FIELD-PRO XV

1600/1850

OPERATOR'S MANUAL

BESTWAY, INC.

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DOM-BW013

Revision H

GENERAL INFORMATION

Congratulations on your purchase of a BESTWAY sprayer. We at Bestway wish to thank you for your patronage and appreciate your confidence in BESTWAY equipment. Your BESTWAY Field-Pro IV sprayer has been carefully designed and ruggedly built to provide many years of dependable service in return for your investment.

This manual has been prepared to assist you in the operation and maintenance of your Field-Pro IV sprayer and to provide the necessary part numbers to keep it in near original condition.

Sprayer Serial Number _____

Optional Foamer Serial Number_____

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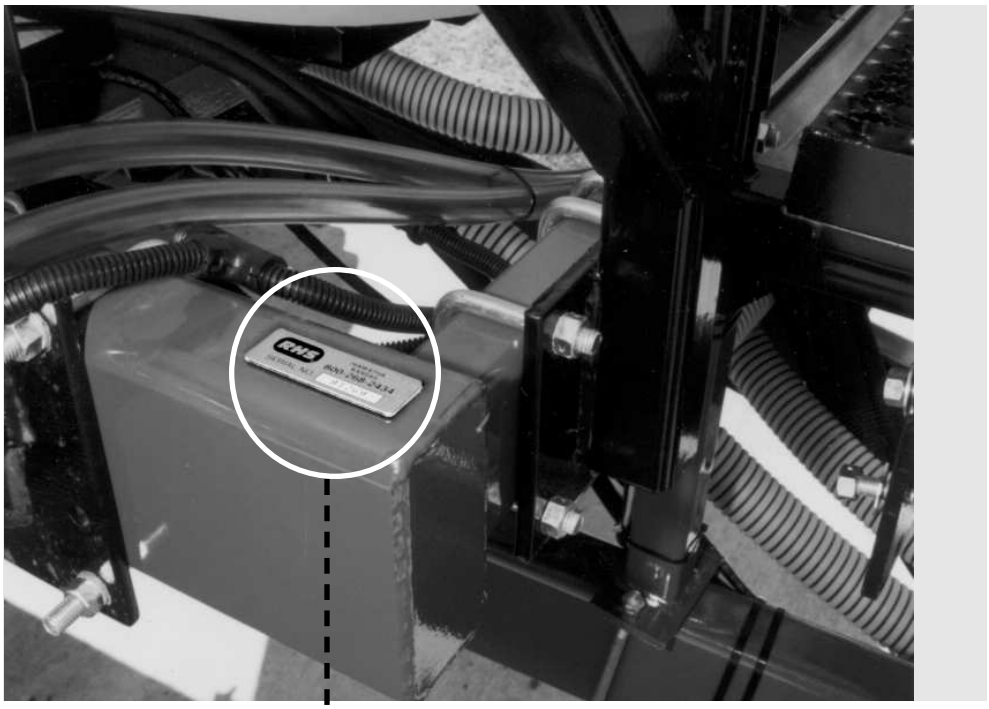
INTRODUCTION

Serial Number

The serial number provides important information about your BESTWAY sprayer and may be required to obtain the correct replacement part(s).

The serial number plate for the sprayer is located on the right side of the mainframe near the front. It is suggested that the serial number be recorded, in the space provided, in the front of this manual. Always provide the serial number and model numbers when ordering parts from your BESTWAY dealer or anytime correspondence is made with Bestway, Inc.



Serial Number on Trailer Frame

Definitions of Safety and Service Statements

TAKE NOTE! THIS SAFETY ALERT SYMBOL, FOUND THROUGHOUT THIS MANUAL, IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

THIS SYMBOL MEANS

- ATTENTION!

- BECOME ALERT!

- YOUR SAFETY IS INVOLVED!

If you have questions not answered in this manual, require additional copies or the manual is damaged, please contact your dealer or Bestway, Inc., 2021 Iowa Street, Hiawatha, KS 66434. TELEPHONE: (785) 742-2949, FAX: (785) 742-2190.

All safety statements in this manual, as well as those found on safety decal's, are preceded by the following warning symbols. Carefully read and follow the instructions provided.

DANGER: **Indicates and imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.**

WARNING: **Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.**

CAUTION: **Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.**

IMPORTANT: **The IMPORTANT notice gives important instructions to prevent damage to the machine or systems.**

NOTE: **A Note will give general information about the correct operation and maintenance of the machine and systems.**

Warranty

Bestway, Inc. (“Bestway”) warrants each new Bestway product to be free from defects in Bestway manufactured components and workmanship. This warranty is applicable only for the normal service life expectancy of the product or components, not to exceed twenty-four (24) consecutive months from the date of delivery of the new Bestway product to the original purchaser.

Purchased components installed by Bestway (pumps, controls, tanks, wheels, valves, cylinders, fittings, etc.) shall be warranted by their respective manufacturer for a period of twelve (12) consecutive months from the date of delivery of the new Bestway product to the original purchaser. All warranty work is to be performed at the dealer’s location unless authorized by Bestway, Inc.

A completed Owner Registration Form from the original purchaser must have been received by Bestway, Inc. to activate warranty coverage.

Genuine Bestway replacement parts and components will be warranted for ninety (90) days from date of purchase, or the remainder of the original equipment warranty period, whichever is longer.

Under no circumstances will it cover any merchandise or components thereof, which, in the opinion of Bestway, has been subjected to misuse, unauthorized modifications, alteration, an accident or if repairs have been made with parts other than those obtainable through Bestway.

Our obligation under this warranty shall be limited to repairing or replacing, free of charge to the original purchaser, any part that, in our judgement, shall show evidence of such defect, provided further that such part shall be returned within thirty (30) days from the date of failure to Bestway through the dealer or distributor from whom the product was purchased, transportation charges prepaid.

This warranty shall not be interpreted to render Bestway liable for injury or damages of any kind or nature to person or property. This warranty does not extend to the loss of crops, loss because of delay in harvesting, or any expense or loss incurred for labor, substitute machinery, rental or for any other reason.

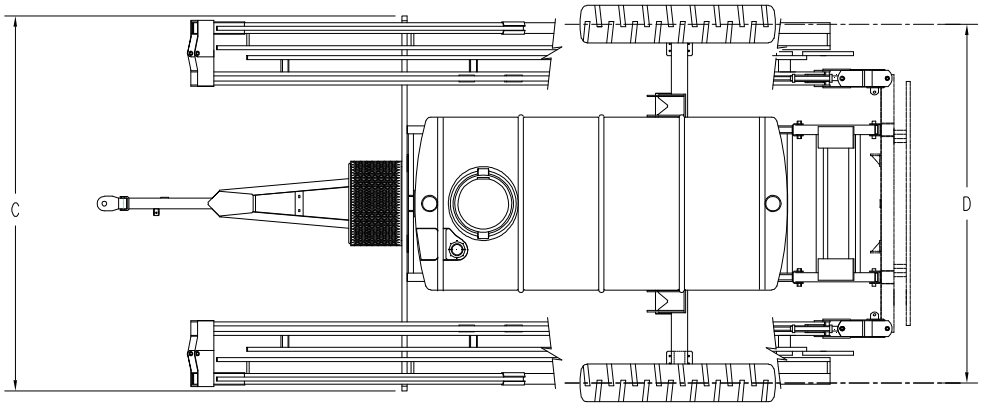
Except as set forth above, **Bestway shall have no obligation or liability of any kind on account of its equipment and shall not be liable for special or consequential damages. Bestway makes no other warranty, expressed or implied, and, specifically, Bestway disclaims any implied warranty or merchantability or fitness for a particular purpose. Some states or provinces do not permit limitations or exclusions of implied warranties or incidental or consequential damages, so the limitations or exclusion in this warranty may not apply.**

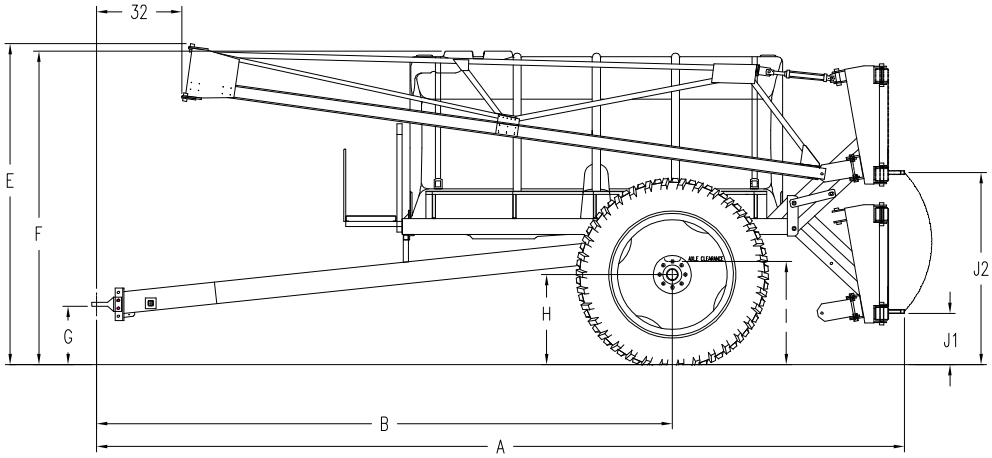
This warranty is subject to any existing conditions of supply, which may directly affect our ability to obtain materials or manufacture replacement parts.

Bestway reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligation to owners of units previously sold.

No one is authorized to alter, modify or enlarge this warranty nor the exclusions, limitations and reservations.

SPECIFICATIONS





Overall Dimensions (with 380/90R46 tires)

(**A**)	Total length	
	90ft. boom	302 in. (7670 mm)
	100ft. boom (to boom tip)	333 in. (8255 mm)
(**B**)	Hitch to axle length	215 in. (5460 mm)
(**C**)	Transport width	140 in. (3556 mm)
	Working width (booms extended)	up to 90 ft. (27.43 m)
(**D**)	Tread width	88-132 in. (2236/3353 mm)
(**E**)	Transport height (booms folded)	121 in. (3048 mm)
(**F**)	Height to top of tank	
	1600 gal.	111.5 in. (2832 mm)
	1850 gal.	118 in. (2997 mm)
(**G**)	Hitch Height	18-24 in. (458-610 mm)
(**H**)	Hub Center Height	33.5 in. (851 mm)
(**I**)	Crop clearance	38.5 in. (978 mm)
(**J**)	Boom working height	19 in.(**J1**) to 71 in. (**J2**) (483 to 1804 mm)

Approx. Weights (1,850 Gal. Tank)

Est. Empty weight	8,100 lbs. (3674 kg)
Est. Tongue weight	1,350 lbs. (526kg)) empty 4550 lbs. (2064 kg) full
Est. Payload	22,200 lbs. (10070 kg) max.
Est. Boom weight - 90ft.	3,200 lbs. (1451 kg)
Est. Boom weight - 100ft.	3,300 lbs. (1496 kg)

Capacities

Sprayer tank	1,600 gal. (6080L) 1850 ga. (7030L)
Rinse system tank	100 gal. (380 L)
Chemical induction tank	15 gal. (57 L)
Fresh water tank	2.5 gal. (9.5 L)
Foam marker	
OBK-10	10 gpm (37.8 L/min.) w/50 gal. (189.3 L)
Maximum application rate	60 gal./acre. @ 6 mph (228 L/acre @ 3.6 Km/hr.)
Acres/hectares per hour	60 acres/hr. (24.3 hectares/hr.)

