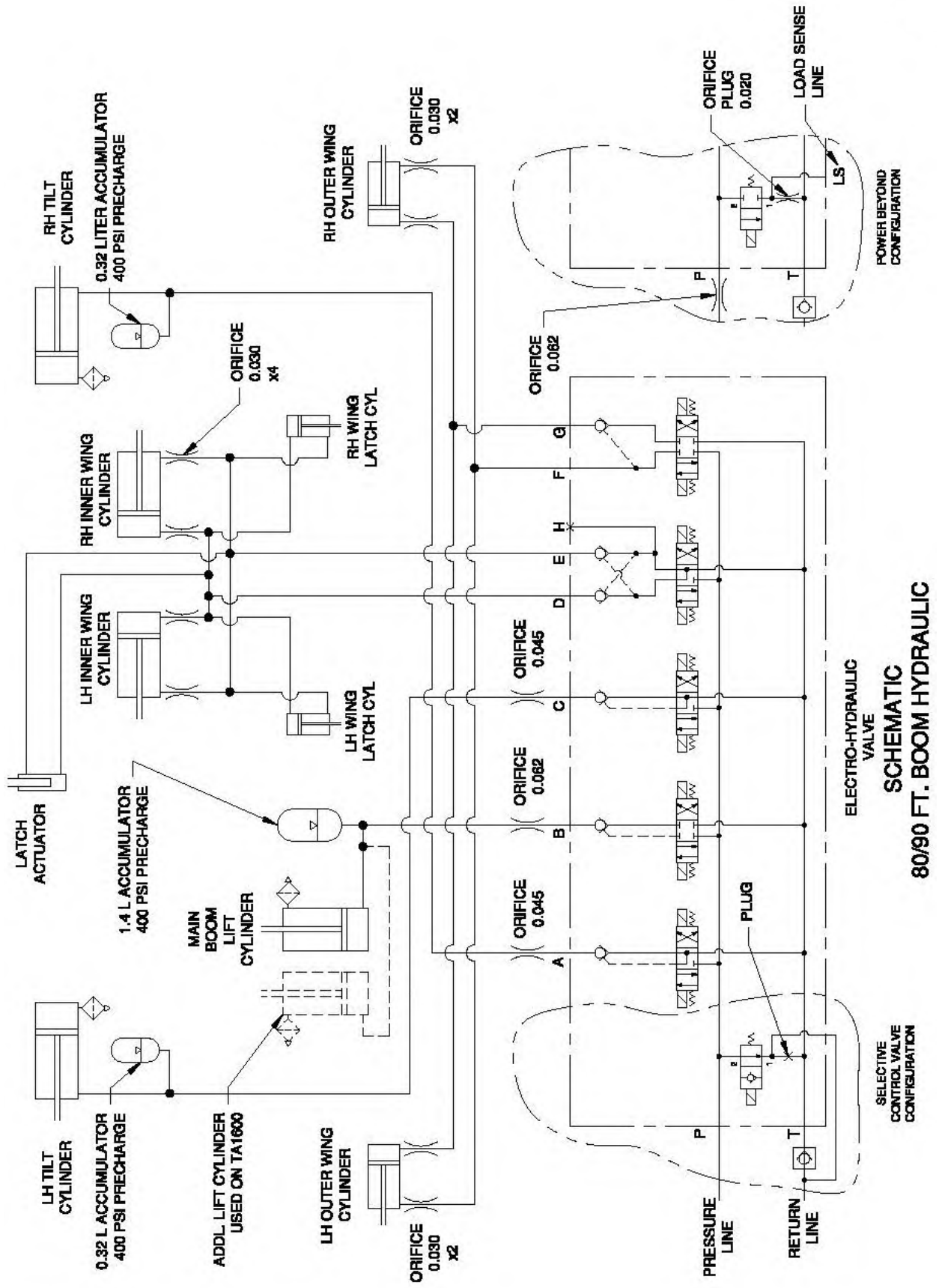
Schematics - Sprayer Chemical



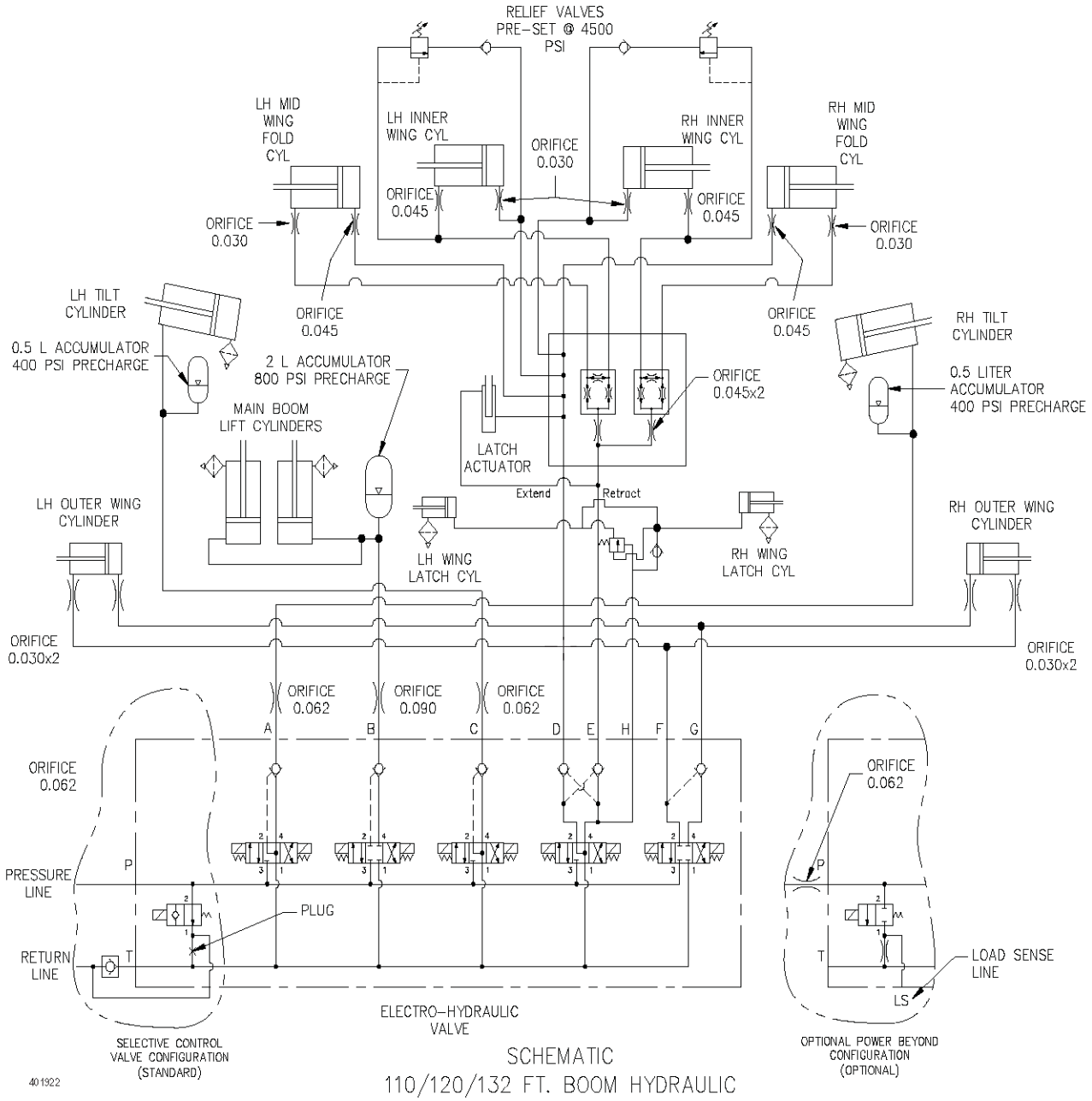
Schematics - Hydraulic



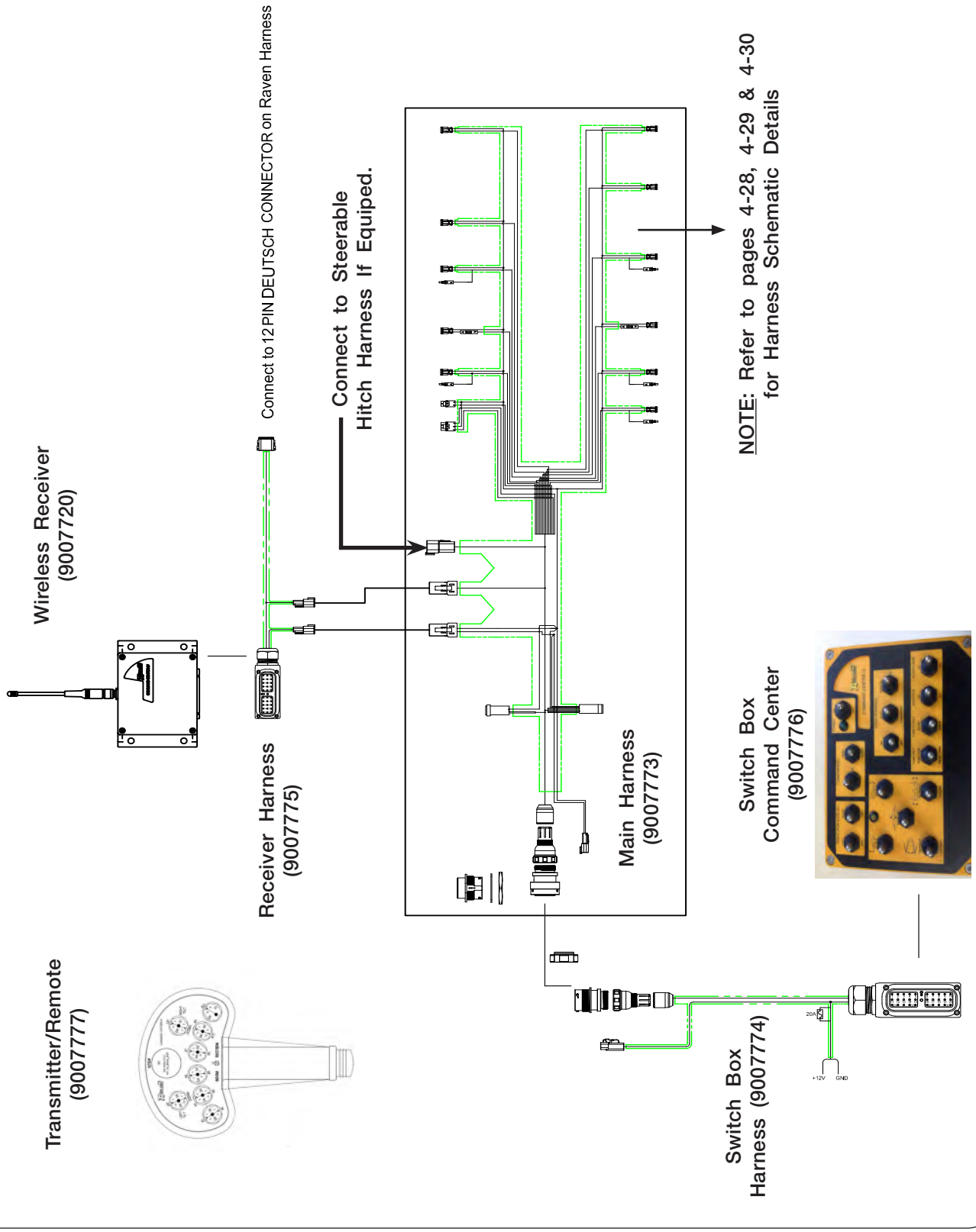
Schematics - Hydraulic



Schematics - Hydraulic

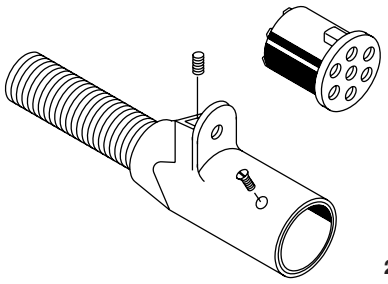


Schematic — Electrical — Wireless Controller System

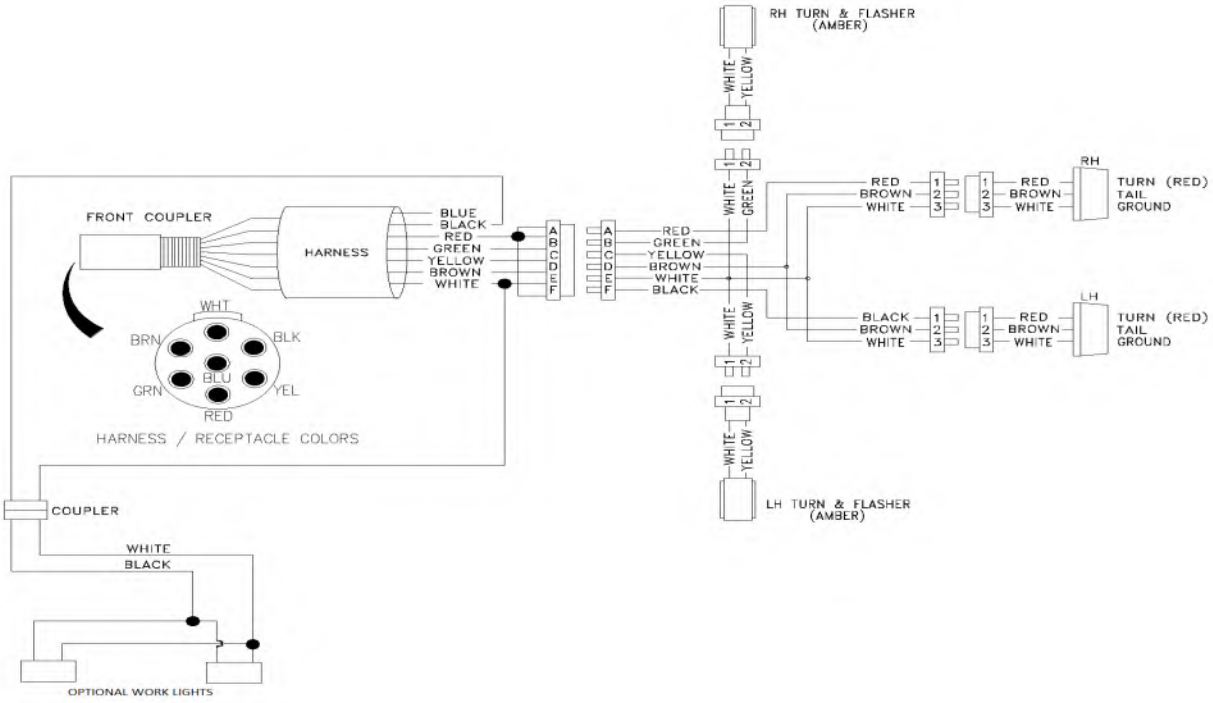


Electrical System Schematic

LIGHTING WIRES
White -- Ground
Green -- Right amber flashing lamp
Yellow -- Left amber flashing lamp
Brown -- Tail light
Black -- Optional Work Lights
Red -- Brake Lights

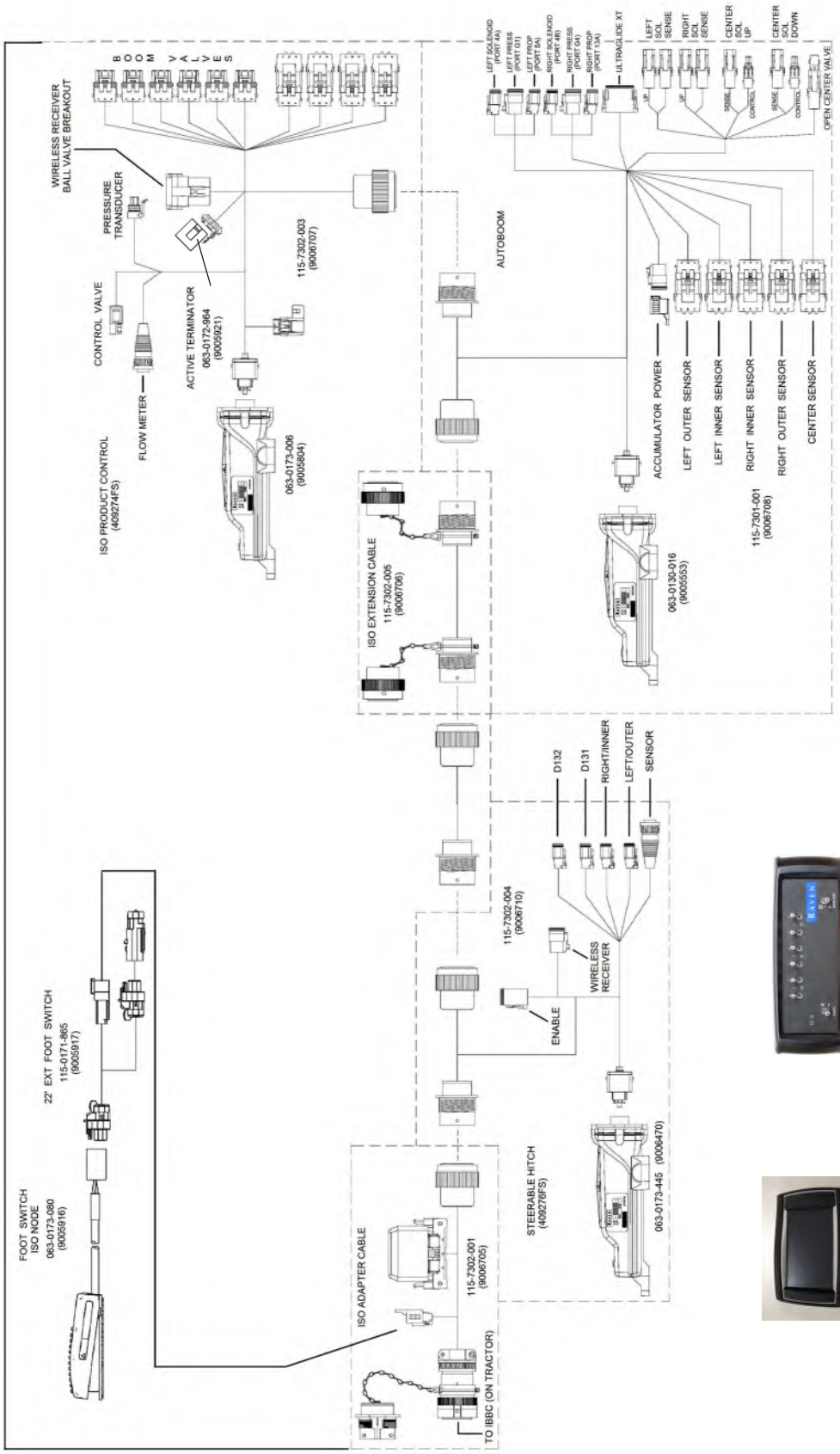


220912



251908

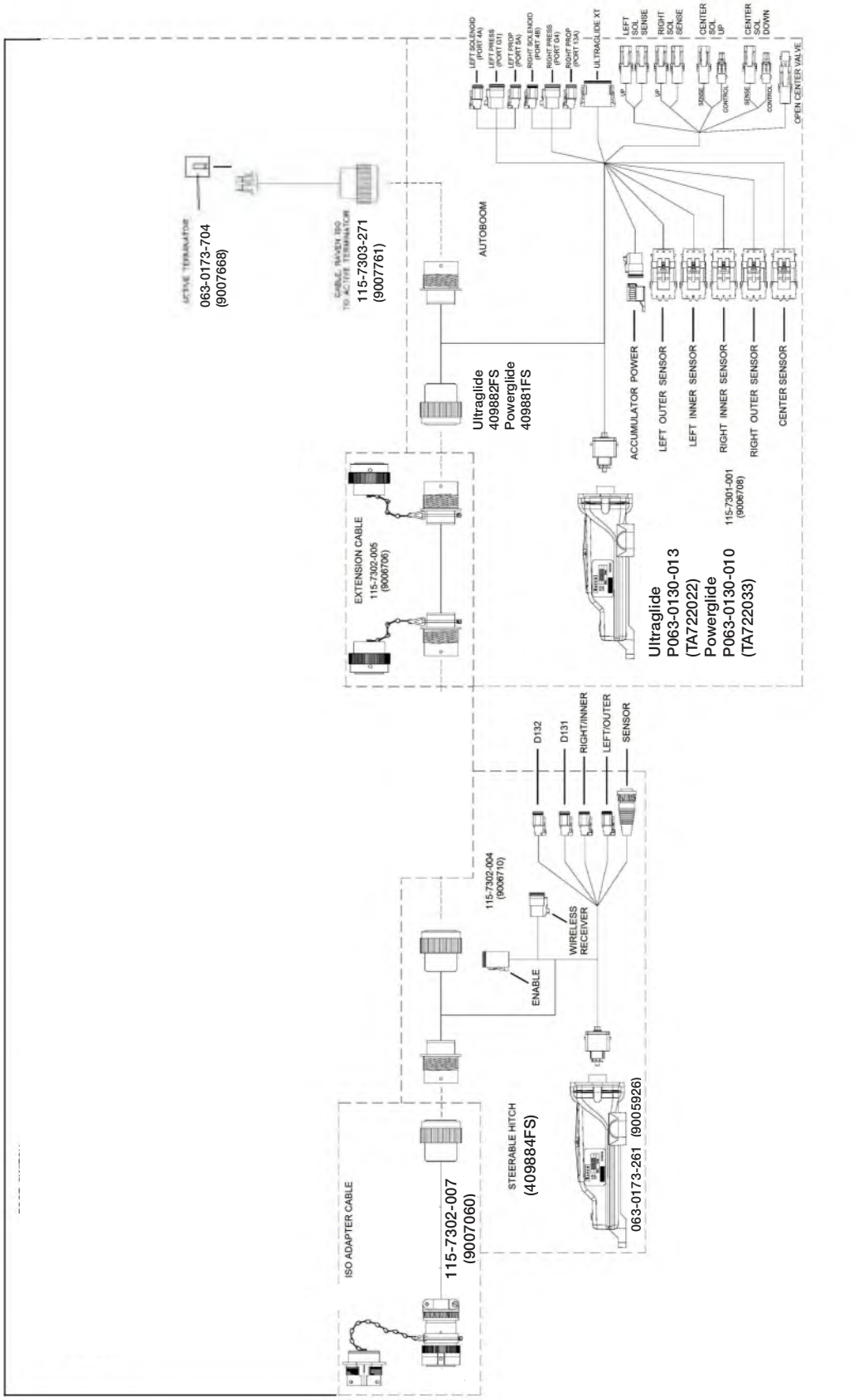
Schematics - Unverferth ISO Product Controller Liquid System w/Autoboom, Steerable Hitch



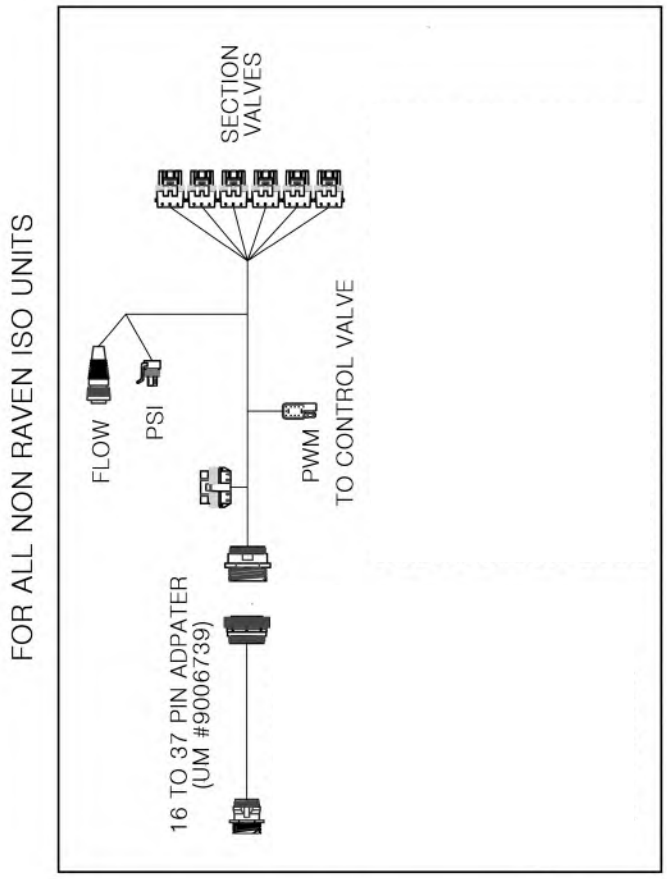
Raven Switch Box
9006716

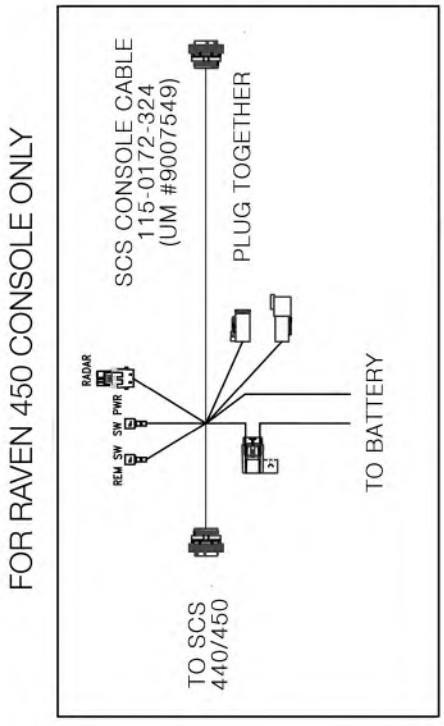
Raven Virtual Terminal
409354

Schematics - Unverferth CAN 4400 w/Autoboom, Steerable Hitch - TA1200/TA1600 Models Only (Optional)

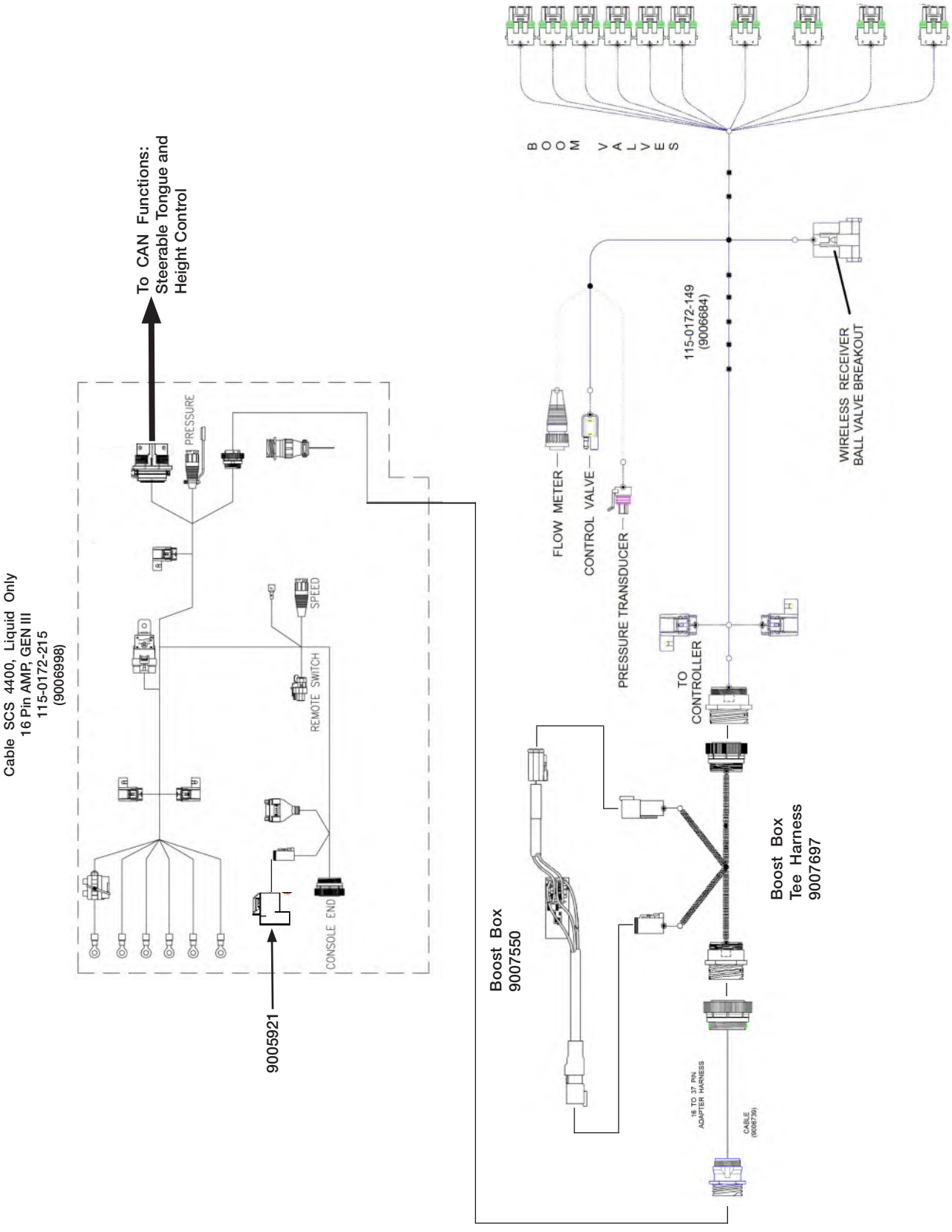


Schematics - Less ISO Raven System Diagram For All Non Raven ISO Units & For Raven 450 Console TA1200 With 60' Boom Only

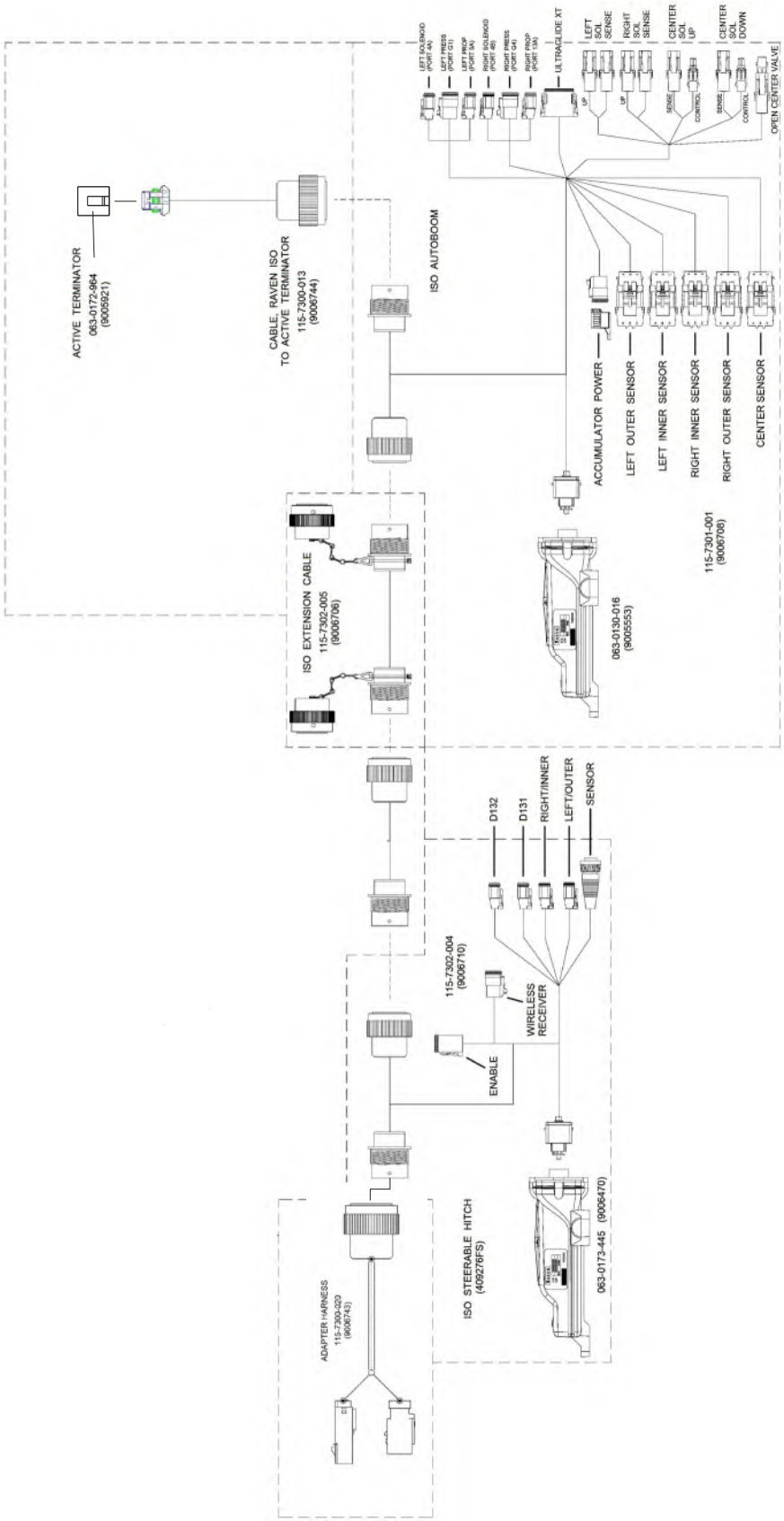




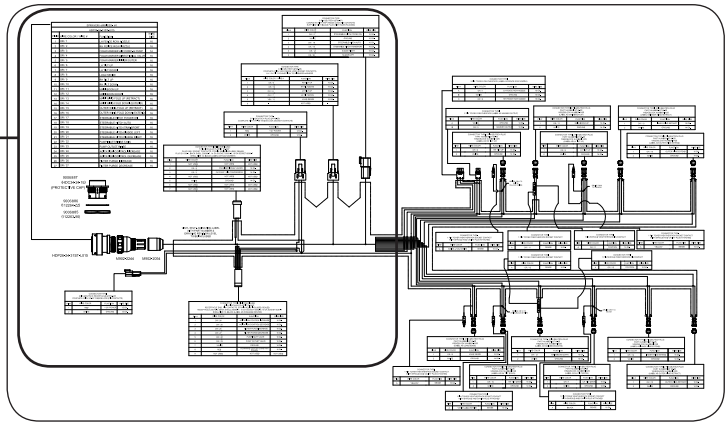
Schematics - Unverferth CAN 4400 Product Controller Liquid System



Schematics - Unverferth ISO Autoboom & Steerable Hitch w/John Deere Product Control



Schematic — Electrical — Main Harness (9007773)



SPRAYER HARNESS - #1			
HDP26-24-31ST-L015			
PIN #	WIRE COLOR / WIRE #	FUNCTION	WIRE SIZE
1	OR / 1	LH FENCE ROW NOZZLE	16
2	OR / 2	RH FENCE ROW NOZZLE	16
3	OR / 3	FOAM MARKER AIR COMP. & PUMP	14
4	OR / 4	FOAM MARKER DIRECTIONAL VALVE	16
5	OR / 5	FOAM MARKER INNER/OUTER	16
6	OR / 6	LH TILT UP	16
7	OR / 7	LH TILT DOWN	16
8	OR / 8	LOAD SENSE	16
9	OR / 9	RH TILT UP	16
10	OR / 10	RH TILT DOWN	16
11	OR / 11	MAIN BOOM UP	16
12	OR / 12	MAIN BOOM DOWN	16
13	OR / 13	MAIN WING FOLD UP (RETRACT)	16
14	OR / 14	MAIN WING FOLD DOWN (EXTEND)	16
15	OR / 15	OUTER WING FOLD UP (RETRACT)	16
16	OR / 16	OUTER WING FOLD DOWN (EXTEND)	16
17	OR / 17	STEERABLE HITCH POWER ON	16
18	OR / 18	STEERABLE HITCH AUTO	16
19	OR / 19	STEERABLE HITCH TRANSPORT	16
20	OR / 20	STEERABLE HITCH NUDGE LEFT	16
21	OR / 21	STEERABLE HITCH NUDGE RIGHT	16
22	OR / 22	PUMP INLET RINSE TANK	16
23	OR / 23	PUMP OUTLET RINSE	16
24	OR / 24	AGITATION CONTROL INCREASE	16
25	OR / 25	AGITATION CONTROL DECREASE	16
26	OR / 26	FILTER PURGE INCREASE	16
27	OR / 27	FILTER PURGE DECREASE	16

9006887
(HDC34-24-1E)
(PROTECTIVE CAP)

9006886
(112264-ZZ)

9006885
(112263-90)

HDP26-24-31ST-L015

M902-2244

M902-2054

VINYL SELF-LAMINATING LABEL
WITH PART NUMBER &
DRAWING REVISION LEVEL
TO BE INCLUDED

CONNECTOR TYPE: 2 PIN DEUTSCH RECEPTACLE (DTP04-2P) COMPLETE WITH WP-2P WEDGE LOCK (PIN CONTACTS)			
PIN#	WIRE COLOR	FUNCTION	WIRE SIZE
1	RED	+12V POWER	12 GA.
2	WHITE	GROUND	12 GA.

CONNECTOR TYPE: (SILICONE FILLED) 9 PIN CIRCULAR PLASTIC TE-AMP RECEPTACLE END, PIN CONTACTS, STRAIN RELIEF INCLUDED, SEALED. RECEPTACLE 206705-2, BACK SHELL 206986-7, 14 GA SOCKET 66602-8, 16 GA SOCKET 66361-7 SHELL SIZE 13, BLACK (LABEL AS COMMAND CENTER)			
PIN #	WIRE COLOR	FUNCTION	WIRE SIZE
1	OR / 24	AGITATION CONTROL INCREASE	16 GA.
2	OR / 25	AGITATION CONTROL DECREASE	16 GA.
3	OR / 26	FILTER PURGE INCREASE	16 GA.
4	OR / 27	FILTER PURGE DECREASE	16 GA.
5	OR / 22	PUMP INLET VALVE	16 GA.
6	OR / 23	PUMP OUTLET VALVE	16 GA.
7	WHITE	GROUND	14 GA.
8	RED	COMMAND CENTER CONSTANT POWER	16 GA.
9	NOT USED	NOT USED	NOT USED

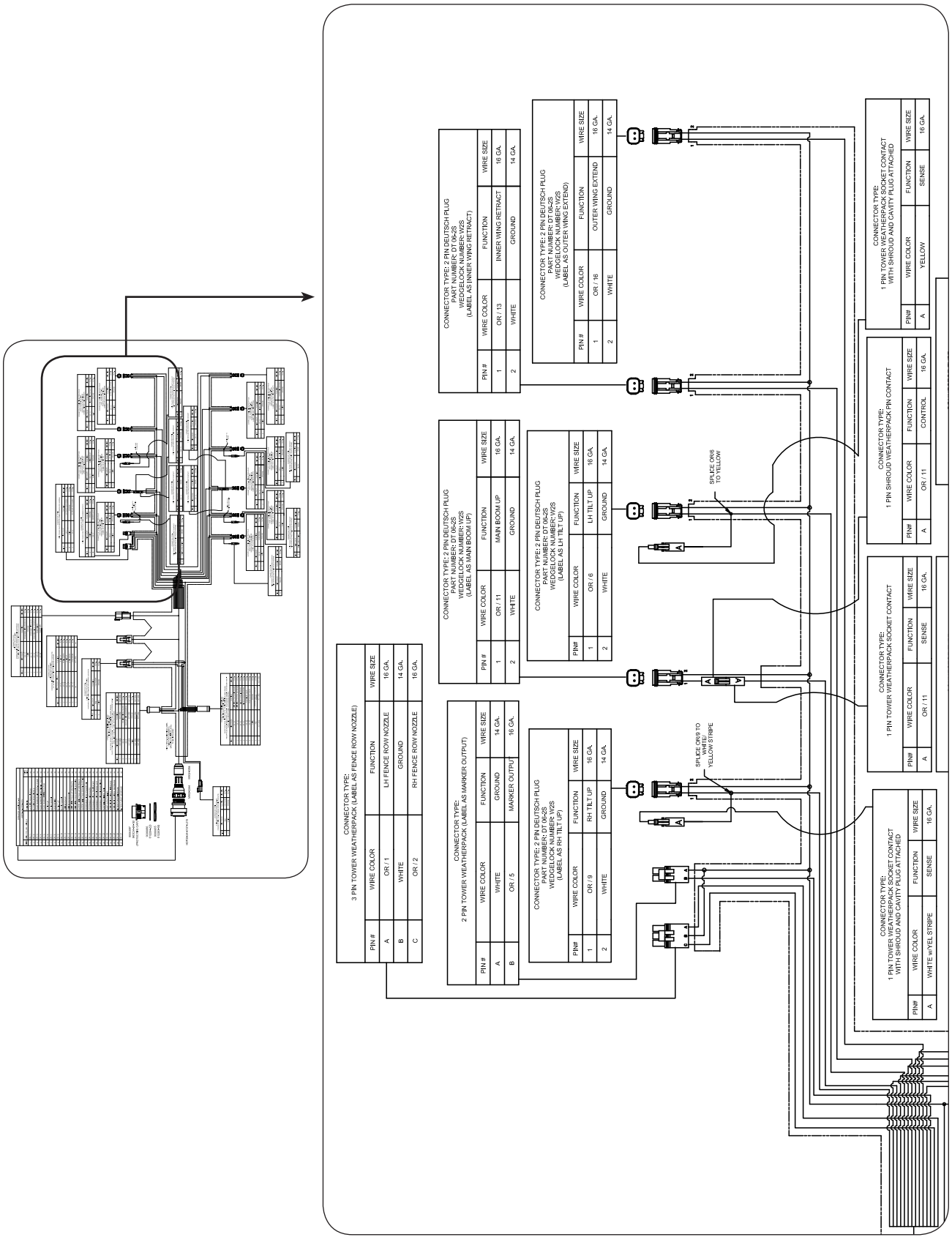
CONNECTOR TYPE: (SILICONE FILLED) 7 PIN CIRCULAR PLASTIC TE-AMP PLUG END, SOCKET CONTACTS, STRAIN RELIEF INCLUDED, SEALED. PLUG 211399-1, BACK SHELL 206986-7, 14 GA SOCKET 66601-9, 16 GA SOCKET 66360-7 SHELL SIZE 13, BLACK (LABEL AS FOAM MARKER)			
PIN #	WIRE COLOR	FUNCTION	WIRE SIZE
1	NOT USED	NOT USED	NOT USED
2	OR / 4	FM DIRECTIONAL VALVES	16 GA.
3	OR / 3	FM PUMP / AIR COMPRESSOR	14 GA.
4	NOT USED	NOT USED	NOT USED
5	WHITE	GROUND	14 GA.
6	NOT USED	NOT USED	NOT USED
7	NOT USED	NOT USED	NOT USED

CONNECTOR TYPE: 2 PIN DEUTSCH PLUG (DTP06-2S) COMPLETE WITH WP-4S WEDGE LOCK (SOCKET CONTACTS)			
PIN #	WIRE COLOR	FUNCTION	WIRE SIZE
1	RED	+12V POWER	12 GA.
2	WHITE	GROUND	12 GA.

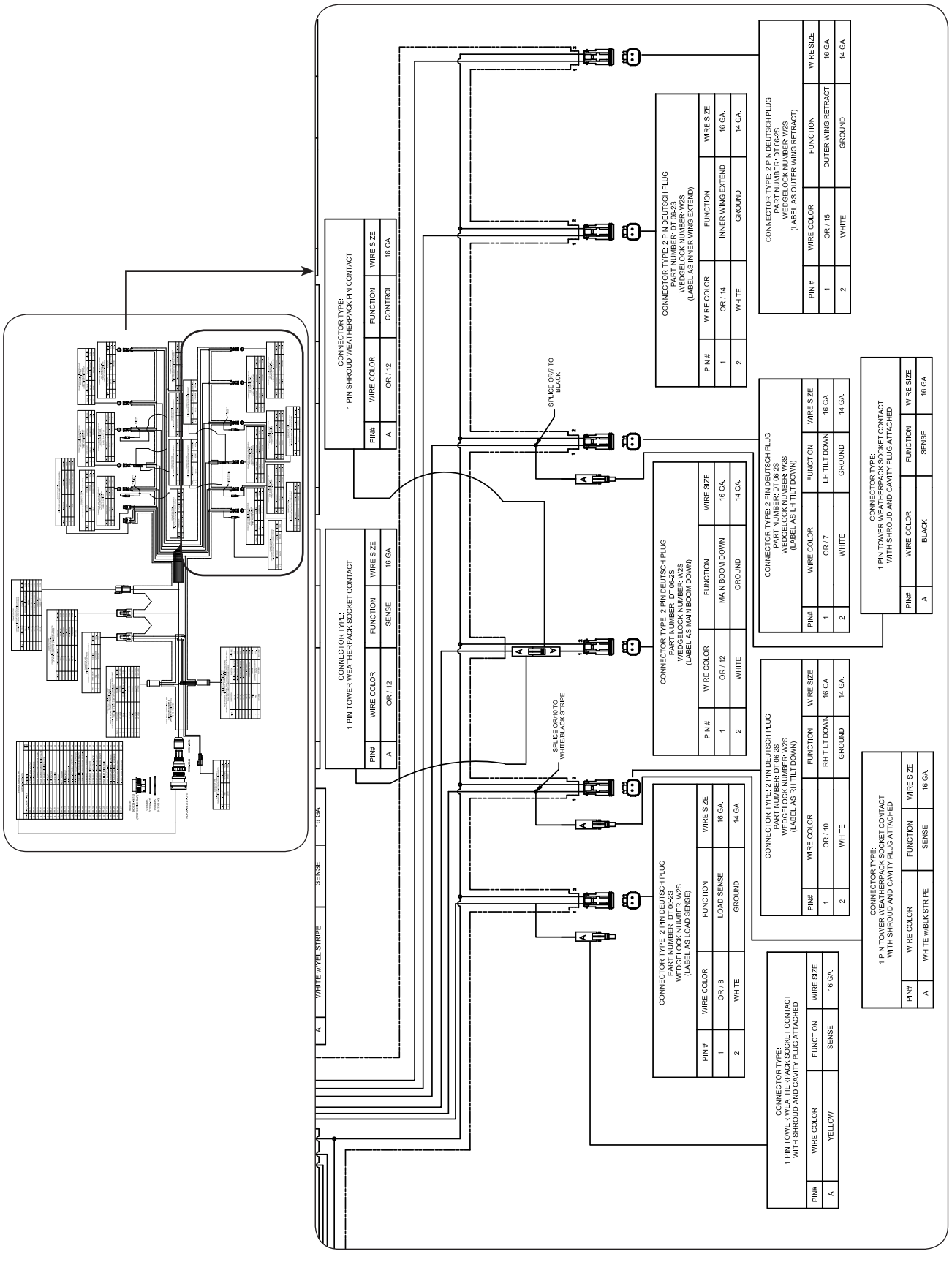
CONNECTOR TYPE 6 PIN DEUTSCH (DT06-6S) COMPLETE WITH W4S WEDGE LOCK (SOCKET CONTACTS) LH / RH TILT CONNECTION TO WIRELESS HARNESS			
PIN #	WIRE COLOR / WIRE #	FUNCTION	WIRE SIZE
1	OR / 9	RH TILT UP	16 GA.
2	OR / 10	RH TILT DOWN	16 GA.
3	OR / 6	LH TILT UP	16 GA.
4	OR / 7	LH TILT DOWN	16 GA.
5	YEL / 11	LOAD SENSE	16 GA.
6	-	NOT USED	-

CONNECTOR TYPE 6 PIN DEUTSCH (DT04-6P) COMPLETE WITH W6P WEDGE LOCK (PIN CONTACTS) SUPPLIED WITH BLANK PLUG WITH HOLES PLUGGED			
PIN #	WIRE COLOR	FUNCTION	WIRE SIZE
1	OR / 17	STEERABLE HITCH POWER ON	16 GA.
2	WHITE	GROUND	16 GA.
3	OR / 18	STEERABLE HITCH AUTO	16 GA.
4	OR / 19	STEERABLE HITCH TRANSPORT	16 GA.
5	OR / 21	NUDGE RIGHT	16 GA.
6	OR / 20	NUDGE LEFT	16 GA.