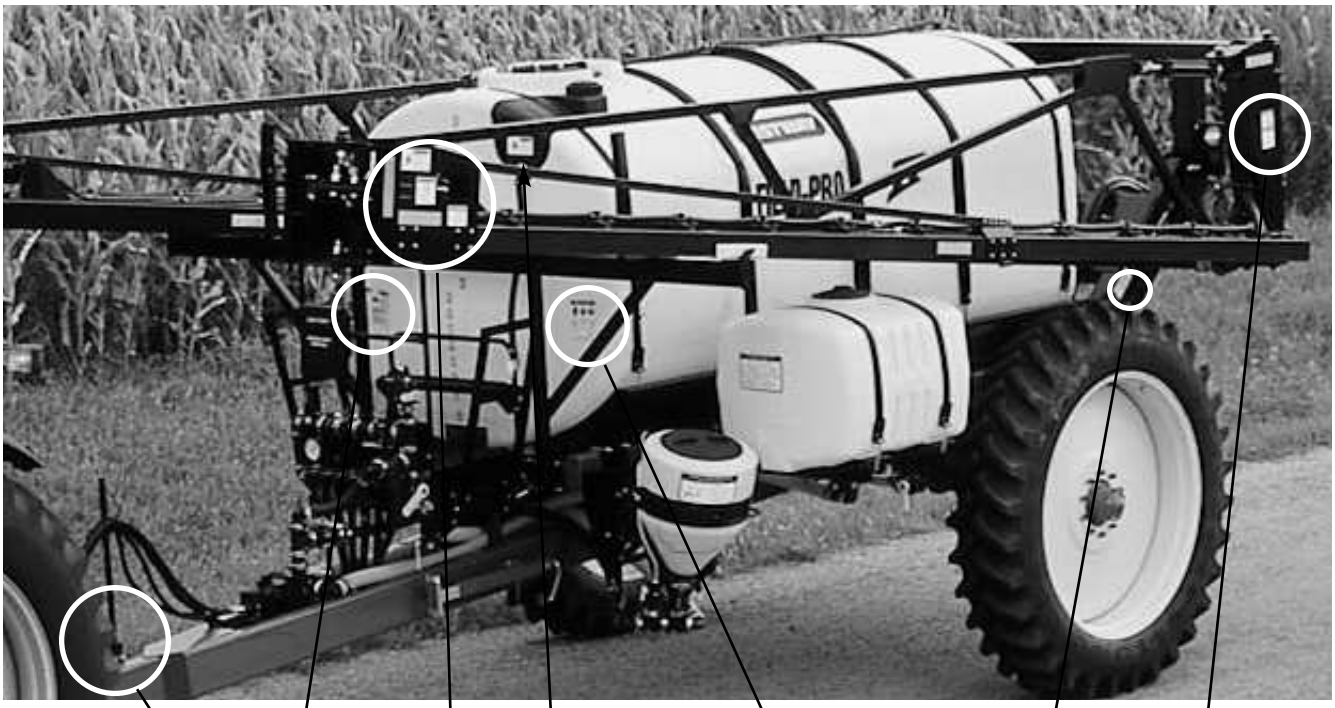
Suspension

Axle	6 x 10 x 1/2 in. (152 x 254 x 13 mm)
Spindle	3.50 in. (89 mm)
Hub	10 bolt @ 15,000 lbs.(6804 kg)
Tire size	380/90R46 radial or 18.4R46 radials

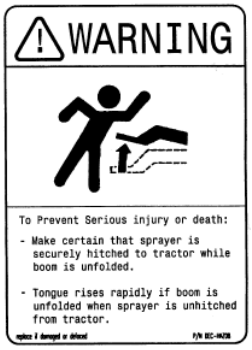
Tractor Requirements (Minimum)

Horsepower Rating	165 hp (124 kw) with cab
Hydraulic Capacity	17 to 22 gpm (64 to 83 L/min.)

Safety Sign Locations



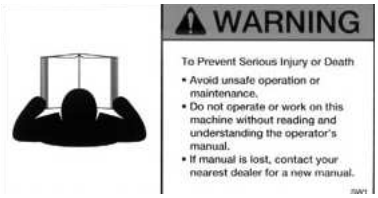
P/N 67657 A



P/N DEC-HAZ08 A

P/N DEC-HAZ01 A

P/N 67673 B



P/N SW001 C

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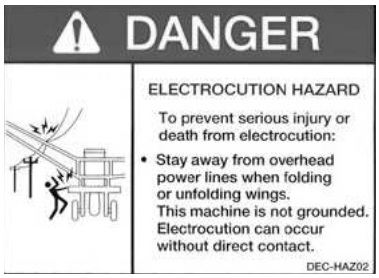


P/N DEC-HAZ02 D,G

P/N 60962 D,G

P/N SW202 D,G

P/N SW900 E

P/N DEC-HAZ05 F

P/N DEC-MT4163 G

Safety Sign Care

- **Keep safety signs clean and legible at all times.**
- **Replace safety signs that are missing or have become illegible.**
- **Replaced parts that displayed a safety sign should also display the current sign.**
- **Safety signs are available from your Distributor or Dealer Parts Department or Bestway, Inc.**

How to Install Safety Signs:

- **Be sure that the installation area is clean and dry.**
- **Decide on the exact position before you remove the backing paper.**
- **Remove the smallest portion of the split backing paper.**
- **Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.**
- **Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.**
- **Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.**

SAFETY INFORMATION

As the manufacturer of your BESTWAY Field-Pro IV sprayer, we care about your safety. In fact, this machine and its systems have been designed to provide maximum safety. Unfortunately, no machine design can prevent operator error or carelessness.

This operator's manual provides instructions for the safe operation and maintenance of the Field-Pro IV. Please read and understand this and all other manuals included in your owner's packet before operating the machine.

Chemical Safety

- **Handle all agricultural chemicals with care as required by the chemical manufacturer's recommendations. This includes, but is not limited to, the following safety precautions.**
- **Do not spray chemicals when the wind is in excess of the label recommendations.**
- **Never allow chemical to contact the skin or eyes.**
- **Wear approved protective equipment and clothing. This equipment includes, but is not limited to, a protective hat, goggles or face shield, chemical resistant gloves, long sleeved shirt, long pants, and a chemical resistant apron.**
- **Keep in mind that the cab filter may not filter out dangerous chemicals. Follow instructions provided by the chemical manufacturer.**

Keep personal wash tank full of clean water for emergencies and rinse purposes.

- **Before leaving the tractor cab, wear personal protective equipment as required by the pesticide use instructions. When re-entering the cab, remove protective equipment and store either outside the cab in a closed box or some other type of sealable container, or inside the cab in a pesticide resistant container, such as a plastic bag.**
- **Clean your shoes or boots to remove soil or other contaminated pesticides prior to entering the tractor cab.**
- **Select an area to fill, flush, calibrate and decontaminate the sprayer where chemicals will not drift or run off to contaminate people, animals, vegetation, water sources, etc.**
- **Never place nozzle tips or other parts to the lips to blow out trash or residue. Have spare tips available for replacement.**
- **Know the phone number and location of your nearest poison control center. Maintain a list of all chemicals being used and the MSDS for each one.**

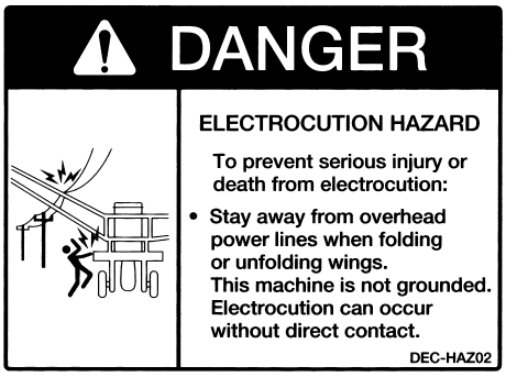
WARNING: **It is possible for certain agricultural chemicals to penetrate into the polyethylene tank wall and/or the walls of connecting hoses. There is a possibility that certain chemicals subsequently introduced into the tank may cause some leaching of a previously used chemical from the tank wall. As a result, personal injury, as well as crop, soil or other damage could occur, depending on the properties of the chemicals involved. Before making any decision regarding the later use of different chemical solutions, the operator should consider this leaching trait and consult the chemical suppliers regarding any potential effects. Prior use of certain chemicals may prevent the appropriate and safe use of some chemicals at a later date. Repeated flushing between appropriate chemical changes is required.**

- **Keep personal wash tank full of clean water for rinsing face and hands, as well as for cleaning safety equipment and spray nozzles. This water is not intended for human or animal consumption.**

Equipment Safety

- **Make sure no person or object is in the path of the sprayer booms, especially when retracting or extending the wings.**
- **Always retract and lock booms in the storage position, except during application.**
- **Stay clear of overhead power lines when folding or extending the boom wings. Serious injury or death from electrocution could occur if the wings come in contact with power lines.**
- **Always maintain correct tire pressure. Do not inflate above the recommended pressure.**
- **Check wheels and tires regularly for low pressure, cuts, bubbles, damaged rims, loose or missing lug bolts and nuts.**
- **Restrict towing speed to 25 MPH empty, 10 MPH loaded.**

Be particularly careful when folding and unfolding the spray booms.



- **Do not remove safety devices or shields.**

Never service, clean or repair any part of the sprayer while the machine or the tractor is operating.

- **Replace any CAUTION, WARNING, DANGER or instruction safety decal that is not readable or is missing. Location of such decal's is indicated in this booklet.**
- **Do not attempt to operate this equipment under the influence of drugs or alcohol.**

Lighting and Marking

- **It is the responsibility of the customer to know the lighting and marking requirements of the local highway authorities.**
- **REMEMBER: If Safety Signs have been damaged, removed, become illegible or parts are replaced without decal's, new decal's must be applied. New decal's are available from Bestway, Inc at 1-877-390-4480.**

During Operation

- **NO PASSENGERS ALLOWED - Do not carry passengers anywhere on, or in, the tractor or equipment, except as required for operation.**
- **Be especially observant of the operating area and terrain - watch for holes, rocks or other hidden hazards. Always inspect the area prior to operation. DO NOT operate near the edge of drop-offs or banks. DO NOT operate on steep slopes as overturn may result. Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.**
- **Maneuver the tractor or towing vehicle at safe speeds.**
- **Do not walk or work under raised components or attachments unless securely positioned and blocked.**

Following Operation

- **Store the unit in an area away from human activity.**
- **Do not permit children to play on or around the stored unit.**

- **Use tongue jack included to support tongue when sprayer is disconnected from towing vehicle. If jack is ever replaced, replacement jack must meet or exceed the load rating of the jack provided from sprayer manufacturer.**

Highway and Transport Operations

- **Comply with state and local laws governing highway safety and movement of farm machinery on public roads.**
- **Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping the unit, etc...**

Remember

- **Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or Bestway, Inc at 1-877-390-4480.**

INITIAL PREPARATION AND SETUP

Tractor Preparation and Hookup

1. Check and adjust tractor drawbar as shown so that it is located 16 to 22 inches above the ground. Then adjust the drawbar to a stationary position so that the hitch pin is directly below the center line of the PTO shaft.

2. Adjust sprayer hitch position, if necessary, to a setting that allows the trailer to tow in a level position when hitched to the tractor. A total of four holes in the hitch mounting bracket permit the choice of three different mounting positions.

3. Securely attach to towing unit. Connect sprayer to the tractor using a high strength, 1 1/8" - 1 1/2" hitch pin with a locking hairpin or hammer strap latch and attach safety chain.

4. Attach quick disconnect fittings to ends of hydraulic hoses to match tractor ports. Then connect hydraulic hoses to tractor ports in a sequence that is both familiar and comfortable to the operator. It is suggested that the hydraulic hoses for the hydraulic pump be connected to the number one outlet, while the boom control hoses are connected to the number two outlet or to the outlet that corresponds to the outermost control lever on the tractor's hydraulic control console. A low pressure return port for the hydraulic pump is recommended.

WARNING: **Before applying pressure to the hydraulic system, make sure all connections are tight and that hoses and fittings have not been damaged. Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin, causing injury and/or infection.**

IMPORTANT: **Always clean hose ends to remove any dirt before connecting couplers to tractor ports.**

5. Install the Raven spray controller unit in the tractor cab, following the instructions provided with the controller unit.

6. Extend the controller power cable from the tractor cab to the battery and connect the battery terminal rings directly to the battery posts, making sure the positive (red) and negative (black) wires correspond with the polarity of the battery terminals.

NOTE: **Some tractors use two 6-volt batteries as a power source. Make sure there is a total of 12 volts delivered to the controller by connecting to the Positive (+) terminal of one battery and the Negative (-) terminal of the other battery. Reliable operation of the controller depends on a clean power supply. Ensure this by connecting the power cables directly to the battery and not to another power source.**

CAUTION: **Batteries can hurt you. They can be dangerous. They contain acid that can burn you, gas that can explode or ignite, and enough electricity to burn you.**

7. If the sprayer is equipped with a foam marker, install the foamer control box in a convenient location in the tractor cab. Connect the power leads to an adequate source of 12-volt power. If the power leads are not directly connected to the battery, make sure the wires feeding the hookup location are at least 12 gauge in diameter.

IMPORTANT: **Make certain the red wire is connected to the positive side and the black wire to negative while attaching the power leads. Damage to the unit can occur if the leads are reversed.**

8. Install the boom control switch box on top of the Raven Controller as shown in photo above. If a Raven controller is not being used with this sprayer, choose another suitable mounting location in the tractor cab. For further information on the function of this control box, refer to the Boom Control Section under Operation.

9. Connect the wiring harnesses leading into the tractor to the appropriate controls, including the boom control switch box, and the spray controller unit.

10. Depending on the hydraulic system of the tractor used to tow the sprayer, adjustments may be required for the hydraulic manifold located under the sprayer tank. For further instructions, refer to page C12.

Initial Preparation of the Sprayer

1. Lubricate the boom pivot points per the lubrication information in this manual prior to initial operation and at prescribed intervals thereafter. Also, make sure all tires have been properly inflated prior to each use.

2. Read all other manuals provided with the Field-Pro IV sprayer, including those that pertain to the controller and pump.

3. If the control valve plumbing has not been pre-installed on the sprayer, follow the directions provided in this section for installation procedure.

4. Refer to the pump operating instructions (provided with the sprayer) to make sure the pump or tractor hydraulic system has been adjusted to match pressure and flow requirements. In general, there are three types of hydraulic systems used on agricultural tractors: Load Sensing, also known as pressure-flow compensating closed center (LS); Pressure Compensating Closed Center (PC), and Open Center (OPEN). The flow of hydraulic oil is regulated in a different manner for each type of system. If you are in doubt about the type of system used on the tractor that will be used to operate the Field-Pro IV, consult the tractor's operator's manual or your tractor dealer.

IMPORTANT: **Failure to regulate oil flow to the pump will cause motor damage.**

NOTE: **Some open center hydraulic systems may not operate both a hydraulic driven solution pump and the hydraulic boom control manifold equipped on this sprayer. PTO driven solution pumps may be required when using tractors with open center hydraulics.**

5. If the tractor used to tow the sprayer is equipped with an open center hydraulic system, refer to the instructions on page C12 to make adjustments to the hydraulic manifold under the sprayer tank.

6. Follow the directions in the sprayer control operating manual to calibrate and set the controller.

7. Fill the sprayer half full of water using the quick fill port (see filling the sprayer in the "Operation" section). Also, fill the rinse tank and the personal wash tank. Check for leaks around all tanks and valves. Ensure that the agitation valve is at least 1/2 open.

8. Make sure the tank suction valve is turned on, allowing water to flood the pump inlet. Start the tractor engine, engage the pump by actuating the appropriate hydraulic remote valve and adjust the tractor rpm to the speed that will be used when spraying. Do not continue to operate the pump if pressure is not indicated immediately.

9. Unfold boom slowly and carefully (See boom operation in the "Operation" section). Position boom so the nozzles can all be observed easily.

DANGER: **Make sure no person or object is in the path of the wings, especially when folding or unfolding. Be aware of the boom location at all times. Stay away from power lines when folding or unfolding wings. Always retract and lock wings except during application.**

WARNING: **Make sure when unfolding boom, sprayer is attached to a towing vehicle.**

10. With pressure showing on the pressure gauge, set the controller to its manual mode and turn on the valves for each section of the spray boom. Ensure that the spray tips being used match those programmed in the controller.

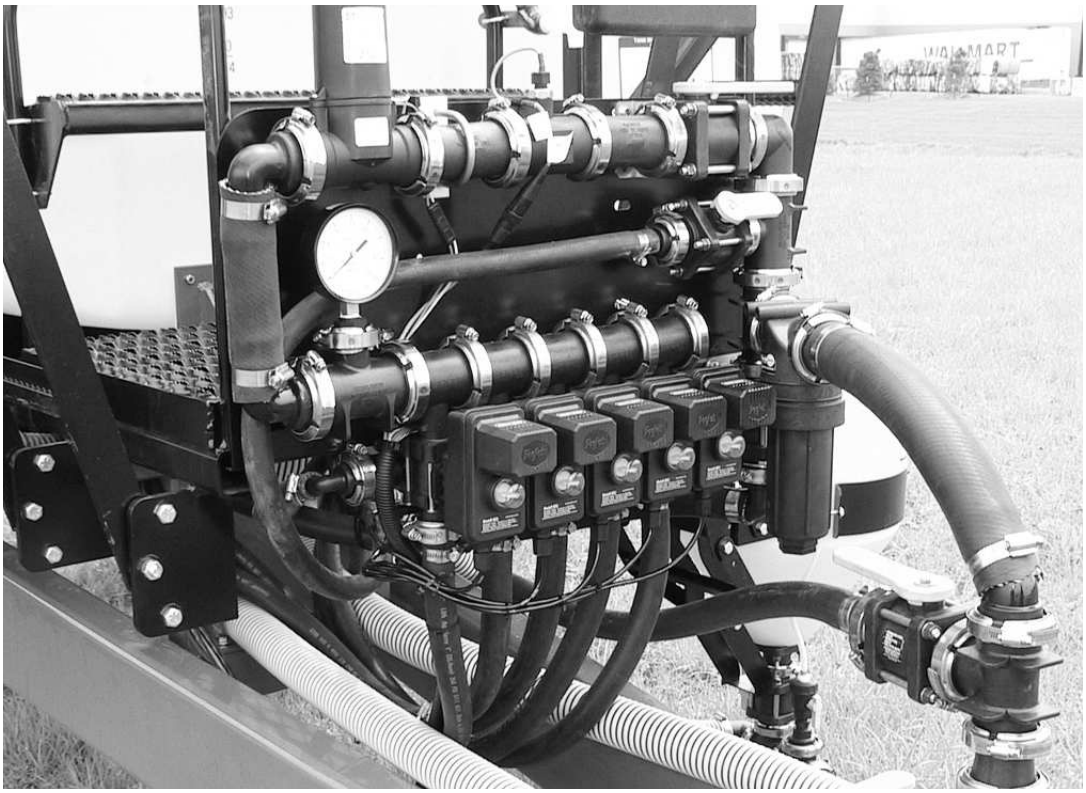
11. Turn on the master switch to direct water to the spray nozzles. At this point, the sprayer will be activated and spray tip performance can be visually checked. However, it is recommended that you also use a calibrated container and a stop watch to manually check and calibrate each spray nozzle prior to initial operation.

12. Check the operation of the sparge system and the tank rinse system to make sure they are operating properly.

Controller Installation

In most cases, the Field-Pro IV will come from the factory with a Raven 450 sprayer control pre-installed. However, the Field-Pro IV can also be ordered with the base deluxe plumbing plate and 5-valve stack assembly, which permits the owner to install any compatible control system desired. Keep in mind that the deluxe ball valves require 12 volts at all times so the valves can close when the control wires drop voltage. This is different than a solenoid-type valve that closes with spring action.

To install a Raven 450 control on a unit that is not already equipped with the unit, refer to the specific instructions that follow.



5-valve stack assembly with Raven controller.