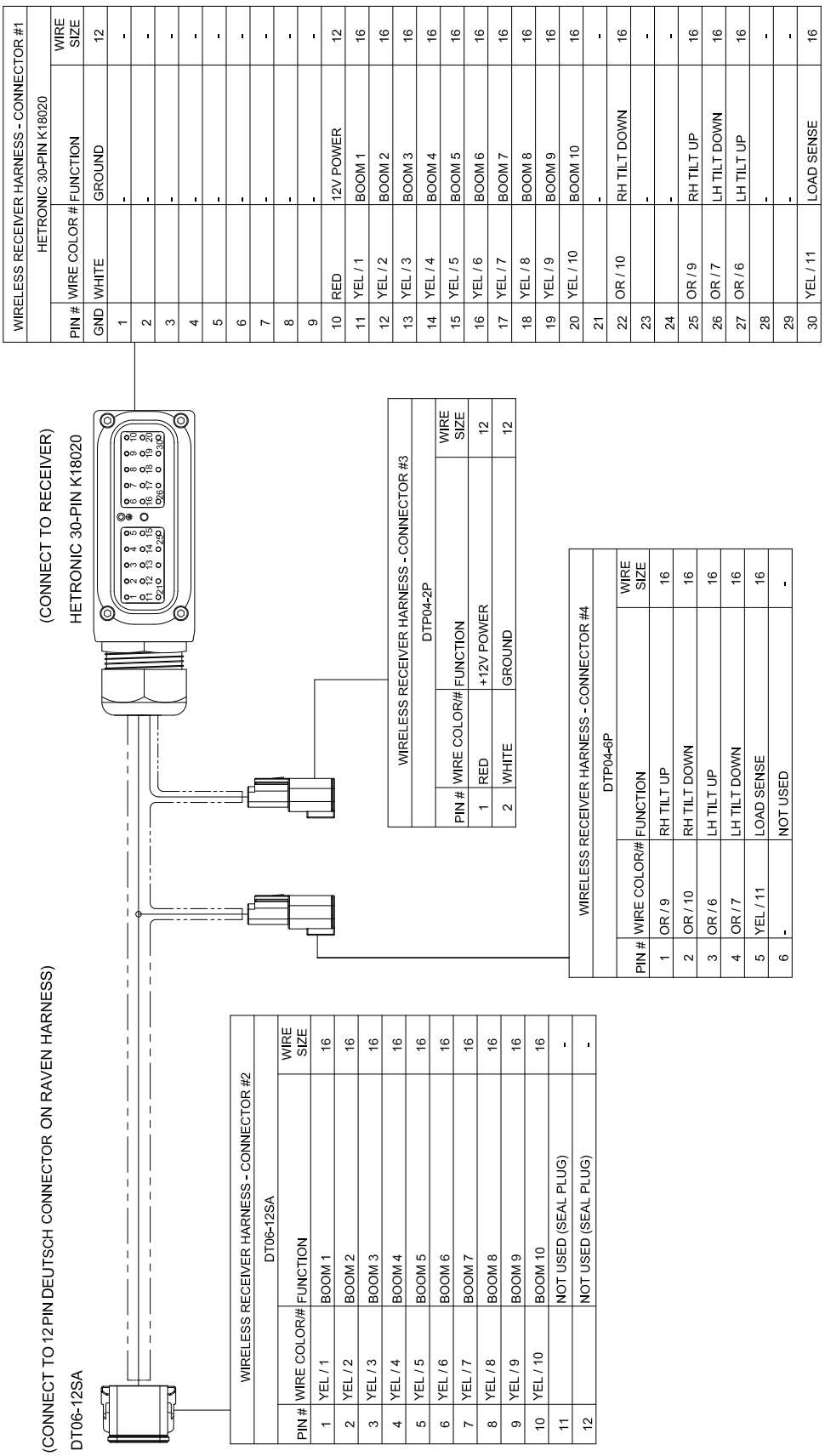
Schematic — Electrical — Main Harness (9007773) (continued)



Schematic — Electrical — Main Harness (9007773) (continued)



Schematic — Electrical — Receiver Harness (9007775)



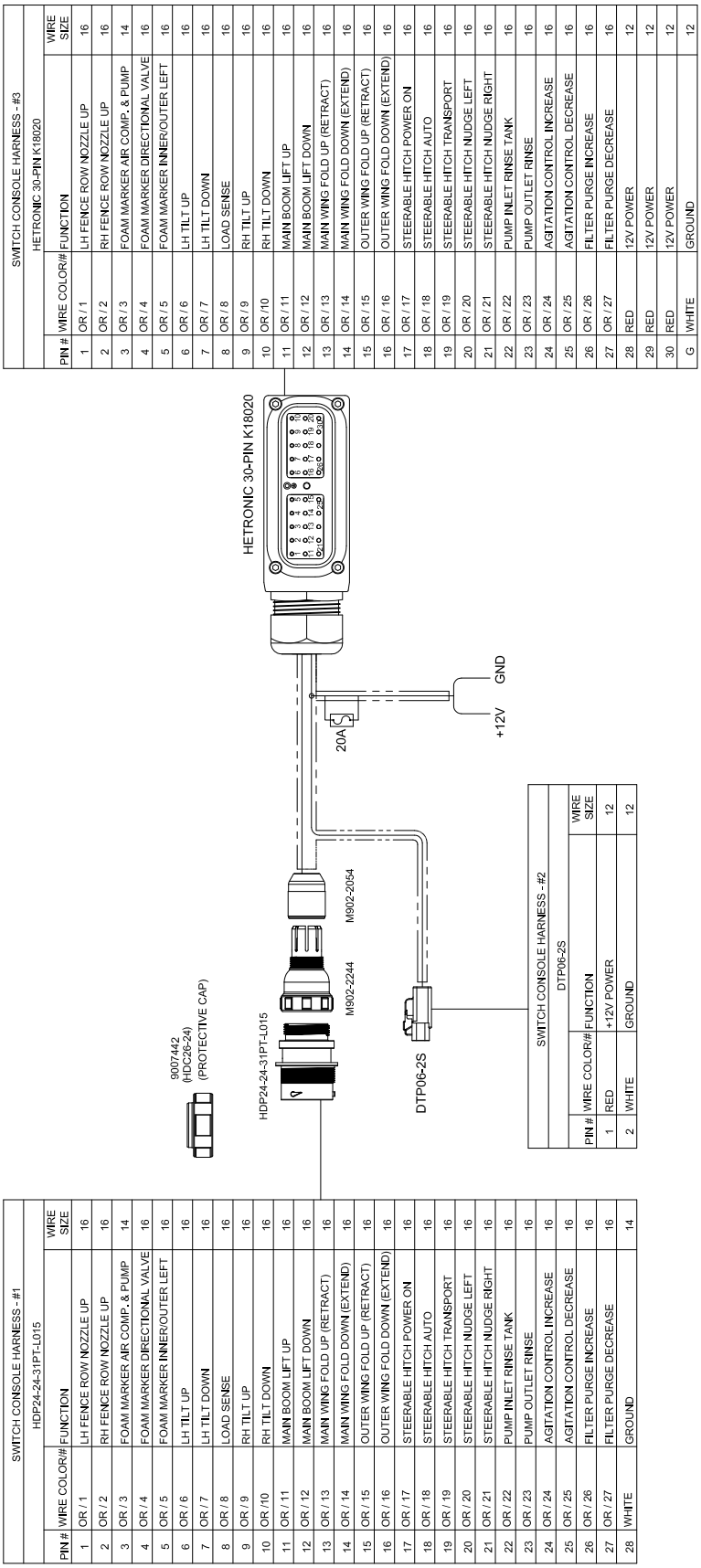
WIRELESS RECEIVER HARNESS - CONNECTOR #2			
DT06-12SA			
PIN #	WIRE COLOR/#	FUNCTION	WIRE SIZE
1	YEL / 1	BOOM 1	16
2	YEL / 2	BOOM 2	16
3	YEL / 3	BOOM 3	16
4	YEL / 4	BOOM 4	16
5	YEL / 5	BOOM 5	16
6	YEL / 6	BOOM 6	16
7	YEL / 7	BOOM 7	16
8	YEL / 8	BOOM 8	16
9	YEL / 9	BOOM 9	16
10	YEL / 10	BOOM 10	16
11		NOT USED (SEAL PLUG)	-
12		NOT USED (SEAL PLUG)	-

WIRELESS RECEIVER HARNESS - CONNECTOR #3			
DTP04-2P			
PIN #	WIRE COLOR/#	FUNCTION	WIRE SIZE
1	RED	+12V POWER	12
2	WHITE	GROUND	12

WIRELESS RECEIVER HARNESS - CONNECTOR #4			
DTP04-6P			
PIN #	WIRE COLOR/#	FUNCTION	WIRE SIZE
1	OR / 9	RH TILT UP	16
2	OR / 10	RH TILT DOWN	16
3	OR / 6	LH TILT UP	16
4	OR / 7	LH TILT DOWN	16
5	YEL / 11	LOAD SENSE	16
6	-	NOT USED	-

WIRELESS RECEIVER HARNESS - CONNECTOR #1			
HETRONIC 30-PIN K18020			
PIN #	WIRE COLOR #	FUNCTION	WIRE SIZE
GND	WHITE	GROUND	12
1		-	-
2		-	-
3		-	-
4		-	-
5		-	-
6		-	-
7		-	-
8		-	-
9		-	-
10	RED	12V POWER	12
11	YEL / 1	BOOM 1	16
12	YEL / 2	BOOM 2	16
13	YEL / 3	BOOM 3	16
14	YEL / 4	BOOM 4	16
15	YEL / 5	BOOM 5	16
16	YEL / 6	BOOM 6	16
17	YEL / 7	BOOM 7	16
18	YEL / 8	BOOM 8	16
19	YEL / 9	BOOM 9	16
20	YEL / 10	BOOM 10	16
21		-	-
22	OR / 10	RH TILT DOWN	16
23		-	-
24		-	-
25	OR / 9	RH TILT UP	16
26	OR / 7	LH TILT DOWN	16
27	OR / 6	LH TILT UP	16
28		-	-
29		-	-
30	YEL / 11	LOAD SENSE	16

Schematic — Electrical — Switch Box Harness (9007774)



Wheel, Hub and Spindle Disassembly and Assembly

⚠ WARNING

- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE MACHINE IS SECURELY BLOCKED.**
- **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 8,000 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**

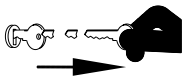
⚠ CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. TORQUE WHEEL NUTS/BOLTS TO VALUES IN TABLE. CHECK TORQUE BEFORE USE, AFTER ONE HOUR OF UNLOADED USE OR AFTER FIRST LOAD, AND EACH LOAD UNTIL WHEEL NUTS/BOLTS MAINTAIN TORQUE VALUE. CHECK TORQUE EVERY 10 HOURS OF USE THERE-AFTER. AFTER EACH WHEEL REMOVAL START TORQUE PROCESS FROM BEGINNING. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

IMPORTANT

- *Remove only one wheel and tire from a side at any given time in the following procedure.*

1. Hitch sprayer to tractor. Park the empty sprayer on a firm, level surface. Set the tractor's parking brake, shut off engine and remove key.



2. With sprayer empty, use a safe lifting device rated at 4 ton to support the weight of your sprayer. Place the lifting device under the axle closest to the tire.

3. Use a safe lifting device rated for 1500 lbs. to support the wheel and tire during removal.

NOTE: For straddle duals, first remove the outer wheel and tire.

⚠ WARNING

- **INNER WHEEL AND TIRE MAY FALL FROM HUB CAUSING SERIOUS INJURY OR DEATH. ALWAYS SUPPORT INNER WHEEL WHEN REMOVING OUTER WHEEL.**

4. If only changing wheel and tire, skip to Step 8; otherwise continue with Step 4.

   Remove the hardware retaining the hubcap. Next, remove the hubcap, gasket, cotter pin, castle nut and spindle washer. Remove hub with bearings from old spindle using a 200 lb. lifting device.

Wheel, Hub and Spindle Disassembly and Assembly (continued)

5. Inspect the spindle and replace if necessary. If spindle does not need to be replaced, skip to Step 6; otherwise continue with Step 5.

   Remove the bolt and lock nut that retain the spindle to the axle. Using a lifting device rated for 150 lbs., replace the old spindle with a new spindle. Coat axle contact length of spindle shaft with anti-seize lubricant prior to installation. Reuse bolt and lock nut to retain spindle to axle. Tighten as outlined in Maintenance Section.

6. Remove seal and inspect bearings, spindle washer, castle nut and cotter pin. Replace if necessary. Pack both bearings with approved grease and reinstall inner bearing. Install new seal in hub with garter spring facing the hub by tapping on flat plate that completely covers seal while driving it square to hub. Install until flush with back face of hub. Using a 200 lb. rated lifting device, install hub assembly onto spindle. Install outer bearing, spindle washer and castle nut.

7. Slowly tighten castle nut while spinning the hub until drag causes the hub to stop freely spinning. Do not use an impact! Turn castle nut counterclockwise until the hole in the spindle aligns with the next notch in castle nut. Hub should spin smoothly with little drag and no end play. If play exists, tighten to next notch of castle nut. If drag exists, then back castle nut to next notch of castle nut. Spin and check again. Install cotter pin. Clean face for hub cap gasket and install gasket, grease filled hub cap and retain hubcap with hardware removed. Tighten hubcap hardware in alternating pattern.

8. Attach the wheel(s) and tire(s) to the hub using the same rated lifting device for removal. Tighten wheel nuts to appropriate requirements and recheck as outlined in the Wheel and Tire section of this manual.

9. Raise sprayer, remove lifting device and lower tire to the ground.

Wheels and Tires

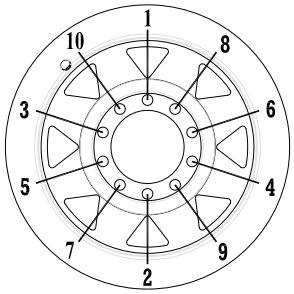
Wheel Nut Torque Requirements

⚠ CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. TORQUE WHEEL NUTS/BOLTS TO VALUES IN TABLE. CHECK TORQUE BEFORE USE, AFTER ONE HOUR OF UNLOADED USE OR AFTER FIRST LOAD, AND EACH LOAD UNTIL WHEEL NUTS/BOLTS MAINTAIN TORQUE VALUE. CHECK TORQUE EVERY 10 HOURS OF USE THEREAFTER. AFTER EACH WHEEL REMOVAL START TORQUE PROCESS FROM BEGINNING. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

Failure to check torque before first load may damage wheel nut/bolt seats. Once seats are damaged, it will become impossible to keep nuts/bolts tight. Tighten nuts/bolts to applicable torque value shown in table. Start all nuts/bolts by hand to prevent cross threading. Torque nuts/bolts in the recommended sequence as shown in Diagram 1.

WHEEL HARDWARE	
SIZE	FOOT-POUNDS
3/4-16 (UNF)	365 ft.-lbs.
7/8-14 (UNF)	440 ft.-lbs.



10 BOLT

DIAGRAM 1

Wheels and Tires (continued)

Tire Pressure

The following is to be used as a general guide for tire inflation and figures can vary depending on specific brand of tire used. **It is important that tires are inspected after unit is loaded.** Start with minimum pressure indicated. The tire should stand up with no side-wall buckling or distress as tire rolls. Record the pressure needed to support the full load and maintain this pressure to achieve proper tire life. **Do not exceed maximum recommended tire pressure.**

Tire Pressure for Top Air Sprayers

Tire Make	Tire Size	Load Index / Ply Rating	Max PSI
Firestone	480/80R42 R-1	151 A8	36
Goodyear	320/105R54 R-1W	166 A8	75
Mitas	320/95R46 R-1W	152 A8	58
	320/90R50 R-1W	150 A8	52
	320/105R54 R-1W	169 D	58
	380/90R46 R-1W	159 A8	58
	380/90R54 R-1W	152 A8	35
	480/80R50 R-1W	159 A8	35
	650/65R42 R-1W	168 A8	44

Tire Warranty

For questions regarding new tire warranty, please contact your local original equipment tire dealer. Used tires carry no warranty. Following are phone numbers and Websites for your convenience:

Firestone
www.firestoneag.com
Phone 800-847-3364

Titan
or
Goodyear
www.titan-intl.com
Phone 800-USA-BEAR
Fax 515-265-9301

Continental/Mitas
www.mitas-tires.com
Phone 704-542-3422
Fax 704-542-3474

Tracks

Track Warranty

For questions regarding new track warranty, please contact your local dealer or call Unverferth Manufacturing @ 1-800-264-4580. Used tracks carry no warranty.

Complete English and Metric 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 ENG.	SIZE METRIC	FOOT POUNDS	NEWTON METERS
1/4-20 1/4-28	M6 x 1	8-10 9-11	11-13 12-15
5/16-18 5/16-24	M8 x 1.25	15-17 17-19	20-23 23-26
3/8-16 3/8-24	M10 x 1.5	25-28 28-31	34-38 38-42
7/16-14 7/16-20	M12 x 1.75	40-45 45-50	54-61 61-68
1/2-13 1/2-20	M14 x 2	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	M18 x 2	120-135 124-137	162-183 168-186
3/4-10 3/4-16	M20 x 2.5	200-220 210-230	270-300 285-310
7/8-9 7/8-14	M22 x 2.5	330-350 360-380	425-475 460-515
1-8 1-14	M24 x 3	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	M30 x 3.5	850-895 940-990	1150-1215 1275-1340
1 3/8-6 1 3/8-12	M36 x 4	1125-1175 1280-1335	1525-1590 1735-1810
1 1/2-6 1 1/2-12	-	1500-1560 1685-1755	2035-2115 2285-2380

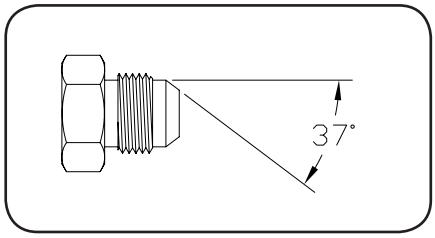
IMPORTANT

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

Hydraulic Fittings – Torque and Installation

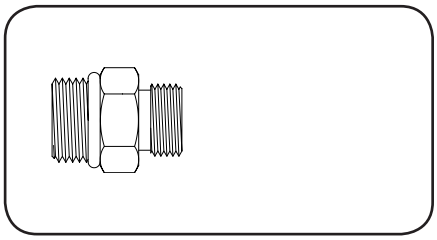
SAE FLARE CONNECTION (J. I. C.)

1. Tighten nut with finger until it bottoms the seat.
2. Using a wrench, rotate nut to tighten. Turn nut 1/3 turn to apply proper torque.



SAE STRAIGHT THREAD O-RING SEAL

1. Insure jam nut and washer are backed up to the back side of smooth portion of elbow adapter.
2. Lubricate o-ring -- VERY IMPORTANT!
3. Thread into port until washer bottoms onto spot face.
4. Position elbows by backing up adapter.
5. Tighten jam nut.



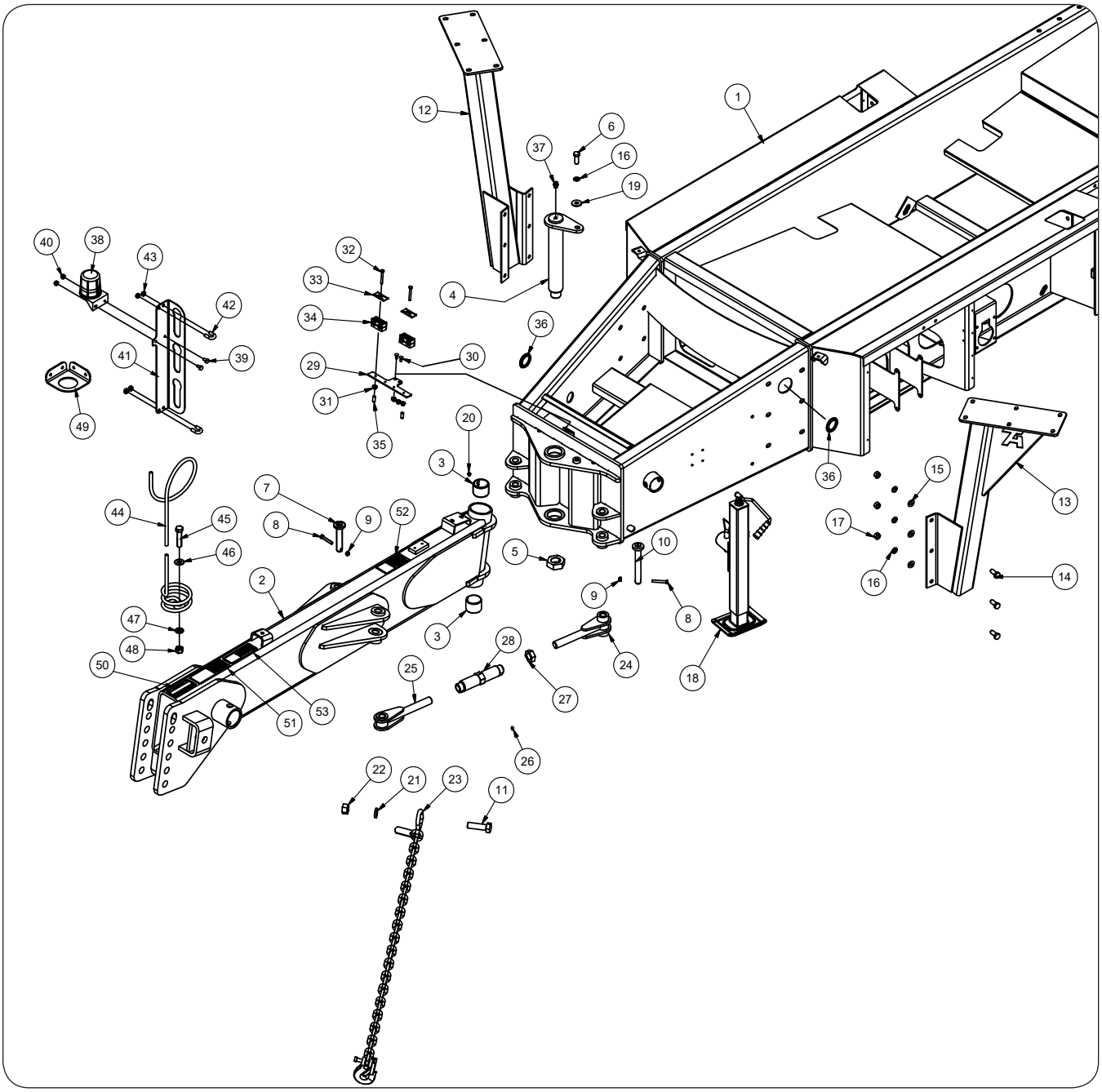
Notes

Section V
Parts

FOR TRACK INFORMATION, PLEASE REFER TO YOUR TRACK MANUAL.

Frame & Tongue

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



ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
1	Frame Weldment =Green=	408100G	407757G	407782G	
	Frame Weldment =Red=	408100R	407757R	407782R	
2	Tongue Weldment =Green=	43299G	>	>	Includes Items 3, 20, 50 to 53
	Tongue Weldment =Red=	43299R	>	>	
3	Split Bushing	9003230	>	>	
4	Tongue Pin	408090	>	>	
5	Hex Jam Nut w/Set Screw 1 3/4-5UNC	9005290	>	>	
6	Capscrew 5/8-11UNC x 1 3/4	9390-123	>	>	

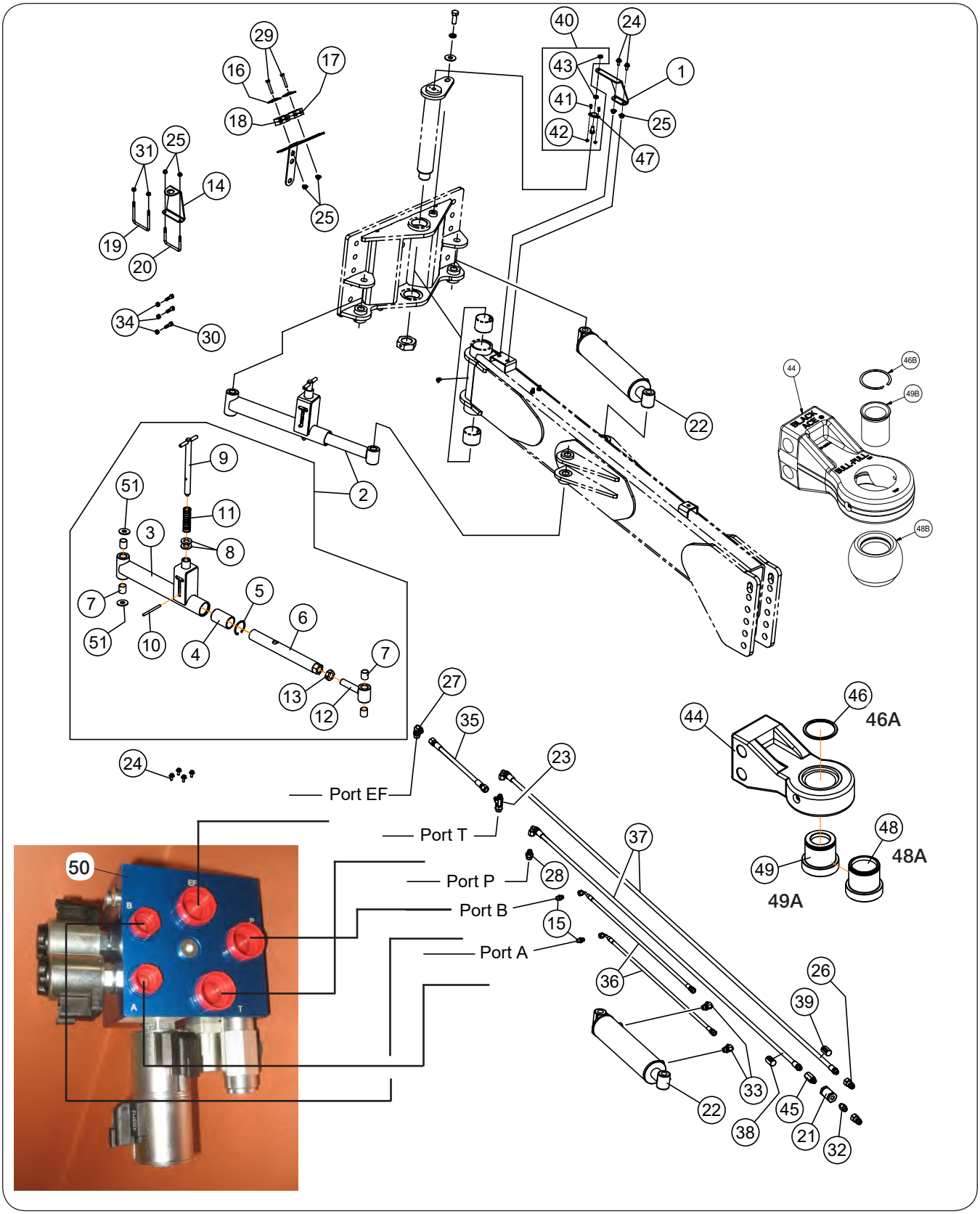
Frame & Tongue

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

ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
7	Cylinder Pin 1" Dia.	407588	>	>	
8	Capscrew 3/8-16UNC x 2 1/2	9390-061	>	>	
9	Locknut 3/8-16UNC	9928	>	>	
10	Cylinder Pin 1" Dia.	407589	>	>	
11	Capscrew, 1-8UNC x 3 1/4	9390-188	>	>	Grade 5
12	RH Wing Rest Weldment =Green=	402098G	401126G	401126G	
	RH Wing Rest Weldment =Red=	402098R	401126R	401126R	
13	LH Wing Rest Weldment =Green=	402099G	401127G	401127G	
	LH Wing Rest Weldment =Red=	402099R	401127R	401127R	
14	Capscrew, 5/8-11UNC x 1 1/2	9390-122	>	>	Grade 5
15	Flat Washer, 5/8	9405-100	>	>	
16	Lock Washer, 5/8	9404-029	>	>	
17	Hex Nut, 5/8-11UNC	9394-014	>	>	Grade 5
18	Jack, 7000#	9003295	>	>	
19	Flat Washer 5/8"	9405-100	>	>	
20	90° Grease Zerk	9000875	>	>	
21	Lock Washer, 1"	9404-041	>	>	
22	Hex Nut, 1-8UNC	9394-020	>	>	Grade 5
23	Transport Chain w\Hook, Eye, Decal	9003265	>	95055	
24	RH Tongue Adjustment End Weldment	407742	>	>	
25	LH Tongue Adjustment End Weldment	407745	>	>	
26	Grease Zerk	91160	>	>	
27	Hex Jam Nut 1 1/4UNC	9395-024	>	>	
28	Turnbuckle	62324	>	>	
29	Hose Bracket	407770B	>	>	
30	Carriage Bolt 5/16-18UNC x 3/4	9388-024	>	>	
31	Serrated Flange Nut 5/16-18UNC	91257	>	>	
32	Capscrew 5/16-18UNC x 2 1/4	9390-035	>	>	
33	Top Plate	9004857	>	>	
34	Hose Clamp	9004856	>	>	
35	Vinyl Cap	9005985	>	>	
36	3" Rubber Grommet	9004485	>	>	
37	Threaded Plastic Plug	9006310	>	>	
38	Connector Holder	9001968	>	>	
39	Capscrew, 1/4-20UNC x 1/2	9390-001	>	>	Grade 5
40	Lock Nut, 1/4-20UNC	9936	>	>	Grade 5
41	Hose Holder	415546	>	>	
42	U-Bolt, 5/16-18UNC x 15/16 x 3/4 C/C	9006429	>	>	Grade 5
43	Lock Nut, 5/16-18UNC	9807	>	>	Grade 5
44	Coil Spring Hose Holder	9006424	>	>	
45	Capscrew, 1/2-13UNC x 1 1/2	9390-101	>	>	Grade 5
46	Flat Washer, 1/2 USS	9405-088	>	>	
47	Lock Washer, 1/2	9404-025	>	>	
48	Hex Nut, 1/2-13UNC	9394-010	>	>	Grade 5
49	IBBC Plate Bracket =Black=	409880B	>	>	
50	Decal, DANGER (Electric Shock)	901258	>	>	
51	Decal, WARNING (Tongue)	94094	>	>	
52	Decal, WARNING (High Pressure Oil)	95445	>	>	
53	Decal, CAUTION (Transport Chain)	97575	>	>	

Steerable Hitch Option

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



Steerable Hitch Option

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

ITEM	PART NO.	DESCRIPTION	QTY.	NOTES
1	408092B	Rotary Sensor Bracket Plate	1	
2	407795B	Lock Assembly	1	
3	407707B	Lock Tube Weldment w/ Pin Chamber	1	
4	407723	Bushing Guide 2.135" OD	1	
5	9006206	Internal Retaining Ring	1	
6	407716B	Lock Tube Weldment	1	
7	9003440	Self-Lubricating Bushing, 1.13" OD x 1 1/4" Long	4	
8	9405-110	Flat Washer 7/8"	2	
9	408364	Lock Pin Weldment, 7/8" Dia. x 11	1	
10	9392-167	Roll Pin 5/16" Dia. x 4	1	
11	9005788	Compression Spring	1	
12	408615	Adjustment Rod Weldment	1	
13	9395-020	Hex Jam Nut, 1-8UNC Gr.5	1	
14	407906B	Prox. Switch Bracket Plate	1	
15	9006150	Adapter 9/16-18 JIC Flare-O Male x 9/16-18 O-Ring Male	2	
16	9003814	Clamp Top Plate	2	
17	9003816	Poly Clamp Pair For 1/4" Hose	2	
18	9004367	Poly Clamp Pair For 3/8" Hose	2	
19	9004454	U-Bolt 1/4-20UNC x 3 3/4 (Used on 120'/132' Booms)	1	
20	9005281	U-Bolt 5/16-18UNC x 2 3/4 (Used on 80'/90'/100' Booms)	1	
21	9005403	Micron Hyd Filter	1	
22	9005673	Welded Cylinder 3 1/2 x 12	1	
	9006653	Seal Kit for Cylinder 3 1/2 x 12	1	
23	9006174	Tee 3/4-16 JIC Flare-O Male x 7/8-14 O-Ring Male x 3/4-16 JIC Flare-O Male	1	
24	91256	Screw/Large Flange, 5/16-18UNC x 3/4		
25	91257	Flange Nut 5/16-18UNC	4	
26	91383	Male Tip Coupling 3/4-16	2	
27	9006175	90° Elbow 3/4-16 JIC Flare-O Male x 7/8-14 O-Ring Male	1	
28	9006176	Adapter 3/4-16 JIC Flare-O Male x 7/8-14 O-Ring Male	1	
29	9390-034	Capscrew, 5/16-18UNC x 2 Gr.5	2	
30	9390-055	Capscrew, 3/8-16UNC x 1 Gr.5	3	
31	97189	Hex Nut/Large Flange, 1/4-20UNC	2	
32	98508	Adapter, 3/4-16 O-Ring Male x 3/4-16 O-Ring Male	1	
33	9874	90° Elbow 9/16-18 JIC Male x 3/4-16 O-Ring Male	2	
34	9928	Locknut 3/8-16UNC	3	

(Continued on next page)

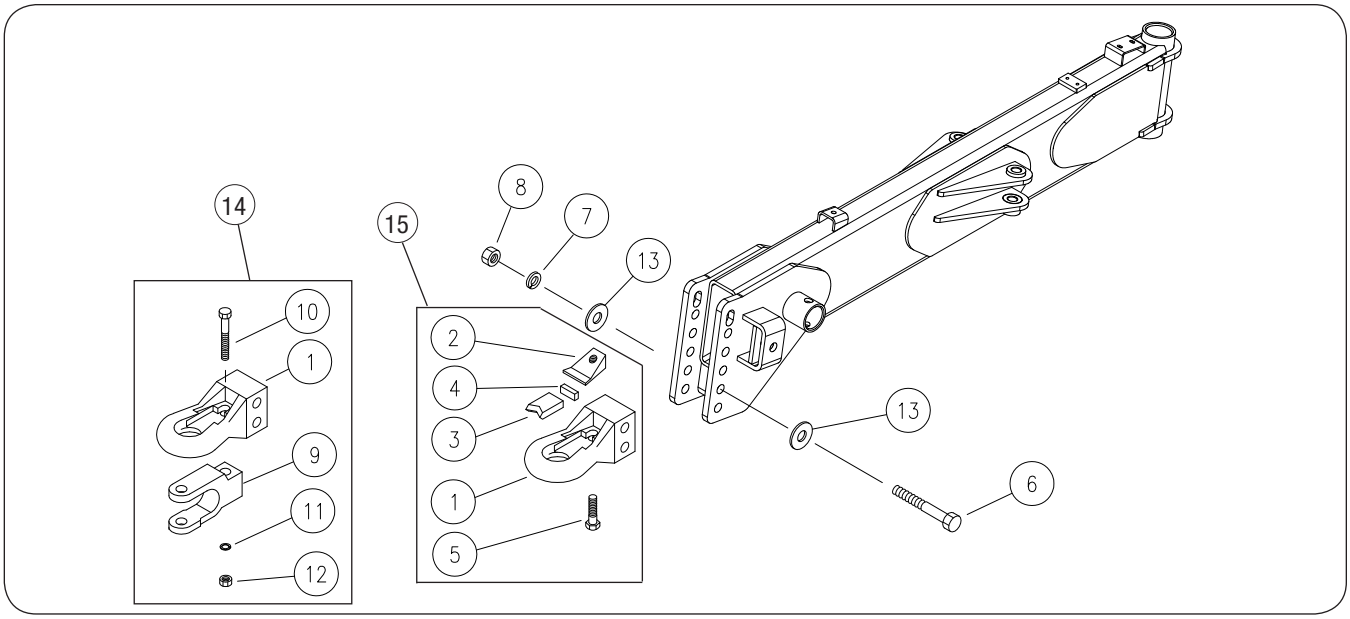
Steerable Hitch Option (continued)

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

35	9001228	Hose 3/8" Dia. x 15" 3/4-16 JIC F x 3/4-16 JIC F	1	
36	9005864	Hose, 1/4 x 66 90° Elbow 9/16-18 JIC Female x 9/16-18 JIC Female	2	
37	9005869	Hose, 3/8" Dia. x 156" 90° Elbow 3/4-16 JIC Female x 3/4-16 male O-Ring	2	
38	9005870	Hose Marker "Steering Pressure"	1	
39	9005871	Hose Marker "Steering Return"	1	
40	9005875	Steerable Hitch Kit	1	
41	9006042	Washer Head Capscrew, #8-32 x 1/2"	2	
42	9006041	Serrated Flange Nut, #8-32	2	
43	9005874	Hex Jam Nut, M10x1.0	2	
44	JAP3228	Ball and Socket Cast Hitch, CAT IV	1	
45	94909	Check Valve	1	
46A	9006501	Internal Spiral Retaining Ring	1	
46B	9007938			Used with 49B only
47	9006222	Non-Contact Rotary Sensor	1	
48A	9006701	Hitch Bushing, 2"	1	
48B	9007939	Hitch Ball Insert, 2" CAT 4	1	
49A	9009655	Hitch Bushing, 1 1/2"	1	
49B	9007941	Hitch Bushing, 1 1/2" CAT 4	1	
50	9005925	Complete Valve Block	1	
51	9405-116	Flat Washer 1" SAE	2	

Standard Cast Hitch

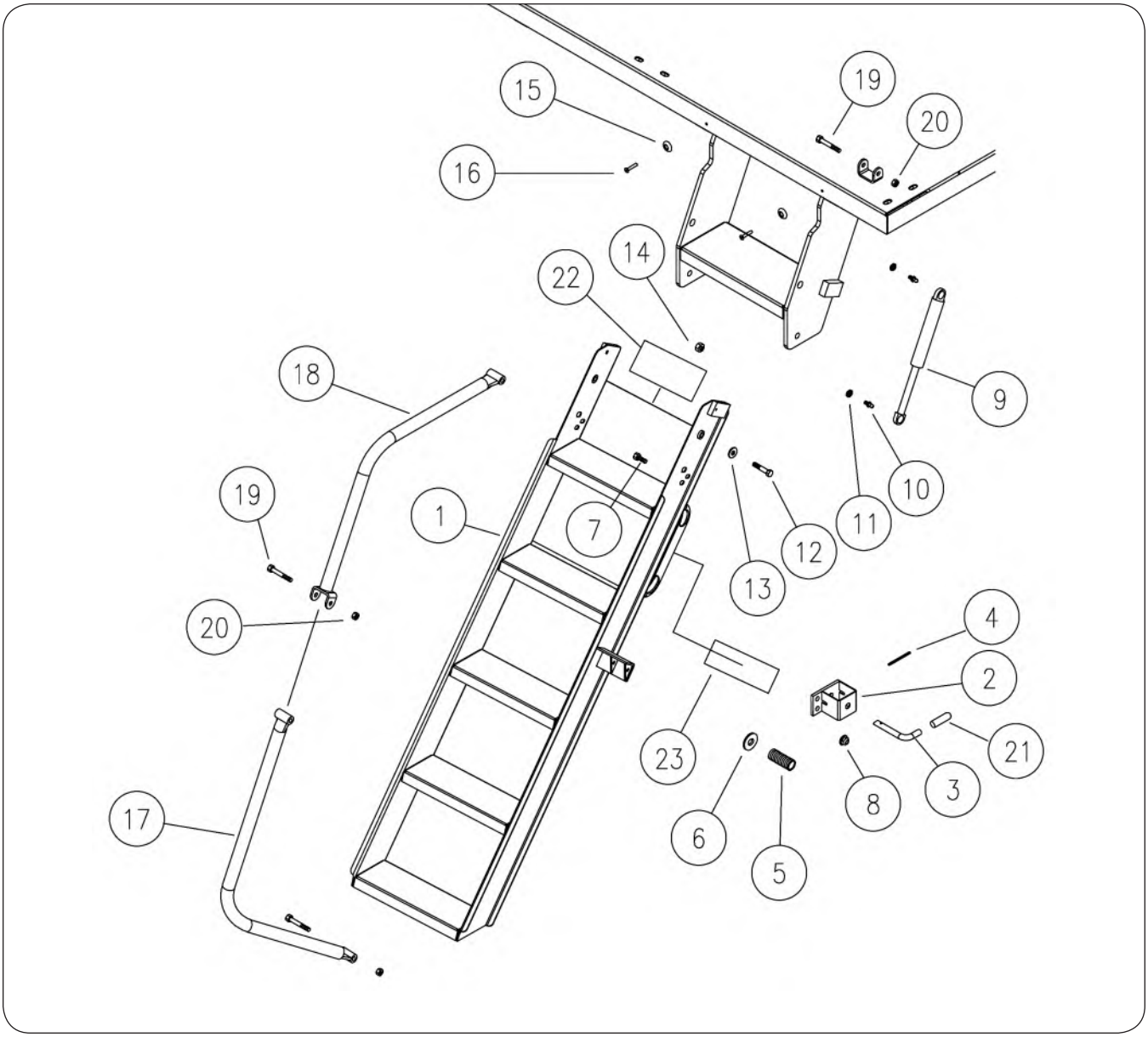
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Base/Hitch Clevis	TA610050-1	1	For Models 1200 & 1600 - CAT 3 Max. Pin 1 1/2" Dia.
		TA610051-1	1	For Model 2400 - CAT 4 Max. Pin 2" Dia.
2	Hitch Top Plate	TA610050-2	1	
3	Hitch V-Block	TA610050-3	1	
4	Neoprene Hitch Cushion	TA610050-4	1	
5	Capscrew, 3/4-10UNC x 3	9390-149	1	Grade 5 - For Model 2400
6	Capscrew, 1-8UNC x 7 1/2	9390-198	2	Grade 5
7	Lock Washer, 1	9404-041	2	
8	Hex Nut, 1-8UNC	9394-020	2	Grade 5
9	Clevis Hitch	9004290	1	For Models 1200 & 1600
10	Capscrew, 3/4-10UNC x 6	91299-157	1	Grade 8 - For Models 1200 & 1600
11	Lock Washer, 3/4	9404-033	1	For Models 1200 & 1600
12	Hex Nut, 3/4-10UNC	9394-016	1	Grade 5 - For Models 1200 & 1600
13	Flat Washer, 1	9405-116	4	
14	Hitch & Clevis Assembly	408716	-	For Models 1200 & 1600
15	Pintle Hitch Assembly CAT 3 Max Pin Size 1 1/2" Dia.	TA610050	-	CAT 3 For Models 1200 & 1600
	Perfect Hitch Assembly CAT 4 Max Pin Size 2" Dia.	TA610051	-	CAT 4 For Model 2400

Ladder

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



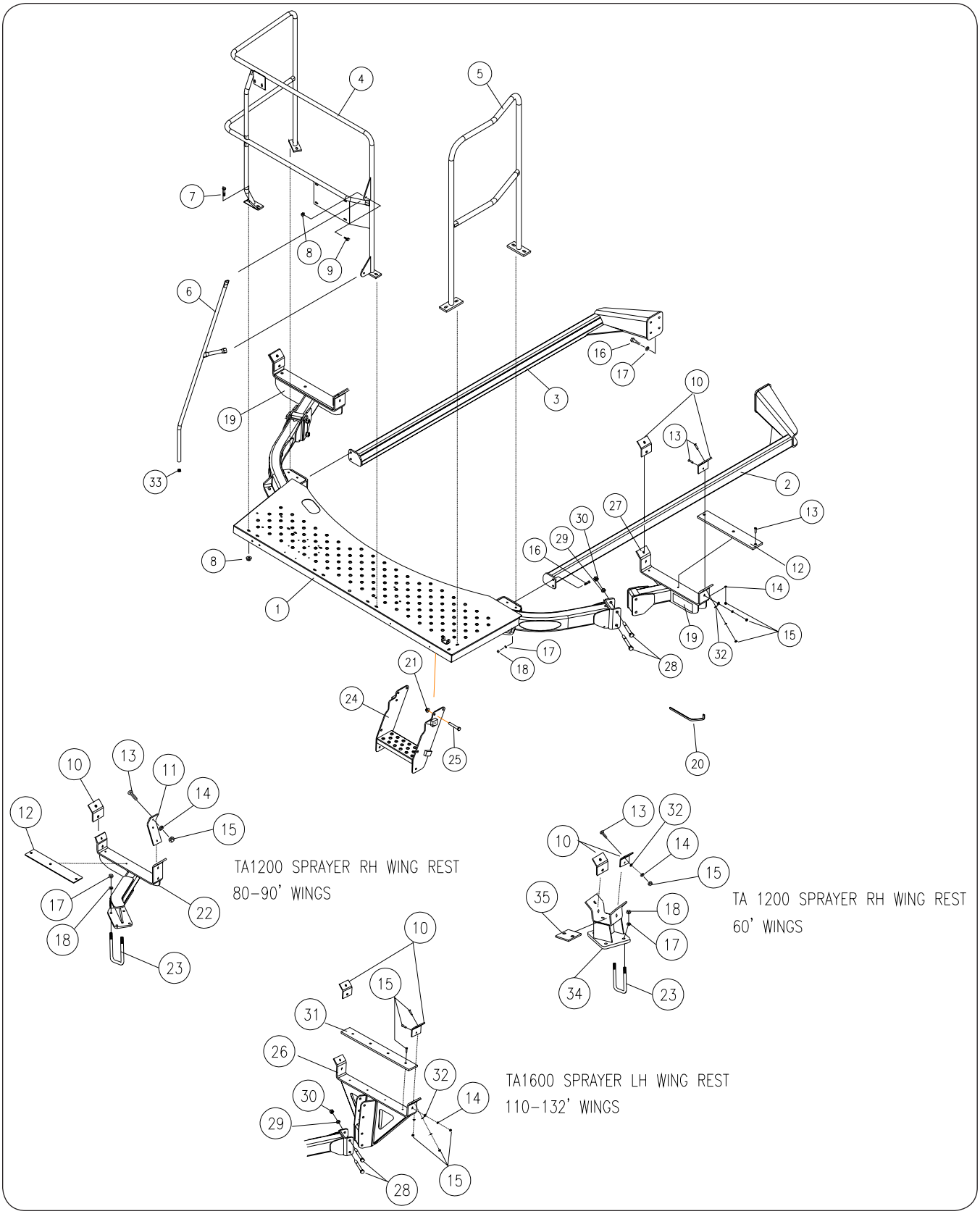
Ladder

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

ITEM	DESCRIPTION	PART NO.			QTY.	NOTES
		1200	1600	2400		
1	Ladder Weldment =Green=	43297G	43298G	43295G	1	Includes Items 22 and 23
	Ladder Weldment =Red=	43297R	43298R	43295R		
2	Latch Pin Weldment	401879B	>	>	1	
3	Pin, 1/2" Dia. x 5 3/8	401880	>	>	1	
4	Poll Pin, 3/16" Dia. x 2 1/2	9392-107	>	>	1	
5	Spring, 2 1/2" Long	TA510035	>	>	1	
6	Flat Washer, 1/2	9405-088	>	>	1	
7	Capscrew, 3/8-16UNC x 7/8	9390-054	>	>	2	Grade 5
8	Nut/Large Flg, 3/8-16UNC	91263	>	>	2	
9	Gas Spring, 6.30" Stroke	9003685	>	>	2	
10	Ball Stud	9003832	>	>	4	
11	Lock Washer, 5/16	9404-019	>	>	4	
12	Capscrew,1/2-13NC x 1 1/2	9390-101	>	>	2	Grade 5
13	Flat Washer, 1/2	9405-088	>	>	2	
14	Locknut, 1/2-13UNC	94981	>	9395-010	2	
15	Bumper	9003850	>	>	2	
16	Pop Rivet, 3/16	TA0-908386-0	>	>	2	
17	Lower Handrail Weldment =Green=	401829G	>	>	1	
	Lower Handrail Weldment =Red=	401829R	>	>		
18	Upper Handrail Weldment =Green=	401847G	>	>	1	
	Upper Handrail Weldment =Red=	401847R	>	>		
19	Capscrew, 3/8-16UNC x 2 1/4	9390-060	>	9390-061	2	Grade 5
20	Locknut, 3/8-16UNC	9003396	>	>	3	Grade 5
21	Grip	9003870	>	>	1	
22	Decal, DANGER (Electric Shock)	901258	>	>	1	
23	Decal, WARNING (No Riders)	9003476	>	>	1	

Platform, Railings - Models 1200 / 1600 for SN B44200099 and Lower

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



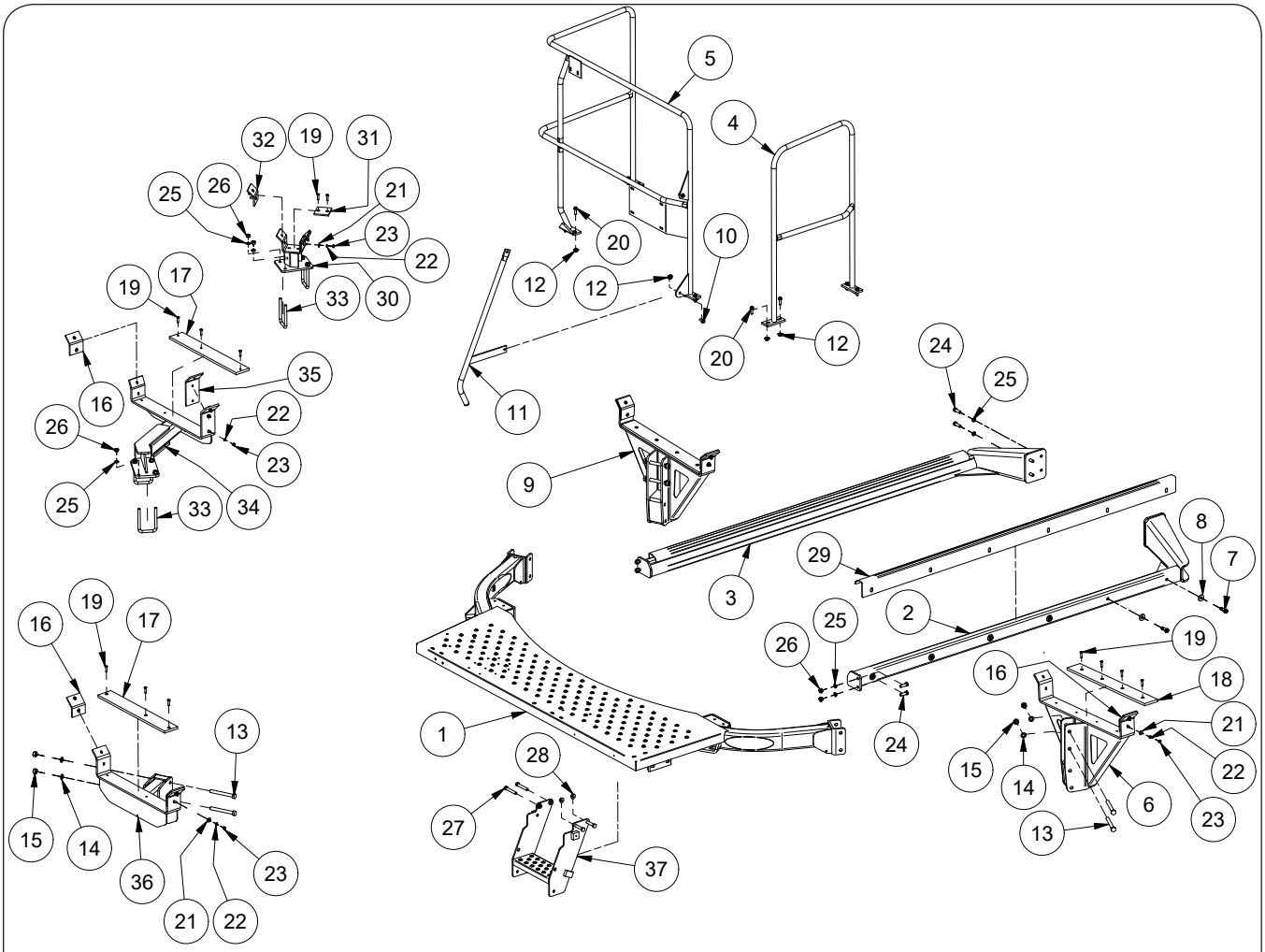
Platform, Railings - Models 1200 / 1600 for SN B44200099 and Lower

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

ITEM	DESCRIPTION	PART NO.		QTY.	NOTES
		1200	1600	(60'/80'-90'/ 110'-132')	
1	Platform Weldment =Green=	402093G	402875G	1	
	Platform Weldment =Red=	402093R	402875R		
2	LH Perimeter Weldment =Green=	402817G	401838G	1	
	LH Perimeter Weldment =Red=	402817R	401838R		
3	RH Perimeter Weldment =Green=	402818G	401839G	1	
	RH Perimeter Weldment =Red=	402818R	401839R		
4	Platform Railing Weldment =Green=	409253G	409253G	1	
	Platform Railing Weldment =Red=	409253R	409253R		
5	LH Platform Railing Weldment =Green=	403773G	403773G	1	
	LH Platform Railing Weldment =Red=	403773R	403773R		
6	Handrail Weldment =Green=	407738G	407738G	1	
	Handrail Weldment =Red=	407738R	407738R		
7	Capscrew Flg 3/8-16UNC x 1 1/4	9003259	9003259	10	Grade 5 (Serrated)
8	Nut/Lrg Flg 3/8-16UNC	91263	91263	12	Grade 5
9	Screw/Lrg Flg 3/8-16UNC x 1	91262	91262	2	Grade 5
10	Wear Pad	402609	400875	2*/4	*For 1200 60' Sprayer
11	Wear Pad	-	401561	2	
12	Wear Pad	-	408582	2	
13	Phillips Head Screw 5/16-18UNC x 1 1/4	903171-662	903171-662	12/14/16	
14	Lock Washer, 5/16	9404-019	9404-019	12/14/16	
15	Nut, 5/16-18UNC	9394-004	9394-004	12/14/16	Grade 5
16	Capscrew 1/2-13UNC x 1 1/2	9390-101	9390-101	12	Grade 5
17	Lock Washer, 1/2	9404-025	9404-025	20	
18	Nut, 1/2-13UNC	9394-010	9394-010	12	Grade 5
19	Reflector, Amber	9003127	9003127	2	2 x 9"
20	Trim-lok	9000787	9000787	AR	Specifiy Feet
21	Flange Nut, 1/2-13UNC Gr.5	9003397	9003397	4	
22	Rest Weldment, RH	408565B	-	1	Used With 80-90' Wings
	Rest Weldment, LH	408566B	-	1	Used With 80-90' Wings
23	U-Bolt, 1/2"	804176	-	4	
24	Step Weldment =Green=	411043G	411037G	1	
	Step Weldment =Red=	411043R	411037R		
25	Capscrew, 1/2-13UNC x 3 1/4 Gr.5	9390-108	9390-108	4	
26	Rest Weldment, RH	-	403754B	1	Used With 110', 120', 132' Wings
	Rest Weldment, LH	-	403753B	1	Used With 110', 120', 132' Wings
27	Rest Weldment, RH	-	408583B	1	Used w/1600 Sprayer 80-90' Wings
	Rest Weldment, LH	-	408584B	1	Used w/1600 Sprayer 80-90' Wings
28	Capscrew 5/8-11UNC x 5 1/2	-	9390-135	4	Grade 5
29	Lock Washer 5/8	-	9404-029	4	
30	Hex Nut 5/8-11UNC	-	9394-014	4	Grade 5
31	Wear Pad	-	403784	2	
32	Flat Washer 5/16	9405-070	-	6/8/10*	*For 1200 60'/80'/90' Sprayer
33	Finishing Plug	901292	901292	1	
34	Rest Weldment, RH	402604B	-	1	Used With 60' Wings
	Rest Weldment, LH	402605B	-	1	Used With 60' Wings
35	Wear Pad	402601	-	1	Used With 60' Wings

Platform, Railings - Models 1200 / 1600 for SN B44200100 and Higher

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



1600 Model Shown

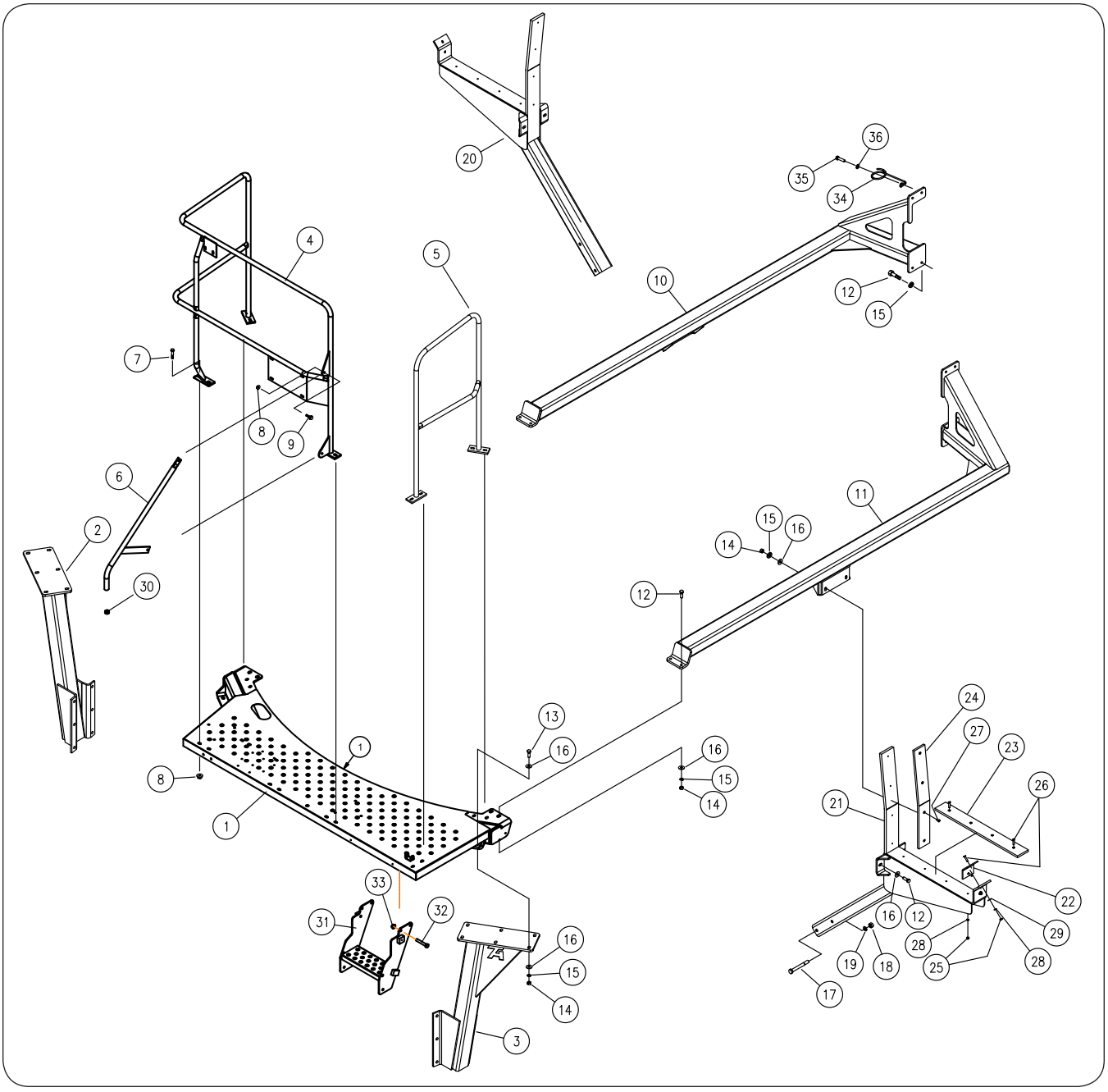
Platform, Railings - Models 1200 / 1600 for SN B44200100 and Higher

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

ITEM	PART NO.		QTY.	DESCRIPTION	NOTES
	1200	1600	(60'/80'-90'/ 110'-132')		
1	402093G	402875G	1	Platform Weldment =Green=	
	402093R	402875R		Platform Weldment =Red=	
2	402817G	401838G	1	LH Perimeter Weldment =Green=	
	402817R	401838R		LH Perimeter Weldment =Red=	
3	402818G	401839G	1	RH Perimeter Weldment =Green=	
	402818R	401839R		RH Perimeter Weldment =Red=	
4	403773G	403773G	1	LH Platform Railing Weldment =Green=	
	403773R	403773R		LH Platform Railing Weldment =Red=	
5	409253R	409253R	1	RH Platform Railing Weldment =Green=	
	409253G	409253G		RH Platform Railing Weldment =Red=	
6	-	403753B	1	Rest Weldment, LH	Used With 110', 120', 132' Wings
7	-	9009818	12	Box Bolt 5/16"-18UNC Grade 8	
8	-	9405-088	12	Flat Washer 1/2" USS	
9		403754B	1	Rest Weldment, RH	Used With 110', 120', 132' Wings
10	91262	91262	2	Screw/Lrg Flg 3/8-16UNC x 1 Grade 5	
11	407738G	407738G	1	Handrail Weldment =Green=	
	407738R	407738R		Handrail Weldment =Red=	
12	91263	91263	12	Nut/Lrg Flg 3/8-16UNC Grade 5	
13	-	9390-135	4	Capscrew 5/8-11UNC x 5 1/2 Grade 5	
14	-	9404-029	4	Lock Washer 5/8	
15	-	9394-014	4	Hex Nut 5/8-11UNC Grade 5	
16	402609	400875	2*/4	Wear Pad	*For 1200 60' Sprayer
17	-	408582	2	Wear Pad	
18	-	403784	2	Wear Pad	
19	903171-662	903171-662	12/14/16	Phillips Screw 5/16-18UNC x 1 1/4	
20	9003259	9003259	10	Capscrew Flg 3/8-16UNC x 1 1/4 Grade 5	
21	9405-070	9405-070	12/14/16	Flat Washer, 5/16" USS	
22	9404-019	9404-019	12/14/16	Lock Washer, 5/16	
23	9394-004	9394-004	12/14/16	Nut, 5/16-18UNC Grade 5	
24	9390-101	9390-101	12	Capscrew 1/2-13UNC x 1 1/2 Grade 5	
25	9404-025	9404-025	20	Lock Washer, 1/2	
26	9394-010	9394-010	12	Nut, 1/2-13UNC Grade 5	
27	9390-108	9390-108	4	Capscrew, 1/2-13UNC x 3 1/4 Grade 5	
28	9003397	9003397	4	Flange Nut, 1/2-13UNC Gr.5	
29	-	416458	2	Tank Support Plate	
30	402604B	-	1	Rest Weldment, RH	Used With 60' Wings
	402605B	-		Rest Weldment, LH	Used With 60' Wings
31	402601	-	2	Wear Pad	
32	402609	-	2	Wear Pad	
33	804176	-	4	U-Bolt, 1/2"	
34	408565B	-	1	Rest Weldment, RH	Used With 80-90' Wings
	408566B	-	1	Rest Weldment, LH	Used With 80-90' Wings
35	401561	-	2	Wear Pad	
36	-	408583B	1	Rest Weldment, RH	Used With 80-90' Wings
	-	408584B	1	Rest Weldment, LH	Used With 80-90' Wings
37	411043G	411037G	1	Step Weldment =Green=	
	411043R	411037R	1	Step Weldment =Red=	

Platform, Railings - Models 2400 for SN B44200099 and Lower

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



ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Platform Weldment (Green)	403028G	1	
	Platform Weldment (Red)	403028R	1	
2	RH Rest Weldment (Green)	401126G	1	
	RH Rest Weldment (Red)	401126R	1	
3	LH Rest Weldment (Green)	401127G	1	
	LH Rest Weldment (Red)	401127R	1	

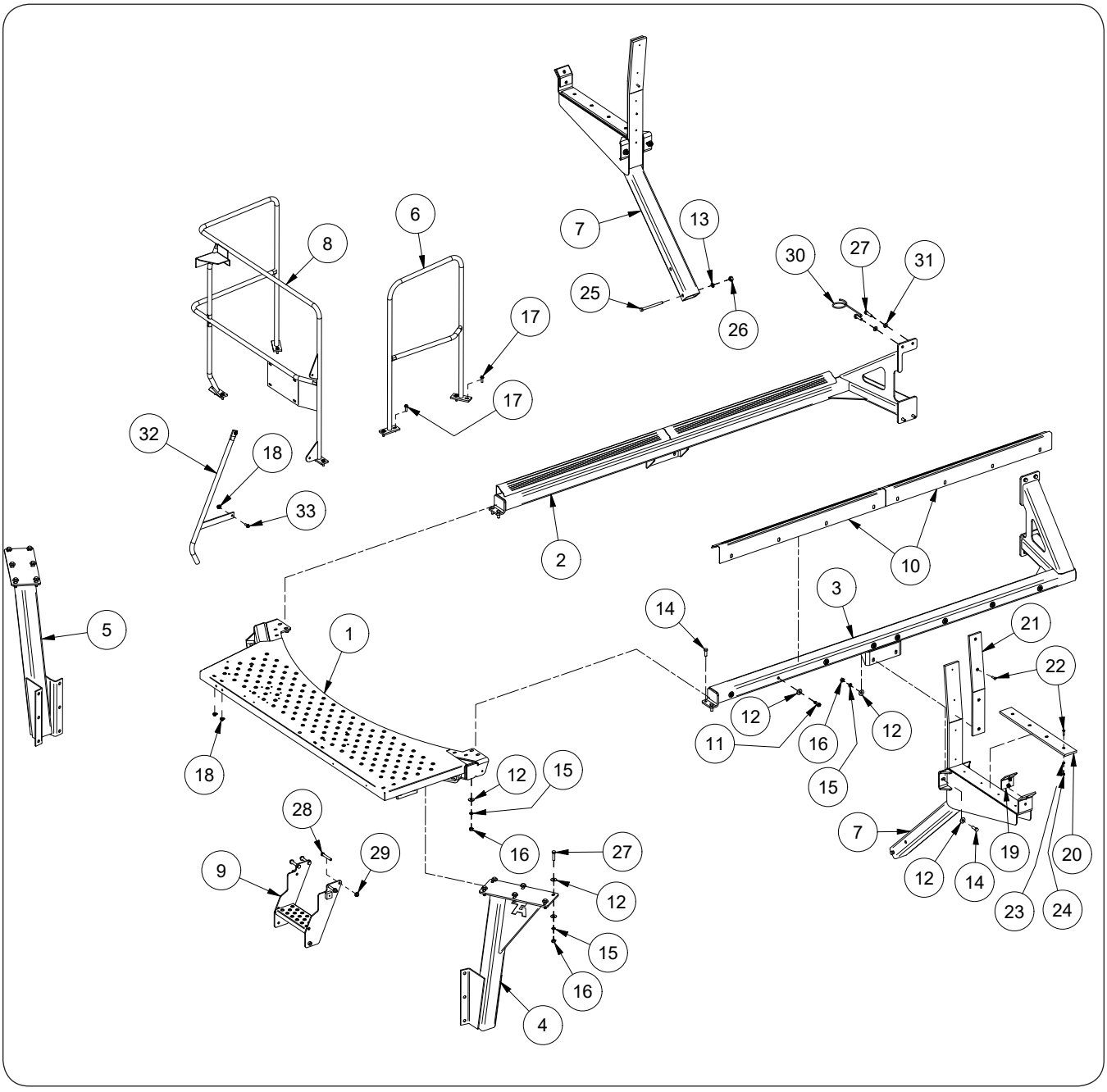
Platform, Railings - Models 2400 for SN B44200099 and Lower

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
4	Platform Railing Weldment (Green)	409254G	1	
	Platform Railing Weldment (Red)	409254R	1	
5	LH Railing Weldment (Green)	403076G	1	
	LH Railing Weldment (Red)	403076R	1	
6	Handrail Weldment (Green)	407738G	1	
	Handrail Weldment (Red)	407738R	1	
7	Capscrew Flange, 3/8-16UNC x 1 1/4	9003259	10	Grade 5
8	Nut/Large Flange, 3/8-16UNC	91263	12	
9	Screw/Large Flange, 3/8-16UNC x 1	91262	2	Grade 5
10	RH Perimeter Weldment (Green)	403866G	1	
	RH Perimeter Weldment (Red)	403866R	1	
11	LH Perimeter Weldment (Green)	403867G	1	
	LH Perimeter Weldment (Red)	403867R	1	
12	Capscrew, 1/2-13UNC x 1 1/2	9390-101	15	Grade 5
13	Capscrew, 1/2-13UNC x 2	9390-103	12	Grade 5
14	Hex Nut, 1/2-13 UNC	9394-010	20	
15	Lock Washer, 1/2	9404-025	28	
16	Flat Washer, 1/2	9405-088	36	
17	Capscrew, 5/8-11UNC x 5 1/2	9390-135	4	
18	Hex Nut, 5/8-11UNC	9394-014	4	
19	Lock Washer, 5/8	9404-029	4	
20	Wing Rest Assembly (Green)	405725G	2	
	Wing Rest Assembly (Red)	405725R	2	
21	Wing Rest Weldment (Green)	403071G	2	
	Wing Rest Weldment (Red)	403071R	2	
22	Poly Rest Pad	400875	2	
23	Poly Rest Pad	403784	2	
24	Poly Rest Pad	404777	2	
25	Hex Nut, 5/16-18UNC	9394-004	10	
26	Flat Head, 5/16-18UNC x 1 1/4	9400-102	12	Machine Screw
27	Flat Head, 5/16-18UNC x 3/4	9400-105	8	Machine Screw
28	Lock Washer, 5/16	9404-019	10	
29	Flat Washer, 5/16	9405-070	4	
30	Finishing Plug	9005842	1	
31	Step Weldment =Green=	411043G	1	
	Step Weldment =Red=	411043R		
32	Capscrew, 1/2-13UNC x 3 1/4 Gr.5	9390-108	4	
33	Flange Nut, 1/2-13UNC Gr.5	9003397	4	
34	Hose Holder	9005689	1	
35	Capscrew 1/2"-13UNC x 2"	9390-103	1	
36	Flat Washer 1/2" SAE	9405-086	1	

Platform, Railings - Models 2400 for SN B44200100 and Higher

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



ITEM	PART NO.	QTY.	DESCRIPTION	NOTES
1	403028G	1	Platform Weldment =Green=	
	403028R		Platform Weldment =Red=	
2	403866G	1	RH Perimeter Weldment =Green=	
	403866R		RH Perimeter Weldment =Red=	
3	403867G	1	LH Perimeter Weldment =Green=	
	403867R		LH Perimeter Weldment =Red=	

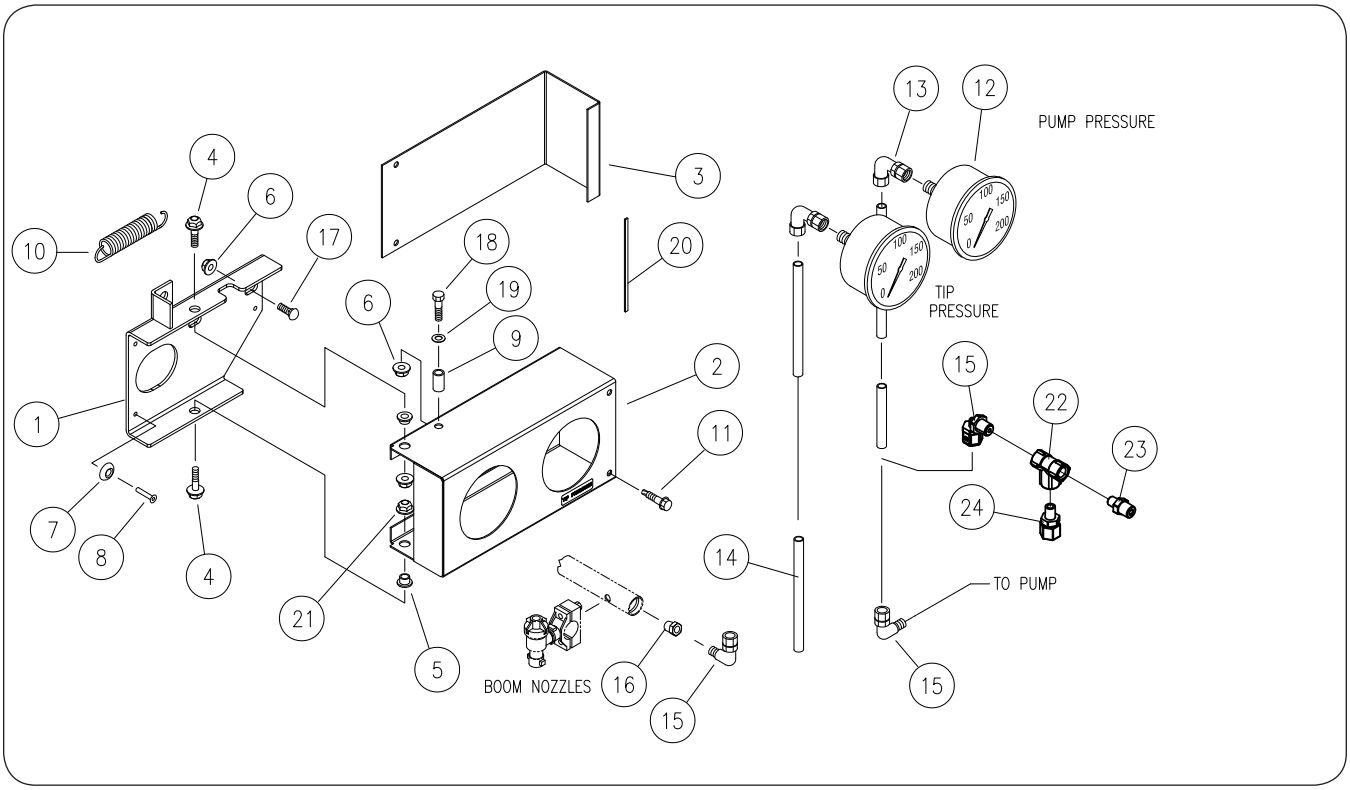
Platform, Railings - Models 2400 for SN B44200100 and Higher

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

ITEM	PART NO.	QTY.	DESCRIPTION	NOTES
4	401127G	1	LH Rest Weldment =Green=	
	401127R		LH Rest Weldment =Red=	
5	401126G	1	RH Rest Weldment =Green=	
	401126R		RH Rest Weldment =Red=	
6	403076G	1	LH Railing Weldment =Green=	
	403076R		LH Railing Weldment =Red=	
7	403071G	2	Wing Rest Weldment =Green=	
	403071R		Wing Rest Weldment =Red=	
8	409254G	1	Platform Railing Weldment =Green=	
	409254R		Platform Railing Weldment =Red=	
9	411043G	1	Step Weldment =Green=	
	411043R		Step Weldment =Red=	
10	416459G	1	Tank Support =Green=	
	416459R		Tank Support =Red=	
11	9009818	16	Box Bolt 5/16”-18UNC Grade 8	
12	9405-088	52	Flat Washer, 1/2	
13	9404-029	4	Lock Washer, 5/8	
14	9390-101	15	Capscrew, 1/2-13UNC x 1 1/2 Grade 5	
15	9404-025	28	Lock Washer, 1/2	
16	9394-010	20	Hex Nut, 1/2-13 UNC	
17	9003259	10	Capscrew Flange, 3/8-16UNC x 1 1/4 Grade 5	
18	91263	12	Nut/Large Flange, 3/8-16UNC	
19	400875	2	Poly Rest Pad	
20	403784	2	Poly Rest Pad	
21	404777	2	Poly Rest Pad	
22	9400-102	12	Flat Head, 5/16-18UNC x 1 1/4	Machine Screw
23	9404-019	10	Lock Washer, 5/16	
24	9394-004	10	Hex Nut, 5/16-18UNC	
25	9390-115	2	Capscrew 1/2”-13UNC x 6 Grade 5	
26	9394-014	4	Hex Nut, 5/8-11UNC	
27	9390-103	1	Capscrew 1/2”-13UNC x 2”	
28	9390-108	4	Capscrew, 1/2-13UNC x 3 1/4 Grade	
29	9003397	4	Flange Nut, 1/2-13UNC	
30	9005689	1	Hose Holder	
31	9405-086	1	Flat Washer 1/2” SAE	
32	407738G	1	Handrail Weldment =Green=	
	407738R		Handrail Weldment =Red=	
33	91262	2	Screw/Large Flange, 3/8-16UNC x 1 Grade 5	

Gauge Panel For SN B44200099 and Lower

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



Gauge Panel For SN B44200099 and Lower

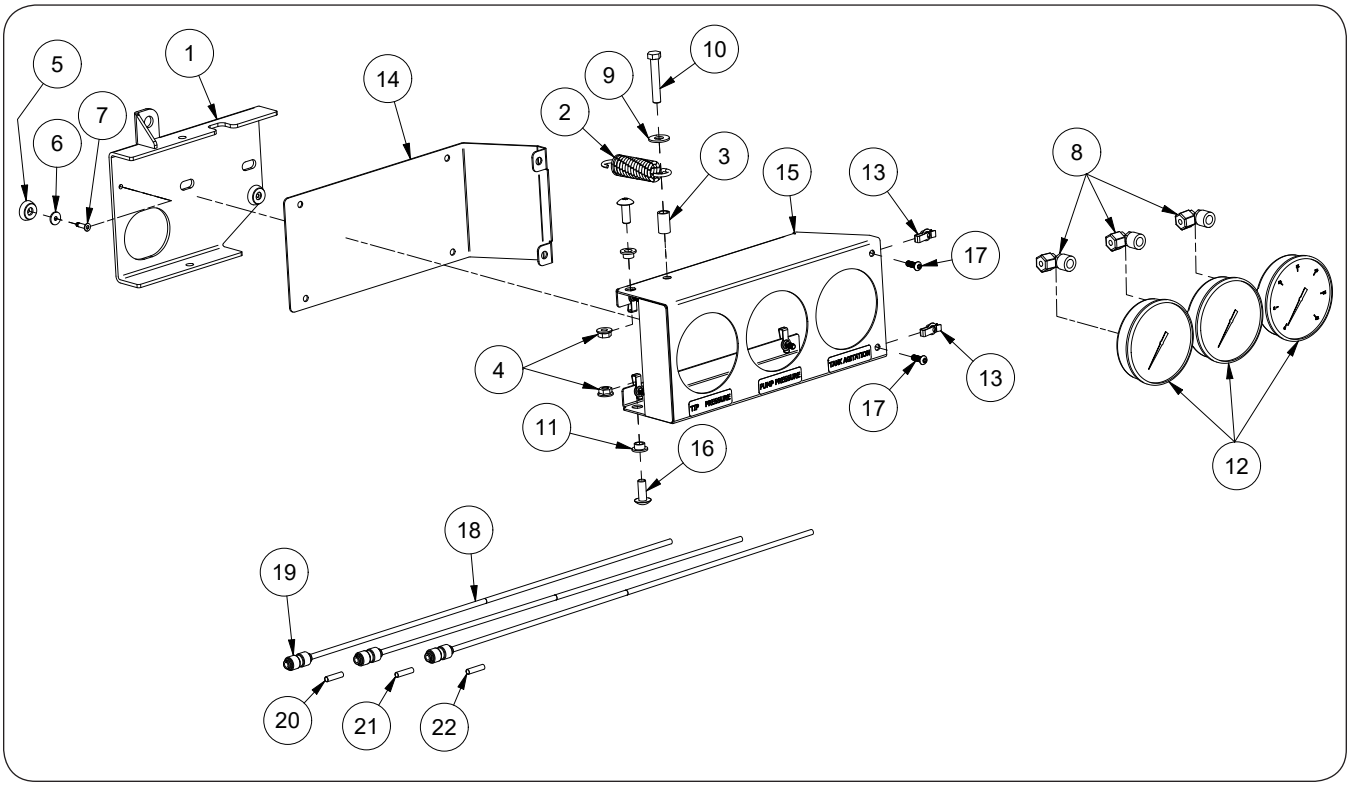
Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Gauge Bracket Mount Weldment	401114B	1	
2	Gauge Bracket Weldment	401870B	1	
3	Cover, Back - Gauge	401103B	1	
4	Flange Screw, 3/8-16NC x 1	91262	2	
5	Shoulder Washer, 3/8 ID	9003862	2	
6	Flange Nut, 3/8-16NC	91263	3	
7	Bumper	9003850	2	
8	Pop Rivet, 3/16	TA0-908386-0	2	
9	Spacer	401109	1	
10	Spring	9002044	1	
11	Self-Threading Screw, 1/4-14NC x 1	9512	2	
12	Gauge, Pressure	9003758	2	
13	Elbow, 1/4 FPT x 1/4 Tube	TA720812	2	
14	Tubing, 1/4	TA720620	AR	Specify Feet
15	Elbow, 1/4 MPT x 1/4 Tube	TA720802	1	
16	Reducer Bushing	TA814651	1	
17	Carriage Bolt, 3/8-16NC x 3/4	9388-050	2	
18	Capscrew, 3/8-16NC x 2 1/4	9390-060	1	
19	Flat Washer, 3/8	9405-076	1	
20	Rubber Trim, 3/16”	9003756	1	Specify Feet
21	Flange Lock Nut, 3/8-16NC	9003396	2	
22	Poly Pipe Tee, 1/4”	TA809190	1	
23	Pipe Nipple	TA802450	1	
24	Adapter, 1/4” MPT x 1/4” Tube	TA720808	1	

NOTE: Remove all gauges and store indoors in an upright position to prevent freezing.

Gauge Panel For SN B44200100 and Higher

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



Gauge Panel For SN B44200100 and Higher

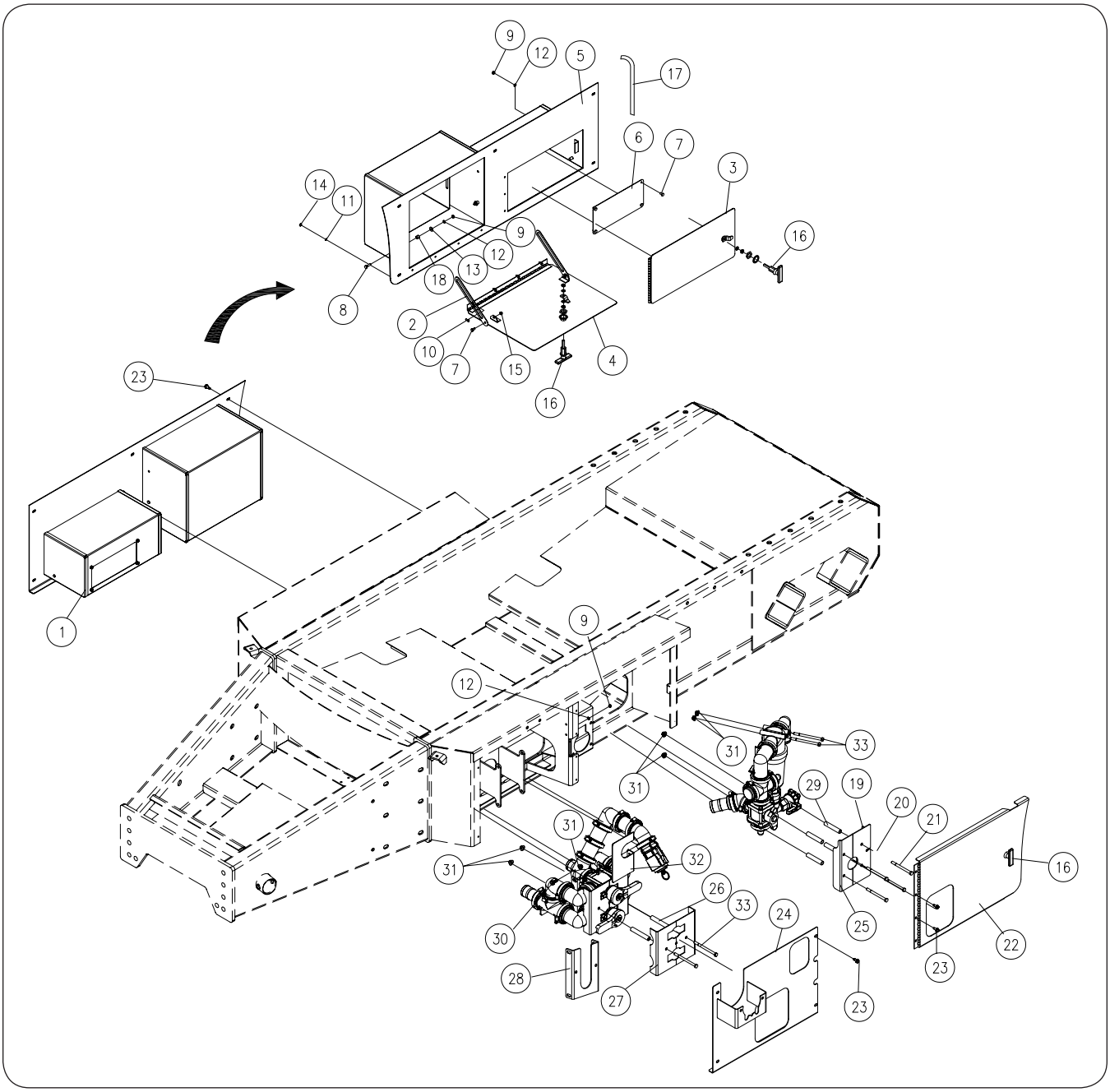
Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	QTY.	DESCRIPTION	NOTES
1	402889	1	Gauge Mount Weldment	
2	9002044	1	Extension Spring	
3	401109	1	Spacer Tube	
4	9003396	2	Locknut 3/8”-16UNC	
5	9003850	2	Bumper	
6	9405-048	2	Flat Washer #8	
7	TA0-908386-0	2	Stainless Pop Rivet 3/8”	
8	TA720812	3	Elbow 1/4” FPT x 1/4” Tube	
9	9405-076	1	Flat Washer 3/8” USS	
10	9390-060	1	Capscrew 3/8”-16UNC x 2 1/4” Grade 5	
11	9003862	2	Washer, Shouldered 1/4”	
12	9007569	3	Pressure Gauge 0-160PSI	
13	TA500592	6	Cage Nut	
14	416549	1	Gauge Cover Plate	
15	416552	1	Gauge Bracekt Weldment	
16	9005312	2	Truss Head Machine Screw 3/8”-16UNC x 1”	
17	9003829	6	Button Head Socket Screw 1/4”-20UNC x 3/4” Grade 5	
18	TA720620	3	Gauge Tubing	Order By The Foot
19	TA750171	3	Coupler 1/4” Push to Connect	
20	9010009	1	Shrink Wrap (Blue)	For Tip Pressure Gauge
21	9010008	1	Shrink Wrap (White)	For Pump Pressure Gauge
22	9010007	1	Shrink Wrap (Red)	For Tank Aggitation Gauge

NOTE: Remove all gauges and store indoors in an upright position to prevent freezing.