Raven 450 Controller

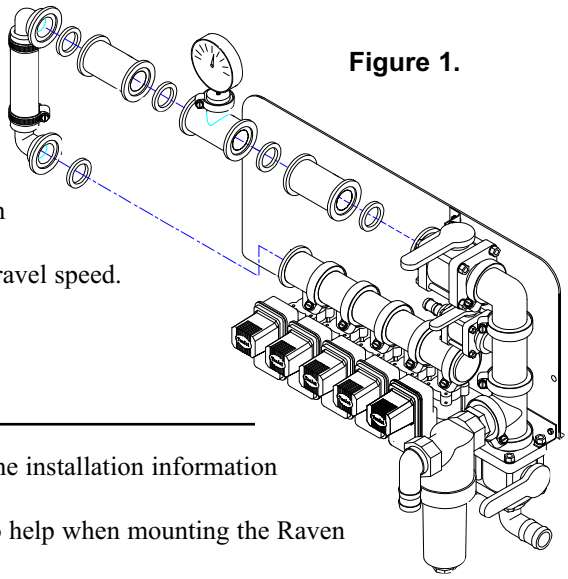


Figure 1.

Overview

The control valve used with the Raven 450 Control system is placed in an in-line location. In addition, the Raven control may be equipped with proximity sensor to measure travel speed.

Installation

The Raven installation manual should provide most of the installation information required. However, the following instructions are intended to help when mounting the Raven flow meter into the existing plumbing on the Field-Pro IV sprayer.

1. Disassemble the plumbing as illustrated in Figure 1.

2. Re-Locate gauge tee next to valve stack inlet as illustrated in Figure 2.

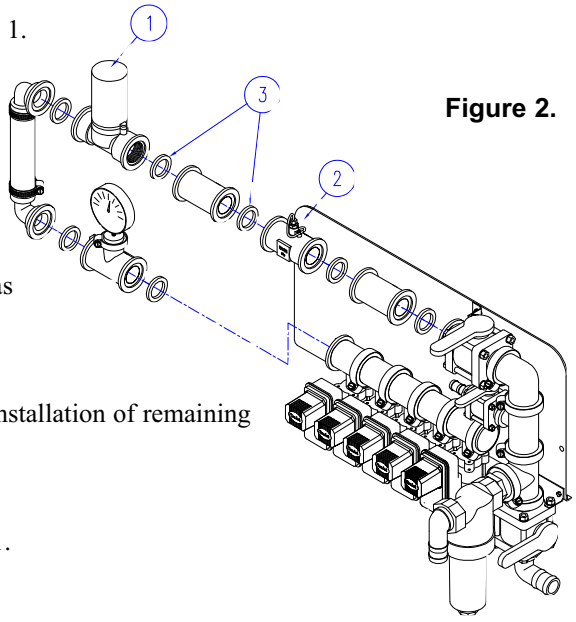


Figure 2.

3. Install the remaining plumbing using the flow meter and butterfly valve from the Raven controller kit as illustrated in Figure 2.

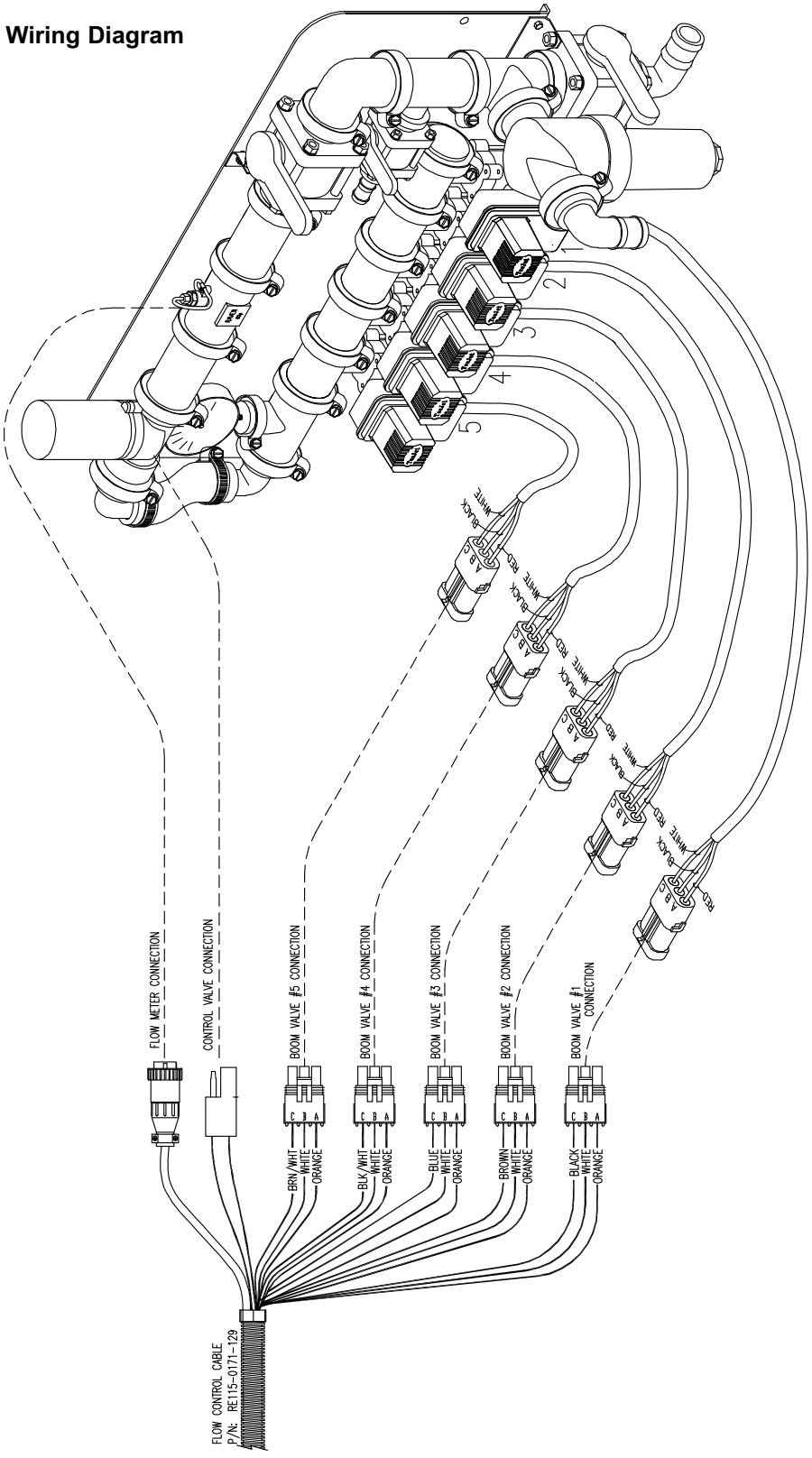
4. Refer to the sprayer control owner's manual for installation of remaining controller components.

5. Connect wiring as shown in diagram on page C11.

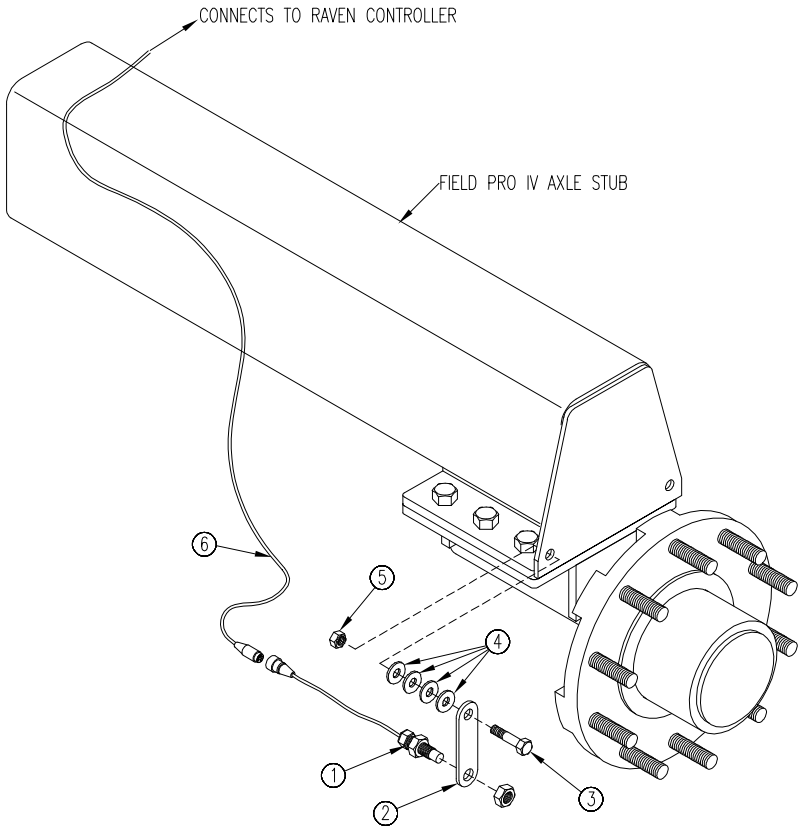
Raven 450 Spray Control Kit

REF	P/N	DESCRIPTION	QTY
1	RE063-0171-894	1 1/2" BUTTERFLY VALVE	1
2	RE063-0171-793	FLOW METER, RFM-60P	1
3	150-G	GASKET, FLANGED FITTING	2
	FC200	CLAMP, 2" FLANGED FITTING (not shown)	2

Raven 450 Wiring Diagram



Proximity Sensor Mounting

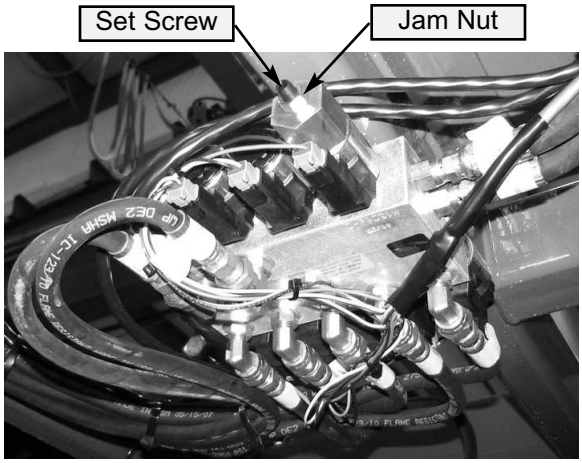


Proximity Sensor Mounting Detail

REF	P/N	DESCRIPTION	QTY
1	RE063-0172-443	Proximity Sensor	1
2	67452	Mount Bracket	1
3	B12.112	Bolt, 1/2NC x 1-1/2	1
4	FW12	Flat Washer, 1/2”	4
5	LN12	Lock Nut, 1/2NC	1
6	RE115-0159-018	Speed Sensor Extension, 24’	
	RE115-0159-032	Speed Sensor Extension, 12’	

Open Center Hydraulic Modification

The sprayer is equipped with a Hydraulic Boom Control Manifold that can be switched from closed center to open center with an adjustment of a dump valve located in the picture at right. This dump valve has a set screw on the end of it. This set screw manually holds this dump valve shut at all times.