Toolbox, Side Panels & Command Center Mounting

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



ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
1	Toolbox Assembly =Green=	404517G	404523G	403060G	
	Toolbox Assembly =Red=	404517R	404523R	403060R	
2	Door Stop	401228B	>	>	
3	Door Weldment =Green=	401800G	>	>	
	Door Weldment =Red=	401800R			

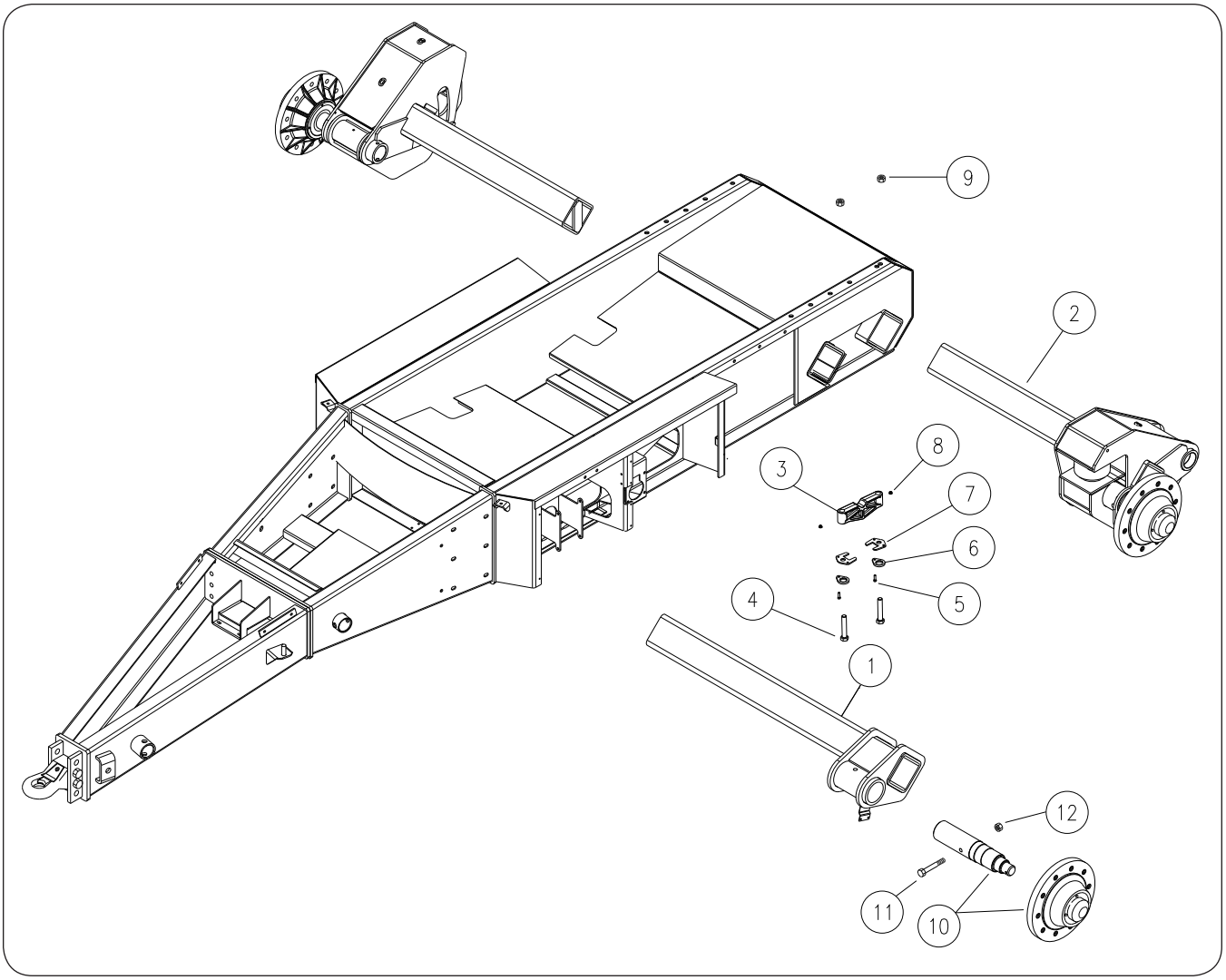
Toolbox, Side Panels & Command Center Mounting

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

ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
4	Door Weldment =Green=	402809G	401801G	403061G	
	Door Weldment =Red=	402809R	401801R	403061R	
5	RH Side Weldment =Green=	403053G	403047G	403898G	
	RH Side Weldment =Red=	403053R	403047R	403898R	
6	Cover Plate	404647B	>	>	
7	Capscrew, 1/4-20UNC x 1/2	9390-001	>	>	Grade 5
8	Capscrew, 1/4-20UNC x 1	9390-005	>	>	Grade 5
9	Nut, 1/4-20UNC	9394-002	>	>	Grade 5
10	Flat Head Screw, #10-32UNF x 1/2	9400-076	>	>	
11	Lock Washer, #10	9404-013	>	>	
12	Lock Washer, 1/4	9404-017	>	>	
13	Flat Washer, 1/4	9405-064	>	>	
14	Nut, #10-32UNF	9830-016	>	>	Grade 2
15	Locknut, 1/4-20UNC	9936	>	>	
16	T-Handle, Black	TA610014	>	>	
17	Gasket, 1/4 x 1/2" Foam	9003757	>	>	
18	Bushing, 1/2 x 1/4 x 7/16"	401227	>	>	
19	Clamp, Valve	403881B	>	>	
20	Rubber Grommet	9001005	>	>	
21	Capscrew, 3/8-16UNC x 4 1/2	9390-068	>	>	
22	Door Weldment =Green=	403046G	-	-	
	Door Weldment =Red=	403046R	-	-	
	Door Weldment =Green=	-	403051G	-	
	Door Weldment =Red=	-	403051R	-	
	Door Weldment =Green=	-	-	403894G	
	Door Weldment =Red=	-	-	403894R	
23	Capscrew, Flange 5/16-18UNC x 3/4	9004565	>	>	
24	LH Front Panel =Green=	408102G	407447G	407449G	
	LH Front Panel =Red=	408102R	407447R	407449R	
25	Bracket, Valve	405110B	>	>	
26	Bushing, Spacer	403858B	>	>	
27	Bracket, Valve	403870B	>	>	
28	Bracket, Valve	403874B	>	>	
29	Bushing, Spacer	403860B	>	>	
30	Screw, Large Flange 3/8-16UNC x 1	91262	>	>	Grade 5
31	Nut, Large Flange 3/8-16UNC	91263	>	>	Grade 5
32	Bracket, Quick Fill	403871B	>	>	
33	Capscrew, 3/8-16UNC x 5	9390-069	>	>	Grade 5

Axle

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



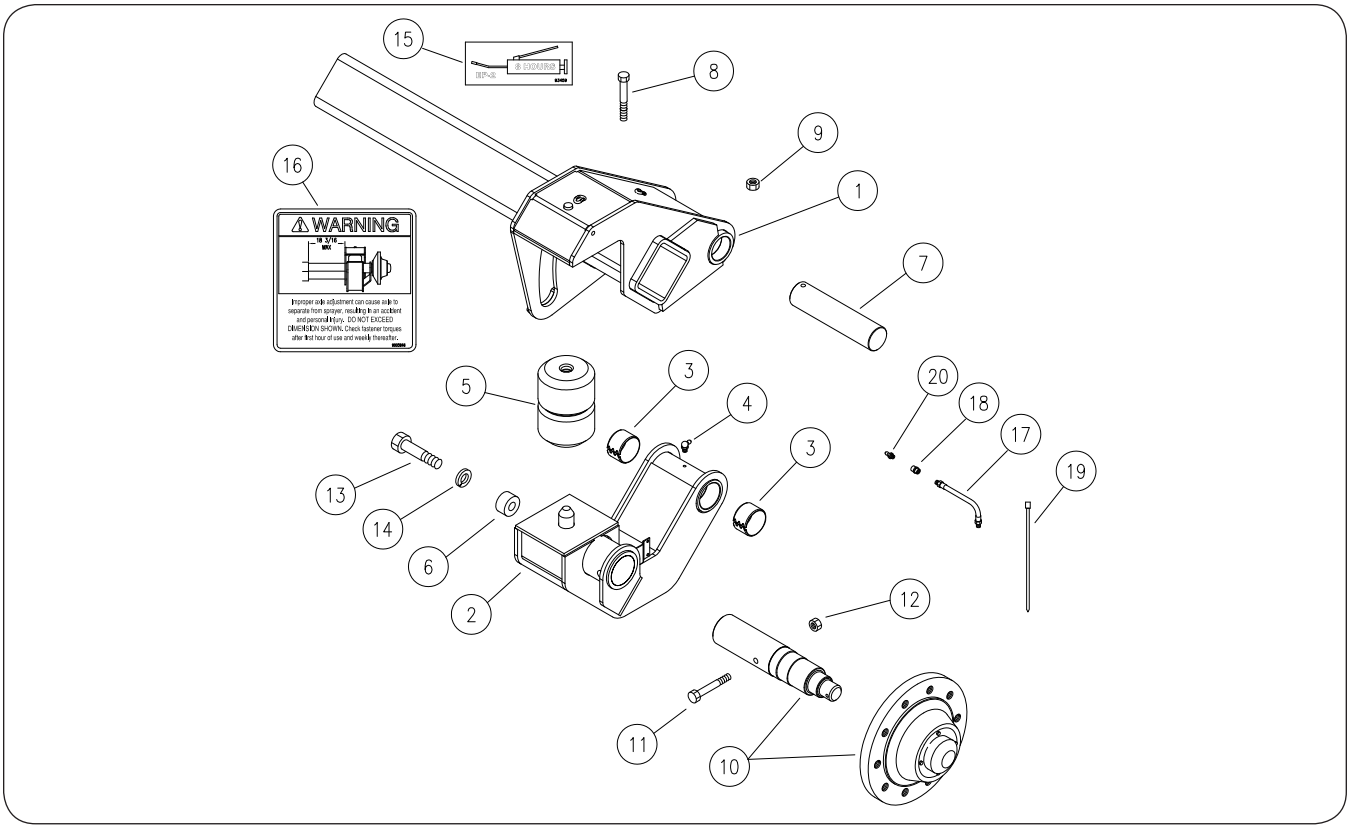
Axle

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

ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
1	Axle Weldment, Non-Suspended	402642B	-	-	
2	Axle Assembly, Suspended	402063	400752	406741	See page 5-20
3	Clamp	404785B	404785B	404785B	
4	Capscrew, 1-8UNC x 5 1/2	9390-194	>	>	Grade 5
5	Capscrew, 3/8-16UNC x 1 1/4 Grade 5	9390-056	>	>	Beginning with SN B37240100 & Higher
	Hardened Flat Washer 1"	-	-	9448	Prior to SN B37240100
6	Bolt Retainer Plate	413570B	>	>	Beginning with SN B37240100 & Higher
7	Bolt Retainer Plate	413569B	>	>	Beginning with SN B37240100 & Higher
8	Locknut, 3/8-16UNC Grade F	9003396	>	>	Beginning with SN B37240100 & Higher
9	Hex Nut, 1-8UNC Grade 5	9394-020	>	>	Beginning with SN B37240100 & Higher
	Hex Lock Nut, 1-8UNC Grade 5	92199	>	>	Prior to SN B37240100
10	Hub & Spindle Assembly - Non-Suspended Axle	401593B	-	-	
	Hub & Spindle Assembly - Suspended Axle	400765B	400765B	400765B	
11	Capscrew, 5/8-11UNC x 5 1/2	9390-135	>	>	Grade 5
12	Locknut, 5/8-11UNC	95905	>	>	

Suspended Axle

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



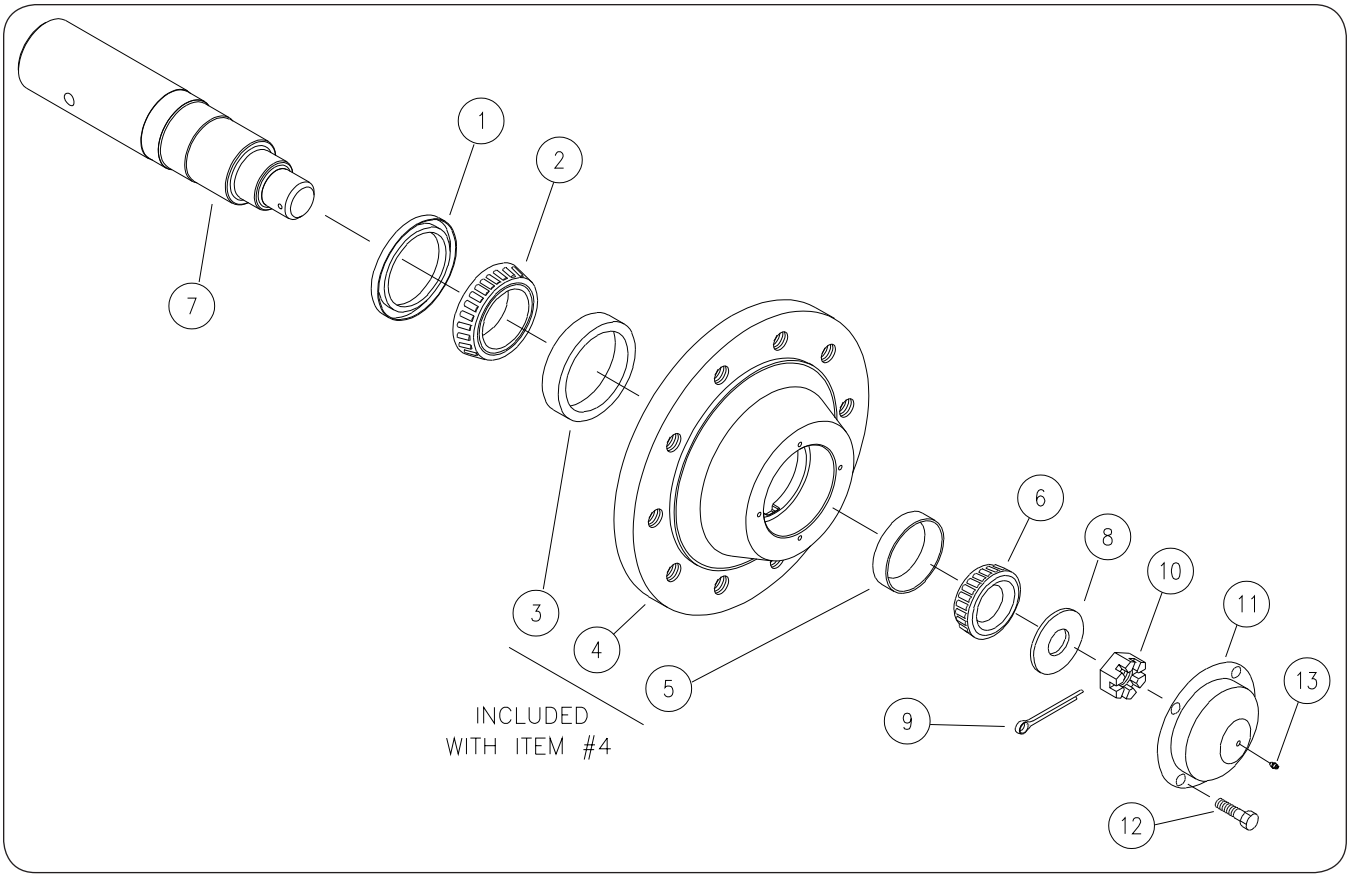
Suspended Axle

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

ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
	Axle Assembly - 120”	402063	400752	406741	
	Axle Assembly - 144”	405829	405830		
1	Upper Axle Weldment - 120”	<	400751B	406740B	
	Upper Axle Weldment - 144”	<	405822B		
2	Lower Axle Weldment	<	400741B	413750B	
3	Bushing	<	9003415	>	3 1/4 OD x 3 ID x 2
4	Grease Zerk, 1/8 NPT 90°	<	9000875	>	
5	Spring/Rubber	9004161	9003597	9004706	
6	Bushing	<	400707	>	2 1/2 OD x 1 ID x 1 3/8
7	Pin 3” Dia. x 12 13/16	<	400660	>	
8	Capscrew, 1/2-13UNC x 4 1/2	<	9390-112	>	Grade 5
9	Locknut, 1/2-13UNC	<	94981	>	
10	Hub & Spindle Assembly	<	400765B	>	
11	Capscrew, 5/8-11UNC x 5 1/2	<	9390-135	>	Grade 5
12	Locknut, 5/8-11UNC	<	95905	>	
13	Capscrew, 1-8UNC x 3 1/2	<	9390-189	>	Grade 5
14	Lock Washer, 1”	<	9404-041	>	
15	Decal, Grease - 8 Hours	<	93459	>	
16	Decal, WARNING Axle Adjustment	<	9003846	>	
17	Hose, 1/4 x 24”	<	9003830	>	
18	Pipe Coupling, 1/8 NPT	<	9003949	>	
19	Plastic Tie, 15 1/2”	<	9000107	>	
20	Grease Zerk, 1/8 NPT	<	93426	>	

Hub & Spindle

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



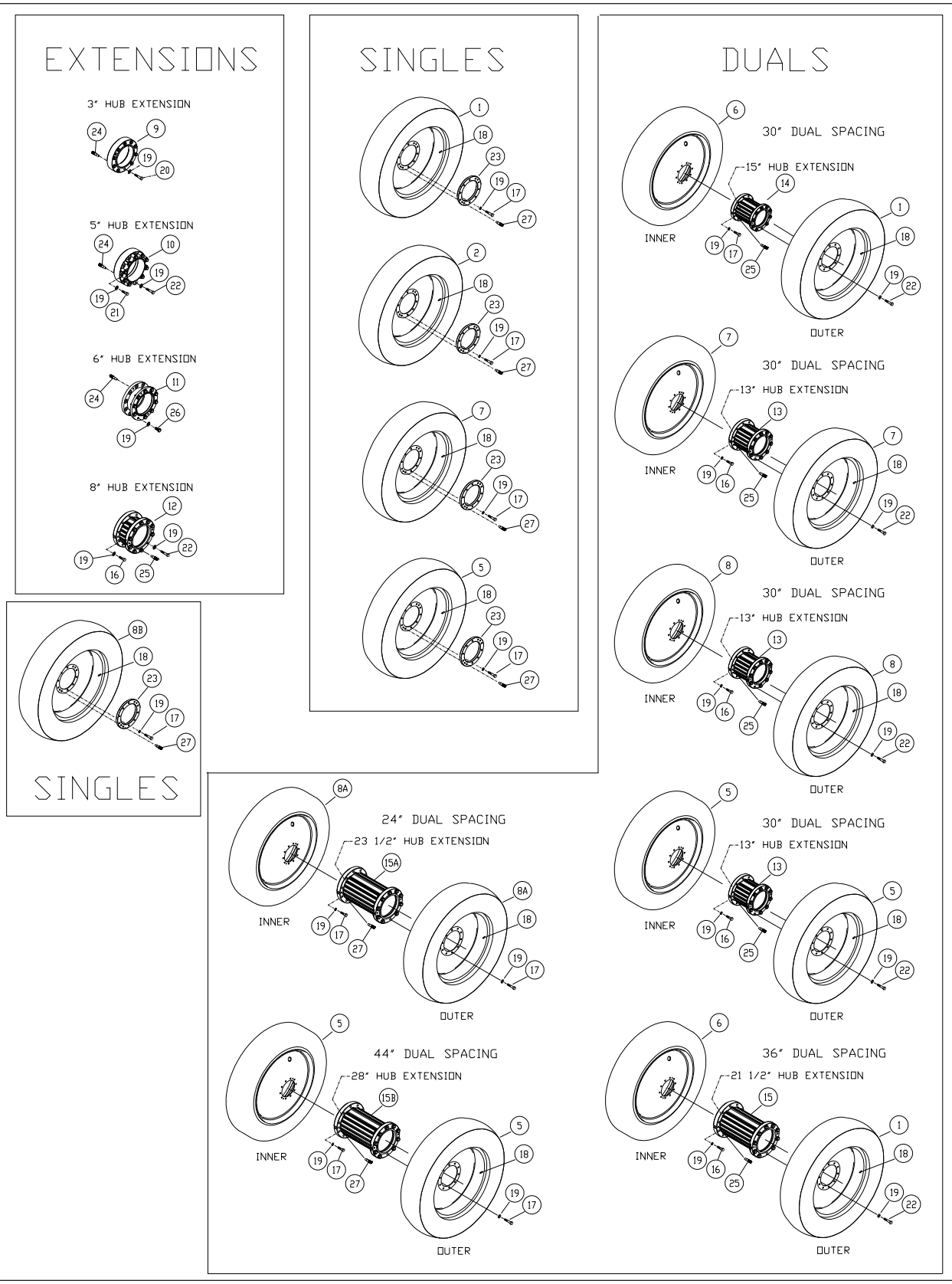
Hub & Spindle

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

ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
	Hub & Spindle Assembly	401593B Standard Axle	400765B Suspended Axle	400765B Suspended Axle	10 Bolt Hub w/ 3 3/4 Spindle
1	Seal 3.685 ID	92565	>	>	SA370605
2	Inner Bearing Cone	92545	>	>	HM218248
3	Inner Bearing Cup	92476	>	>	HM218210
4	Hub w/Cups	401144B	>	>	
5	Outer Bearing Cup	92462	>	>	HM212011
6	Outer Bearing Cone	92464	>	>	HM212049
7	Spindle 3 3/4" Dia.	401580	400743	400743	
8	Spindle Washer 2 1/16" ID	92472	>	>	
9	Cotter Pin 3/8" Dia. x 4	9391-090	>	>	
10	Castle Nut 2-12UNF	92470	>	>	Grade 5
11	Hub Cap w/Hole	286171B	>	>	
12	Capscrew 5/16-18UNC x 1/2	9390-026	>	>	Grade 5
13	Grease Zerk	91160	>	>	

Wheels & Tires - Models 1200 / 1600

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



Wheels & Tires - Models 1200 / 1600

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

ITEM	DESCRIPTION	PART NO.	NOTES
1	Wheel & Tire Assembly =Silver Mist=	16477SM/902519	Only Sliver Mist SN B37240100 & Higher TL380/90R46A 8 Star R-1
	Wheel & Tire Assembly =Yellow=	16378Y	
	Wheel Only =Silver Mist=	16477SM	13 x 46 10 Hole
	Wheel Only =Yellow=	16477Y	
2	Wheel & Tire Assembly =Silver Mist=	16376SM	Only Sliver Mist SN B37240100 & Higher TL480/80R42F 3 Star R-1
	Wheel & Tire Assembly =Yellow=	16376Y	
	Wheel Only =Silver Mist=	16369SM	16 x 42 10 Hole
	Wheel Only =Yellow=	16369Y	
5	Wheel & Tire Assembly =Silver Mist=	17142SM/9501538	Only Sliver Mist SN B37240100 & Higher TL320/90R50A 8 Star R-1
	Wheel & Tire Assembly =Yellow=	17143Y	
	Wheel Only =Silver Mist=	17142SM	10 x 50 10 Hole
	Wheel Only =Yellow=	17142Y	
6	Wheel & Tire Assembly =Silver Mist=	16366SM/902519	Only Sliver Mist SN B37240100 & Higher TL380/90R46A 8 Star R-1
	Wheel & Tire Assembly =Yellow=	16379Y	
	Wheel Only =Silver Mist=	16366SM	13 x 46 10 Hole
	Wheel Only =Yellow=	16366Y	
7	Wheel & Tire Assembly =Silver Mist=	16648SM/9501416	Only Sliver Mist SN B37240100 & Higher TL 320/95R46 R-1
	Wheel & Tire Assembly =Yellow=	16649Y	
	Wheel Only =Silver Mist=	16648SM	10 x 46 10 Hole
	Wheel Only =Yellow=	16648Y	
8	Wheel & Tire Assembly =Silver Mist=	17104SM	Only Sliver Mist SN B37240100 & Higher TL 270/95R48A R-1
	Wheel & Tire Assembly =Yellow=	17104Y	
	Wheel Only =Silver Mist=	17103SM	10 x 48 10 Hole
	Wheel Only =Yellow=	17103Y	
8A	Wheel & Tire Assembly =Silver Mist=	16376SM	Only Sliver Mist SN B37240100 & Higher TL 480/80R42F R-1
	Wheel & Tire Assembly =Yellow=	16376Y	
	Wheel Only =Silver Mist=	16369SM	16 x 42 10 Hole
	Wheel Only =Yellow=	16369Y	
8B	Wheel & Tire Assembly =Silver Mist=	111190SM	TL 320/90R42 R-1W 10 x 42 10 Hole

(Continued on next page)

Wheels & Tires - Models 1200 / 1600 (continued)

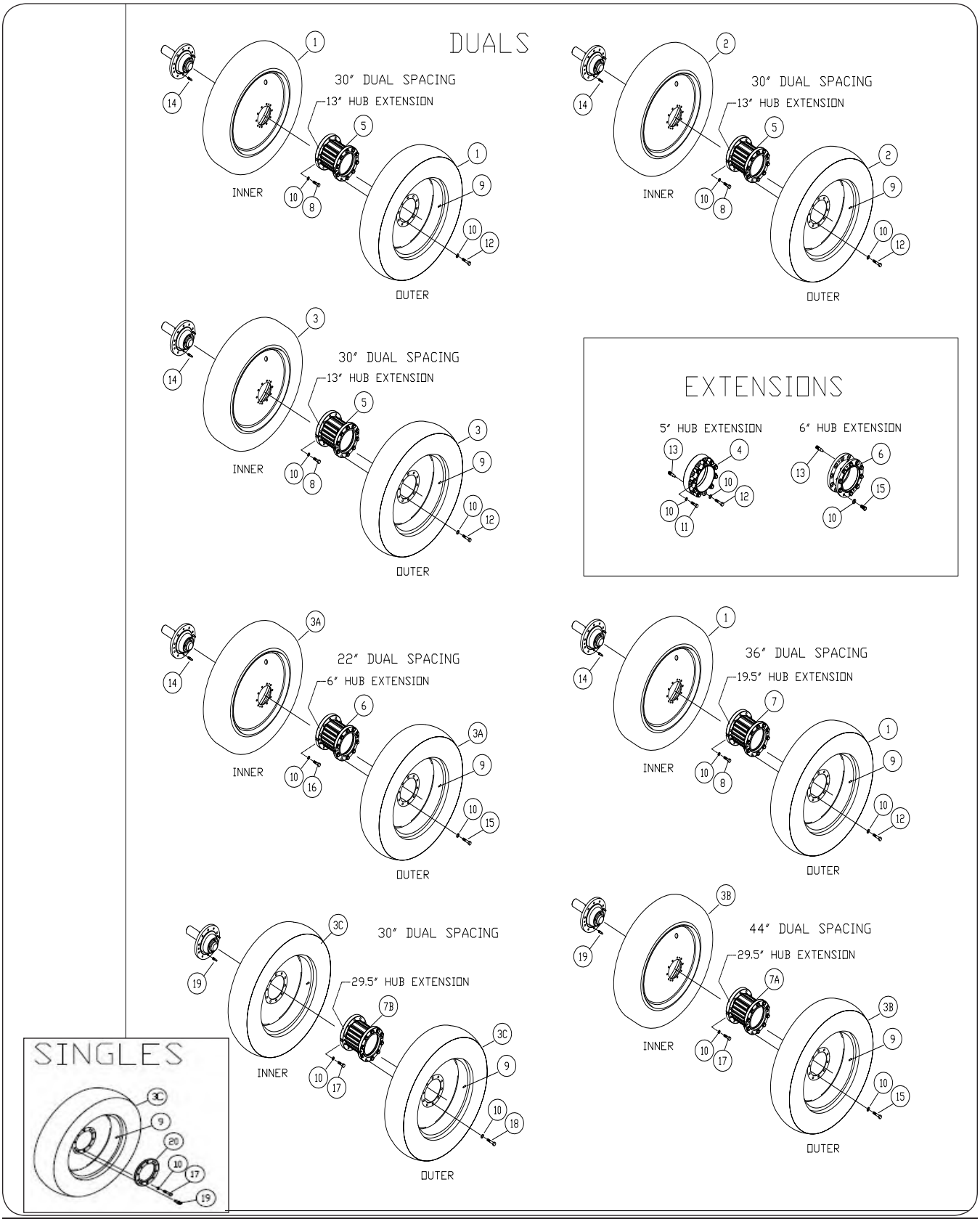
Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
		Extensions (2 Per Unit)		
9	Hub Extension 3" Kit =Black=	404792B	1	Used With 320/90R46 & 320/90R50 20" Rows Includes Hub & Hardware
	Hub Extension 3" Kit =Yellow=	404792Y		
10	Hub Extension 5" Kit =Black=	403201B	1	Used With 320/90R46 22" Rows Includes Hub & Hardware
	Hub Extension 5" Kit =Yellow=	403201Y		
11	Hub Extension 6" Kit =Black=	17540B	1	Includes Hub & Hardware
	Hub Extension 6" Kit =Yellow=	17540Y		
12	Hub Extension 8" Kit =Black=	404791B	1	Used With 380/90R46 22" Rows Includes Hub & Hardware
	Hub Extension 8" Kit =Yellow=	404791Y		
13	Hub Extension 13" Kit =Black=	402863B	1	Used With 320/90R46 30" Rows Includes Hub & Hardware
	Hub Extension 13" Kit =Yellow=	402863Y		
14	Hub Extension 15" Kit =Black=	404789B	1	Used With 380/90R46 30" Rows Includes Hub & Hardware
	Hub Extension 15" Kit =Yellow=	404789Y		
15	Hub Extension 21 1/2" Kit =Black=	404790B	1	Used With 380/90R46 36" Rows Includes Hub & Hardware
	Hub Extension 21 1/2" Kit =Yellow=	404790Y		
15A	Hub Extension 23 1/2" Kit =Black=	18070B	1	
	Hub Extension 23 1/2" Kit =Yellow=	18070Y		
15B	Hub Extension 28" Kit =Black=	19242B	1	
	Hub Extension 28" Kit =Yellow=	19242Y		
		Hardware		
16	Wheel Bolt, 7/8-14UNF x 4	97043	20	Grade 8
17	Wheel Bolt, 7/8-14UNF x 3 1/2	97042	20	Grade 8
18	Valve Stem	93300	2	
19	Flat Washer, 7/8	97041	20	
20	Capscrew, 7/8-14UNF x 6	9004138	20	Grade 8
21	Capscrew, 7/8-14UNF x 5 1/2	9004543	20	Grade 8
22	Capscrew, M22 x 2.5P x 65 C10.9	95657	20	Full Threaded
23	Reinforcing Ring =Yellow=	14442Y	2	
	Reinforcing Ring =Silver Mist=	14442SM		
24	Guide Pin 7/8" Dia.	266459	2	
25	Guide Pin 5/8" Dia. (3.125 Lg.)	19293	4	
26	Capscrew, M22 x 2.5P x 50 C10.9	91593	20	
27	Guide Pin, 5/8" DIA. (2.625 Lg.)	10041	2 - Singles	
			4 - Duals	

Notes

Wheels & Tires - Model 2400 Duals

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



Wheels & Tires - Model 2400 Duals

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Wheel & Tire Assembly =Silver Mist=	17075SM/9501418		Only Sliver Mist SN B37240100 & Higher TL380/90R54 R-1W
	Wheel & Tire Assembly =Yellow=	17076Y		
	Wheel Only =Silver Mist=	17075SM		12 x 54 10 Hole
	Wheel Only =Yellow=	17075Y		
2	Wheel & Tire Assembly =Yellow=	17042		Only Sliver Mist SN B37240100 & Higher TL380/105R50 R-1
	Wheel Only =Silver Mist=	14955SM		12 x 50 10 Hole
	Wheel Only =Yellow=	14955Y		
3	Wheel & Tire Assembly =Silver Mist=	17210SM/902535		Only Sliver Mist SN B37240100 & Higher TL 480/80R50 R-1W
	Wheel & Tire Assembly =Yellow=	17210Y/902535		
	Wheel Only =Silver Mist=	17210SM		15 x 50 10 Hole
	Wheel Only =Yellow=	17210Y		
3A	Wheel & Tire Assembly =Silver Mist=	17142SM/9501538		Only Sliver Mist SN B37240100 & Higher TL320/90R50A R-1W
	Wheel & Tire Assembly =Yellow=	17143Y		
	Wheel Only =Silver Mist=	17142SM		10 x 50 10 Hole
	Wheel Only =Yellow=	17142Y		
3B	Wheel & Tire Assembly =Silver Mist=	111467SM		Only Sliver Mist SN B37240100 & Higher 320/105R54
	Wheel & Tire Assembly =Yellow=	12782Y/99495		
	Wheel Only =Silver Mist=	12782SM		10 x 54 10 Hole
	Wheel Only =Yellow=	12782Y		
3C	Wheel & Tire Assembly =Silver Mist=	17467SM		Only Sliver Mist SN B37240100 & Higher 620/70R42
	Wheel & Tire Assembly =Yellow=	17467Y		
	Wheel & Tire Assembly =Silver Mist=	17466SM/902506		650/65R42 R-1
	Wheel & Tire Assembly =Yellow=	17466Y/902506		
	Wheel Only =Silver Mist=	17466SM		20 x 42 10 Hole
	Wheel Only =Yellow=	17466Y		

(Continued on next page)

Wheels & Tires - Model 2400 Duals (continued)

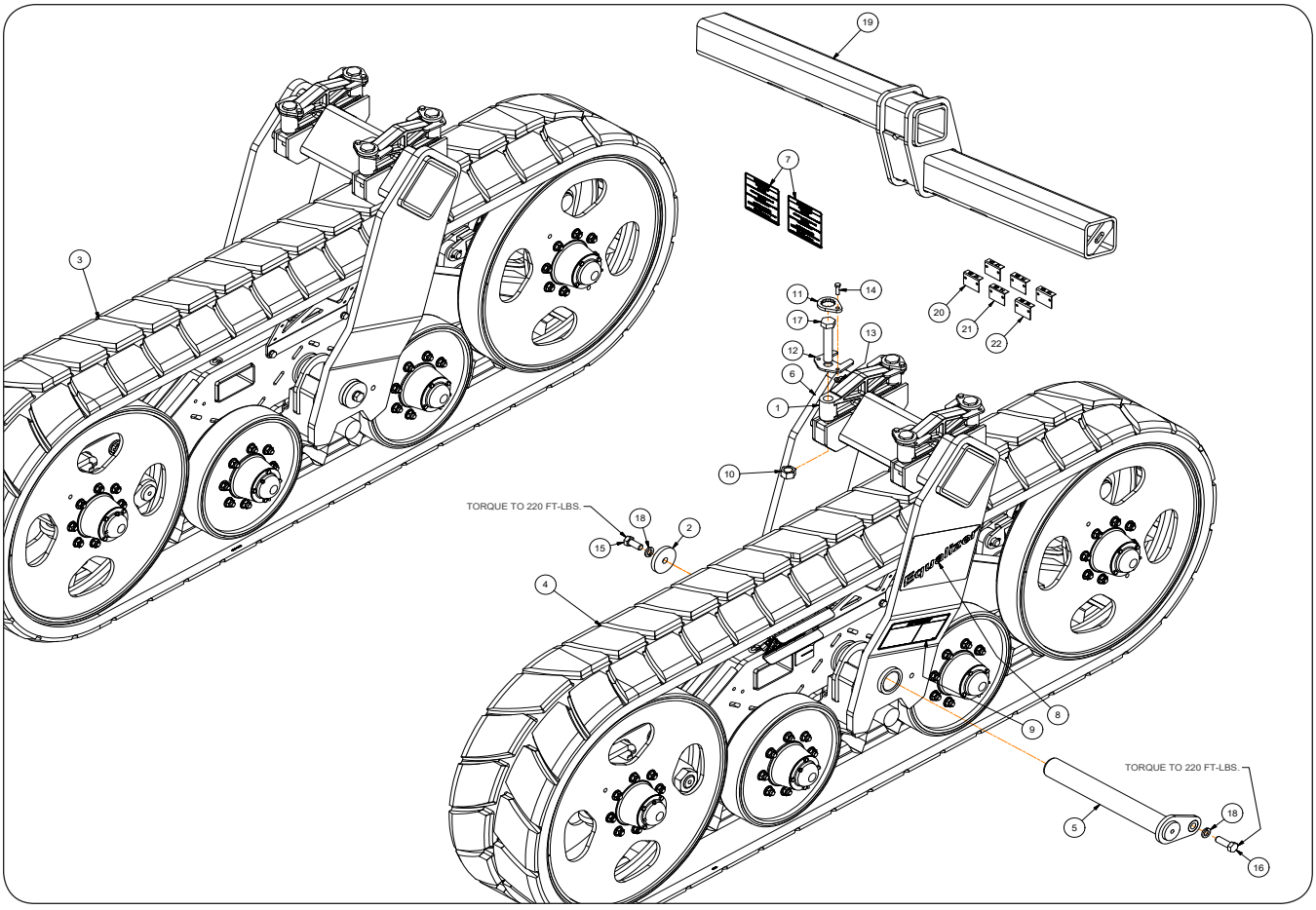
Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
		Extensions		
4	Hub Extension, 5" =Silver Mist=	16383SM	2	Used for 22" Rows with 380/90R54 & 380/105R50 Only Silver Mist SN B37240100 & Higher
	Hub Extension, 5" =Yellow=	16383Y		
	Extension Kit =Silver Mist=	403201SM	2	Includes Hub & Hardware Only Silver Mist SN B37240100 & Higher
	Extension Kit =Yellow=	403201Y		
5	Hub Extension, 13" =Silver Mist=	16967SM	2	Used for 30" Rows with 380/90R54 Only Silver Mist SN B37240100 & Higher
	Hub Extension, 13" =Yellow=	16967Y		
	Extension Kit =Silver Mist=	402863SM	2	Includes Hub & Hardware Only Silver Mist SN B37240100 & Higher
	Extension Kit =Yellow=	402863Y		
6	Hub Extension 6" Kit =Black=	17540B	2	Includes Hub & Hardware
	Hub Extension 6" Kit =Yellow=	17540Y		
7	Hub Extension 19.5" Kit =Black=	18875B	2	Used for 36" Rows with 380/90R54
	Hub Extension 19.5" Kit =Yellow=	18875Y		
7A	Hub Extension 29.5" Kit =Black=	14961B	2	
	Hub Extension 29.5" Kit =Yellow=	14961Y		
7B	Hub Extension 29.5" Kit =Black=	14960B	2	
	Hub Extension 29.5" Kit =Yellow=	14960Y		
		Hardware		
8	Wheel Bolt, 7/8-14UNF x 4	97043	20	Grade 8
9	Valve Stem	93300	2	
10	Flat Washer, 7/8	97041	20	
11	Capscrew, 7/8-14UNF x 5 1/2	9004543	20	Grade 8
12	Capscrew, M22 x 2.5P x 65 C10.9	95657	20	Full Threaded
13	Guide Pin 7/8" Dia.	266459	2	
14	Guide Pin 5/8" Dia. (3.125 Lg.)	19293	4	
15	Capscrew, M22 x 2.5P x 50 C10.9	91593	20	
16	Capscrew, 7/8-14UNF x 3	96780	20	Grade 8
17	Capscrew, 7/8-14UNF x 3 1/2	97042	20	Grade 8
18	Capscrew, M22 x 2.5P x 60 C10.9	97726	20	
19	Guide Pin, 5/8" DIA. (2.625 Lg.)	10041	2	Singles
			4	Duals
20	Reinforcing Ring =Yellow=	14442Y	2	
	Reinforcing Ring =Silver Mist=	14442SM		

Notes

Equalizer® Track Components - Model 1600

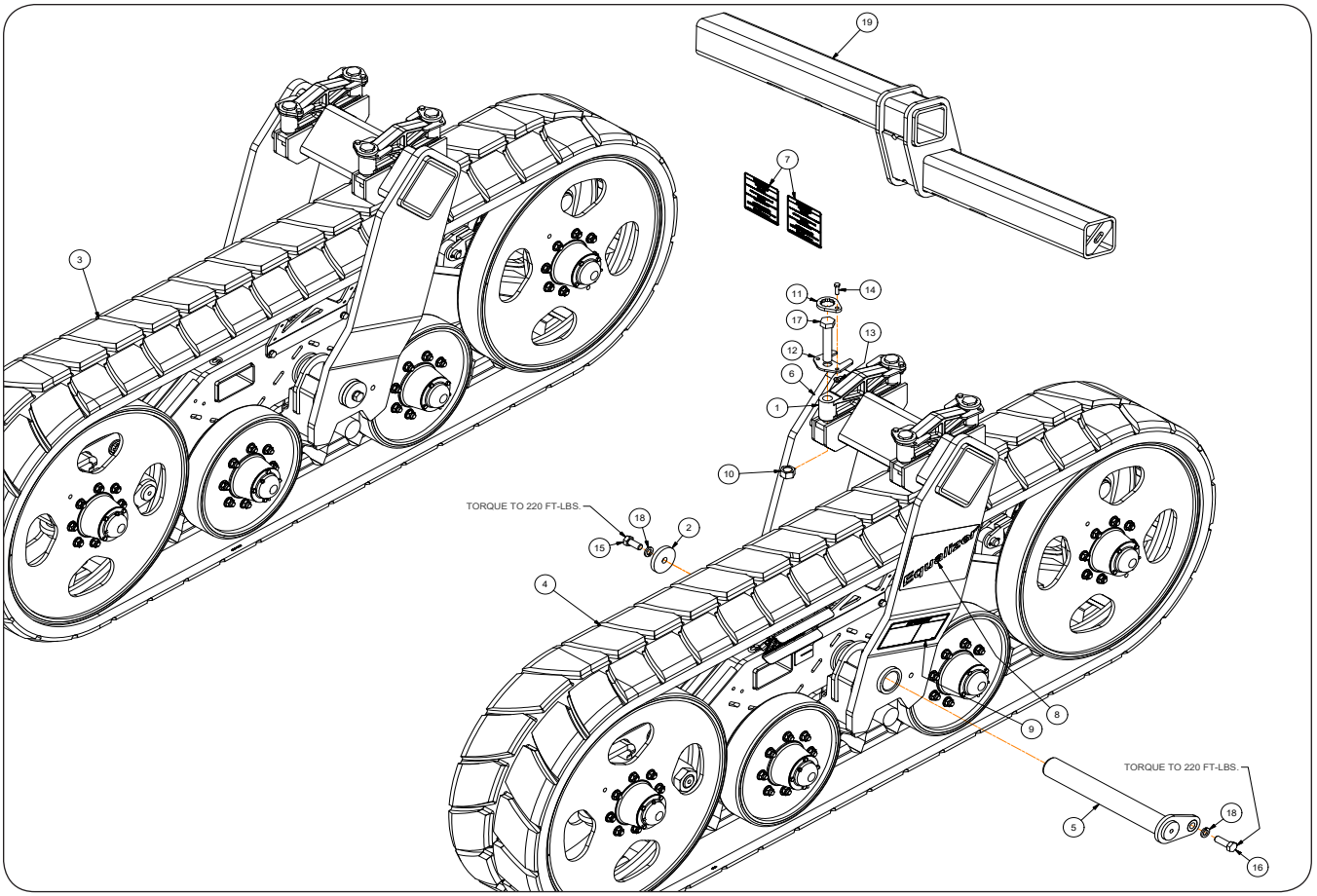
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Axle Clamp =Black=	404785B	4	
2	Pin Retainer Plate	408646	2	
3	Track Assembly, Right-Hand =Black=	409132B	1	
4	Track Assembly, Left-Hand =Black=	409133B	1	
5	Pivot Pin Weldment	411223	2	
6	Track Fork Weldment =Black=	411250B	2	
7	Decal, Important Track Guidlines	9007523	2	
8	Decal, Equalizer	9007564	2	
9	Decal, Important Track Grease	9007616	2	
10	Center Locknut, 1-8UNC	9394-020	8	SN B32740100 & Higher
		92199		Prior to SN B32740100
11	Bolt Retainer Plate 3 5/16"	413570B	8	SN B32740100 & Higher
12	Bolt Retainer Plate 3 7/8"	413569B	8	SN B32740100 & Higher
13	Locknut, 3/8-16UNC Grade F	9003396	8	SN B32740100 & Higher
14	Capscrew, 3/8-16UNC x 1 1/4 Gr.5	9390-056	8	SN B32740100 & Higher
15	Capscrew, 3/4-10UNC x 1 3/4 Gr.5	9390-144	2	
16	Capscrew, 3/4-10UNC x 2 1/4 Gr.5	9390-146	2	
17	Capscrew, 1-8UNC x 5 1/2 Gr.5	9390-194	8	
18	Lock Washer, 3/4 #10	9404-033	4	
19	Axle Weldment =Black=	411116B	2	
20	12 Gauge Shim =Black=	411098B	2	
21	14 Gauge Shim =Black=	411103B	2	
22	10 Gauge Shim =Black=	411105B	2	

Equalizer® Track Components - Model 2400

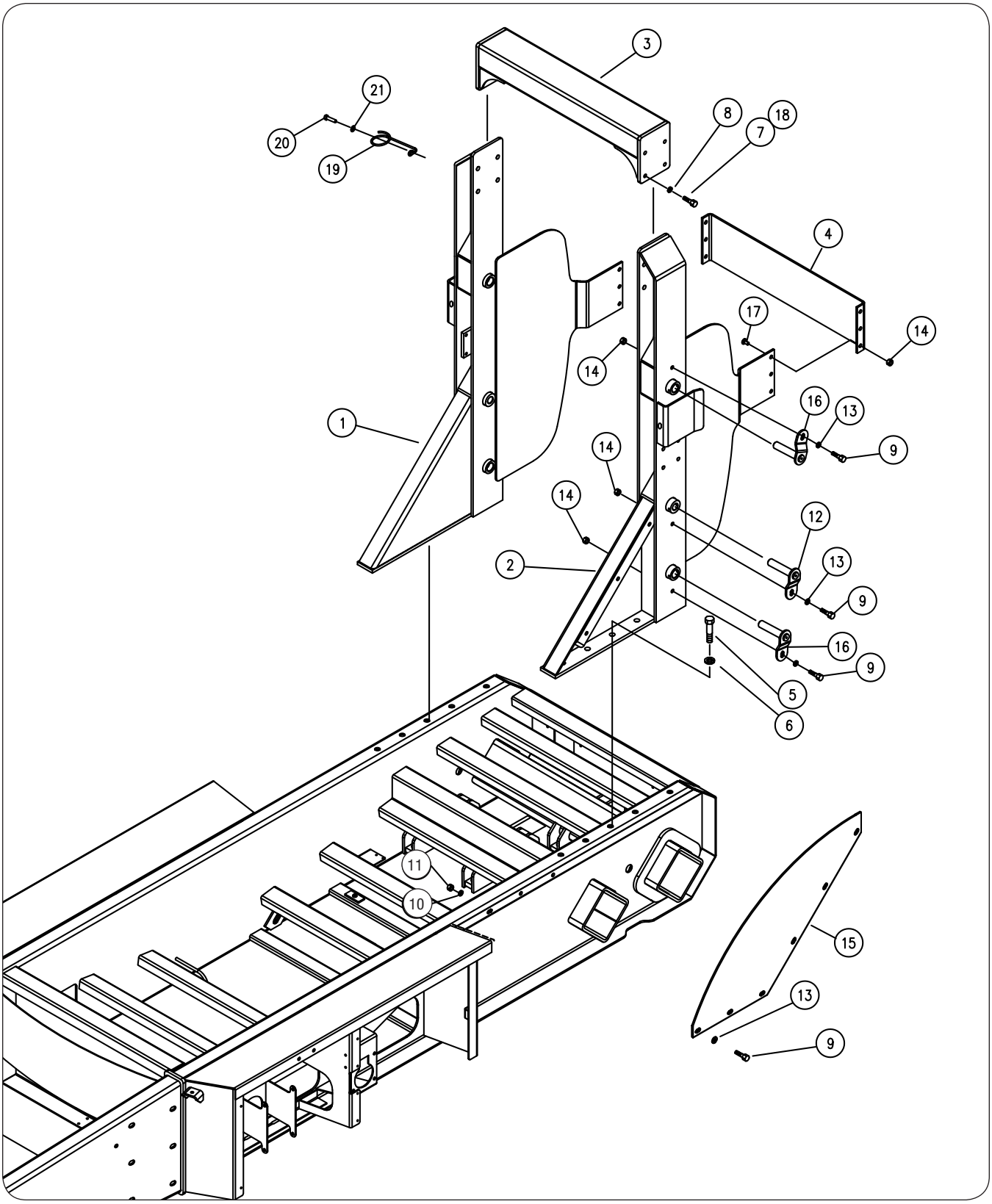
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Axle Clamp =Black=	404785B	4	
2	Pin Retainer Plate	408646	2	
3	Track Assembly, Right-Hand =Black=	409132B	1	
4	Track Assembly, Left-Hand =Black=	409133B	1	
5	Pivot Pin Weldment	411223	2	
6	Track Fork Weldment =Black=	411217B	2	
7	Decal, Important Track Guidlines	9007523	2	
8	Decal, Equalizer	9007564	2	
9	Decal, Important Track Grease	9007616	2	
10	Center Locknut, 1-8UNC	9394-020	8	SN B32740100 & Higher
		92199		Prior to SN B32740100
11	Bolt Retainer Plate 3 5/16"	413570B	8	SN B32740100 & Higher
12	Bolt Retainer Plate 3 7/8"	413569B	8	SN B32740100 & Higher
13	Locknut, 3/8-16UNC Grade F	9003396	8	SN B32740100 & Higher
14	Capscrew, 3/8-16UNC x 1 1/4 Gr.5	9390-056	8	SN B32740100 & Higher
15	Capscrew, 3/4-10UNC x 1 3/4 Gr.5	9390-144	2	
16	Capscrew, 3/4-10UNC x 2 1/4 Gr.5	9390-146	2	
17	Capscrew, 1-8UNC x 5 1/2 Gr.5	9390-194	8	
18	Lock Washer, 3/4 #10	9404-033	4	
19	Axle Weldment =Black=	409324B	2	
20	Hardened Flat Washer 1" (Not Shown)	9448	8	Prior to SN B32740100

Mast

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



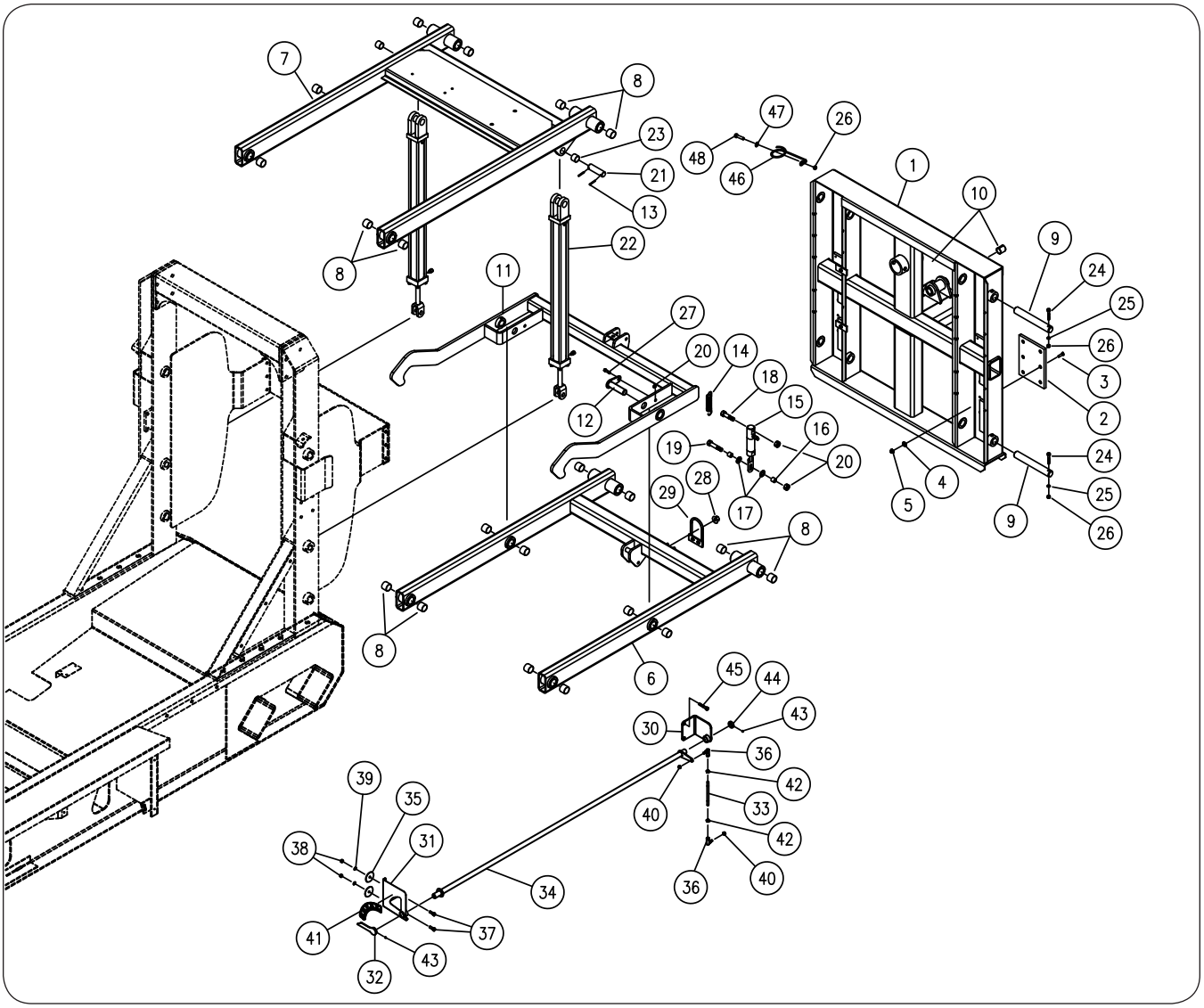
Mast

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

ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
1	RH Mast Weldment =Green=	402089G	400679G	402698G	
	RH Mast Weldment =Red=	402089R	400679R	402698R	
2	LH Mast Weldment =Green=	402090G	400680G	402699G	
	LH Mast Weldment =Red=	402090R	400680R	402699R	
3	Cross Tube Weldment =Green=	401239G	>	>	
	Cross Tube Weldment =Red=	401239R	>	>	
4	Rear Bracket =Green=	401852G	>	>	Serial Number B37840100 & Up
	Rear Bracket =Red=	401852R	>	>	
	Rear Bracket =Green=	409895G	>	>	Serial Number Below B37640100
	Rear Bracket =Red=	409895R	>	>	
5	Capscrew, 3/4-10UNC x 2	9390-145	>	>	Grade 5
6	Lock Washer, 3/4	9404-033	>	>	
7	Capscrew, 5/8-11UNC x 1 1/4	9390-121	>	>	Grade 5
8	Lock Washer, 5/8	9404-029	>	>	
9	Capscrew, 1/2-13UNC x 1 1/4	9390-100	>	>	Grade 5
10	Lock Washer, 1/2	9404-025	>	>	
11	Hex Nut, 1/2-13UNC	9394-010	>	>	Grade 5
12	Flag Pin Weldment, 1"	402072	>	>	
13	Flat Washer, 1/2	9405-088	>	>	
14	Locknut, 1/2-13UNC	94981	>	>	
15	Plate, Fender =Green=	-	401844G	-	
	Plate, Fender =Red=	-	401844R	-	
	LH Fender Weldment =Green=	-	-	405119G	
	LH Fender Weldment =Red=	-	-	405119R	
	RH Fender Weldment =Green=	-	-	405118G	
	RH Fender Weldment =Red=	-	-	405118R	
16	Flag Pin Weldment, 1 1/4"	402071	>	>	
17	Carriage Bolt 1/2-13UNC x 1	9388-102	>	>	
18	Capscrew 5/8-11UNC x 1 1/2	9390-122	>	>	
19	Hose Holder	9005689	>	>	
20	Capscrew, 1/2"-13UNC x 1 3/4" G5	9390-102	>	-	
	Capscrew, 1/2"-13UNC x 2" G5	-	-	9390-103	
21	Flat Washer, 1/2" SAE	9405-086	>	>	

Lift Assembly, H-Frame

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



ITEM	DESCRIPTION	PART NO.		QTY.	NOTES
		60'/80'/90'/100' Booms	110'/120'/132'		
1	H-Frame Weldment =Green=	413809G	413807G	1	
	H-Frame Weldment =Red=	413809R	413807R		
2	Pad	401099	407298	2	
3	Flat Head Screw, 5/16-18UNC x 1	900907-640	9400-101	12	
4	Lock Washer, 5/16	-	9404-019	12	
5	Serrated Flange Nut, 5/16-18UNC	9005639	-	12	
	Hex Nut, 5/16-18UNC	-	9394-004	12	
6	Lower Parallel Lift Weldment =Green=	411003G	411004G	1	For SN B33710100 & Higher
	Lower Parallel Lift Weldment =Red=	411003R	411004R		
	Lower Parallel Lift Weldment =Green=	400700G	403732G		For SN B33710099 & Lower
	Lower Parallel Lift Weldment =Red=	400700R	403732R		

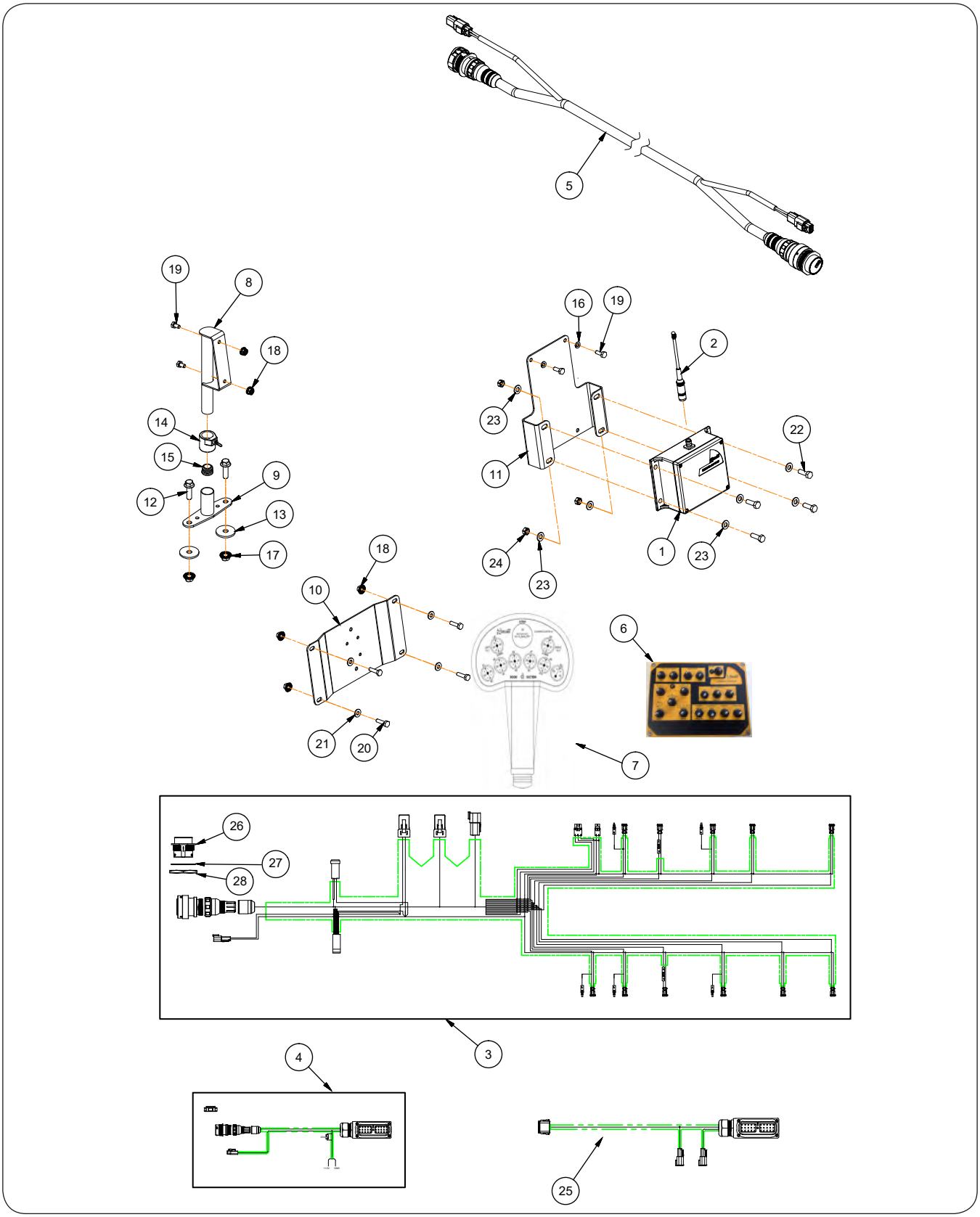
Lift Assembly, H-Frame

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

ITEM	DESCRIPTION	PART NO.		QTY.	NOTES
		60'/80'/90'/100' Booms	110'/120'/132'		
7	Upper Parallel Lift Weldment =Green=	408534G	408923G	1	60/80/90/100 Booms For SN B30810100 & Higher 110/120/132 Booms For SN B30970100 & Higher
	Upper Parallel Lift Weldment =Red=	408534R	408923R		
	Upper Parallel Lift Weldment =Green=	400702G	403731G		60/80/90/100 Booms For SN B30810099 & Lower 110/120/132 Booms For SN B30970099 & Lower
	Upper Parallel Lift Weldment =Red=	400702R	403731R		
8	Self-Lubricating Bushing, 1 1/4 x 1	9003828	>	20	
9	Pin	401071	>	4	
10	Self-Lubricating Bushing, 1 1/8 x 1	9003440	>	2	
11	Lock Weldment =Green=	401216G	>	1	
	Lock Weldment =Red=	401216R	>		
12	Pin Weldment	404766	>	2	
13	Roll Pin, 1/4 x 2	9392-140	>	4	
14	Extension Spring	9004436	>	1	
15	Latching Ram Cylinder	9005606	>	1	
16	Bushing, 3/4 x .56 x .69	400251	>	2	
17	Flat Washer, 1/2	9405-088	>	4	
18	Capscrew, 1/2-13UNC x 3 Gr.5	9390-107	>	1	
19	Capscrew, 1/2-13UNC x 3 1/2 Gr.5	9390-109	>	1	
20	Locknut, 1/2-13UNC	94981	>	4	
21	Pin, Upper Cylinder	804572	>	2	
22	Cylinder, 2 x 24	9003680	-	2	Seal Kit# 9003105
	Cylinder, 2-1/2 x 24	-	9004462	2	Seal Kit# 9004489
23	Tension Bushing, 1 1/4 x 1 x 3/4	95122	>	2	
24	Capscrew, 3/8-16UNC x 2 1/2	9390-061	>	3	Grade 5
25	Lock Washer, 3/8	9404-021	>	2	Model 2400
26	Locknut, 3/8-16UNC	9928	>	4	
27	Capscrew, 1/2-13UNC x 1 1/4	9390-100	>	2	Grade 5
28	Large Flange Nut, 3/8-16UNC	91263	>	2	Grade 5
29	Hose Hanger Weldment	401848B	>	1	
30	Indicator Rear Bracket	405836B	>	1	
31	Indicator Front Bracket	405843B	>	1	
32	Indicator Needle	405845R	>	1	
33	Link Rod	405849	>	1	Model 1200
	Link Rod	405853	>		Model 1600
	Link Rod	405842	>		Model 2400
34	Indicator Pipe	405850B	>	1	Model 1200
	Indicator Pipe	405839B	>		Model 1600
	Indicator Pipe	406096B	>		Model 2400
35	Fender Washer	9004497	>	32	
36	Ball Joint	9004585	>	2	
37	Capscrew, 3/8-16UNC x 1 1/4 SS	900900-056	>	2	
38	Hex Nut, 3/8-16UNC SS	900901-006	>	2	
39	Lock Washer, 3/8 SS	900903-021	>	2	
40	Locknut, 3/8-24UNF	TA91148	>	2	
41	Indicator Decal	9004722	>	1	
42	Hex Nut, 3/8-24UNF	9394-005	>	2	Grade 5
43	Setscrew 1/4-20UNF x 1/4	9399-057	>	2	Cup Point/Hex Socket
44	Retaining Bushing	405847B	>	1	
45	Capscrew, 5/8"-11UNC x 1 1/2" G5	9390-122	>	2	
46	Hose Holder	9006039	>	1	
47	Flat Washer, 3/8" Stainless Steel	9006212	>	1	
48	Capscrew, 3/8"-16UNC x 3" G5	9390-063	>	1	

Command Center 4 Components

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



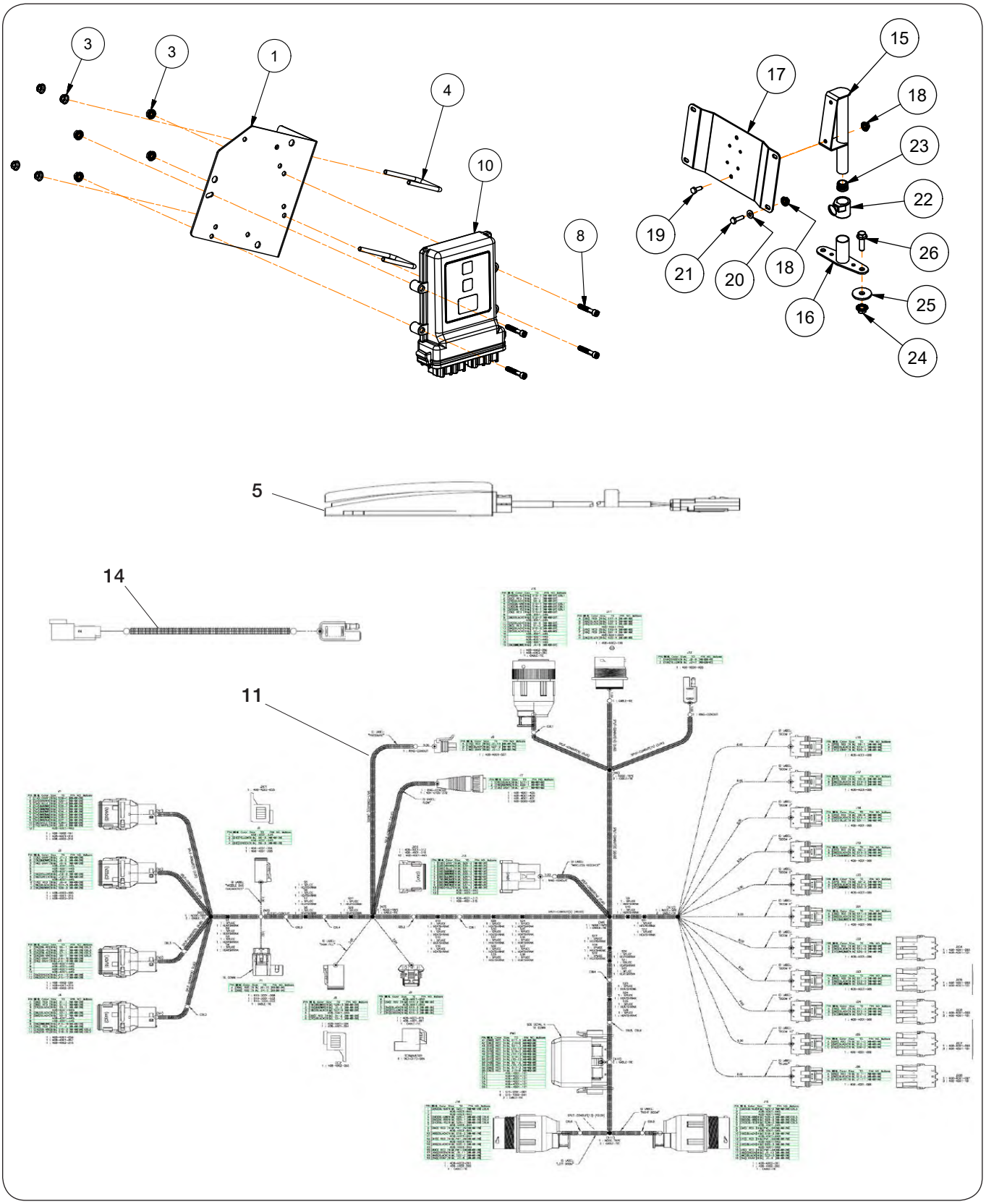
Command Center 4 Components

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Receiver	9007720	1	
2	Antenna 9/16" Dia. x 6	9007721	1	
3	Main Harness	9007773	1	
4	Switch Box Console Harness	9007774	1	
5	Extension Harness (Optional)	9007792	1	
6	Switch Box	9007776	1	
7	Transmitter - Boom Valves & Tilt	9007777	1	
8	Control Box Bracket Weldment	407802B	1	
9	Control Box Bracket Weldment	407805B	1	
10	Controller Plate-Bracket	411911B	1	
11	Receiver Plate-Bracket	411910B	1	
12	Flange Screw 3/8"-16UNC x 1 1/4"	9003259	2	
13	Fender Washer 3/8"	9005696	2	
14	Adjuster Tube	9005888	1	
15	Finishing Plug	9005889	1	
16	Lock Washer 1/4"	9404-017	4	
17	Large Flange Nut 3/8"-16UNC	91263	2	
18	Large Flange Hex Nut 1/4"-20UNC	97189	6	
19	Capscrew 1/4"-20UNC x 3/4"	9390-003	6	
20	Capscrew 1/4"-20UNC x 1"	9390-005	4	
21	Flat Washer 1/4" SAE	9405-062	4	
22	Capscrew 5/16"-18UNC x 1"	9390-030	4	
23	Flat Washer 5/16" SAE	9405-068	8	
24	Elastic Locknut 5/16"-18UNC	9398-010	4	
25	Receiver Harness	9007775	1	
26	Deutsch Connector Cap	9006887	1	
27	Lockwasher Size 24	9006886	1	
28	Panel Nut Size 24	9006885	1	

ISO Rate Control Components

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



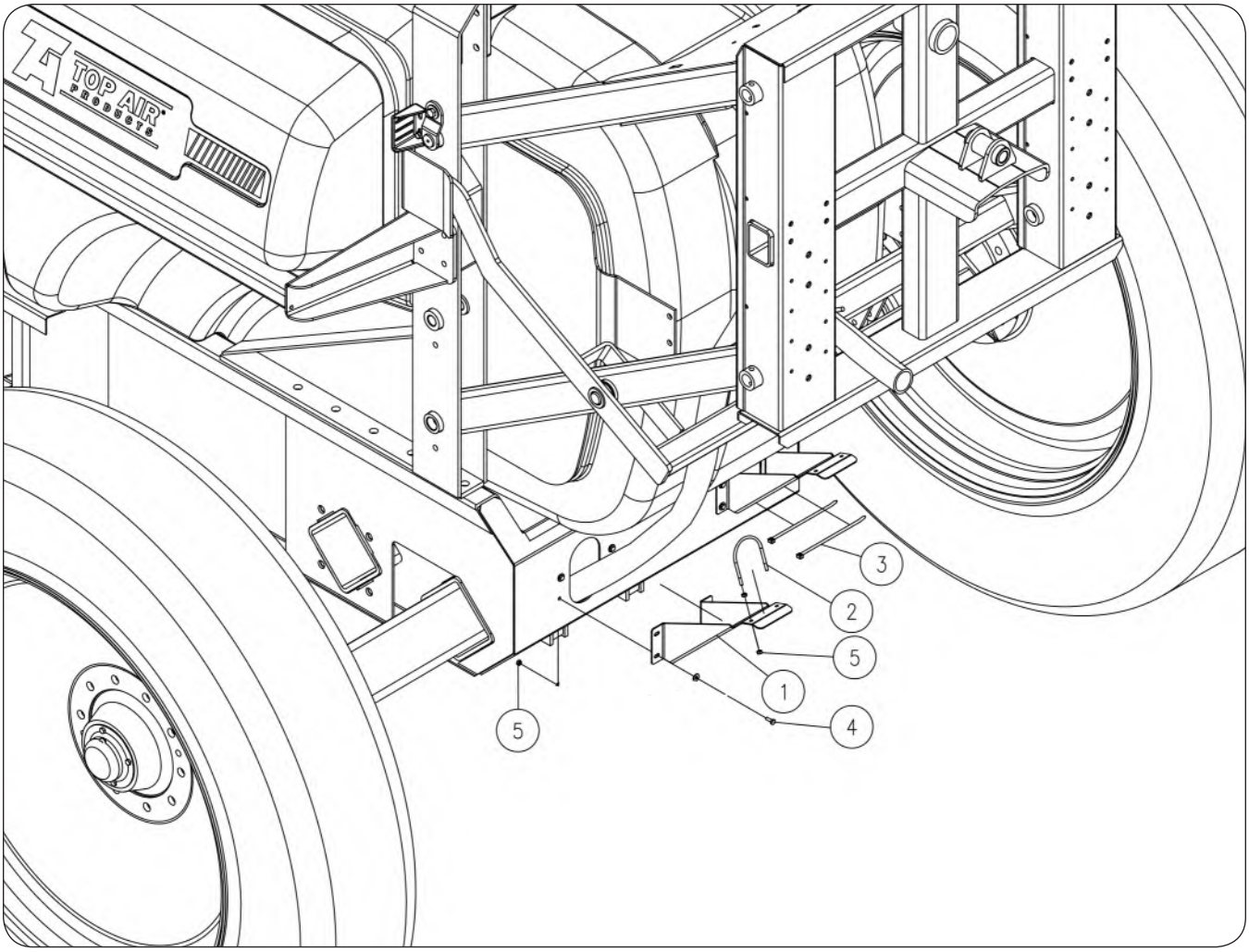
ISO Rate Control Components

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Bracket Node Plate	409142B	1	
2	Cable Tie	9000106	12	Not Shown
3	Flange Nut Serrated, 1/4"-20UNC	9004720	8	
4	U-Bolt, 1/4"-20UNC X 3"	9005638	2	
5	ISO Rate Control Foot Switch	9005916	1	
6	Switch Extension Cable 23FT	9503390	1	Not Shown
7	Pressure Transducer	9006053	1	Not Shown
8	Capscrew 1/4"-20UNC x 1 1/2"	9006698	4	
9	ISO Tractor Cable 17FT	9006705	1	Not Shown
10	ISO Product Controller II Node	9007668	1	
11	ISO Product and Rate Harness	9007761	1	
12	Pipe Tee 1/4"	TA809190	1	Not Shown
13	Pipe Nipple 1/4"	TA809325	1	Not Shown
14	Harness Extension 24 Ft.	9007524	1	For PWM Pump
15	Control Box Mount Weldment =Black=	407802B	1	
16	Control Box Bracket Weldment =Black=	407805B	1	
17	Control Box Bracket Plate =Black=	411911B	1	
18	Large Flange Hex Nut 1/4"-20UNC	97189	6	
19	Capscrew 1/4"-20UNC x 3/4" Gr. 5	9390-003	2	
20	Flat Washer 1/4" SAE	9405-062	4	
21	Capscrew 1/4"-20UNC x 1"	9390-005	4	
22	Tube Adjuster	9005888	1	
23	Finishing Plug	9005889	1	
24	Large Flange Nut 3/8"-16UNC	91263	2	
25	Fender Washer 3/8"	9005696	1	
26	Flange Screw 1/4"-20UNC x 1 1/2"	9003259	2	
27	Switch Box Console Harness	9007774	1	Not Shown
28	Sprayer Switch Box	9007776	1	
29	ISO Product Control Manual	9008271	1	

Hose Bracket

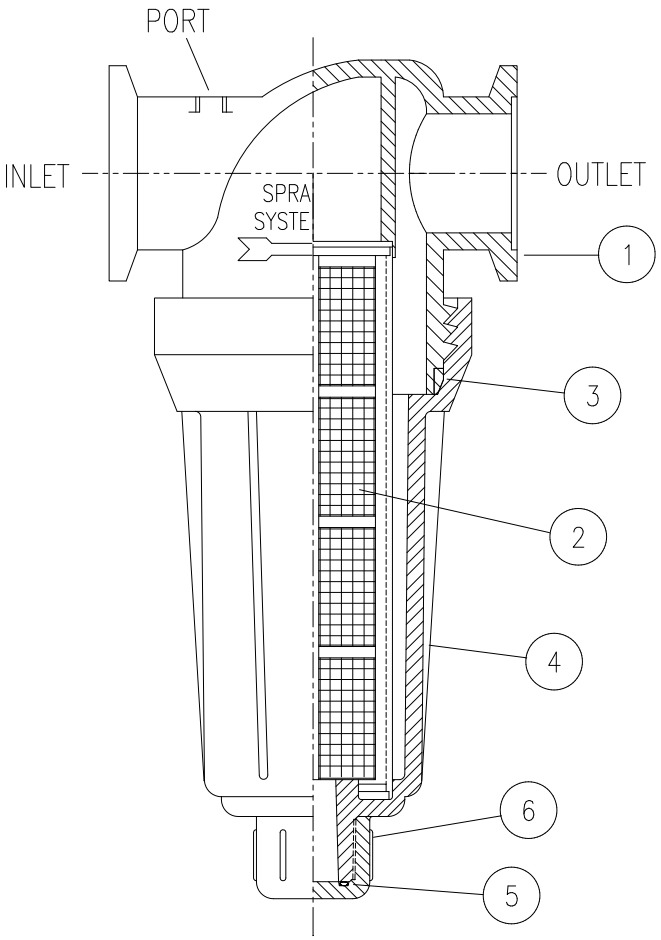
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	PART NO.	DESCRIPTION	QTY.	NOTES
1	403774B	Hose Bracket	2	
2	9001115	U-Bolt 1/4-20UNC	2	
3	9003735	Cable Tie 11" Long	5	
4	97420	Capscrew, 1/4-20UNC x 3/4	8	Grade 5
5	97189	Flange Nut, 1/4-20UNC	16	Grade 5

Strainer

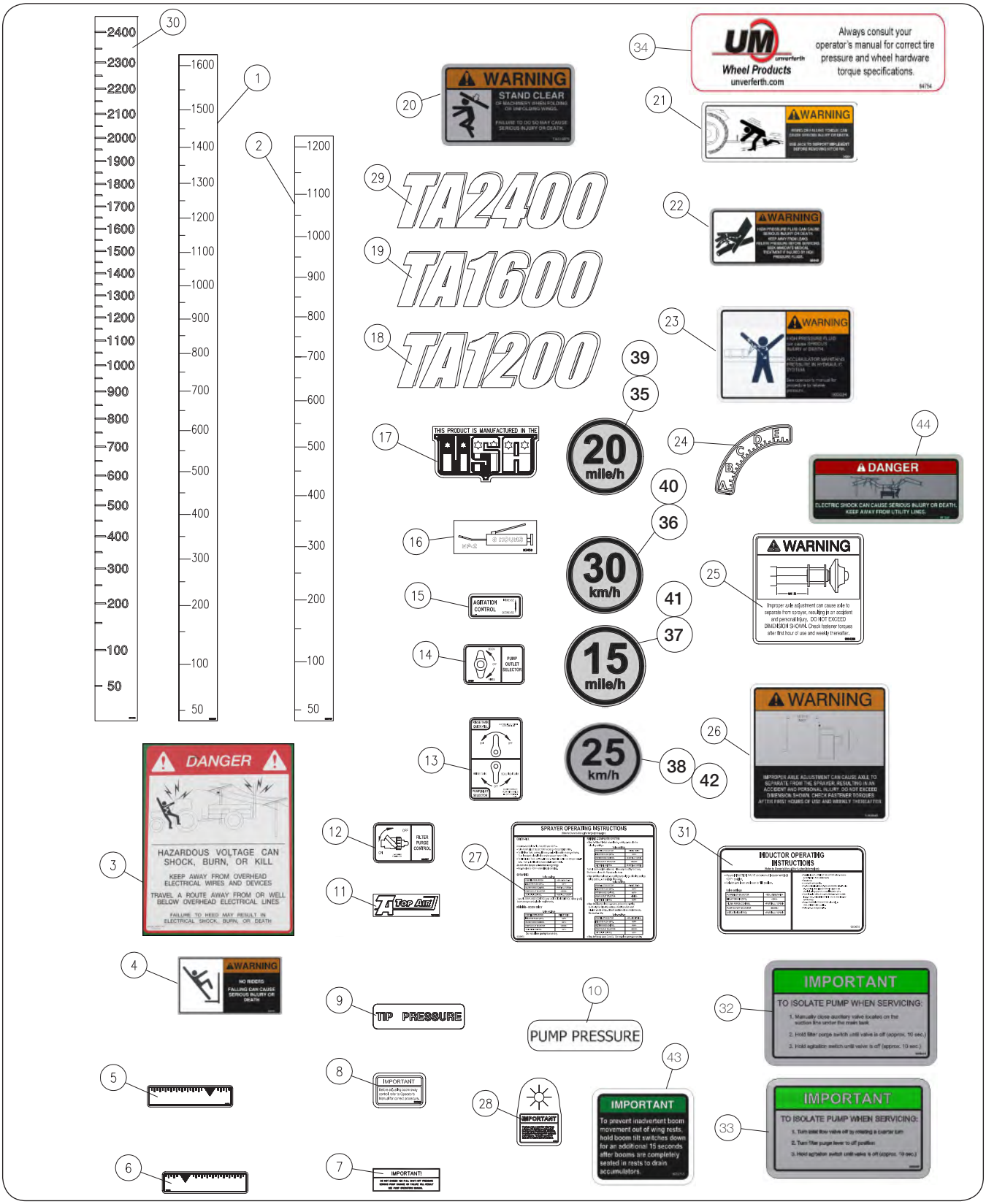
Please visit www.unverferth.com/parts/ for the most current parts listing.



ITEM	DESCRIPTION	PART NO.		QTY.	NOTES
			With Inlet Port		
	Strainer Complete	TA855650	402255	1	2" Flange
1	Strainer Head	TA868841	403257	1	
2	Screen, 50 Mesh (Gentain Blue)	TA869070	>	1	
3	Gasket, EPDM	TA867486	>	1	
4	Bowl, Polypropylene	TA868842	>	1	
5	O-Ring, Viton	TA868843	>	1	
6	Cap, Polypropylene	TA868844	>	1	

Decals

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



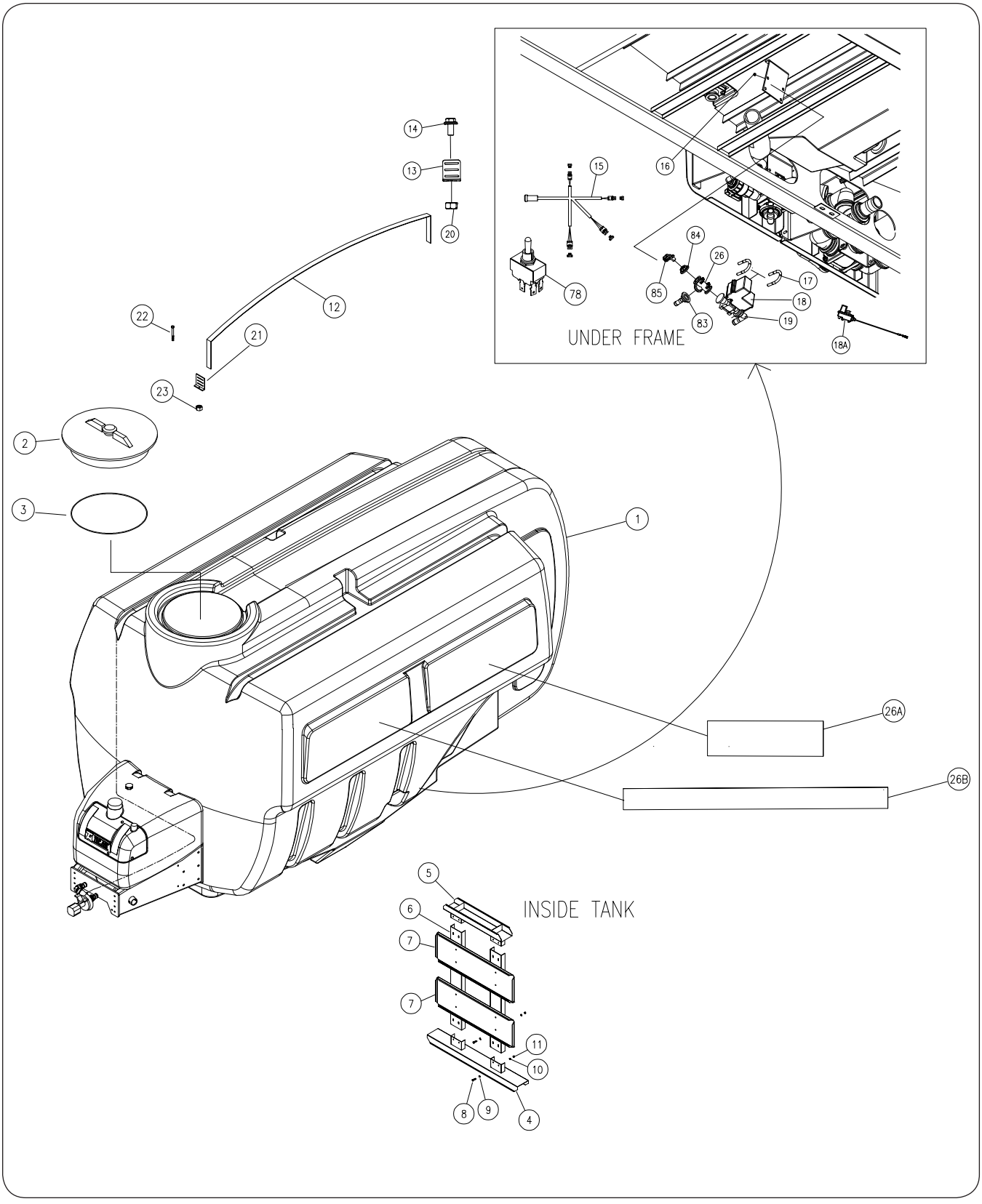
Decals

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

ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
1	Decal, Volume Indicator (Yellow)	-	9003686	-	
	Decal, Volume Indicator (Gray)	-	9004834	-	
2	Decal, Volume Indicator (Yellow)	9004129	-	-	
	Decal, Volume Indicator (Gray)	9004817	-	-	
3	Decal, DANGER (Electrical)	TA510544	>	>	
4	Decal, WARNING (No Riders)	9003476	>	>	
5	Decal, Indicator	9003807	>	>	
6	Decal, Indicator	9003808	>	>	
7	Decal, IMPORTANT (Hydraulic)	TA510212	>	>	
8	Decal, IMPORTANT (Boom Sway)	9004353	>	>	
9	Decal, Tip Pressure	9003841	>	>	
10	Decal, Pump Pressure	-	-	9007132	
11	Decal, Top Air Logo (1x3)	TA510008	>	TA510041	
12	Decal, Filter Purge Control	9004557	>	>	
13	Decal, Pump Inlet	9005369	>	9004558	
14	Decal, Pump Outlet	9004559	>	>	
15	Decal, Agitation Control	9004561	>	>	
16	Decal, 8-Hours Grease	93459	>	>	
17	Decal, USA	TA510031	>	>	
18	Decal, 1200 (Yellow)	9005862	-	-	Used on Steerable Hitch Tongue
	Decal, 1200 (Gray)	9005863			Used on Steerable Hitch Tongue & "A" Frame Tongue
	Decal, 1200 (Yellow)	9004862	-	-	Used on Frame
	Decal, 1200 (Gray)	9004863			
19	Decal, 1600 (Yellow) 5 x 18 9/16	-	9004860	-	Used on Frame
	Decal, 1600 (Gray) 5 x 18 9/16		9004861	-	
	Decal, 1600 (Yellow) 3 x 11 1/8	-	9005838	-	Used on "A" Frame Tongue
	Decal, 1600 (Gray) 3 x 11 1/8		9005839	-	
20	Decal, DANGER (Boom Unfolding)	TA510079	>	>	
21	Decal, WARNING (Tongue)	94094	>	>	
22	Decal, WARNING (High Pressure Oil)	95445	>	>	
23	Decal, WARNING (High Pressure Oil)	900024	>	>	
24	Decal, Indicator	9004722	>	>	
25	Decal, WARNING (Axle Adjustment)	9004286	>	>	Non-Sus-Axle
26	Decal, WARNING (Axle Adjustment)	9003846	>	>	Sus-Axle
27	Decal, Sprayer Instructions	9005370	>	>	
28	Tag - Bypass Plumbing	9005958	>	9005959	
29	Decal, 2400 (Yellow) LH Frame	-	-	9004959	
	Decal, 2400 (Gray) LH Frame	-	-	9004958	
	Decal, 2400 (Yellow) Tongue	-	-	9005854	Used on "A" Frame Tongue
	Decal, 2400 (Gray) Tongue	-	-	9005855	
30	Decal, Volume Indicator (Yellow)	-	-	9004648	
	Decal, Volume Indicator (Gray)	-	-	9004852	
31	Decal, Inductor Operation	-	-	9003679	
32	Decal, Pump Isolation	-	-	9006474	Used on Units with Electric Command Center Option
33	Decal, Pump Isolation	-	-	9006475	
34	Decal, Wheel Systems	94754	>	>	
35	Decal, Front SIS 20 MPH	9008715	>	>	Wheels
36	Decal, Front SIS 30 KPH	9008721	>	>	
37	Decal, Front SIS 15 MPH	9008717	>	>	Tracks
38	Decal, Front SIS 25 KPH	9008723	>	>	
39	Decal, Rear SIS 20 MPH	9008714	>	>	Wheels
40	Decal, Rear SIS 30 KPH	9008720	>	>	
41	Decal, Rear SIS 15 MPH	9008716	>	>	Tracks
42	Decal, Rear SIS 25 KPH	9008722	>	>	
43	Decal, Drain Accumlator	9004755	>	>	
44	Decal, DANGER (Electric Shock)	901258	>	>	

Main Tank

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



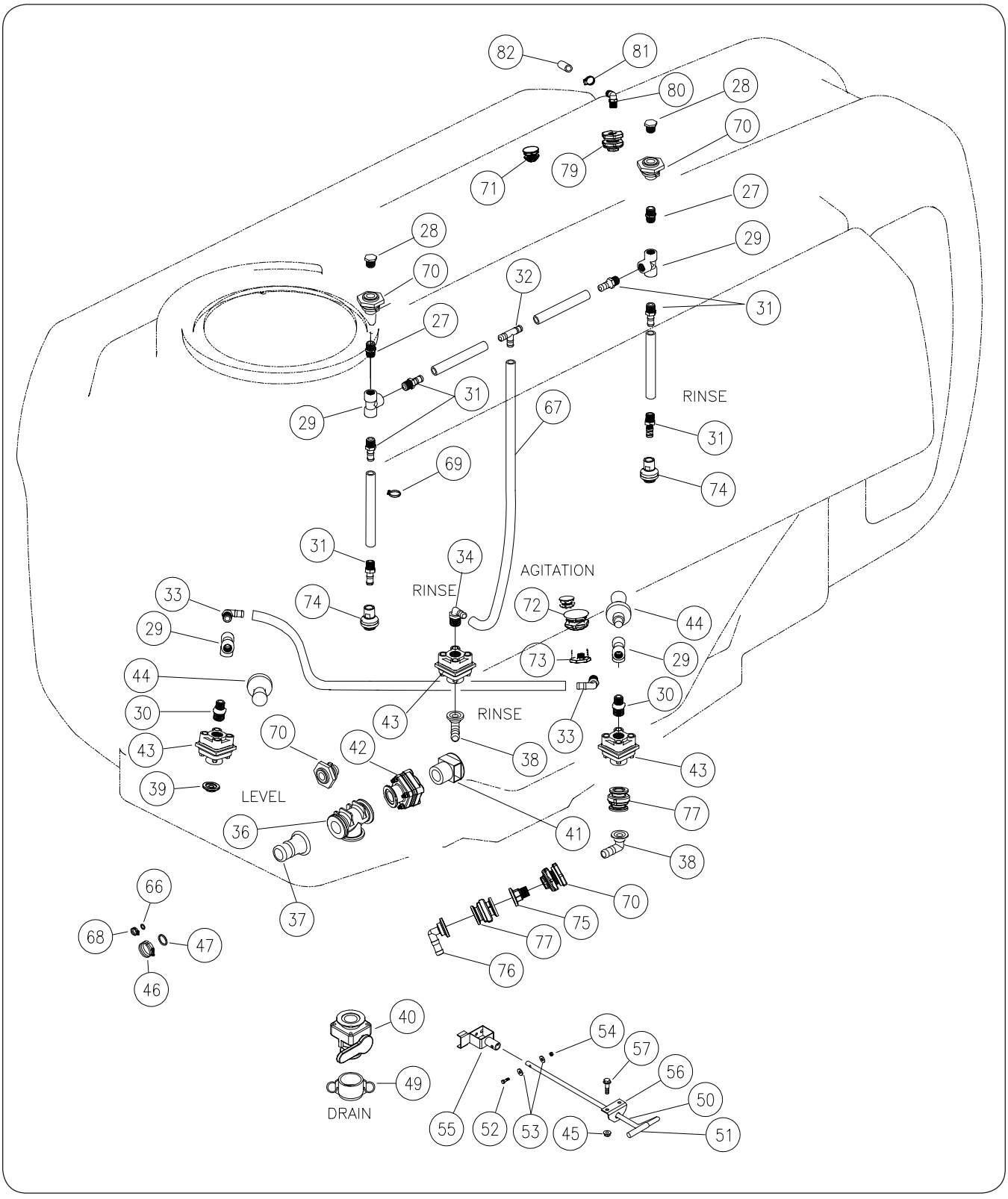
Main Tank

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

ITEM	PART NO.			DESCRIPTION	NOTES
	1200	1600	2400		
1	407366	407367	407370	Tank, =Yellow=	SN B37240099 and Lower
	407371	407372	407375	Tank, =Gray=	
2	9008576	>	>	Tank Lid 16"	SN B40780100 & Higher
	TA805210	>	>		SN B40780099 & Lower
3	TA805198	>	>	O-Ring For 16" Lid	
4	401817	>	403739	Lower Baffle Weldment	
5	401818	>	>	Upper Baffle Weldment	
6	402696	401819	406799	Upright	
7	401820	>	>	Panel	
8	900900-028	>	-	Capscrew, 5/16-18UNC x 3/4	Stainless Steel
	900900-054	-	900900-054	Capscrew, 3/8-16UNC x 7/8 SS	Stainless Steel
9	900902-035	>	-	Flat Washer, 5/16	Stainless Steel
	900902-038	-	900902-038	Flat Washer, 3/8	Stainless Steel
10	-	-	9004497	Fender Washer, 3/8	Stainless Steel
11	900906-004	>	-	Locknut, 5/16-18UNC	Stainless Steel
	900906-006	-	900906-006	Locknut, 3/8-16UNC	Stainless Steel
12	TA500499	>	>	Nylon Strap, 2"	
13	TA510025	>	TA510025	Clip, Strap	
14	95585	>	>	Flange Screw, 3/8-16UNC x 3/4	Grade 5
15	9004550	>	>	Harness, Valve	
16	9807	>	>	Locknut, 5/16-18UNC	
17	100965	>	>	U-Bolt, 5/16-18UNC x 2.18 x 1.6cc	Grade 5
18	9003957	>	>	Electric Ball Valve	
18A	TA854876	>	>	Replacement Motor Valve	
19	TA815018	>	>	Elbow, 1" Flange x 1" HB	
20	9394-006	>	>	Hex Nut 3/8-16UNC	Grade 5
21	TA510025	>	>	Tank Strap Clip	
22	TA0-907131-0	>	>	Capscrew 3/8-16UNC x 4 1/2	Grade 5 - Full Threaded
23	9394-006	>	>	Hex Nut 3/8-16UNC	Grade 5
24	TA805192	>	>	Tank Repair Kit - Poly	Not Shown
25	TA805160	>	>	Welding Rod - Poly	Not Shown
26	TA815005	>	>	Tee Fitting 1" Flange x 1" Flange	For SN B44200100 & Higher
	TA815013	>	>	Fitting 1" Flange x 1" Hose Barb	For SN B44200099 & Lower
26A	9009056 (Qty 2)	>	9009086	Decal, Top Air Tank Logo	For SN B40780100 & Higher
	-	-	9008660		For SN B40780099 & Lower
26B	9009081	9009082	9009084	Decal, Top Air Right-Side	For SN B40780100 & Higher
	9009062	9009083	9009085	Decal, Top Air Left-Side	
	-	-	9008661	Decal, Top Air 2400	For SN B40780099 & Lower
26C	9009057 (Qty 2)	>	-	Decal, Top Air Stripe	Not Shown For SN B40780100 & Higher
27	TA814605	>	>	Nipple, Short Poly - 3/4"	
28	TA814751	>	>	Plug, MPT 3/4	Poly Pipe Plug
29	TA814781	>	>	Tee, Poly Pipe - 3/4"	
30	TA814815	>	>	Reducer Nipple, 1 x 3/4	Poly Reducer
31	TA814861	>	>	Hose Barb, 3/4 x 3/4 MPT	