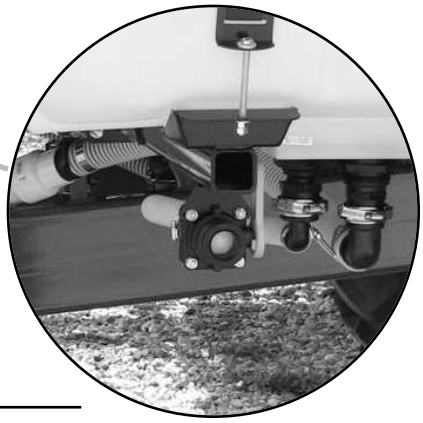


WARNING: **To avoid serious injury or death, Stow Lock Brackets must always be in "Locked" Position and sprayer must be attached to a towing vehicle while working beneath sprayer.**

If using the sprayer on a tractor with an open center hydraulic system, loosen the jam nut on the set screw and back the set screw out approximately 1/4". Once this is done retighten the jam nut. With the set screw backed out, the dump valve can open allowing oil to flow directly back to the tractor reservoir. When any boom function switch on the boom cab control box is activated, this valve will close and the oil flow will be supplied to the activated boom function.

To switch the sprayer back to closed center operation, adjust the set screw back in. Be careful not to over tighten this set screw. When you feel the set screw bottom out against the cartridge it should not be tightened any further.

Main tank
Quick-Fill,
"off" position



Rinse tank
Quick-Fill,
"off" position

OPERATION

Filling The Tank

The main tank on the Field-Pro IV sprayer can be filled in one of two ways – through the top hatch using auxiliary equipment, or through the Quick-Fill valve auxiliary equipment.

To fill the tank through the Quick-Fill valve:

1. Shut off engine on the towing tractor and engage parking brake.
2. Make sure the Quick-Fill valve is closed and the top hatch on the tank is open.
3. Remove cap on Quick-Fill valve and connect hose from nurse tank.
4. Start pump on auxiliary equipment to pressurize fill hose.
5. If applicable, open valve on fill hose or nurse tank.
6. Open Quick-Fill valve to begin filling.

CAUTION: **Always open the hatch in the top of the tank before filling through the quick fill valve. This is especially important when using a high volume pump.**

Adding and Mixing Chemicals

Although chemicals can be added directly to the main tank through the hinged tank lid, the sprayer has been equipped with a Cleanload Chemical Eductor System for quick loading and thorough mixing. Before operating this Eductor system, thoroughly read & understand the original instruction manual that is included in the bag with this Bestway manual.

Before Operation

1. Release the spring loaded latch to allow the eductor to lower to the load position.

2. Insure all eductor valves are closed prior to starting, and inspect for leaks.

3. Unlock the lid by turning it counterclockwise, and open it. Inspect the hopper for cleanliness, remove foreign objects, and ensure the optional hopper outlet screen is properly seated.

4. Close the lid and lock it by turning it clockwise. Gently lift on the lid to ensure it is locked closed. If the lid will not close, will not lock, or is damaged, stop and repair it before further use.

CAUTION:

Read the operating instructions completely before using the Cleanload Eductor

- **Always handle agriculture chemicals with care. Read and follow the chemical label instructions exactly. Understand safe practices for chemical handling, mixing, loading, cleaning, & first aid.**
- **Always wear proper personal protective equipment when handling chemicals, including gloves, eye protection, respirator, and safety shoes.**
- **Always pay attention to wind conditions when dumping chemicals into the eductor hopper tank. Always stand up wind when dumping in windy conditions. Also make sure that there are no other persons downwind prior to dumping.**
- **Always check to make sure that there are no loose objects surrounding the eductor system that could cause damage to the hopper tank or hoses.**
- **IMMEDIATELY close the hopper lid and SHUT DOWN the system if leaks, errant spray, operation error, or malfunction occur.**

5. Fill main sprayer tank with desired amount of clean water.

6. Set pump inlet selector valve to draw from main tank. Make sure the eductor hopper outlet valve is closed. Make sure that the valve under the main tank that connects to the eductor outlet is open. Open the sparge valve. Open the induction valve on the outlet of the pump.

7. Activate tractor remote valve to engage pump and close down the sparge valve to achieve 60-80 psi manifold pressure.

8. Open the eductor hopper outlet valve.

9. Open the eductor lid slowly, taking care to check that no errant spray is detected before fully opening the lid.

Pouring Chemical into Hopper

10. Open eductor sidewall rinse valve.

11. Measure the required amount of chemical using an accurate measuirng vessel or flow meter. The hopper should not be used as a measurement vessel. Carefully pour the chemical into the hopper taking care to not splash or spill.

12. The eductor is equpped with a container rinse system. It can be used to rinse empty liquid containers using steps 13 through 15.

13. Place the container to be rinsed upside down over the nozzle in the bottom of the hopper. Holding the container securely with two hands, press down to activate the container rinse valve for 30 seconds or until container is visibly clean.

14. When the container is visibly clean, stop pressing down. The container rinse valve will close and the spray will stop. Let the container drain until empty, then set it aside for proper recycling or disposal.

15. Operate eductor sidewall rinse system for and additional 30 seconds or longer to flush residues and then close sidewall rinse valve.

Shut-Down

16. After chemical residue has been rinsed from the hopper and hopper rinse system valves are closed, shut off the hopper outlet valve and close the lid.

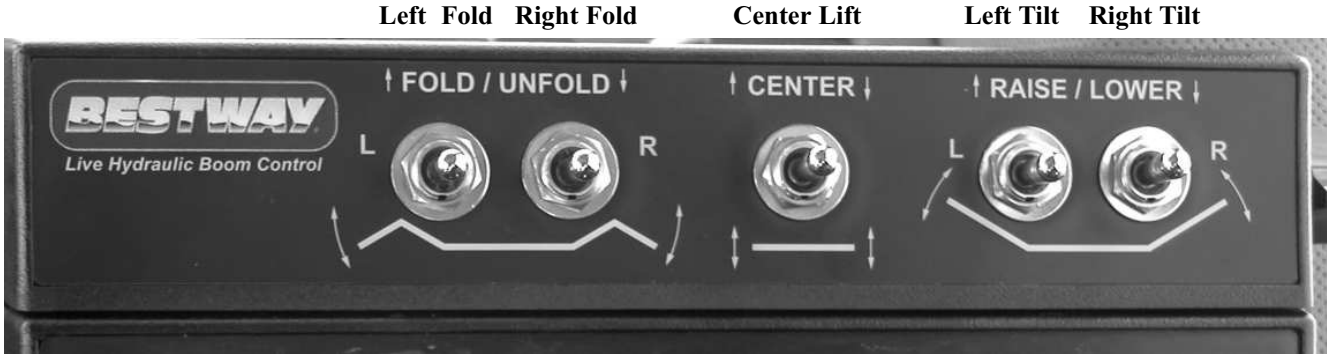
17. Close the induction valve on the outlet of the pump.

18. Lift the eductor assembly up and lock it in the transport position.

19. Allow the pump to operate with the sparge valve fully open for a sufficient time to mix all chemicals. Refer to chemical labels for suggested mixing duration.

Boom Operation

All hydraulic boom functions are controlled with the boom control switch box or a pendant grip in combination with a constant hydraulic flow from the tractor. **Place the hydraulic remote valve control in detent** and then operate the switches on boom control that correspond with the function you wish to activate.



Switch Box

Switch Box Function

To raise or lower the center section of the boom, which in turn controls the overall boom height, switch the center switch down to lower the boom and up to raise the boom.

The two switches toward the left end of the control box control the folding and unfolding of the wings. Push the switches down to unfold the wings and push them up to fold the wings.

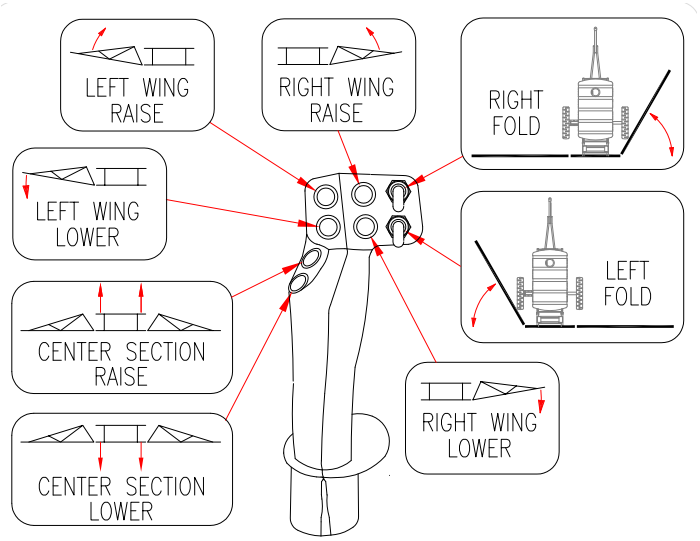
To raise and lower individual wing tips, use the two switches to the right end of the control box. Push a switch up to raise a wing tip or push a switch down to lower a wing tip.

Pendant Grip

Pendant Grip Function

To operate the boom with the pendant grip boom control, reference the diagram on the next page.

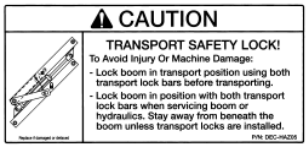
The raise & lower functions are operated by the push buttons on the pendant grip as shown in diagram. The wing fold functions are operated by the toggle switches. Push these switches down to unfold the wings and push them up to fold the wings.



NOTE: **Reaction speed of the boom functions may vary, depending on the hydraulic flow of the tractor. On closed center hydraulic systems the boom function speed can be adjusted by adjusting the hydraulic flow control for the remote valves on the tractor. Refer to the tractor owners manual for further details for adjusting hydraulic flow.**

Extending Boom Wings.

1. Raise center lift to its maximum height.
2. Reposition stow lock brackets from boom “lock” position to “unlock” position.



“Lock” position

“Unlock” position

3. Raise boom wing tilt enough to clear boom stow racks.

4. Unfold wing fold cylinders. Make sure wing is completely unfolded with back pressure on center section and inner wing to eliminate sway while spraying.