Main Tank (continued)

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



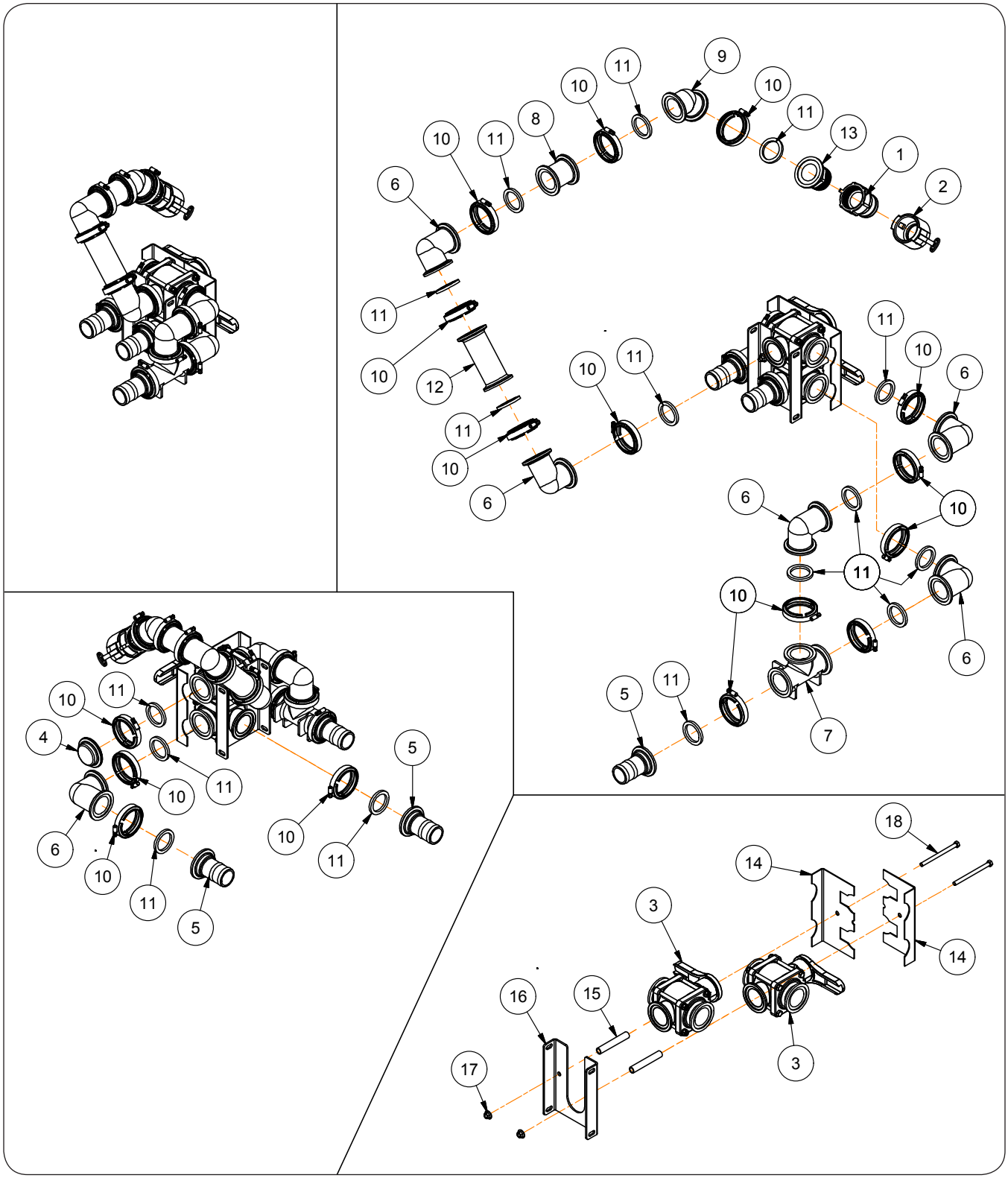
Main Tank (continued)

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

ITEM	PART NO.			DESCRIPTION	NOTES
	1200	1600	2400		
32	TA814891	>	>	Tee, 3/4" Hose Barb	
33	TA814961	>	>	Elbow, 3/4 MPT x 3/4 HB	
34	TA814965	>	>	Elbow, 1 MPT x 3/4 HB 90°	
36	TA815007	>	>	Tee, 2" Std. Flange	Manifold Tee
37	TA815016	>	>	Flange Hose Barb, 2" Fl. X 2" HB	Straight
38	TA815018	>	>	Flange Hose Barb,1" Fl. X 1" HB 90°	
39	TA815022	>	>	Flange Plug, 1"	
40	TA815047	>	>	Valve, 2" Fl. x 2" QDC	
41	TA815074	>	>	Vent Cap, 2"	
42	TA815076	>	>	Tank Fitting, 2" Flange	
43	TA815077	>	>	Tank Fitting, 1" Flange	
44	TA816012	>	>	Agitation Fitting	
45	91263	>	>	Large Flange Nut, 3/8-16UNC	Grade 5
46	TA815025	>	>	Flange Clamp, 2"	
47	TA811944	>	>	EPDM Gasket, 2"	
49	TA811500	>	>	Cap Coupler Poly 2"	
50	402634B	>	>	Handle, Dump Valve	
51	9004015	>	>	Grip, Yellow	
52	9390-008	>	>	Capscrew, 1/4-20UNC x 1 3/4	
53	9405-064	>	>	Flat Washer, 1/4	
54	9936	>	>	Locknut, 1/4-20UNC	
55	402611B	>	>	Handle Weldment	
56	402635B	>	>	Bracket	
57	95585	>	>	Large Flange Bolt, 3/8-16UNC x 3/4	
66	TA815026	>	>	Flange Clamp, 1"	
67	TA806250	>	>	Hose, 3/4" EPDM	
68	TA815029	>	>	EPDM Gasket, 1"	
69	TA800912	>	>	Hose Clamp, Stainless Steel	
70	TA805408	>	>	Tank Fitting, 3/4"	
71	TA816056	>	>	1" Antivortex Fitting	
72	TA805424	>	>	Tank Fitting 1 1/2" Anti-Vortex	2 3/4" Hole Required
73	TA810015	>	>	Hex Plug 1 1/2"	
74	9005451	>	>	Rinse Nozzle 3/4-14NPT Female	
75	TA816021	>	>	Adapter, 1"M Flange x 3/4"M MPT	
76	TA815017	>	>	Hose Barb 90° Elbow, 1" Flange x 3/4"	
77	9006665	>	>	Check Valve - 1" Flange	
78	9004564	>	>	Momentary Switch	
79	TA805408	>	>	Manifold Fitting, 3/4" Double Threaded	For SN B44200100 & Higher
80	TA814963	>	>	Elbow, 90 Degree 3/4"-14NPTF x 1" Hose	For SN B44200100 & Higher
81	TA806275	>	>	Hose, 1" EPDM	For SN B44200100 & Higher
82	TA800912	>	>	Hose Clamp, Stainless Steel	For SN B44200100 & Higher
83	TA815013	>	>	Hose Barb 1" Flange x 3/4" HS	For SN B44200100 & Higher
84	9504009	>	>	Manifold Plug	
85	TA720802	>	>	Elbow 1/4" NPT x 1/4" Gauge Tube	For SN B44200100 & Higher

Front Plumbing Components - Models 1200 / 1600 / 2400

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



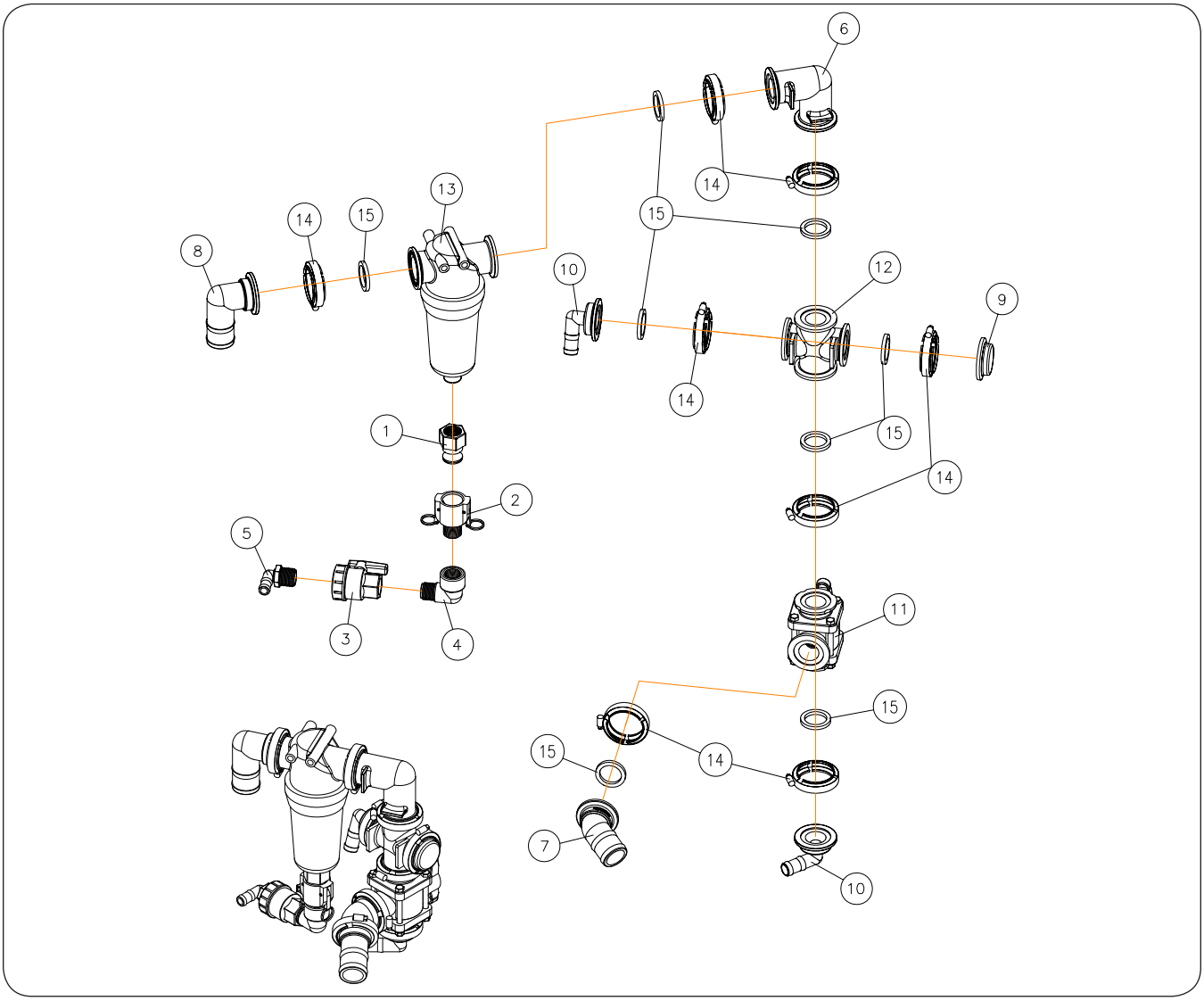
Front Plumbing Components - Models 1200 / 1600 / 2400

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Quick Disconnect Coupling 2" Male Adapter x 2-11 1/2 NPTF Female	TA810625	1	
2	Cap Coupler Poly 2"	TA811500	1	
3	3-Way Ball Valve, 2" Full Port w/ Handle	TA816020	2	
4	Plug, 2" Full Port Flange	TA816013	1	
5	Straight 2" Full Port Flange x 2" HB	TA816008	3	
6	Elbow, 2" Full Port Flange	TA816010	6	
7	Tee, 2" Full Port Flange x 2" Full Port Flange x 2" Full Port Flange	TA816011	1	
8	Coupler, 2" Full Port Flange	TA816014	1	
9	45° Elbow 2" Full Port Flange x 2" Full Port Flange	TA816015	1	
10	Clamp, 2" Full Port Flange	TA816000	16	
11	Gasket, 2" Full Port Flange	TA816001	16	
12	Coupler 2" Full Port 6" Long	TA816055	1	
13	Adapter 2" Flange Male x 2" NPT Male	TA816016	1	
14	Bracket Valve	403870B	2	
15	Bushing-Spacer	403858B	2	
16	Bracket-Valve	403874B	1	
17	Large Flange Nut 3/8-16UNC	91263	2	
18	Capscrew 3/8-16UNC x 5	9390-069	2	Grade 5

Rear Plumbing Components - Models 1200 / 1600 / 2400

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



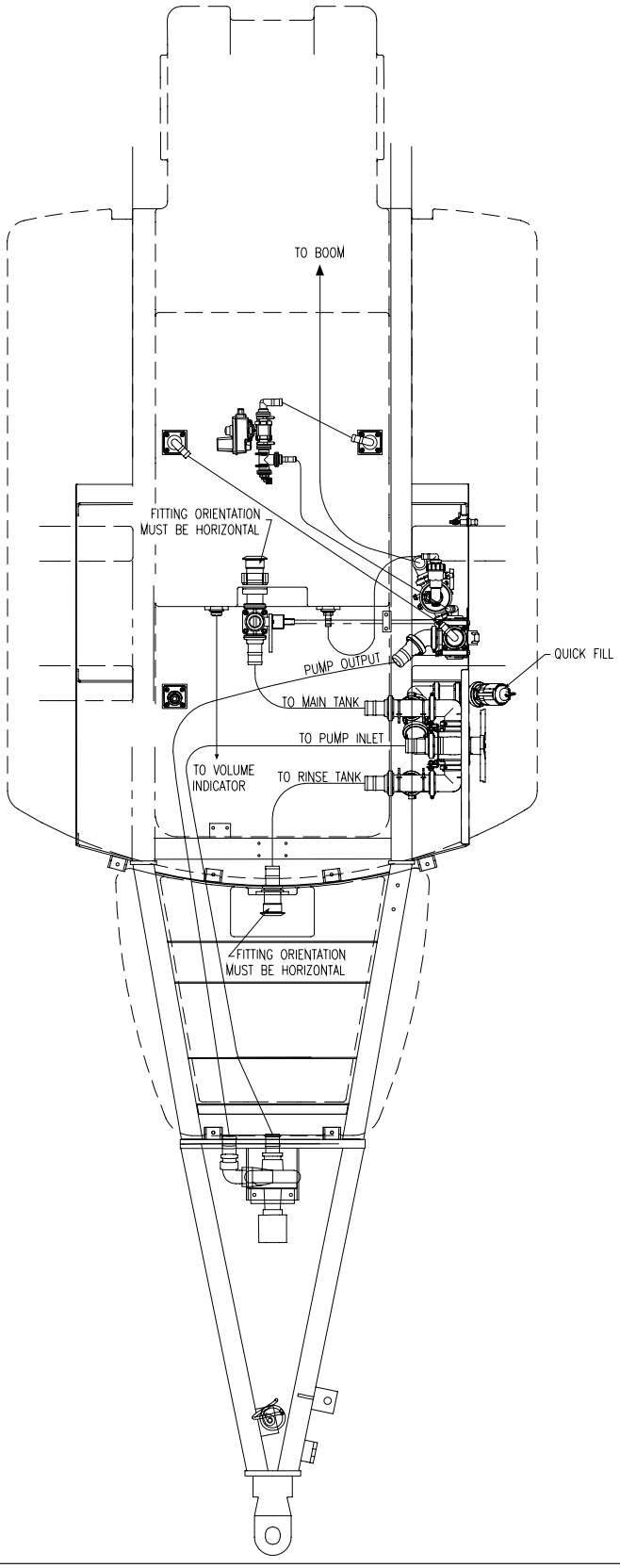
Rear Plumbing Components - Models 1200 / 1600 / 2400

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Coupler, 1"Quick	TA810550		
2	Coupler, 1" Female Quick	TA810675		
3	Ball Valve, 1" Union	TA811517		
4	Elbow, 1" Street	TA814692		
5	Elbow, 1 NPT x 3/4 HB 90°	TA814965		
6	Elbow, 2" STD Flange	TA815004		
7	Adapter, 2" Flange x 2" HB	9005587		
8	Adapter, 2" STD Flange x 2" HB 90°	TA815021		
9	2" STD Flange Plug	TA815023		
10	2" Flange x 1" HB 90° Elbow	TA815024		
11	2" 3-Way Ball Valve	TA815048		
12	Cross, 2" 4-Way	TA816019		
13	2" Flange Line Strainer	TA855650		
14	Clamp, 2" Flange	TA815025		
15	Gasket, 2" Flange	TA811944		

Plumbing Overhead Layout - Models 1200 / 1600 / 2400

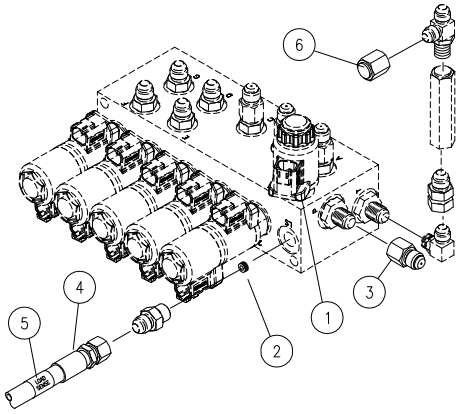
Please visit www.unverferth.com/parts/ for the most current parts listing.

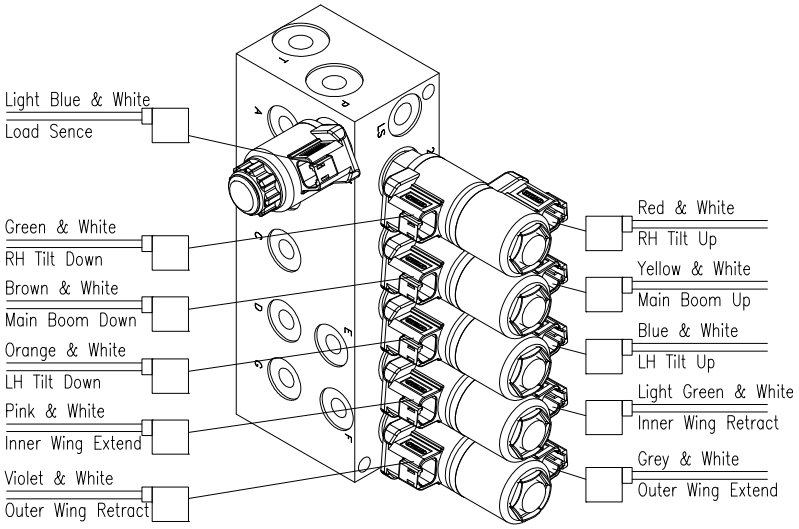


Hydraulic Valve Conversions

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

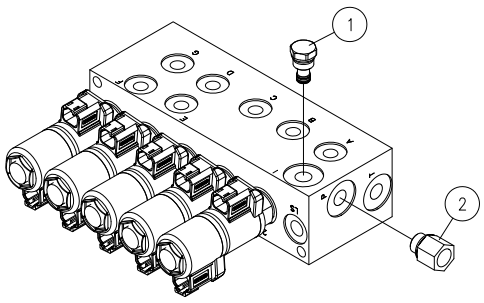
CLOSED CENTER CONVERSION





CLOSED CENTER CONVERSION (For Power Beyond Load Sense Tractors)			
ITEM	**DESCRIPTION**	**PART NO.**	**QTY.**
	1600 Kit Includes:	402406	1
1	Cartridge, Closed Center	9003852	1
2	Orifice (Closed Center)	9003933	1
3	Restrictor Reducer, .062”	9002199	1
4	Hose, 1/4 x 372”	9003948	1
5	Hose Marker	9003940	1
6	Cap	9001850	1

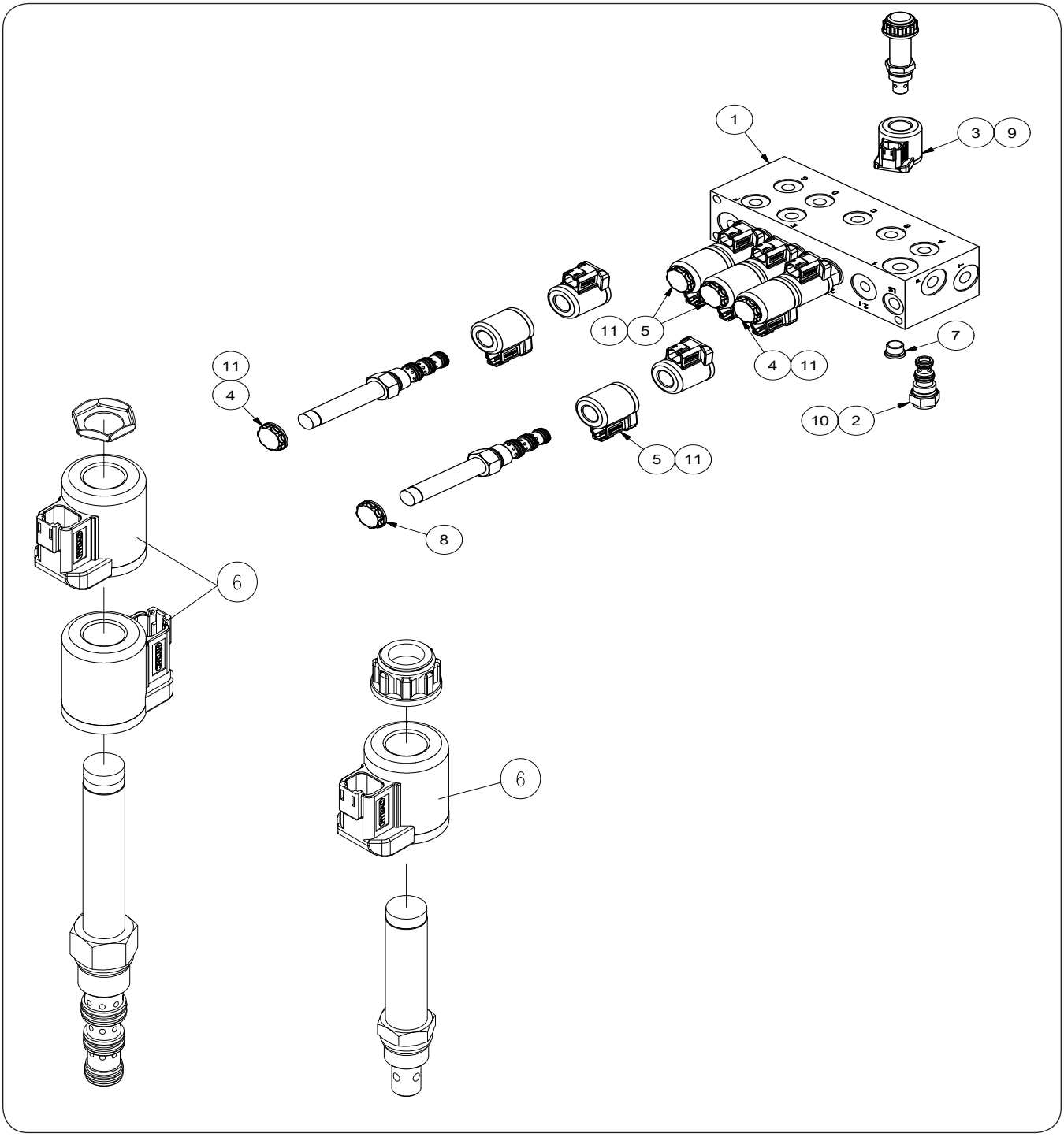
PRESSURE COMPENSATING CLOSED CENTER CONVERSION



PRESSURE COMPENSATING CLOSED CENTER CONVERSION			
ITEM	**DESCRIPTION**	**PART NO.**	**QTY.**
	Kit Includes:	406107	1
1	Cavity Plug	9006486	1
2	Port Reducer O-Ring Orifice	9006531	1

Hydraulic Valve

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



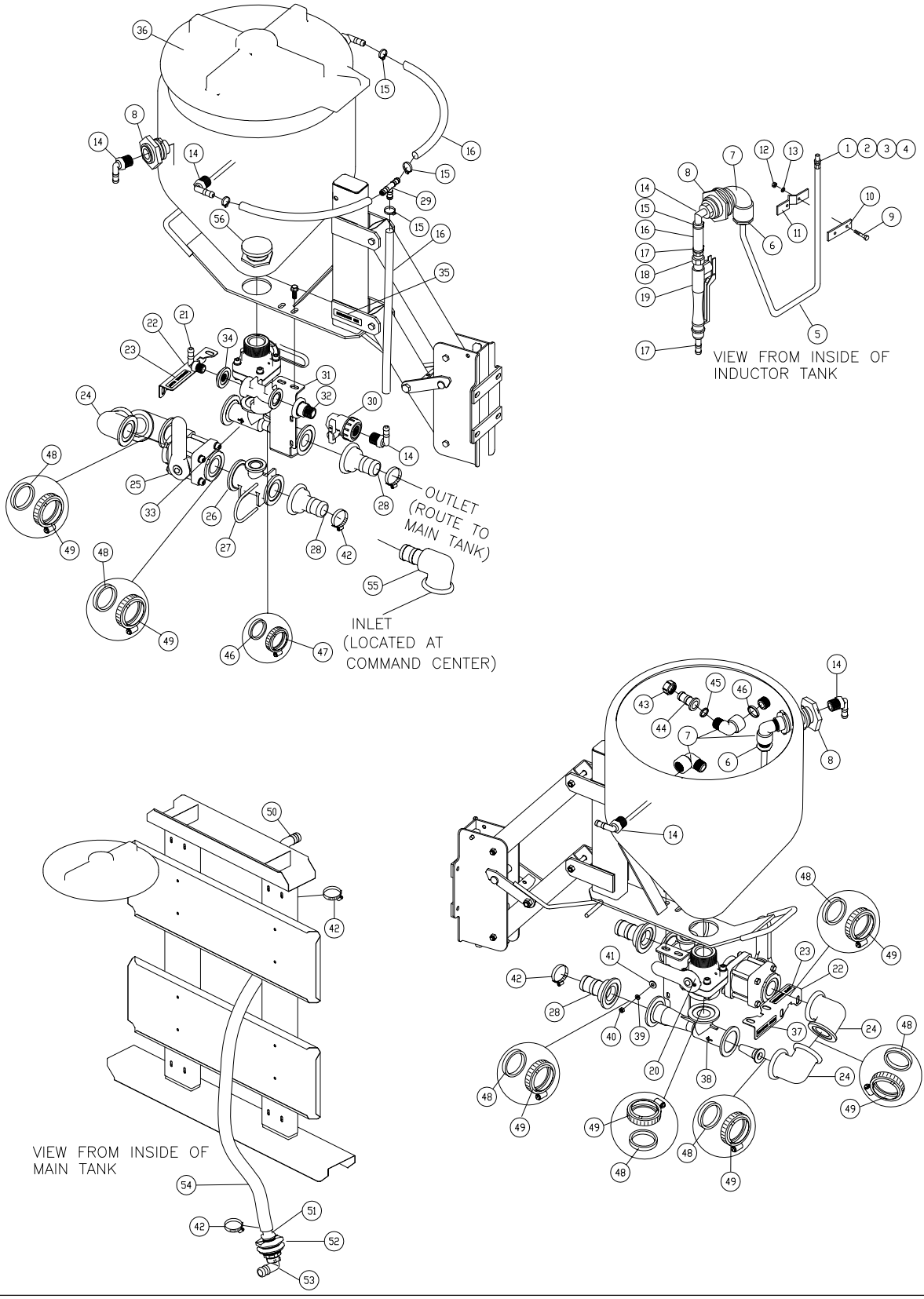
Hydraulic Valve

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
	Hydraulic Valve Complete	9006399	1	
1	Manifold Block, Aluminum	9003851	1	
2	Check Valve, Pilot Operated	9003856	6	
3	Cartridge, 2-Position (Open Center)	9003857	1	Load Sense / Unloader
4	Cartridge Valve, 3-Position	9003854	2	Boom Lift, Outer Wing Fold
5	Cartridge Valve, 3-Position (Special)	9003855	3	RH / LH Tilt, Main Wing Fold
6	Coil, 12 Volt DC	9005769	11	
7	Hollow Hex Head Plug	9003423	1	Standard
8	Coil Nut w/O-Ring Groove	9004760	-	
	Seal Kits			
9	Seal Kit, For 2 Pos, Cartridge	9003904	1	Item 3
10	Seal Kit, For Check Valve	9003905	1	Item 2
11	Seal Kit, For 3-Pos, Cartridge	9003906	1	Item 4&5

Inductor Plumbing - Optional

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



Inductor Plumbing - Optional

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Full Jet Celcon Tip - FL15	TA848450	1	
2	Mesh Strainer (8079-PP-50-NY)	TA865240	1	
3	T-Jet Cap (8027-NY)	TA865180	1	
4	T-Jet Cap, Extra Long (8027-1-NY)	TA867250	1	
5	Tube, Inductor Bottle Washer	TA1-114776-0	1	
6	Reducer Bushing, 3/4 x 1/4" Poly	TA814651	1	
7	Street Elbow, 3/4" Poly	TA814691	1	
8	Fitting, 3/4" Double Thread	TA805408	1	
9	Capscrew, 5/16-18NC x 1SS	TA0-907048-0	2	
10	Support, Bottle Washer	TA1-114778-0	1	
11	Clamp, Bottle Washer	TA1-114777-0	1	
12	Nut, 5/16-18NC SS	TA0-907826-0	2	
13	Lock Washer, 5/16 SS	TA0-908480-0	2	
14	Elbow, 90° - 3/4" MPT x 1/2 Hose	TA814960	1	
15	Hose Clamp, M-6 SS	TA800902	2	
16	Hose, 1/2" EPDM	TA806225	AR	Specify Length
17	Hose Barb, 1/4" MPT x 1/2" Straight	TA810100	1	
18	T-Jet Adapter, 4676-NY-1/4	TA861885	1	
19	Spray Gun (22650-PP-1/4)	TA885299	1	
20	Valve, 2" Flg x 2" MPT	TA816022	1	
21	Elbow, 1/2 Poly x 1/2 NPTF	TA814956	1	
22	Bracket, Ind. Valve	402872B	1	
23	Decal, Inductor Flow	9004320	1	
24	Elbow, 2" Flg - Short	TA816017	2	
25	2" Ball Valve	TA815045	1	
26	2" Flg. x 1" Flg Tee	TA815006	1	
27	U-Bolt, 1/4-20UNC x 3 1/2	9001114	1	
28	2" Flg x 1 1/2" HB	TA815015	2	
29	1/2" HB Tee	TA808725	1	
30	Banjo, 3/4" Ny-Glass Ball Valve	TA811515	1	
31	Plate, Inductor	402651B	1	
32	Adapter, 1" Flg x 1/2 FPT	TA816021	1	
33	1" Flg Tee	TA815005	1	
34	Plug, 1" Flg x 1/2 FPT	TA816023	1	
35	Decal, Inductor Mix	9004322	1	

(Continued on next page)

Inductor Plumbing - Optional (continued)

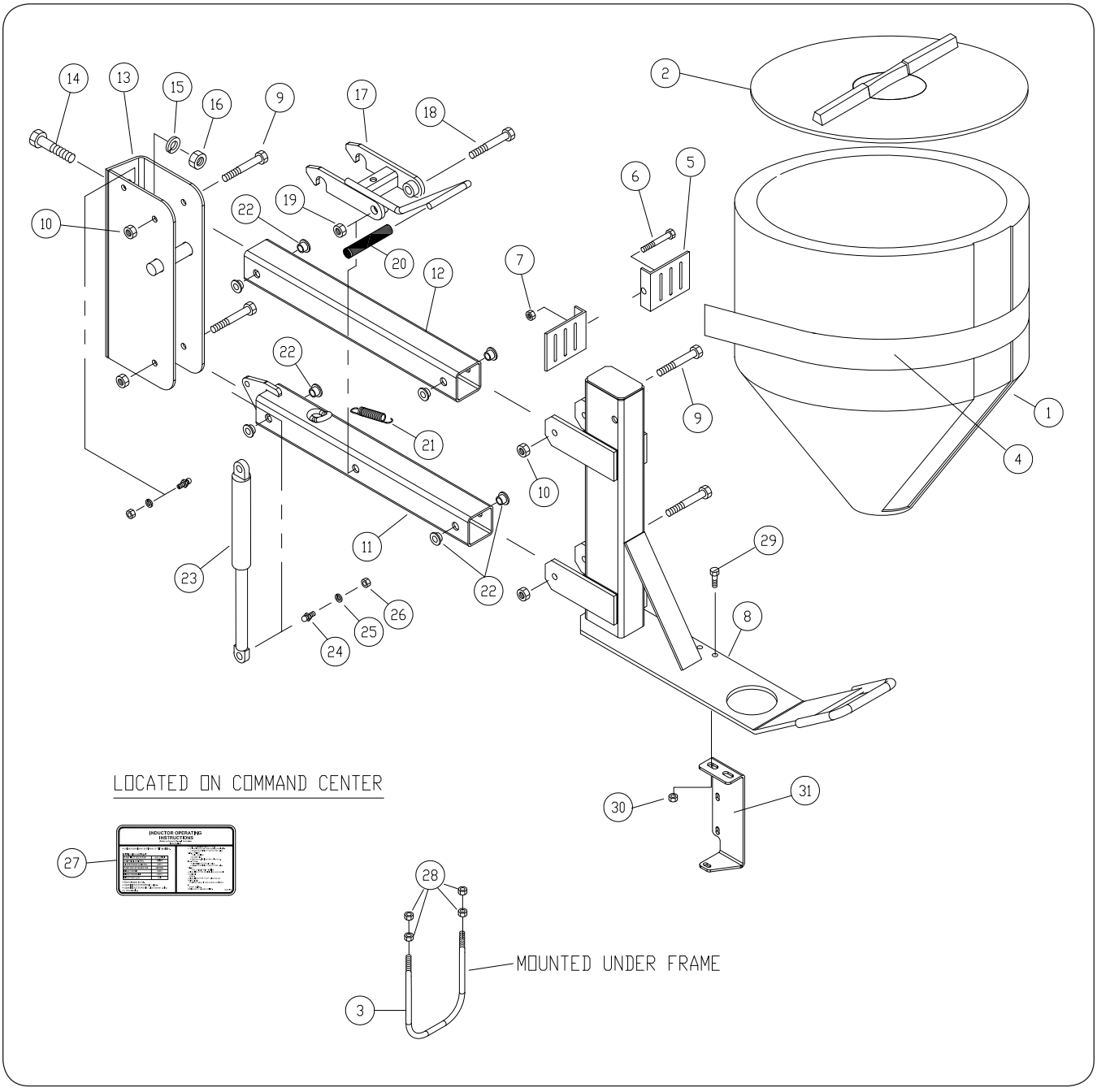
Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
36	Solution Tank Lid	TA805210	1	
37	Decal, Inductor Drain	9004321	1	
38	Flanged Venturi, 2”	TA816018	1	
39	Lock Washer, 1/4”	9404-014	2	
40	Nut, 1/4-20UNC Gr. 5	9394-002	2	
41	Flat Washer, 1/4”	9405-064	2	
42	Hose Clamp, Stainless Stl.	TA800916	7	
43	3/4” Hex Nut	TA809160	2	
44	Hose Barb, 1/2” Flat Seat	TA809754	2	
45	Poly Washer	TA809746	2	
46	Gasket, Seal	TA815029	5	
47	Clamp, 1” Flange	TA815029	3	
48	Gasket, Seal	TA811944	8	
49	Clamp, 2” Flange	TA815025	8	
50	Elbow, 1 1/2” Hose Barb	TA808518	1	
51	Adapter, 1 1/2” HB x 1 1/2” NPTF-Male	TA814875	1	
52	Double Threaded Fitting, 1 1/2”	TA805422	1	
53	Elbow, 1 1/2”HB x 1 1/2” Male NPT	TA814975	1	
54	Hose, 1 1/2” EPDM	TA806325	AR	Specify Length
55	Elbow, 2” Flange x 1 1/2” HB	TA815020	1	Command Center Hook-Up
56	Anti-Vortex Fitting 2”	9005306	1	

Notes

Inductor Mounting - Optional

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



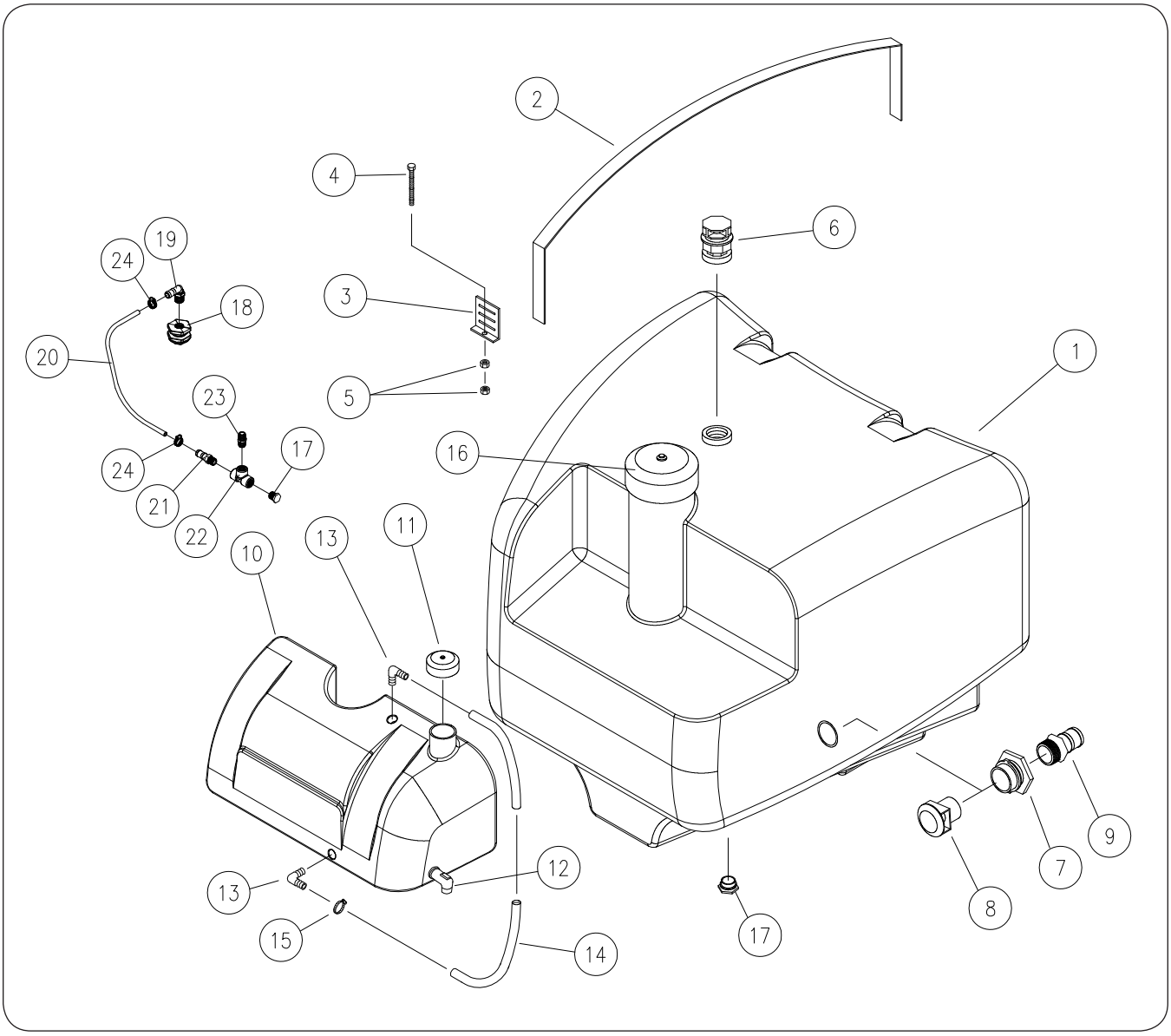
Inductor Mounting - Optional

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	15-Gallon Tank With Lid (Yellow)	403597	1	Includes Item 2
	15-Gallon Tank With Lid (Gray)	407469		
2	Lid, 16" - Complete	TA805210	1	
3	U-Bolt	9004014	1	
4	Tank Strap	TA500499	5.5 Ft	
5	Clip, Tank Strap	TA510025	2	
6	Capscrew, 3/8-16UNC x 3	9390-063	1	Grade 5
7	Lock Nut, 3/8-16UNC	9928	1	Grade 5
8	Inductor Support Weldment	407096B	1	
9	Capscrew, 3/8-16UNC x 3 1/4	9390-064	4	Grade 5
10	Locknut, 3/8-16UNC	9928	4	Grade 5
11	Lower Lift Arm Weldment	400684B	1	
12	Upper Lift Tube	400666B	1	
13	Inductor Mount	400686B	1	
14	Capscrew, 1/2-13UNC x 1	9390-099	2	Grade 5
15	Lock Washer, 1/2	9404-025	2	
16	Hex Nut, 1/2-13UNC	9394-010	2	Grade 5
17	Lock Weldment	400717B	1	
18	Capscrew, 1/2-13UNC x 4	9390-111	1	Grade 5
19	Locknut, 1/2-13UNC	94981	1	
20	Grip	9003869	1	
21	Spring	9000725B	1	
22	Shoulder Washer, 3/8" ID	9003862	8	
23	Gas Spring	9003684	1	
24	Ball Stud	9003832	2	
25	Lock Washer, 5/16	9404-019	2	
26	Hex Nut, 5/16-18UNC	9394-004	2	Grade 5
27	Decal, Inductor Operating Instructions	9004324	1	
28	Hex Nut, 1/4-20UNC	9394-002	4	Grade 5
29	Large Flange Screw, 3/8-16UNC x 1	91262	2	Grade 5
30	Nut, Large Flange 3/8-16UNC	91263	1	Grade 5
31	Plate, Inductor	402651B	1	

Rinse Tank

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



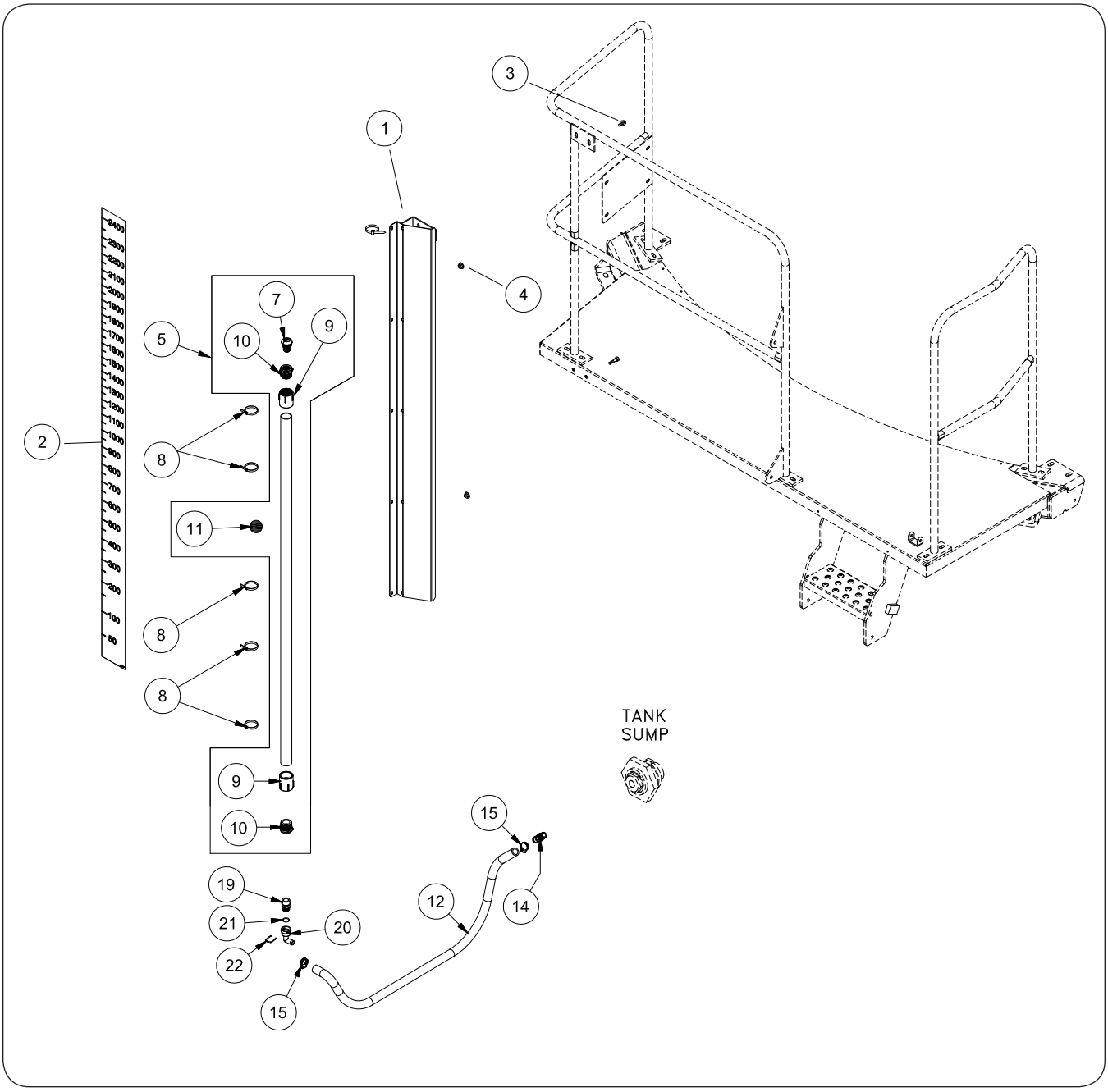
Rinse Tank

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

ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
1	Rinse Tank, 140 Gallon =Yellow=	407368	-	-	Used on SN B37240099 and Lower
	Rinse Tank, 140 Gallon =Gray=	407373	-	-	
	Rinse Tank, 165 Gallon =Yellow=	-	407369	>	Used on SN B37240099 and Lowerv
	Rinse Tank, 165 Gallon =Gray=	-	407374	>	
2	Nylon Strap, 2"	TA500499	>	>	
3	Clip, Strap	TA510025	>	>	
4	Capscrew, 3/8-16UNC x 4 1/2	TA0-907131-0	>	>	Grade 5 - Full Threaded
5	Hex Nut, 3/8-16UNC	9394-006	>	>	Grade 5
6	1" Antivortex Fitting, Tank Vent	TA816056	>	>	
7	Tank Fitting, 2"	TA805428	>	>	
8	Vent Cap	TA815074	>	>	
9	Hose Barb, 2" x 2" MPT	TA814880	>	>	
10	Clean Water Tank =Yellow=	401191	>	>	USE 404522
	Clean Water Tank =Gray=	406067	>	>	USE 406356
11	Cap - Vented	TA510074	>	>	
12	KBI Fitting (Spigot)	TA510073	>	>	
13	Elbow, 3/4 MPT x 1/2 HB 90°	TA808275	>	>	
14	Clear Vinyl Hose	TA806554	>	>	
15	Hose Clamp, 1/4 x 3/8"	TA801065	>	>	
16	Tank Lid - 5"	TA805503	>	>	
17	Plug, 1/2-14 NPTF	TA814750	>	>	
18	Manifold Fitting, 3/4"	TA805408	>	>	
19	90° Hose Barb Elbow, 3/4 x 3/4-14NPT Male Poly	TA814961	>	>	
20	Clear Vinyl Tubing, 3/4"	TA806558	>	>	
21	Straight Poly Hose Barb, 1/2-14MPT x 3/4 HS	TA814857	>	>	
22	Tee, 1/2" Female Poly	TA814780	>	>	
23	Nipple 1/2" x Close Poly	TA814600	>	>	
24	Hose Clamp	TA800910	>	>	

Sight Gauge

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



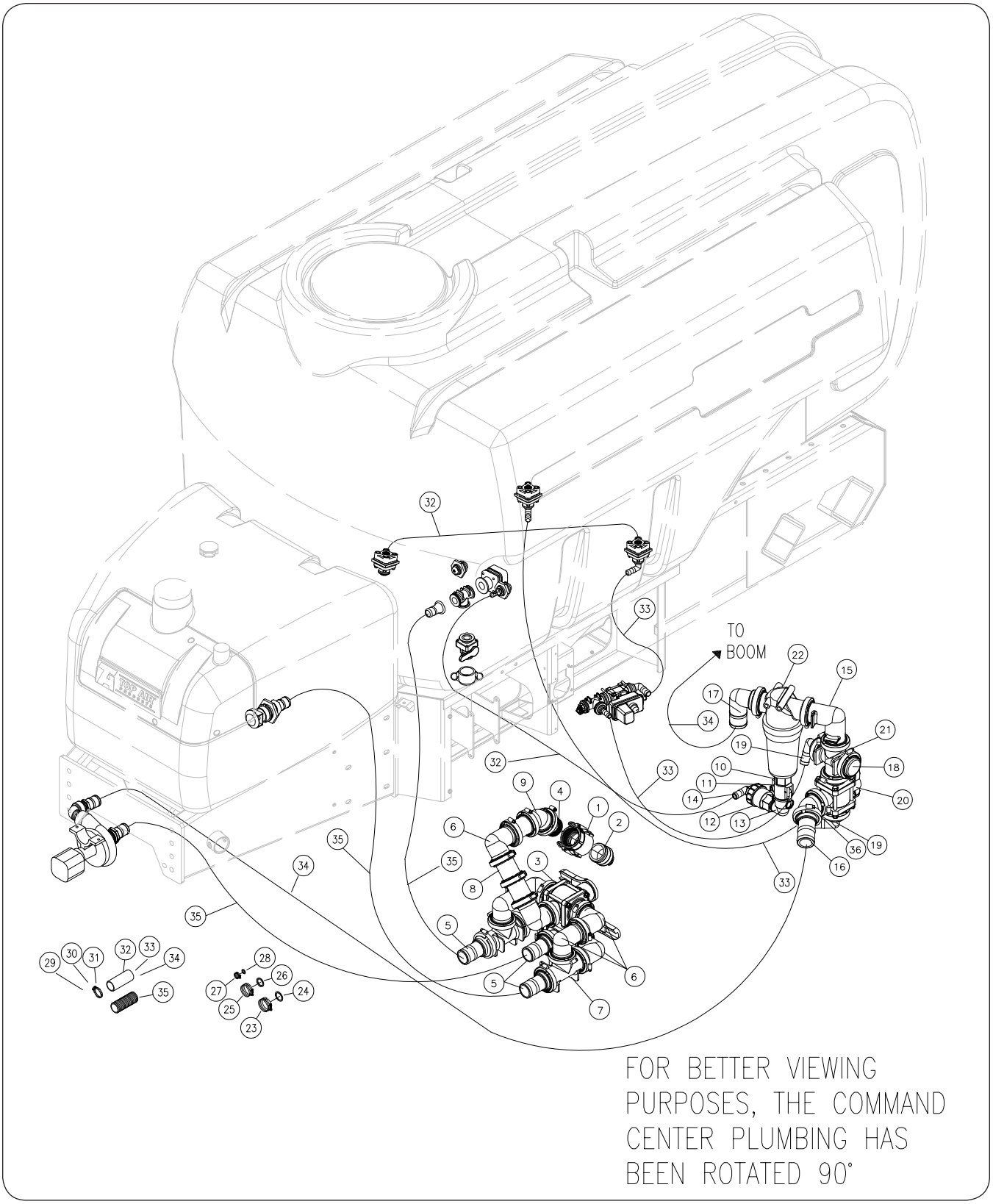
Sight Gauge

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

ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
1	Sight Gauge Weldment	402806B	400745B	405703B	
2	Decal, "Volume Indicator" (Yellow)	9004129	9003686	9004648	
	Decal, "Volume Indicator" (Gray)	9004817	9004834	9004852	
3	Capscrew Large Flange, 3/8-16 x 3/4	95585	>	>	Grade 5
4	Large Flange Nut, 3/8-16UNC	91263	>	>	Grade 5
5	Sight Gauge Tube	407461	407462	407463	
7	Breather, Tank Vent	9005558	>	>	
8	Cable Tie	9000104	>	>	
9	Adapter, 1 1/2 SCH40 F x 1 1/2 NPT F	9004547	>	>	
10	Reducer Bushing Poly	TA814661	>	>	
11	Indicator Ball, Red - 1 1/4	9003683	>	>	
12	Hose, 1" EPDM	TA806275	>	>	
14	Adapter, Straight 3/4-14MPT x 1" Hose Shank	TA814863	>	>	
15	Hose Clamp, S.S.	TA800912	>	>	
19	Adapter, 1" Male Pipe Quick Connect	9006477	>	>	
20	Quick Connect Kit	TA854886	>	>	
21	O-Ring for Quick Connect Kit	TA854887	>	>	
22	Clip for Quick Connect Kit	TA854883	>	>	

Spray System & Command Center

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



Spray System & Command Center

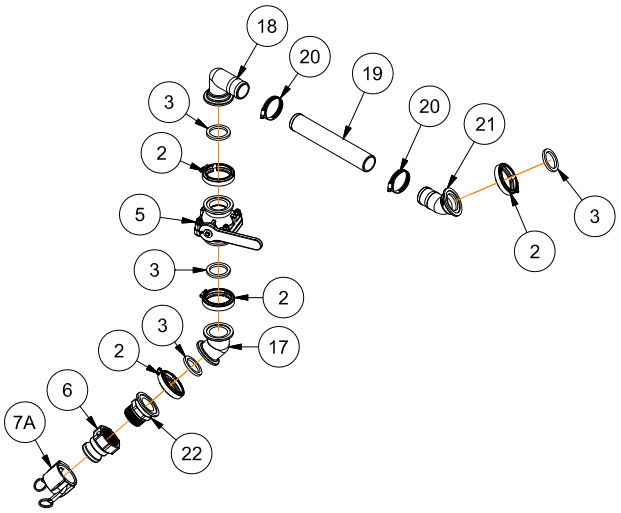
Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	DESCRIPTION	NOTES
1	TA810625	Quick Disconnect Coupling Poly 2" Male Adapter x 2-11 1/2 NPTF Female	
2	TA811500	Cap Coupler Poly 2"	
3	TA816020	3-Way Ball Valve, 2" FP	
4	TA816016	Adapter, 2" Full Port Flg. x 2" MPT	
5	TA816008	Straight 2" Full Port Flg. x 2" HB	
6	TA816010	Elbow, 2" Full Port Flg.	
7	TA816011	Tee, 2" Full Port Flange	
8	TA816014	Coupler, 2" Full Port Flange	
9	TA816015	Coupler, 2" Full Port Coupling 45	
10	TA810550	Coupler, 1"Quick	
11	TA810675	Coupler, 1" Female Quick	
12	TA811517	Ball Valve, 1" Union	
13	TA814692	Elbow, 1" Street	
14	TA814965	Elbow, 1 NPT x 3/4 HB 90°	
15	TA815004	Elbow, 2" STD Flange	
16	9005587	45° Elbow, 2" Flange x 2" Hose Barb	
17	TA815021	Adapter, 2" STD Flange x 2" HB 90°	
18	TA815023	2" STD Flange Plug	
19	TA815024	2" Flange x 1" HB 90° Elbow	
20	TA815048	2" 3-Way Ball Valve	
21	TA816019	Cross, 2" 4-Way	
22	TA855650	2" Flange Line Strainer	
23	TA816000	Clamp, 2" Full Port Flange	
24	TA816001	Gasket, 2" Full Port Flange	
25	TA815025	Clamp, 2" Flange	
26	TA811944	Gasket, 2" Flange	
27	TA815026	Clamp, 1" Flange	
28	TA815029	Gasket, 1" Flange	
29	TA800912	Hose Clamp,13/16" - 1 1/2"	
30	TA800910	Clamp, SS - SC12	
31	TA800922	Clamp, SS - SC36	
32	TA806250	Hose, 3/4" EPDM	
33	TA806275	Hose, 1" EPDM	
34	TA806328	Hose, 2" EPDM	
35	TA806332	Hose, 2" Fertilizer Solution	
36	TA816055	Coupler, 2" Full Port Coupling x 6" Lg.	
37	TA808520	2" Hose Barb Elbow	

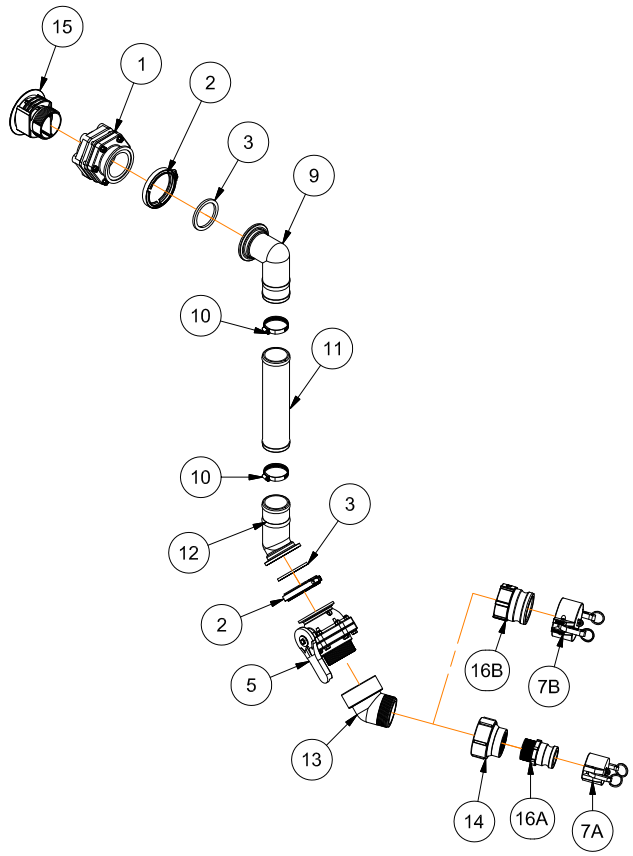
Solution Tank Quick Fill

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

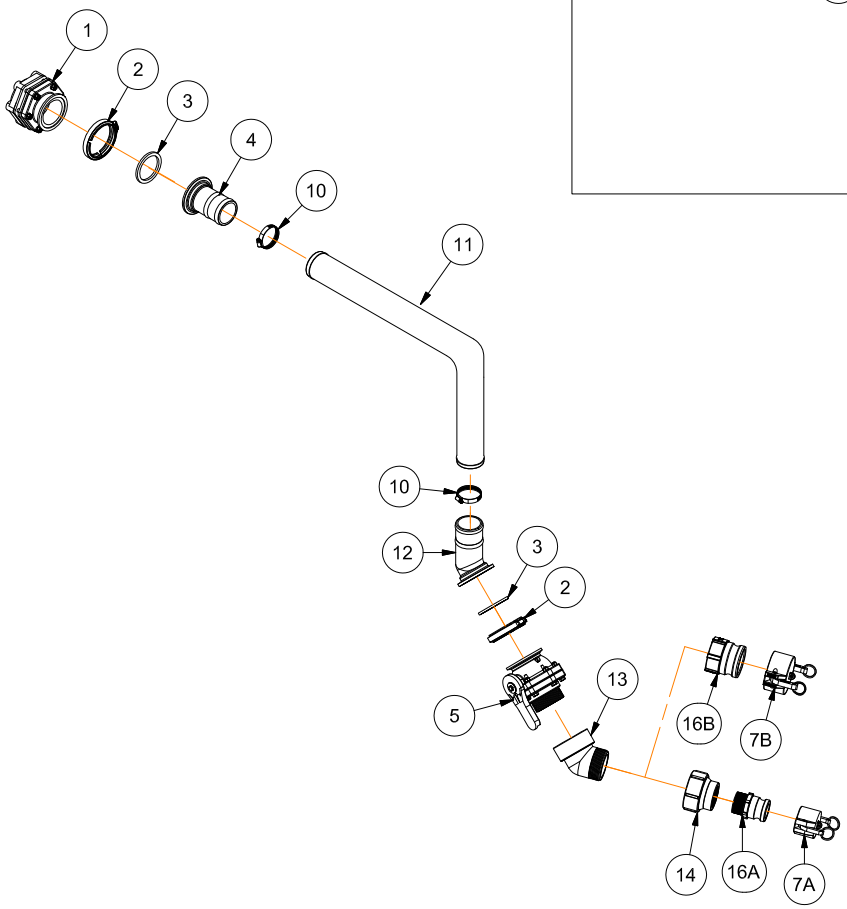
Model 1200



Model 1600



Model 2400



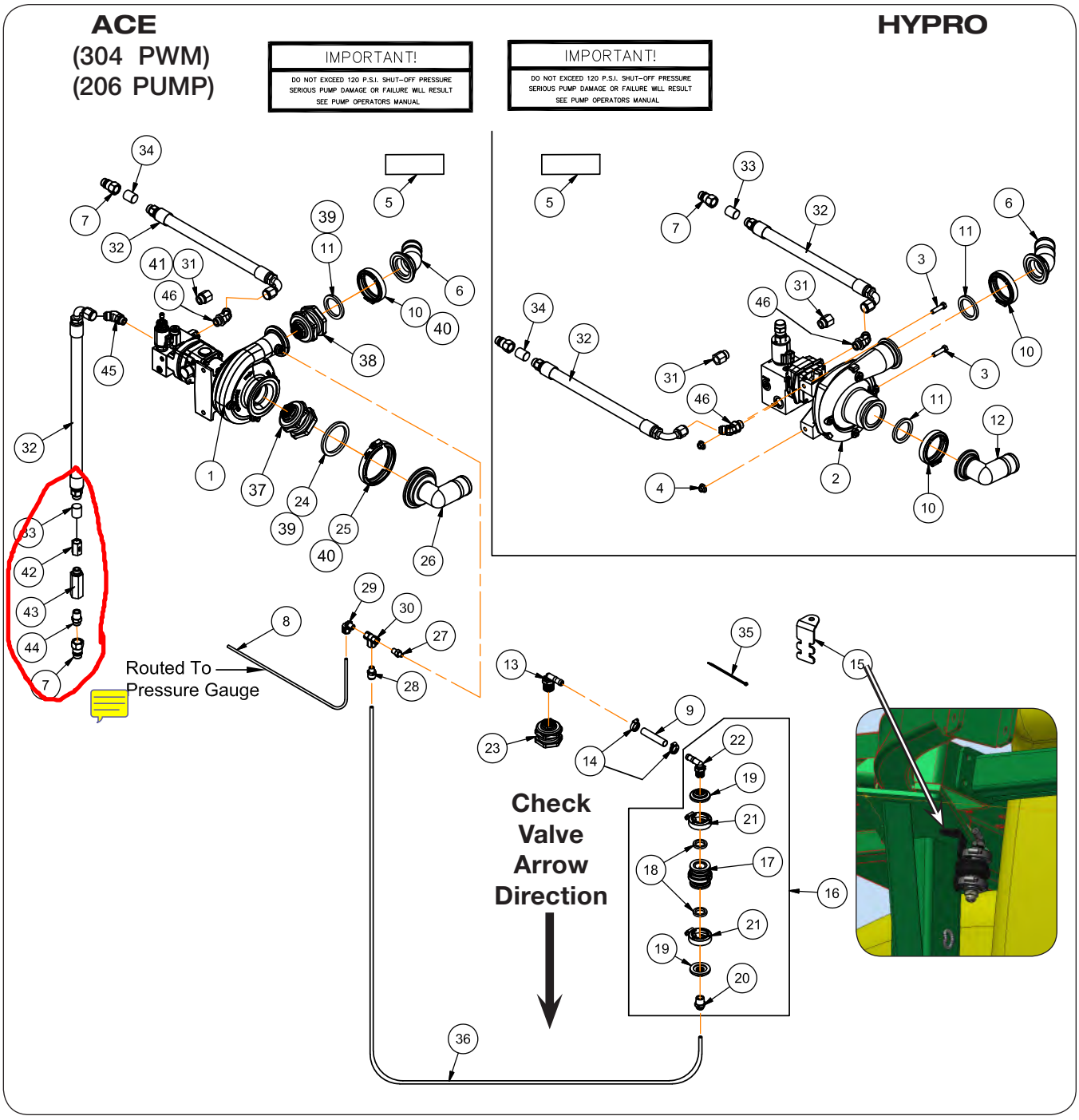
Solution Tank Quick Fill

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

ITEM	DESCRIPTION	PART NO.			NOTES
		1200	1600	2400	
1	Tank Flange Manifold	-	TA816042	TA816042	
2	Clamp/Flange	TA816000	TA816039	TA816039	
3	Gasket EPDM	TA816001	TA816038	TA816038	
4	Straight Hose Barb 3" Flange x 3" Hose Shank	-	-	TA816047	
5	Stubby Valve	9006056	TA816041	TA816041	
6	Quick Disconnect Coupling Poly 2" Male Adapter x 2-11 1/2 NPTF Female	TA810625	-	-	
7A	Cap Coupler Poly 2"	TA811500	TA811500	TA811500	
7B	Quick Disconnect Cap 3"	-	TA811816	TA811816	Does not use Item #14 (Not Shown)
8	End Fill Chain	TA0-903700-0	TA0-903700-0	TA0-903700-0	Not Shown
9	90° Elbow 3" Flange x 3" Hose Barb	-	9005533	-	
10	Hose Clamp (SC-52)	-	TA800926	TA800926	
11	3" Fertilizer Solution Hose	-	TA806334	TA806334	Specify in Feet
12	45° Elbow 3" Flange x 3" Hose Barb	-	9005528	9005528	
13	45° Elbow 3" Male x 3" Female	-	TA814730	TA814730	
14	Reducer Coupling 3-8 NPTF Female x 2-11 1/2 NPTF Female	-	TA814719	TA814719	Not used when using the 3" Adapter & Quick Disconnect Coupler
15	3" Anti-Vortex Plug	-	TA816053	-	
16A	Coupler 2" NPT Male Coupler/Male Threads	-	TA811250	TA811250	
16B	Quick Disconnect Coupling 3" Male Adapter x 3-8 NPTF Female	-	TA811810	TA811810	Does not use Item #14 (Not Shown)
17	45° Elbow, 2" Full Port x 2" Full Port	TA816015	-	-	
18	90° Elbow, 2" Full Port x 2" Hose Barb	TA816009	-	-	
19	2" Fertilizer Solution Hose	TA806332	-	-	
20	Hose Clamp	TA800922	-	-	
21	45° Elbow, 2" Full Port to 2" Hose Barb	9005845	-	-	
22	Adapter 2" Full Port Flange x 2" male Pipe	TA816016	-	-	

Spray Pump

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



ITEM	DESCRIPTION	PART NO.	NOTES
1	Spray Pump, ACE (304 PWM)	9007100	80,90,110,120,132' Booms
	Spray Pump, ACE (206)	TA825250	60' Boom
2	Spray Pump, HYPRO (9306C PWM)	9007141	Opt/80,90,110,120,132' Booms
3	Capscrew, 3/8-16UNC x 1 1/2	9390-057	Grade 5
4	Large Flange Hex Nut, 3/8-16UNC	91263	Grade 5
5	Decal, "Important"	TA510212	

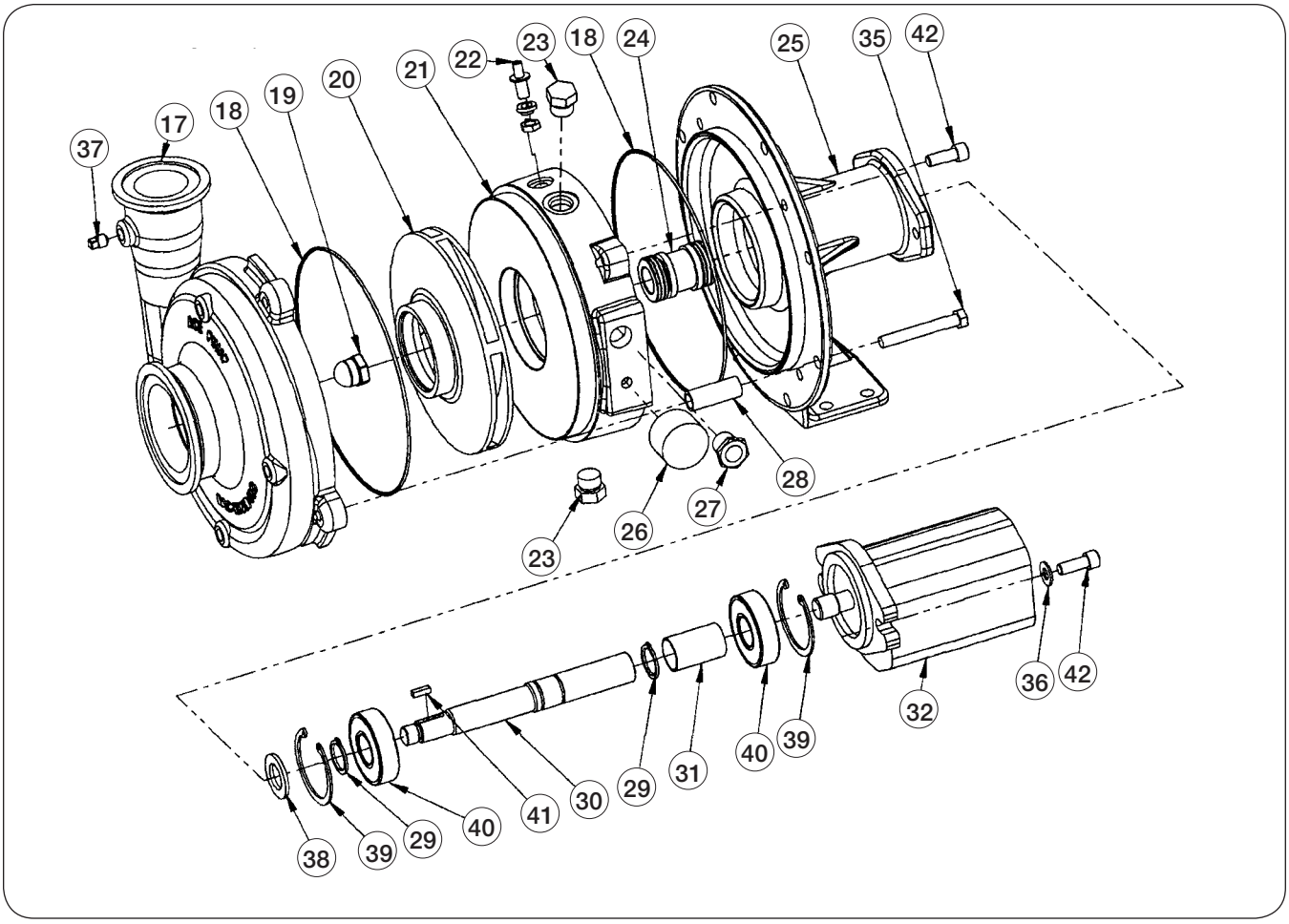
Spray Pump

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

ITEM	DESCRIPTION	PART NO.	NOTES
6	45° Elbow, 2" Flange x 2" Hose Barb	9005845	
		9005587	For ACE Pump (206)
7	Male Tip, 3/4-16 O-Ring For 1/2" Hose	91383	
	Male Tip, 7/8-14 O-Ring For 3/4" Hose	95477	
8	Gauge Tubing, 1/4"	TA720620	
9	Hose 1/2" EPDM	TA806225	Specify in Feet
10	Worm Screw Flange Clamp 2"	TA816000	
11	Gasket - 2" EPDM	TA816001	
12	90° Elbow, 2" Flange x 2" Hose Barb	TA816009	
13	90° Elbow 3/4-14 NPTF Male x 1/2 Hose Shank	TA814960	
14	Hose Clamp M-6	TA800902	Stainless Steel
15	Vent Bracket	411079B	
16	Air Vent Assembly	411078	Includes Items 28 through 33
17	1" Flange Check Valve	9007339	
18	Gasket - 1" EPDM	TA815029	
19	1" Flange Plug x 1/2" FPT	TA816023	
20	3/8" Push to Connect x 1/2" MNPT	9007340	
21	Flange Clamp 1" Worm Screw	TA815026	
22	90° Elbow 1/2-14 NPTF Male x 1/2 Hose Shank	TA814956	
23	Manifold Fitting 3/4" Double Threaded	TA805408	1 5/8" Hole Required
24	Gasket - 3" EPDM	TA816038	For ACE Pump (304)
25	Worm Screw Flange Clamp 3"	TA816039	For ACE Pump (304)
26	90° Elbow, 3" Flange x 2" Hose Barb	9005844	For ACE Pump (304)
	90° Elbow, 2" Flange x 2" Hose Barb	TA815021	For ACE Pump (206)
27	Pipe Nipple, 1/4" NPT x 1/8" NPT	9007182	Stainless Steel
28	Quick Coupler 1/4-18 NPT x 3/8" Push to Connect	TA750120	
29	Elbow, 1/4" NPT x 1/4" Compression	TA720802	
30	Poly Pipe Tee, 1/4"	TA809190	
31	Reducer 7/8-14 O-Ring Male x 3/4-16 O-Ring Female	98801	Serial #'s Below B42080100 1 Required for ACE Pump (304) 2 Required for Hypro Pump
32	Hose Replacement Kit	415555B	Serial #'s Below B42080100
	Hose 3/4 x 150 90° Swivel 7/8-14 Male O-Ring x 7/8-14 Male O-Ring	9009306	Serial #'s B42080100 & Higher
33	Hose Marker, "Solution Pump Pressure" For 1/2" Hose	9003935	
	Hose Marker, "Solution Pump Pressure" For 3/4" Hose	9009304	
34	Hose Marker, "Solution Pump Return" For 1/2" Hose	9003936	
	Hose Marker, "Solution Pump Return" For 3/4" Hose	9009305	
35	Cable Tie	9000106	
36	3/8" OD Tubing	TA750051	Specify in Feet
37	Adapter 2" Flange x 1 1/2" Male NPTF	TA815010	For ACE Pump (206)
38	Adapter 2" Flange x 1 1/4" Male NPTF	TA815009	For ACE Pump (206)
39	Gasket - 1 5/8" Dia.	TA811944	For ACE Pump (206)
40	Worm Screw Flange Clamp 2"	TA815025	For ACE Pump (206)
41	Adapter 3/4-16 O-Ring Female x 1/2-14 Male NPTF	91035	2 Required for ACE Pump (206) Serial Numbers Below B42080100
42	Adapter 3/4-16 O-Ring Female x 3/4-16 O-Ring Female	9852	For ACE Pump (206)
43	Flow Limiter	9005187	For ACE Pump (206)
44	Adapter 3/4-16 O-Ring Male x 1/2-14 Male NPT	9008705	For ACE Pump (206)
45	45° Elbow, 3/4-16 O-Ring Male x 7/8-14 JIC Male	9009307	Serial #'s B42080100 & Higher
46	45° Elbow, 7/8-14 JIC Male x 7/8-14 O-Ring Male	9502614	Serial #'s B42080100 & Higher

Spray Pump - (ACE HYD 750)

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



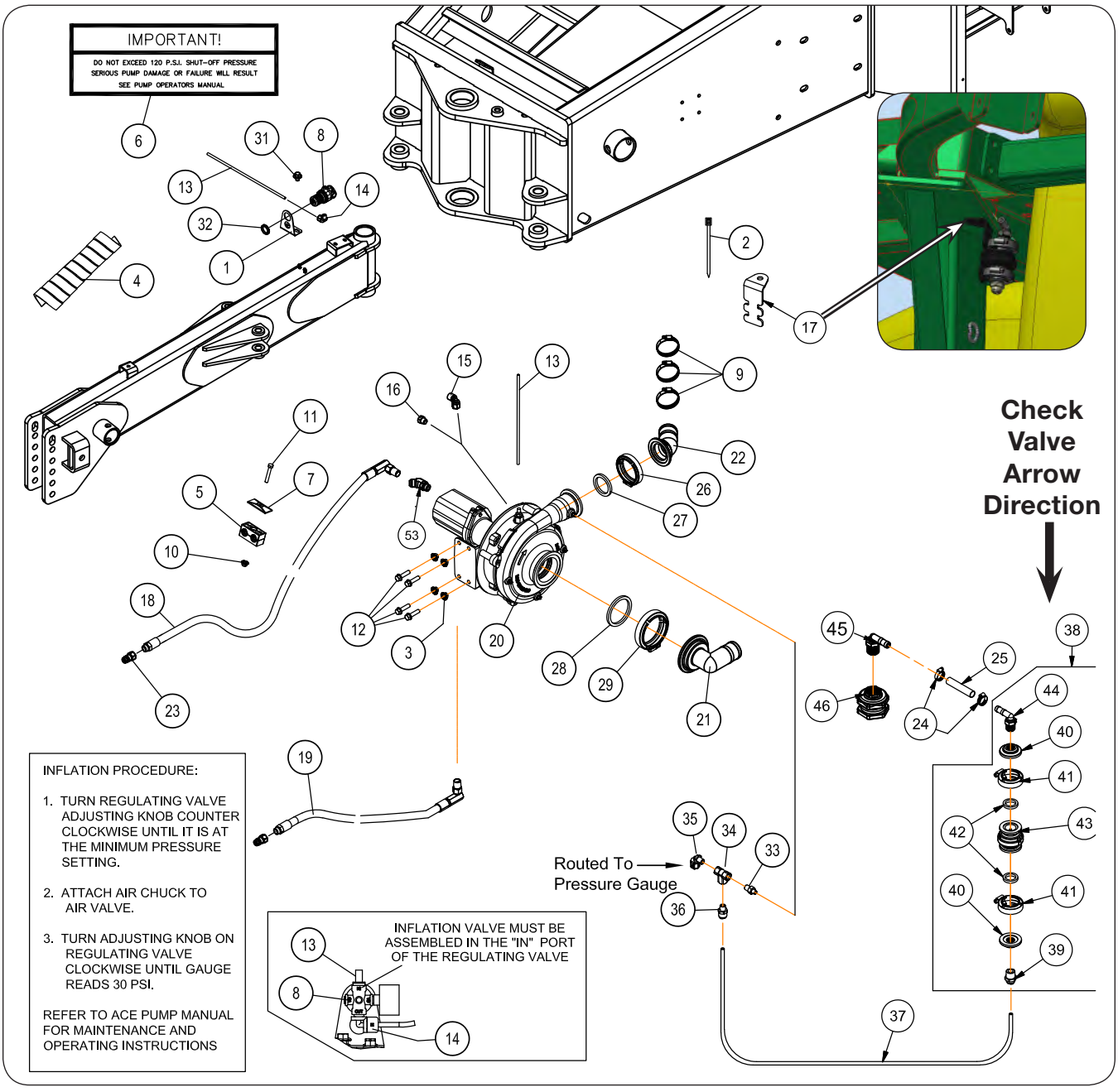
Spray Pump - (ACE HYD 750)

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
16	Pump, 750	9005840	1	
17	Volute, 300 x 220 Flange	9005502	1	
18	O-Ring	9005503	2	
19	Acorn Nut, 5/8-11 SS	9005504	1	
20	Impeller	9005505	1	
21	Seal Plate	9005506	1	
22	Air Valve, Clamp-In (for Tubeless Tire)	9005507	1	
23	Plug	9005508	2	
24	Dual Seal Assembly	9005509	1	
25	Pump Mounting Frame	9005510	1	
26	Pump Pressure Gauge	9005511	1	
27	Oil Level Sight Gauge	9005512	1	
28	Spacer Tube	9005513	4	
29	Snap Ring	9005514	2	
30	Pump Shaft	9005515	1	
31	Shaft Spacer	9005516	1	
	Hydraulic Motor Shaft Seal Repair Kit	9005781	1	Not Shown
32	Hydraulic Motor, 18 GPM	9005517	1	
	Repair Kit	9007391	-	Not Shown
33	Royal Purple Barrier Fluid (Quart)	9005518		Not Shown
34	Pump Repair Kit, ACE 750	9005519	1	Not Shown
35	Capscrew, 3/8-16UNC x 2 3/4	9390-062	4	Grade 5
36	Flat Washer, 3/8	9405-076	2	
37	ACE Pipe Plug	TA826325	4	
38	Slinger, 7/8" Shaft	TA831022	1	
39	Snap Ring	TA831024	2	
40	Bearing	TA831026	2	
41	Key, .188 x .188 x .875	TA831030	1	
42	Capscrew, 3/8"NC x 1	TA831034	4	

Spray Pump - (ACE HYD 750)

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



ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Regulator Bracket	407597B	1	
2	Cable Tie, 6" Lg.	9000106	4	
3	Large Flange Nut, 3/8-16UNC	91263	6	Grade 5
4	Spiral Hose Wrap	9004075	A/R	
5	Poly Double Hose Clamp For 1/2" Hose	9004856	1	
	Poly Double Hose Clamp For 3/4" Hose	9007372		
6	Decal, "IMPORTANT"	TA510212	1	
7	Top Plate for Hose Clamp For 1/2" Hose	9004857	1	
	Top Plate for Hose Clamp For 3/4" Hose	9007373		
8	Regulating Valve	408097	1	

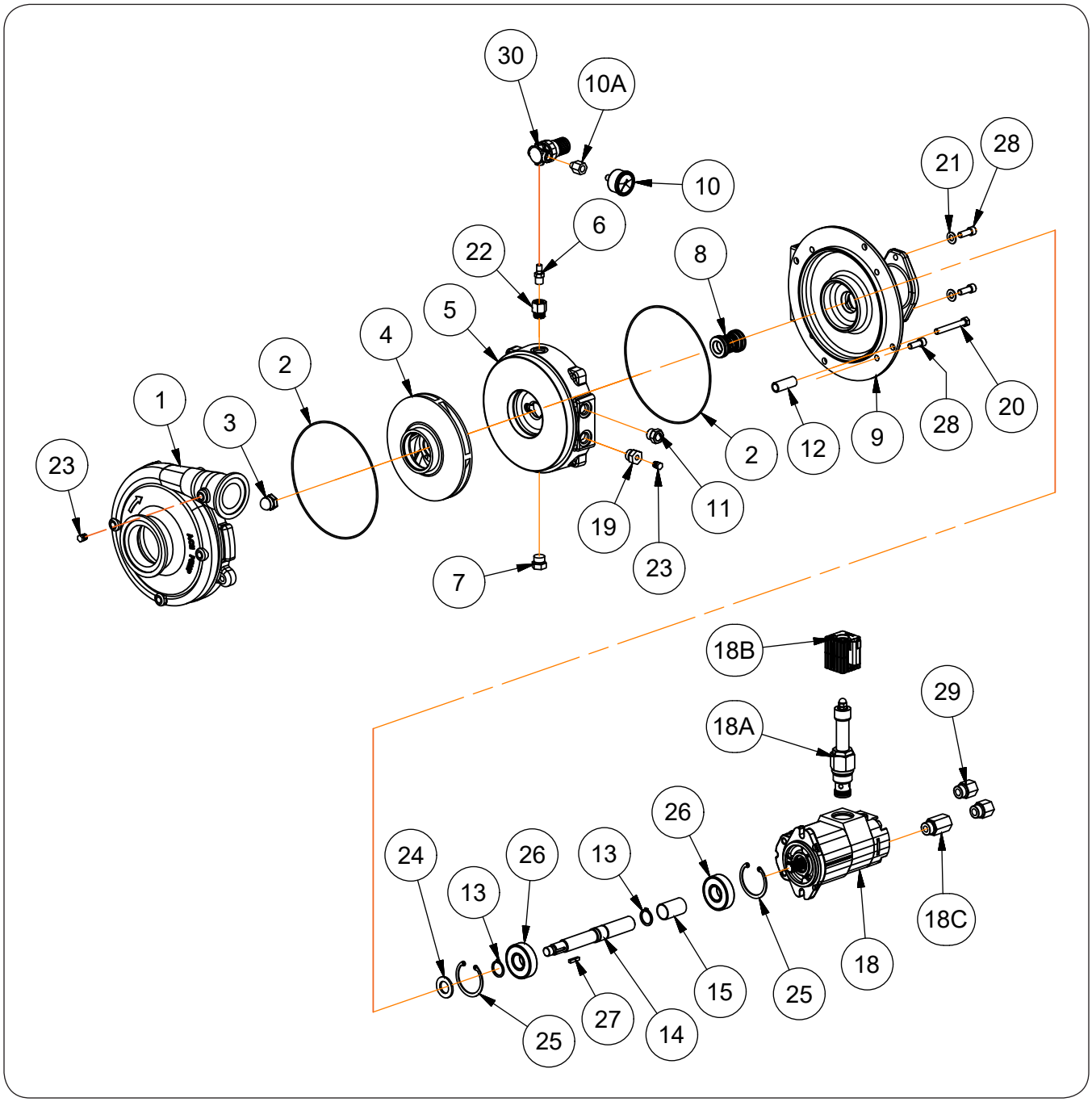
Spray Pump - (ACE HYD 750)

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
9	Hose Clamp, SS (SC-36)	TA800922	3	
10	Large Flange Hex Nut 5/16-18UNC	91257	1	
11	Capscrew 5/16-18UNC x 2 1/4 G5	9390-035	1	For 1/2" Hose
	Capscrew 5/16-18UNC x 2 1/2 G5	9390-036		For 3/4" Hose
12	Capscrew 3/8-16UNC x 1 1/4	9390-056	4	Grade 5
13	Gauge Tubing 1/4" Dia.	TA720620	A/R	
14	90° Elbow 1/4" NPT x 1/4" Gauge Tube	TA720802	1	
15	90° Elbow 1/4" FPT x 1/4" Gauge Tube	TA720812	1	
16	1/4" Close Nipple	TA809325	1	
17	Vent Bracket	411079B	1	
18	Hose Marker Solution Pump Pressure	9003935	1	For 1/2" Hose
		9009304		For 3/4" Hose
	Hose 3/4 x 150	415555B	1	Serial #B42080099 & Lower
		9009306		Serial #B42080100 & Higher
19	Hose Marker	9003936	1	For 1/2" Hose
		9009305		For 3/4" Hose
	Hose 1/2 x 150	415555B	1	Serial #B42080099 & Lower
		9009306		Serial #B42080100 & Higher
20	ACE 750 Hydraulic	9005840	1	
20A	ACE 750 Hydraulic PWM Pump	9008132	1	
21	90° Elbow 3" Flange x 2" Hose Barb	9005844	1	
22	45° Elbow 2" Flange x 2" Hose Barb	9005845	1	
23	Male Tip, 3/4-16 O-Ring	91383	2	For 1/2" Hose
	Male Tip, 7/8-14 O-Ring	95477	2	For 3/4" Hose
24	Hose Clamp M-6	TA800902	1	Stainless Steel
25	Hose 1/2" EPDM	TA806225	A/R	Specify in Feet
26	Worm Screw Flange Clamp 2"	TA816000	1	
27	Gasket 2"	TA816001	1	
28	Gasket 3"	TA816038	1	
29	Worm Screw Flange Clamp 3"	TA816039	1	
31	Flange Screw, 3/8-16UNC x 1/2 Gr.5	9006040	2	
32	Regulator Metal Panel Nut	9006051	1	
33	Pipe Nipple, 1/4" NPT x 1/8" NPT	9007182	1	Stainless Steel
34	Poly Pipe Tee, 1/4"	TA809190	1	
35	Elbow, 1/4" NPT x 1/4" Gauge Tube	TA720802	1	
36	Quick Coupler 1/4-18 NPT x 3/8" ID	TA750120	1	
37	3/8" OD Tubing	TA750051	A/R	Specify in Feet
38	Air Vent Assembly	411078	1	Includes Items 39 through 44
39	3/8" Push to Connect x 1/2" MNPT	9007340	1	
40	1" Flange Plug x 1/2" FPT	TA816023	1	
41	Flange Clamp 1" Worm Screw	TA815026	1	
42	Gasket - 1" EPDM	TA815029	1	
43	1" Flange Check Valve	9007339	1	
44	90° Elbow 1/2-14 NPTF Male x 1/2 Hose Shank	TA814956	1	
45	90° Elbow 3/4-14 NPTF Male x 1/2 Hose Shank	TA814960	1	
46	Manifold Fitting 3/4" Double Threaded	TA805408	1	1 5/8" Hole Required
48	ACE 750 Hydraulic PWM Pump Kit	414050FS	1	Not Shown
49	Adapter Plate	414046B	1	Used for mounting 750 PWM Pump on SN B37240099 and Lower
50	Capscrew, 3/8-16UNC x 1 1/4"	902703-041	4	
51	Capscrew, 3/8-16UNC x 3/4" Gr. 5	9390-053	4	
52	Lock Waser, 3/8"	9404-021	4	
53	45° Elbow, 7/8"-14 JIC Male x 7/8"-14 Male	9502614	2	

PWM Pump - (ACE 750 & ACE 755)

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



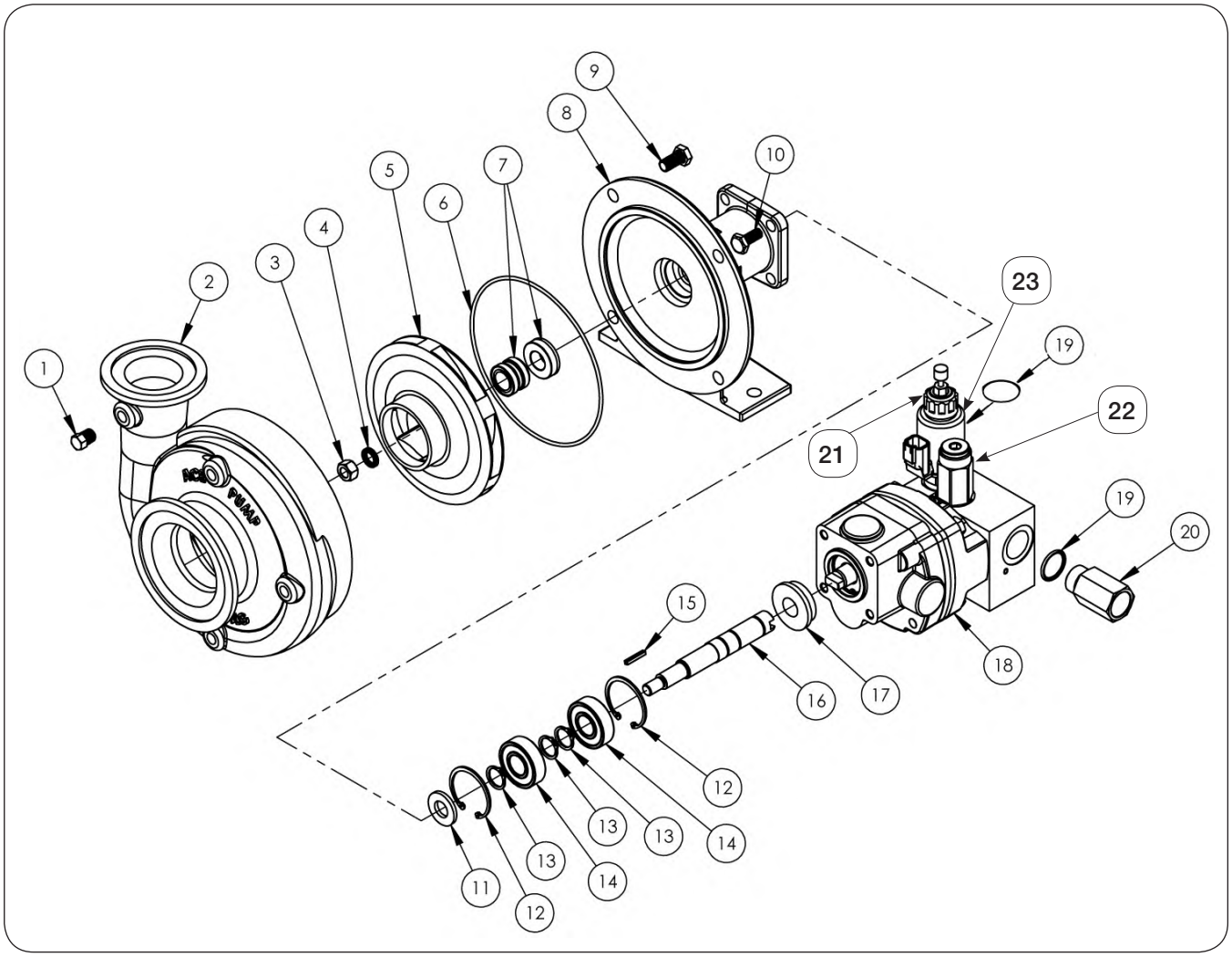
PWM Pump - (ACE 750 & ACE 755)