5. Lower boom wing tilt until level with center section.

DANGER: **Make sure no person or object is in the path of the wings, especially when folding or unfolding the booms. Be aware of the boom location at all times. Always retract and lock booms except during application.**

WARNING: **Make sure when unfolding boom, sprayer is attached to a towing vehicle.**

CAUTION: **Never fold or unfold the booms while the tractor and sprayer are moving. Always make sure the sprayer is on a flat, level surface.**

6. Repeat steps 3-5 to unfold opposite wing.

7. Lower center section to desired spray height.

NOTE: **During operation, each wing can be adjusted to a position ranging from -5 degrees to +15 degrees from level in order to follow varying ground contours, such as terraces and waterways.**

Retracting Boom Wings

To retract boom wings, follow the above steps in reverse. Be sure to reposition stow lock from "unlock" position to "lock" position.

IMPORTANT: **To avoid damage to the wings and/or sprayer, always make sure the center section is raised to its full height before attempting to fold the wings into the transport position.**

Sprayer Operation

Once you have filled the sprayer tank and thoroughly mixed the chemical(s), you are prepared to begin the spraying operation. At this point, you should have also determined the application rate and programmed that information into the rate controller computer, along with information on the spray tips, boom width, etc. To begin sprayer operation:

1. Switch rate controller computer on.

2. Activate tractor hydraulic valve to start sprayer pump.

3. Toggle boom switches to their "on" position for each of the five boom sections.

4. If controller is equipped with an Auto/Manual function, make sure it is switched to "Auto."

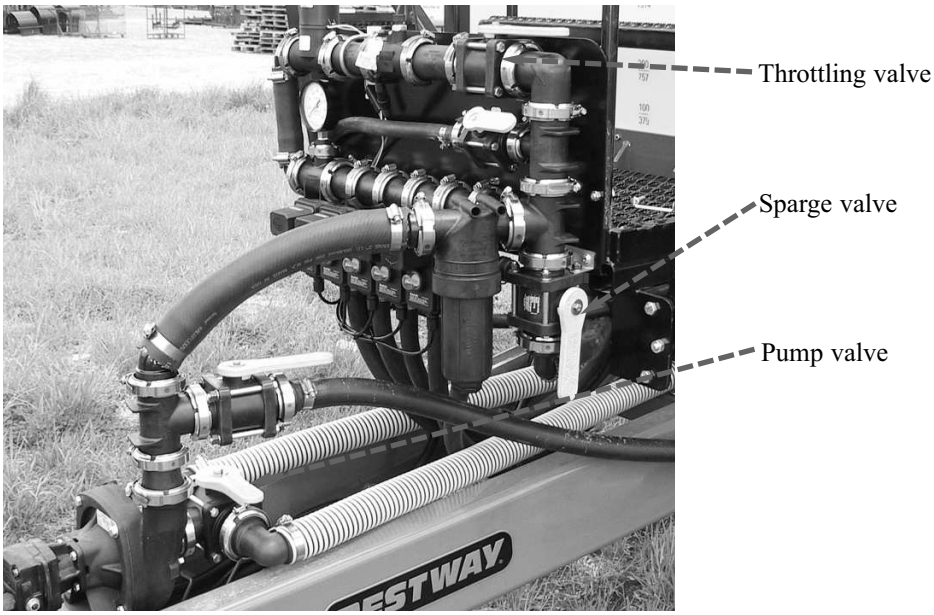
5. As you enter the field to the point where you will begin spraying, turn Master boom switch to the "on" position.

6. Maintain your usual tractor speed for spraying. Moderate changes in tractor speed will not affect the application rate, since such changes are compensated for by automatic pressure increases or decreases.

7. If for any reason you need to stop, or when turning around at the ends of the field, turn Master boom switch to "off".

Sparge Valve Function

The sparge valve is used to adjust tank sparge during operation. Open the valve to increase sparging. Close the valve to reduce sparging or to increase capacity available to the boom.



Throttling Valve Function

In most cases, the rate controller will maintain the correct flow and pressure settings for the desired application. However, in cases where the pressure within the systems is beyond the bounds of the controller, you may wish to manually reduce the pressure to the regulating valve and boom valves by partially closing the throttling valve. In most cases, it is best to start with the throttling valve closed as far as possible, while still providing enough pressure to operate the boom satisfactorily.

Pump Valve

While operating the sprayer, the pump valve must be positioned to draw from the main sprayer tank. While rinsing (described on page D13), the valve must be turned to draw from the rinse tank.

Foam Marker Operation

Refer to the Operator's Manual of your Foam Guidance System for operating instruction.

50 gallon foam solution tank

Foam Guidance Pump Unit

Controlling Drift

Drift can be defined as the movement of spray droplets outside the intended target. It is one of the biggest environmental concerns chemical applicators face.

Although some products have a greater tendency to drift than others, due to their volatility, the potential for drift exists with any chemical. Unfortunately, with the advent of genetically altered crops like Roundup Ready soybeans, and Liberty Link corn, the potential damage that can occur as a result of chemical drift is greater than ever before.

In order to make informed decisions about nozzle selection and operation, an applicator must first be knowledgeable about droplet size and the causes of drift.

Types Of Drift

- **Particle drift - Particle drift is due to off-target movement of spray particles during application. This can happen with any chemical.**
- **Volatilization drift - Volatilization drift is due to a chemical's ability to volatilize after an application has been made. Therefore, it has more to do with the chemical's characteristics than the sprayer or spray pattern.**

Factors Affecting Drift

- **Wind speed and direction - Since chemical particles can be carried by the wind, stronger winds are obviously more likely to cause drift. A doubling of wind speed generally doubles the horizontal distance droplets will travel.**
- **Relative humidity - In general, the lower the humidity, the greater the drift potential.**
- **Air temperature - In general, higher temperatures mean increased drift potential.**
- **Droplet size - With most chemicals, controlling spray droplet size is a key factor in controlling drift. The smaller the droplet, the slower it will fall, the faster it will evaporate and the further it will drift horizontally, particularly if winds are also a factor. Droplet size is primarily determined by nozzle orifice size, spray angle and spray pressure. Therefore, an increase in nozzle orifice size and/or a decrease in pressure is one way to increase droplet size and decrease the potential for drift.**

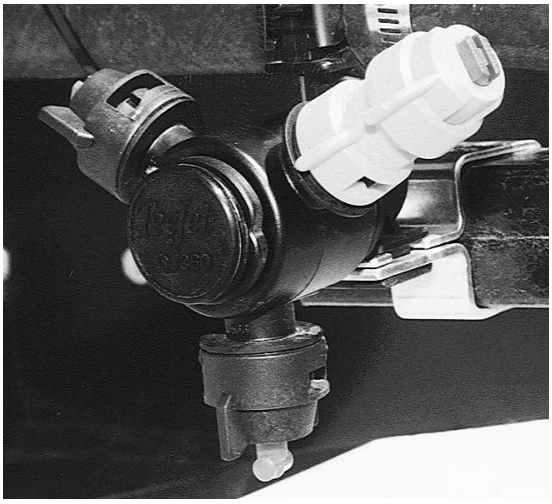
- **Boom height - Boom height is an important factor in controlling drift. A boom that is set too high obviously favors drift, since droplets have farther to fall, thus having more time and opportunity to drift off course. Doubling the boom height, in effect, doubles the length of time required for droplets to reach the target canopy. That, in turn, doubles the horizontal distance droplets can travel during their fall.**

Managing Drift

To manage drift while spraying herbicide with the Field-Pro IV:

- **Spray when wind velocity and direction doesn't favor drift. Do not spray when winds are gusty or under any condition which will allow drift to move to an off-target area. That includes spraying when wind is blowing toward a crop that doesn't have a resistant gene, such as Roundup Ready crops.**
- **Use a combination of nozzles and spray pressures that minimizes fine droplets. Keep spray pressure within the range suggested by the nozzle manufacturer and use a larger nozzle – one that delivers 10 to 20 gpm – if necessary.**
- **Keep boom height at the lowest possible effective height while spraying.**

Spray Nozzle Selection



Nozzle, or spray tip, selection is often based upon droplet size, which refers to the diameter of an individual spray droplet. In addition to its importance in controlling drift, droplet size from a nozzle becomes important when the efficacy of a particular crop chemical is dependent on coverage. Always refer to the chemical label for recommendations on spray tip size and type.

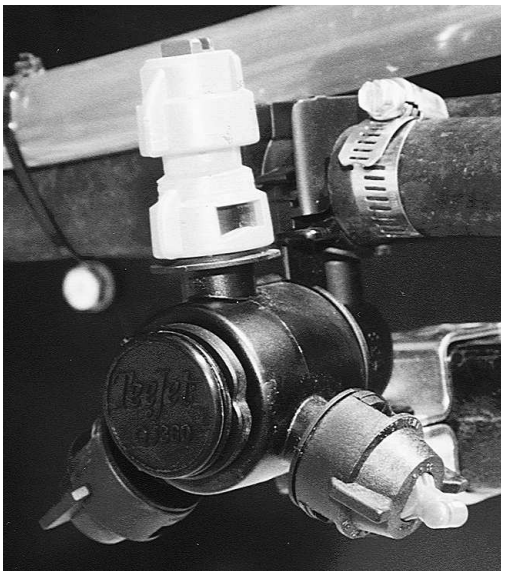
- **The majority of nozzles used in agriculture can be classified as producing either fine, medium, coarse or very coarse droplets.**

- **Nozzles which produce fine droplets are usually recommended for post-emergence applications, which require excellent coverage on leaf surfaces.**
- **The most common nozzles used in agriculture are those which produce medium sized droplets. These can be used for contact and systemic herbicide, preemergence surface applied herbicide, insecticides and fungicides.**
- **Remember that a spray nozzle in any droplet size category can produce different size droplets at different spray pressures. A nozzle might produce medium droplets at low pressures, while producing fine droplets as pressure is increased.**

Spray Tip Turret

Each spray nozzle outlet on the Field-Pro IV has been equipped with a 360-degree nozzle turret for fast and convenient spray tip changes in the field. With just a twist of your wrist, you can quickly choose the right tip for the right job, assuming that different types of spray tips have been installed on each turret.

You may wish to equip the turret with spray tips for each type of application you perform, such as burndown, pre-emerge and post applications. Or, you may want to equip the turret with at least two of the most commonly used tips, so a quick change can be made in the event a tip gets plugged or damaged.



Spray tip turret in "off" position.

To change from one tip to another, simply rotate the turret until you hear a "click". Because the 360-degree turrets feature positive shutoffs between each tip outlet, you can also use the turret to shut off individual spray tips on the boom. Simply rotate the turret to a "click" position between spray tip outlets. This feature is particularly useful when you need to change nozzle spacing or reduce the swath width.