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
	PWM Pump, 750	9008132	1	For Standard Pump 750
	PWM Pump, 755 (Stainless Steel)	9008739		For Stainless Steel Pump 755
1	Volute, 300 x 220 Flange	9005502	1	For Standard Pump 750
	Volute, 300 x 220 Flange (Stainless Steel)	9008855		For Stainless Steel Pump 755
2	O-Ring	9005503	2	
3	Acorn Nut, 5/8-11 SS	9005504	1	
4	Impeller	9005505	1	For Standard Pump 750
	Impeller (Stainless Steel)	9008856		For Stainless Steel Pump 755
5	Seal Plate	9005506	1	For Standard Pump 750
	Seal Plate (Stainless Steel)	9008853		For Stainless Steel Pump 755
6	Air Valve, Clamp-In (for Tubeless Tire)	9005507	1	
7	Plug	9005508	1	
8	Dual Seal Assembly	9005509	1	
9	Pump Mounting Frame	9005510	1	
10	Pump Pressure Gauge	9008866	1	
11	Oil Level Sight Gauge	9005512	1	
12	Spacer Tube	9005513	4	For Standard Pump 750 ONLY
13	Snap Ring	9005514	2	
14	Pump Shaft	9005515	1	
15	Shaft Spacer	9005516	1	
16	Royal Purple Barrier Fluid (Quart)	9005518	1.32	Qty. in quarts
17	Liquid Side Pump Seal Kit, ACE 750	9005519	1	Includes Items 2, 8 and 16
18	PWM Hydraulic Motor Assembly	9008148	1	
18A	Valve	9008228	1	
18B	Coil	9008229	1	
18C	Reverse Check Assembly	9007530	1	
19	Adapter Plug, 3/4 x 1/8	9008257	1	
20	Capscrew, 3/8-16UNC x 2 3/4 (Stainless Steel)	900900-062	4	For Standard Pump 750
	Capscrew, 3/8-16UNC x 2 1/2 (Stainless Steel)	900900-061		For Stainless Steel Pump 755
21	Flat Washer, 3/8	900902-037	3	
22	Adapter, 3/4 x 1/4	99928	1	
23	ACE Pipe Plug	TA826325	5	
24	Slinger, 7/8" Shaft	TA831022	1	
25	Snap Ring	TA831024	2	
26	Bearing	TA831026	2	
27	Key, .188 x .188 x .875	TA831030	1	
28	Capscrew, 3/8"NC x 1	TA831034	6	
29	Reducer 7/8-14 O-Ring Male x 3/4-16 O-Ring Female	98801	2	
30	Air Regulator	9006050	1	

Spray Pump - (ACE FMCSC 205F HYD 304 PWM)

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



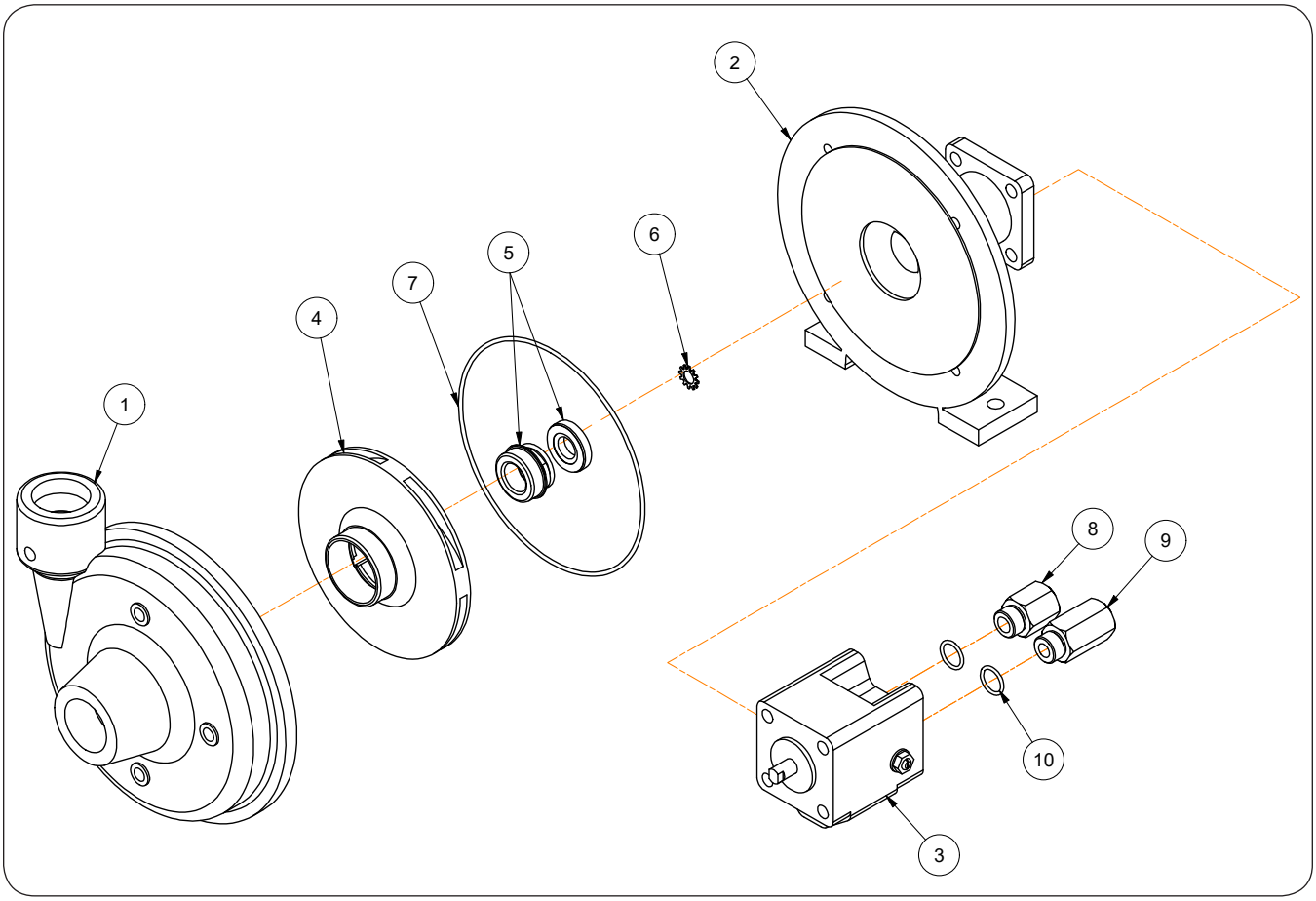
Spray Pump - (ACE FMCSC 205F HYD 304 PWM)

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
	Pump Complete, ACE FMCSC-205-HYD-304 PWM	9007100	1	Includes Items 1 thru 20
1	Pipe Plug	TA826325	4	
2	Volute, 300 Standard Flange x 220 Full Port Flange, Cast Iron	9007526	1	
	Repair Kit - FMC-205 Pump w/Carbide Shaft Seal	9005902	-	Not Shown
3	Nut, 3/8" UNF, Stainless Steel	900901-005	1	
4	Washer, 3/8", Stainless Steel, Self-Locking	9007531	1	
5	Impeller, Thermoplastic	TA827920	1	
	Impeller, Cast Iron (Optional)	TA830732		
6	O-Ring	TA827875	1	
7	Silicon Carbide Seal	9005894	1	
8	Mounting Frame, 205 Pump	9005895	1	
9	Capscrew, 3/8"-16UNC x 3/4"	9390-053	4	
10	Capscrew, 5/16"-18UNC x 3/4" (Motor to Pump)	TA829300	4	
11	Slinger	TA826275	1	
12	Snap Ring, Internal	9005897	2	
13	Snap Ring, External	9005898	3	
14	Ball Bearing, Sealed	9005899	2	
15	Shaft, Extended Keyway, Impeller	9005900	1	
16	Key, 1/8 x 1/8 x 13/16" - Extended	TA830736	1	
17	Seal Support Spacer	9005901	1	
18	Hydraulic Motor, 304/205 - 11 GPM, PWM	9007396	1	
	Repair Kit - Hydraulic Motor	TA830910	-	Not Shown
19	O-ring, #10 SAE Fitting	TA831035	1	
20	Reverse Check Assembly, #10 SAE x #10 SAE	9007530	1	
21	Proportional Cartridge Valve Assembly	9007887	1	
22	Pressure Reducing Valve Assembly	9007889	1	
23	Coil For PWM Cartridge Valve (2-Pin)	9009262	-	

Spray Pump - (ACE FMCSC 150 HYD 206)

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



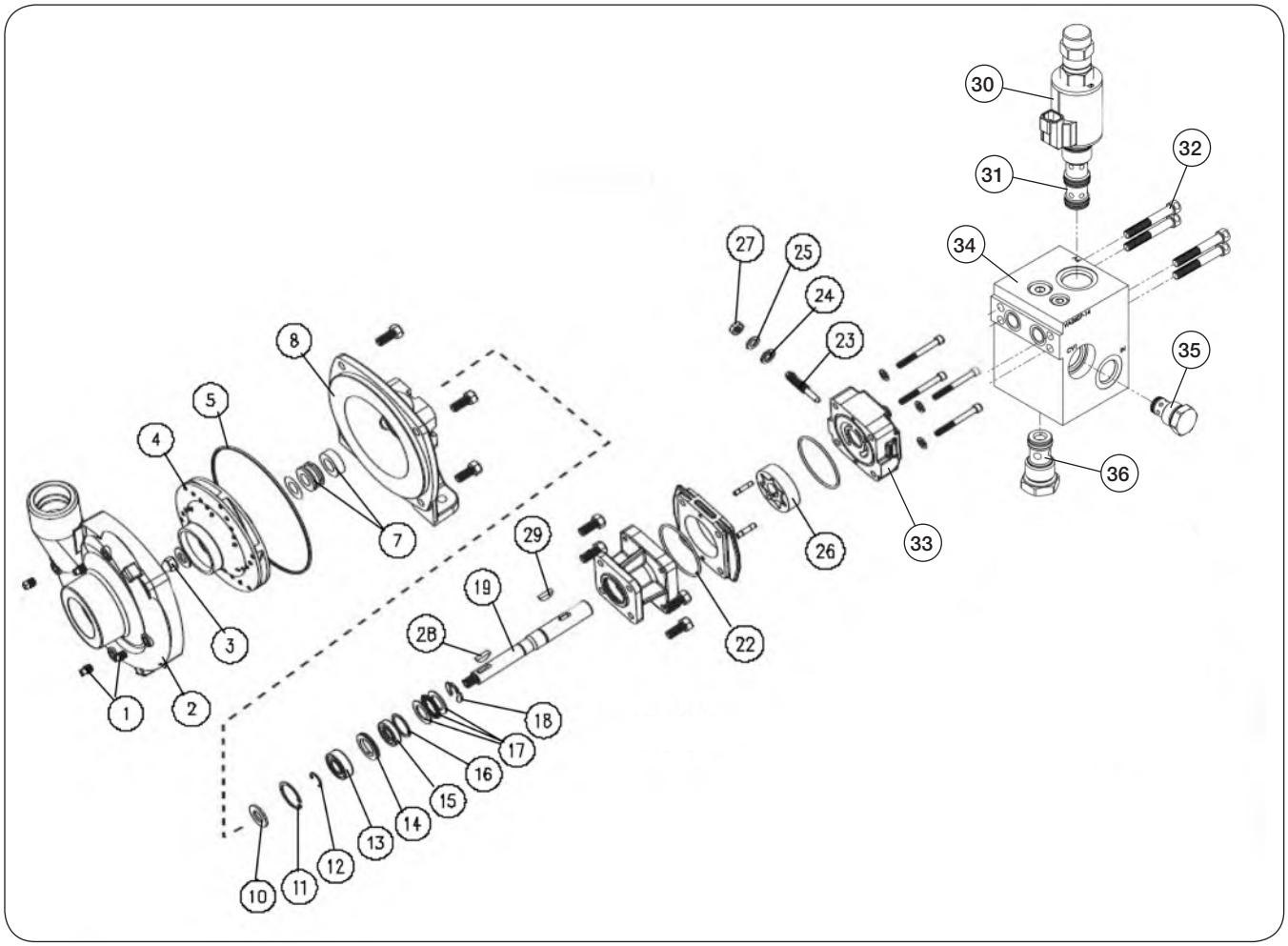
Spray Pump - (ACE FMCSC 150 HYD 206)

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
	Pump Complete, ACE FMCSC-150-HYD-206	TA825250	1	Includes Items 1 thru 10
1	Volute, 1 1/2" Suction & 1 1/4" Discharge	TA827910	1	
2	Mounting Frame (Black)	TA829560	1	
3	Hydraulic Motor, 206/150 - 27 GPM	TA829260	1	
4	Impeller, Thermoplastic	TA827918	1	
5	Silicon Carbide Seal	TA830733	1	
6	Star Washer 3/8" (Stainless Steel)	TA829500	1	
7	O-Ring Volute Seal	TA827900	1	
8	Restrictor Orifice 1" Dia. x 1 1/2"	901974	1	
9	Reverse Flow Check, #10 SAE x #8 SAE	901975	1	
10	O-Ring	9840	2	

Spray Pump - (HYPRO 9306C-HM1C)

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



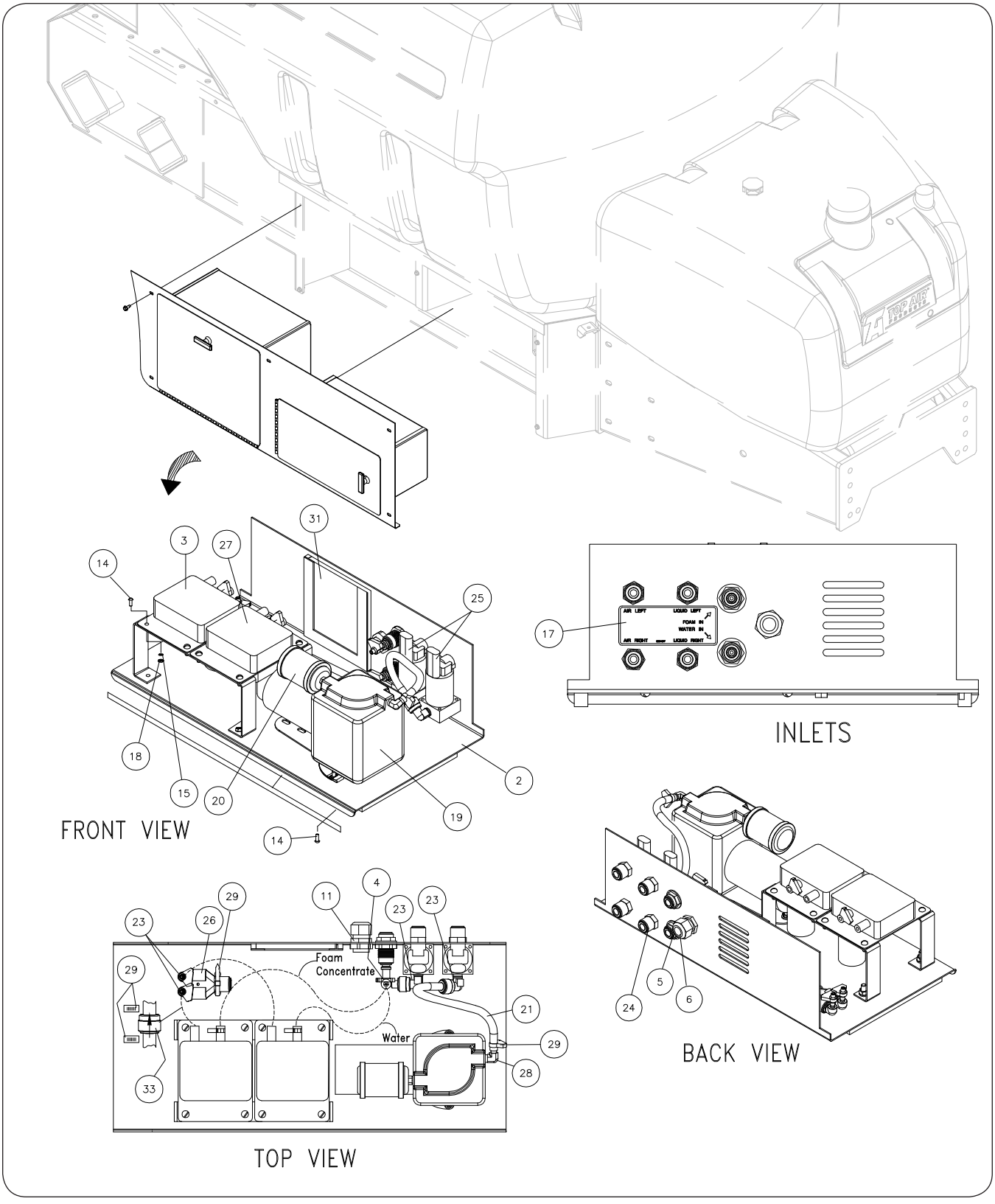
Spray Pump - (HYPRO 9306C-HM1C)

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
	Pump Complete, Hypro 9306C - PWM	9007141	1	Includes Items 1 thru 29
1	Drain Vent Plug	TA840300	4	
2	Pump Casing	-	1	
3	Impeller Nut	TA840101	1	
4	Impeller	TA836050	1	
5	O-Ring	TA838775	1	
7	Viton Seal	TA839575	1	
8	Mounting Flange	TA837475	1	
9	Reducer, 7/8-14 OR Male x 3/4-16 OR Female Nut	98801	2	
10	Slinger Ring	TA838300	1	
11	Retaining Ring	TA839125	1	
12	Snap Ring	TA839050	1	
13	Ball Bearing	TA839250	1	
14	Spacer	TA838325	1	
15	Shaft Seal	TA839450	1	
16	Seal Spacer	TA838350	1	
17	Thrust Bearing Assembly	TA839350	1	
18	Snap Ring	TA839075	1	
19	Shaft, 7”	TA837050	1	
22	O-Ring	TA838900	2	
23	Bypass Adjusting Screw	TA840400	1	
24	Gasket	TA838700	1	
25	Washer	TA840225	1	
26	Gerotor	TA841225	1	
27	Lock Nut	TA840075	1	
28	Woodruff Key	TA838625	1	
29	Roll Pin	TA838650	1	
30	PWM Valve Coil	9007540	1	
31	Proportional Cartridge Valve	9007538	1	
32	Hex Capscrew	9007541	4	
33	Motor End Cover	9007535	1	
34	PWM Manifold Assembly	9007542	1	
35	Check Valve (#10)	9007537	1	
36	Check Valve (#12)	9007536	1	

Foam Marker - Optional

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



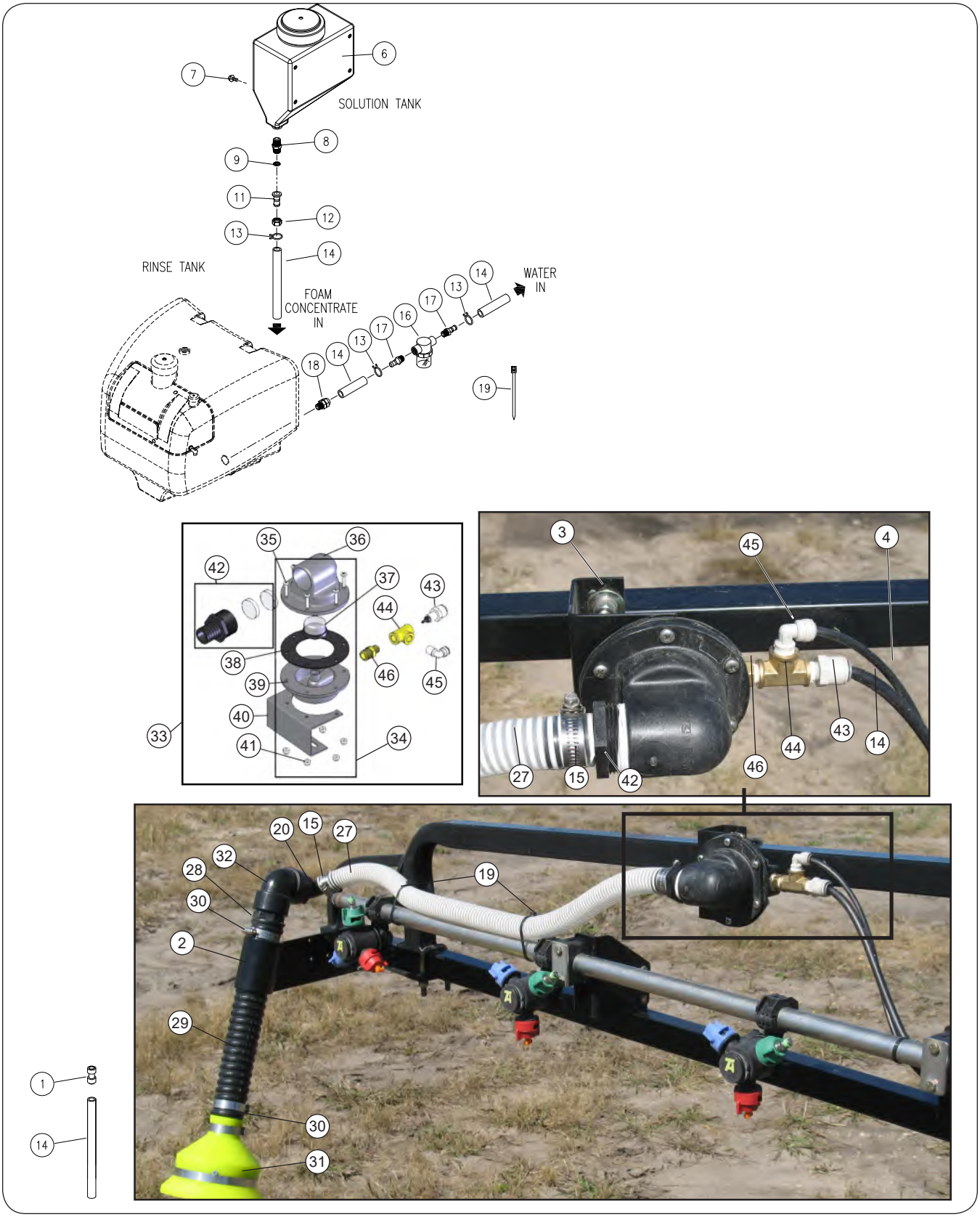
Foam Marker - Optional

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
2	Tray Weldment	9005229	1	
3	Pump, Concentrate	9005227	1	
4	Hose Barb Stem	TA816032	2	
5	Bulkhead, 3/8"	9003944	2	
6	Strain Relief	9004551	1	
8	Harness Solenoid Valve (Not Shown)	9004553	2	
9	Wire Nut, Yellow (Not Shown)	9004554	3	
10	Wire Nut, Orange (Not Shown)	9004555	2	
11	Hex Nut, 1/2" NPT	9004556	1	
12	Capscrew, 1/4-20UNC	9390-003	4	
13	Nut, 1/4-20UNC	9394-002	4	
14	Machine Screw, #10-24UNC	9403-022	11	
15	Lock Washer, #10	9404-013	8	
16	Lock Washer, 1/4	9404-017	4	
17	Decal, Tray Marker	9004627	1	
18	Hex Nut, #10-24	9830-017	8	
19	Compressor	TA750019	1	
20	Filter	TA750020	1	
21	Tubing, 1/4" x 3/8" Air Line	TA750051	1	Specify Feet
22	In-Line Check Valve	9006313	2	Not Shown
23	Elbow, 1/4 MPT x 3/8 HB 90°	TA750118	2	
24	Adapter	TA750120	4	
25	Solenoid Valve	9005223	1	
26	Tee, 3/8 OD Y Quick Coupler	TA750287	1	
27	Pump, Water	9005226	1	
28	Elbow, 1/8"MPTx 1/4"HB	TA801710	1	
29	Nyglass Clamp	TA801906	7	
30	Plastic Tie, 6"	TA809168	1	
31	Air Filter Square	TA816029	1	
33	Elbow, 3/8 Stem x 1/4 HB 90°	TA816032	4	

Foam Marker Assembly - Optional

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



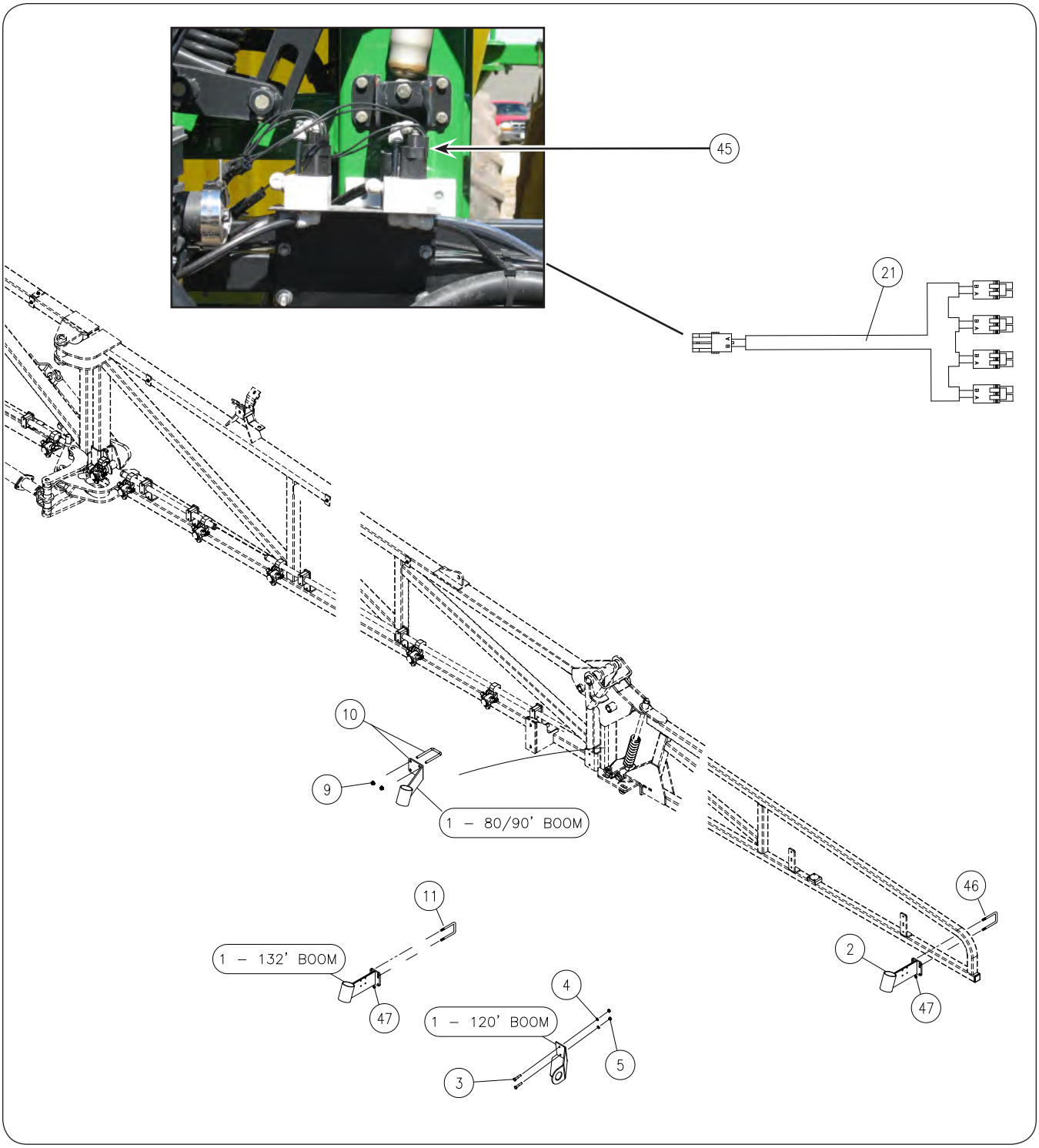
Foam Marker Assembly - Optional

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

ITEM	DESCRIPTION	PART NO.	QTY.	NOTES
1	Union 1/4" Hose Push-to-Connect Style	TA750289	4	
3	U-Bolt, 3/8-16UNC for 1 1/2" Tube	9004685	4	Stainless Steel
	U-Bolt, 3/8-16UNC for 2" Tube	9004688		
	Flat Washer, 3/8	900902-038	8	
	Serrated Flange Nut, 3/8-16UNC	9005640	8	
4	Gauge Tubing 1/4" OD	TA720620	A/R	
6	Tank, Solution =Yellow=	9003759	1	
	Tank, Solution =Grey=	9004816		
7	Screw/Large Flange 5/16-18UNC x 3/4	91256	4	Grade 5
8	Close Nipple, 3/4"	TA809400	1	
9	Garden Hose Washer w/Strainer	9005604	1	
11	Hose Barb, 1/4" Flat Seat	TA809750	1	
12	Hex Nut, 3/4" FPT	TA809160	1	
13	Squeeze Clamp	TA750219	3	
14	Nylon Tubing 3/8" OD	TA750051	A/R	
15	Hose Clamp, SC-20	TA800914	4	Stainless Steel
16	Strainer 80 Mesh Line	TA813070	1	
17	Adapter, 1/2 NPT x 1/4 Hose Barb	TA810180	2	
18	Quick Coupler, 1/4 MPT x 3/8	TA750120	1	
19	Tie Strap, 12"	9000107	A/R	
20	90° Elbow, Poly	TA814971	2	
25	Flange Nut 1/4-20UNC	9004720	8 - 2	Stainless Steel
27	Hose 1" Foam	TA750034	A/R	
28	Adapter, 1 1/4 NPTF Male x 1 1/2 Hose Barb	TA814869	2	
29	Hose 1 1/2 Collector	TA816044	2	
30	Hose Clamp, SC-32	TA800920	4	Stainless Steel
31	Collector Head, 1 1/2"	TA750062	2	
32	90° Elbow, 1 1/4 NPTF Female	TA814793	2	
33	Foamhead Assembly	9005220	1	
34	Foam Assembly	9005221	1	
35	Screw	9005209	5	
36	Top Housing	9005210	1	
37	3/8 Screen	9005211	1	
38	Gasket	9005212	1	
39	Bottom Housing	9005213	1	
40	Mounting Bracket	9005214	1	
41	Nut	9005215	5	
42	Homogenizer Nipple	9005208	1	
43	Venturi 1/4m x 3/8t	9005216	1	
44	Tee 1/4f	9005217	1	
45	90° Elbow 1/4m x 1/4t	9005218	1	
46	Adapter, 1/4m x 3/8m	9005219	1	

Foam Marker Assembly - Optional (continued)

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



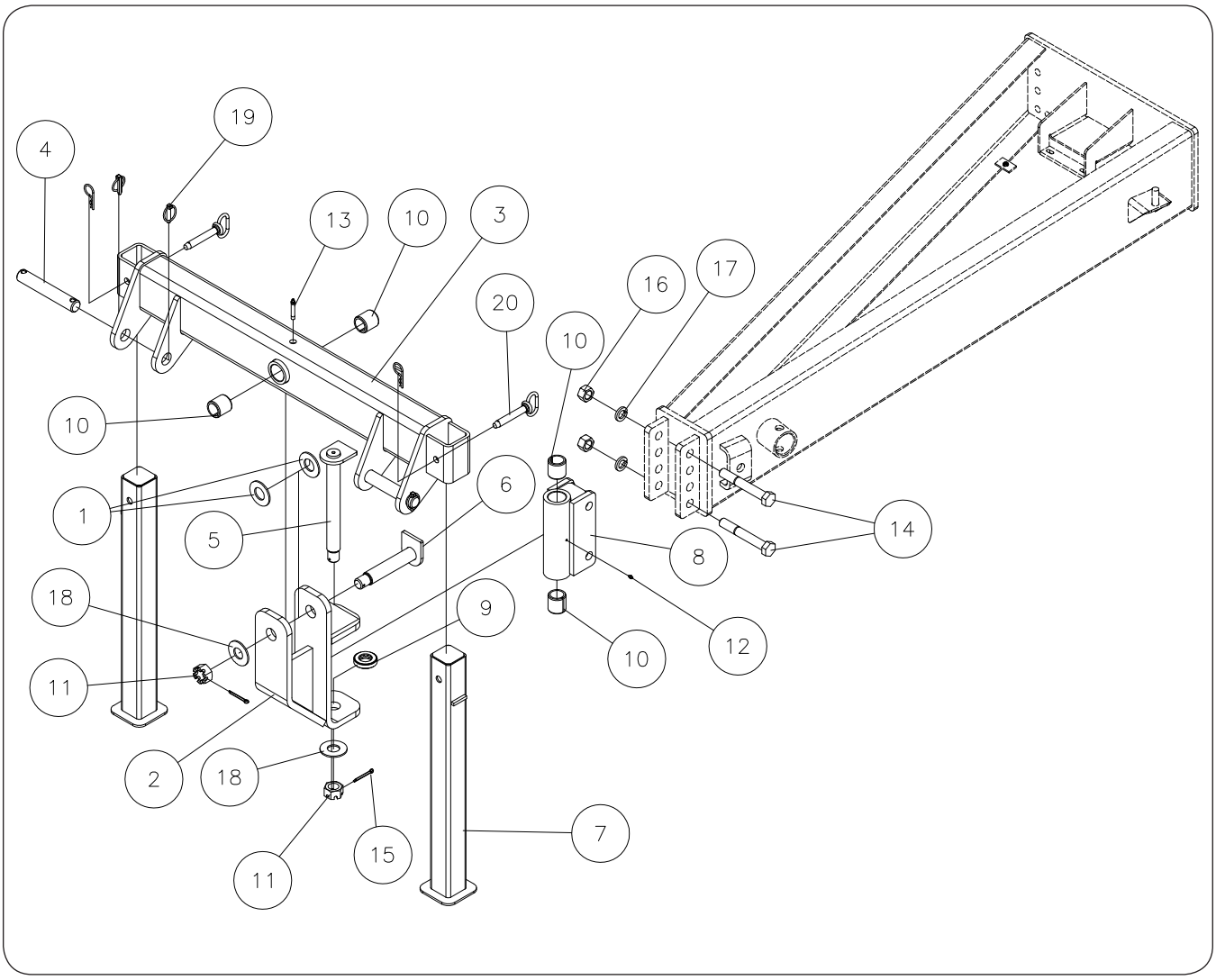
Foam Marker Assembly - Optional (continued)

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

ITEM	DESCRIPTION	PART NO.			NOTES
		For 80/90' Booms	For 120' Boom	For 132' Boom	
1	Plate, RH Foamer Bracket	407676B	405314B	-	
	Plate, LH Foamer Bracket	407674B	405315B	-	
	Plate, RH Foamer Bracket	-	404589B	-	Model 2400
	Plate, LH Foamer Bracket	-	404590B	-	Model 2400
2	Foamer Bracket	405823B	>	>	
3	Capscrew 5/16-18UNC x 1	-	900900-030	-	Stainless Steel
4	Lock Washer 5/16	-	900903-019	-	Stainless Steel
5	Hex Nut 5/16-18UNC	-	900901-004	-	Stainless Steel
9	Serrated Flange Nut 3/8-16UNC	9005640	-	-	Stainless Steel
10	U-Bolt 3/8-16UNC x 4	9004684	-	-	Stainless Steel
11	U-Bolt 1/4-20UNC x 3 3/4	-	9004683	-	Stainless Steel
21	Harness, Switch	9005485	>	>	
45	Dual Drop Control Module Block	9005203	>	>	
	Dual Drop 3 Way Solenoid Valve	9005206	>	>	
	Dual Drop Control Module Bracket	9005207	>	>	
46	U-Bolt 1/4-20UNC	9004714	>	>	Stainless Steel
47	Flange Nut 1/4-20UNC	9004720	>	>	Stainless Steel

2-Point Hitch - Optional

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



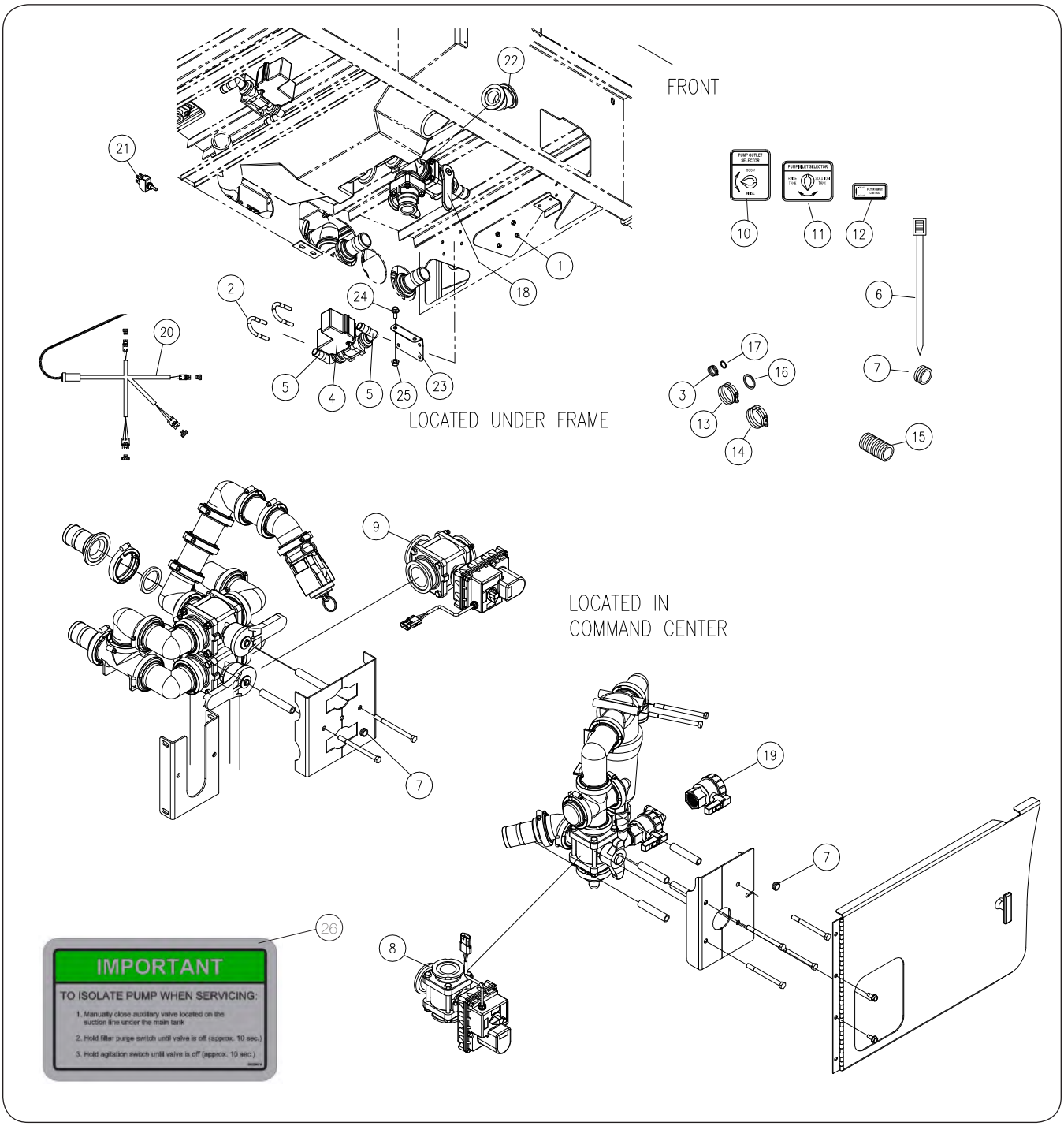
2-Point Hitch - Optional

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

ITEM	DESCRIPTION	PART NO.	NOTES
	2-Point Hitch Assembly	402838	Includes Items 1-13, 15, 18-20
1	Washer	250392	
2	2-Point Turning Weldment	402835B	
3	2-Point Hitch Weldment	402843B	
4	Pin	403747	
5	2-Point Pin (Vertical)	403792	
6	2-Point Pin (Horizontal)	403794	
7	Jack Stand Weldment	403798B	
8	Hitch Weldment	403801B	
9	Thrust Bearing	9000906	
10	Bushing	9001917	
11	Nut, Slotted	9002721	
12	Grease Zerk	91160	
13	Grease Zerk	92549	
14	Capscrew, 1-8UNCx7 G5	9390-197	
15	Cotter Pin	9391-061	
16	Hex Nut, 1-8UNC G5	9394-020	
17	Lock Washer	9404-041	
18	Flat Washer	9405-130	
19	Klik Pin	95031	
20	Hitch Pin	97199	

Electric Controls - Optional

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



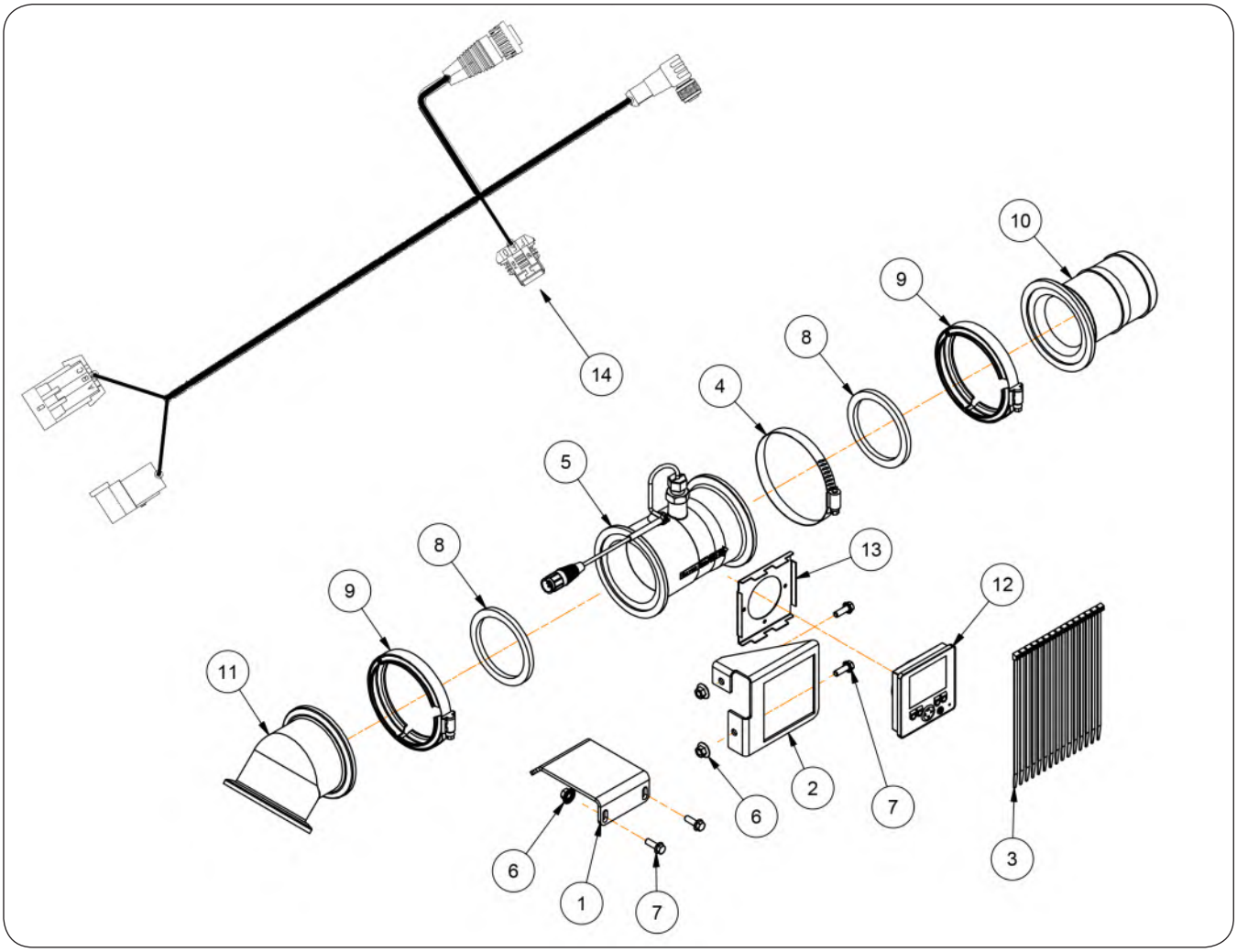
Electric Controls - Optional

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

ITEM	DESCRIPTION	PART NO.	NOTES
	Electric Control Valve Kit	403885	
1	Locknut, 5/16-18NC	9807	
2	U-Bolt, 5/16-18NC x 2.18 x 1.6cc	100965	
3	Clamp, 1" Flange	TA815026	
4	Electric Ball Valve, 1" Flange	9003957	Includes Motor
	Motor	TA854876	Not Shown Separately
5	Elbow, 1" Flange x 3/4" HB	TA815017	
6	Cable Tie, 15 1/2	9000107	
7	Rubber Grommet	9001005	
8	Ball Valve, 2" STD Flange Electric	9003955	
9	Ball Valve, 2" Full Port Flange Electric	9003956	
10	Decal, Outlet Selector	9004008	
11	Decal, Pump Inlet	9004006	
12	Decal, Filter Purge Control	9004560	
13	Clamp, 2" Flange	TA815025	
14	Clamp, 2" Full Port Flange STAINL	TA800910	
15	Hose, 3/4 EPMD	TA806250	
16	Gasket, 2" Flange	TA811944	
17	Gasket, 1" Flange	TA815029	
18	Ball Valve, 2" Flange	TA815045	
19	Ball Valve, 1" Union	TA811517	
20	Harness, Valve / Agitation Switch	9004550	
21	Electric Agitation Switch	9004564	
22	45° Elbow, 2" Flange	TA816004	
23	Valve Bracket	408324B	
24	Large Flange Screw, 5/16-18UNC x 3/4 Gr.5	91256	
25	Large Flange Hex Nut, 5/16-18UNC	91257	
26	Decal, "Pump Isolation"	9006474	Used on Units with Electric Command Center Option

Raven ISO Tank Fill Meter

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



Raven ISO Tank Fill Meter

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

ITEM	DESCRIPTION	PART NO.	QTY	NOTES
	Raven ISO Tank Fill Kit	414071B	-	Includes items 1 through 11
1	Flow Meter Bracket =Black=	414070B	1	
2	Display Mounting Plate	414072B	1	
3	Cable Tie 7 1/2"	9000106	15	
4	Hose Clamp 4 1/2" Dia.	9007462	1	
5	Raven ISO Fill Meter	9007170	1	
6	Large Flange Hex Nut 1/4"-20UNC	97189	4	
7	Flange Screw 1/4"-20UNC x 3/4" G5	97420	4	
8	Gasket 3" EPDM	TA816038	2	
9	3" Flange Clamp	TA816039	2	
10	Hose Barb 3" Flange x 3" Hose Shank	TA816047	1	
11	Coupler 3" Flange x 45 Degree	TA816049	1	
12	Display Console	9007166	1	
13	Display Mounting Bracket	9007167	1	
14	Tank Fill Harness	9007428	1	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