Tank rinse valve,
“on” position

Rinsing The Sprayer

It's important that you rinse the sprayer after each use, and every time you change chemical solutions in the tank. In most cases, it's best to rinse and flush the sprayer in the field, to minimize handling issues, with rinse water. In some cases, you may also want to add a commercial tank cleaner to the rinse water to help dissolve or neutralize certain chemicals. When doing so, be sure to read and follow the tank cleaner manufacturer's directions for use of the tank cleaner. Wear proper protective clothing, including gloves and eye protection.

1. Make sure the 100-gallon rinse tank has been filled with clean water.

2. With the pump off, turn pump valve to the “rinse” position (page D9).

3. Open tank rinse valve (This is the smaller valve in the middle of the valve plate.)

4. With sparge valve closed, turn on pump and operate long enough to pull about half the water out of rinse tank through the system.

5. Switch pump valve back to main tank, open sparge valve for agitation, and close tank rinse valve. This allows rinse water to circulate through plumbing and valves, while further rinsing main tank.

6. Discharge rinse through boom valves and spray nozzles, preferably in the field where you have been spraying. Cycle the boom section valves off and on at least three times to flush the flow back line between the boom valves and the tank.

7. Shut off pump and close sparge valve.

8. Switch pump valve back to rinse tank.

9. With rinse valve and boom valves open, start pump to circulate remaining rinse water through valves and plumbing system and out boom spray nozzles.

NOTE:

While rinsing the boom plumbing, cycle the boom section valves on and off at least three times to flush the flow back line between the boom valves and the tank.

MAINTENANCE

Cleaning

Taking the time to clean the sprayer after each use is the most important thing you can do to improve the performance and longevity of your BESTWAY Field-Pro IV sprayer. This is particularly important after the use of suspension type chemicals, which can crystallize and plug the flowmeter, lines and/or spray tips. The potential benefits include less down time, an improved spray pattern and an extended sprayer life.

1. Always end the day with an empty tank. If that is not possible, close the main shutoff valve under the tank.

2. Rinse the interior of the tank and flush all the plumbing with clean water at the end of each day and between each chemical change using the built-in Rinse System. If a film is detected on the interior of the tank, add 2 to 3 pounds of detergent to 50 gallons of water. Refer to the "Rinse System" section of this manual for more information on this step.

3. If possible, apply all rinse water from the tank on a field that has been previously sprayed. Most pesticides are very safe unless they are used in a highly concentrated form. Take special precautions, however, to avoid high concentrations in one spot.

4. Wash off the exterior of the sprayer, including the valve block and all manual valves. Make sure chemical and fertilizer residue is removed from all metal areas. Use a bristle brush and detergent if necessary.

5. Remove and check all nozzle screens, clean caps and tips in a bucket filled with clean water and detergent. Use a tip brush if necessary. Rinse with clean water and reinstall.

Lubrication

Grease Fittings

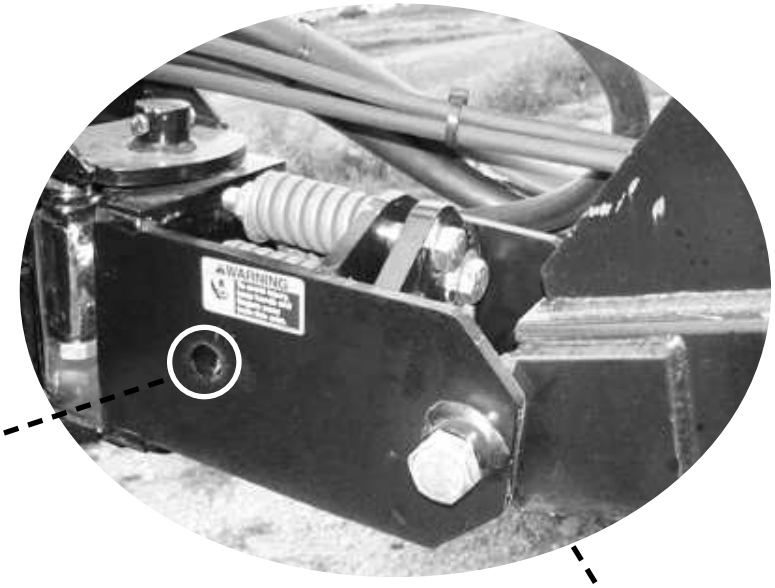
Proper lubrication will help insure efficient operation of your BESTWAY sprayer and prolong the life of friction producing parts. Those parts equipped with grease fittings should be lubricated at the frequency indicated with an SAE multi-purpose type grease. Be sure to clean the fitting thoroughly before using any grease gun.

The Field-Pro IV is equipped with only twelve grease fittings on the entire machine. All are located on the boom pivot points as shown in the photos on page E3.

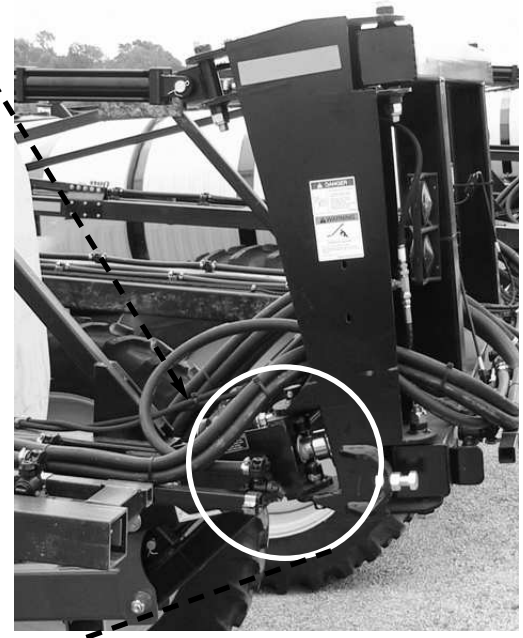
Wheel Bearings

Wheel bearings should be repacked with clean heavy duty axle grease approximately once a year or at the beginning of each season. Follow the procedure outlined for wheel bearing replacement with the exception that bearings and bearing cups are reused when the wheel bearings are being repacked.

Grease Zerk Locations



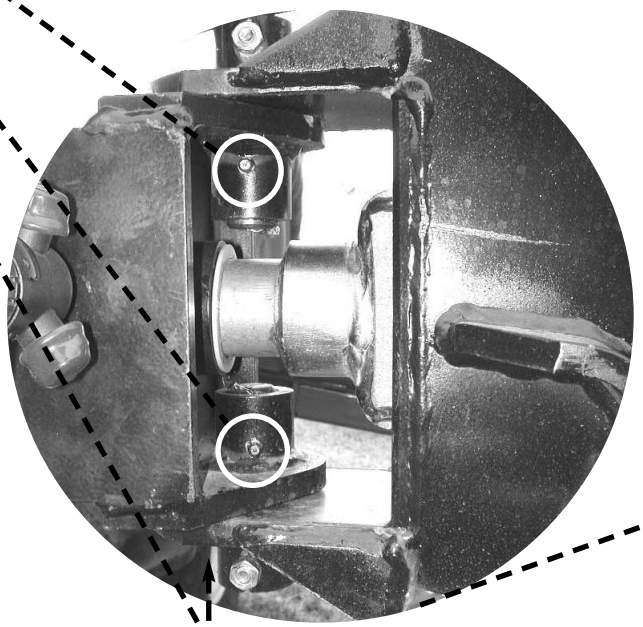
50 Hours



12 Hours
(2 places)

12 Hours
(2 places)

12 Hours



Line Strainer Maintenance

The Field-Pro IV is equipped with a line strainer which has been plumbed into the pressure line from the pump. It is important that the strainer be inspected at regular intervals and washed in soapy water, followed by a rinse in clean water, to remove any sediment or foreign particles that may obstruct the flow.

To remove the filter screen, simply unscrew the bowl from the strainer head and remove the steel screen cartridge. In the event a replacement screen is required, or you have a need for a screen with larger or smaller mesh openings, contact your Bestway dealer or Bestway, Inc.

Sprayer Nozzle Maintenance

Spray Tip Care

Careful cleaning of clogged spray tips can mean the difference between a clean field and one with weed streaks. Keep in mind, however, that some spray tips, particularly flat spray tips, have finely crafted thin edges around the orifice to control the spray. Even the slightest damage from improper cleaning can cause both an increased flow rate and poor spray distribution.

If a tip is clogged and does need cleaning, only use a soft bristled brush or toothpick to clean it. Never use a metal object or wire brush. Use extreme care with soft tip materials such as plastic. Even a wooden toothpick can distort the orifice.

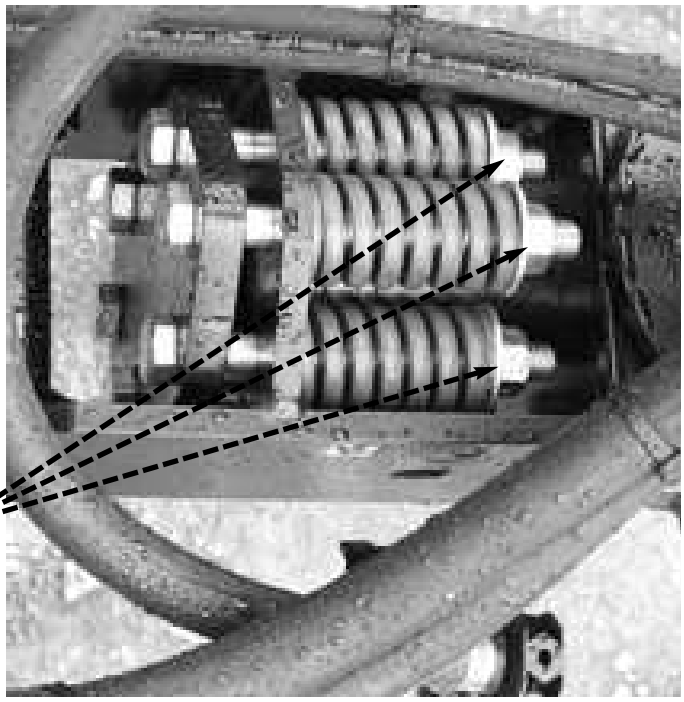
Tip Replacement

Spray tips are often the most neglected component on modern sprayers; yet they are among the most critical items for proper chemical application. Remember, tips don't last forever. Unfortunately, tip wear may not be detected by visually inspecting a nozzle. The best way to determine if a spray tip is excessively worn is to compare the flow rate of the old tip to that of a new one using an accurate graduated collection container and a timing device. Spray tips are considered excessively worn and should be replaced when their flow exceeds the flow of a new tip by 10 percent.

When replacing tips, you will find that certain types of tips are available in more than one type of material. When considering the appropriate replacement tip, consider the following characteristics before basing your decision on price alone.

- **Ceramic - Superior wear life and is highly resistant to abrasive and corrosive chemicals.**
- **Hardened stainless steel - Very good wear life, good durability and chemical resistance.**
- **Stainless steel - Good wear live, excellent chemical resistance and a durable orifice.**
- **Polymer - Good wear life and good chemical resistance, but orifice is susceptible to damage when cleaned improperly.**
- **Brass - Poor wear life and is susceptible to corrosion, especially with fertilizers.**

Boom Breakaway Adjustment



Breakaway tension adjustment bolts.

Inner Section Adjustment

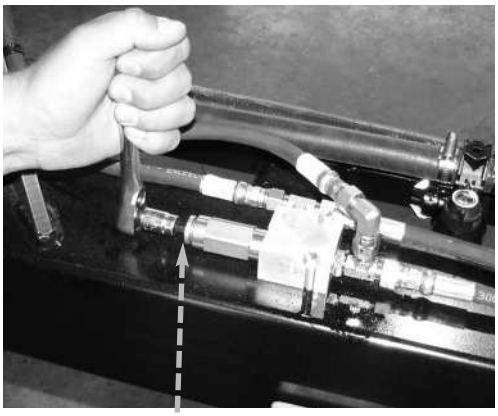
The inner, or first section of both the right and left spray booms has been designed to mechanically breakaway in the event the boom contacts an immovable object. The breakaway tension on both booms has been preset at the factory for average conditions. Nominal spring coil gap is between 1/8” and 9/64”. You may wish to increase or decrease the required breakaway force to match your spraying conditions. To increase or decrease the resistance on the breakaway mechanism, tighten (to increase the pressure) or loosen (to reduce pressure) the 3/4” nuts on the (6) spring retaining bolts found near the base of each wing in 1/8" increments. Use a tape measure or drill bit to gauge the gap between the spring coils to make sure each spring is adjusted the same. Repeat the process on the opposite wing.

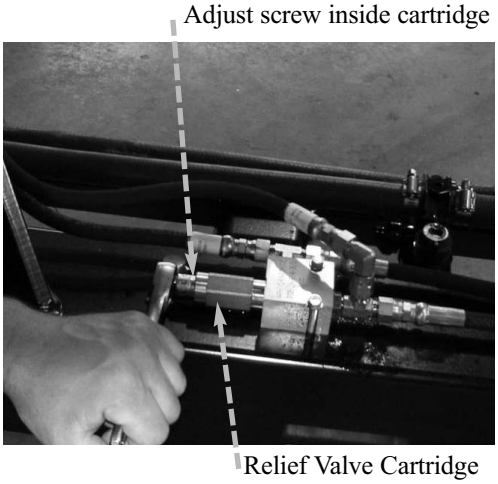
Outer Section Adjustment

The outer wing section of both spray booms includes a pressure relief valve plumbed into the hydraulic hoses near the wing fold cylinders. In the event this section of the wing contacts an immovable object, the relief valve will allow hydraulic oil to bypass the cylinder, permitting the wing tip to breakaway and fold rearward. To adjust the breakaway pressure:

1. Locate the pressure relief valve near the outer wing fold cylinders.

2. With an Allen Wrench, remove the cap located on the end of the cartridge to access the adjustment screw. Some hydraulic fluid may leak from the valve, due to pressure on the cylinder.





3. Using an allen wrench, turn the adjustment screw clockwise to increase the breakaway pressure or counterclockwise to decrease the pressure. When making adjustments, it is suggested that you start with a 1/4 rotation of the screw.

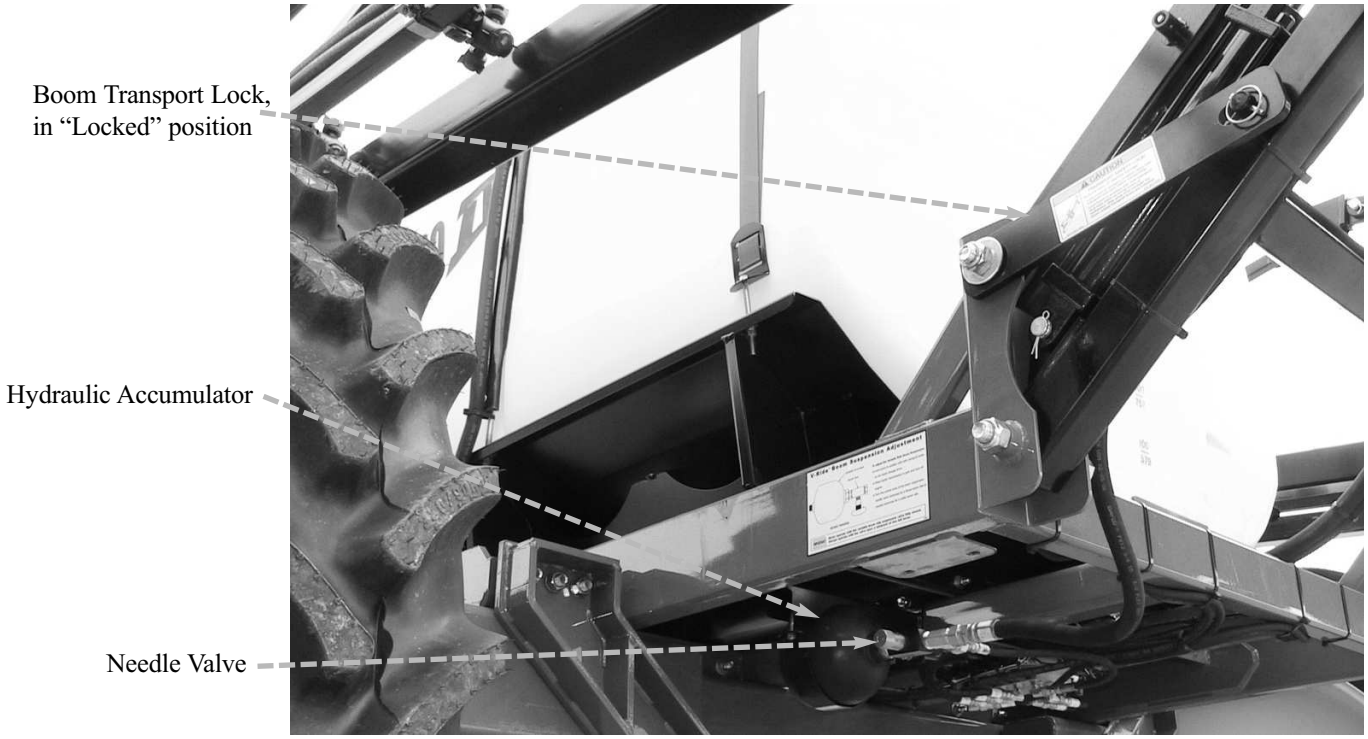
IMPORTANT: **If the pressure relief valve is over tightened, the wing will not break away when it contacts an immovable object. You may also experience problems getting the boom to unfold completely, since the system will be unable to push enough hydraulic oil over the pressure relief valve.**

5. When finished, replace the cap on the end of the cartridge valve.

V-Ride™ Boom Suspension Adjustment

PATENT PENDING

The lift cylinders on the wings and center section of the Bestway spray booms are connected to hydraulic accumulators. These accumulators isolate the boom from the shock and vibration of traveling over rough terrain resulting in a smooth boom ride. On sprayers equipped with the Bestway V-Ride™ boom suspension, the accumulator connected to the center section lift cylinders is larger than the accumulators on the wing lift cylinders. This larger center section accumulator also has a needle valve plumbed in the inlet to provide the operator with the ability to adjust the suspension according to the terrain being traveled.



Adjusting the Variable Ride Boom Suspension

The V-Ride™ boom suspension accumulator is located behind the trailer axle on the left underside of the tank frame. Proceed with the following instructions when making adjustments to this suspension.

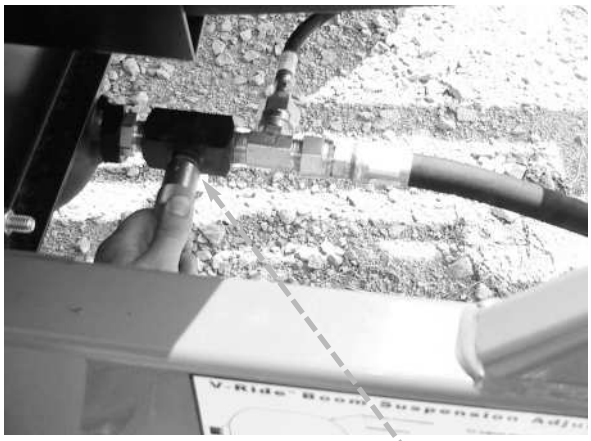
1. Make sure both transport locks on the boom linkage arms are in the locked position.

2. Place tractor transmission in park and shut off engine.

WARNING:

To avoid serious injury or death, Transport Lock Brackets must always be in "Locked" Position and sprayer must be attached to a towing vehicle while working beneath sprayer.

3. Locate the V-Ride™ boom suspension needle valve. Turn the valve control knob clockwise for a firmer boom ride or counter-clockwise for a softer boom ride. Never operate the sprayer with the control knob turned in the extreme clockwise position fully closing the valve. Operating the sprayer with this needle valve fully closed will provide no suspension for the boom and could eventually cause severe damage to the boom components.



IMPORTANT:

Never operate with the variable boom ride suspension valve fully closed. Always operate with the valve open a minimum of two full turns.

Tire Pressure

Tire pressure should be checked prior to each use of the sprayer and maintained as follows:

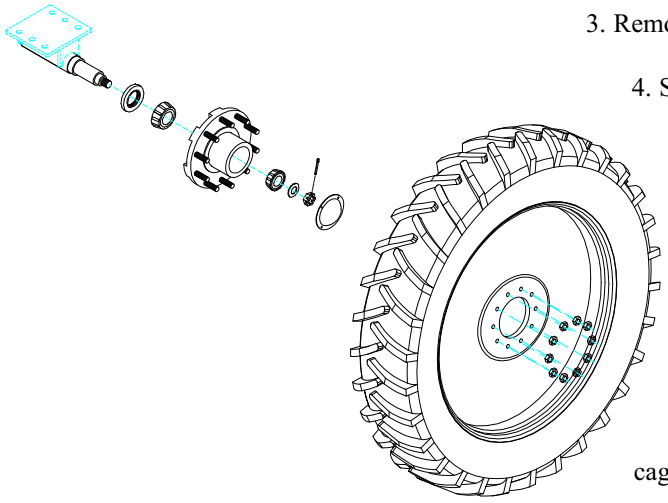
TIRE PRESSURE	STARTING PRESSURE	LOADED FOOTPRINT LENGTH
380/90 X 46 Radial Tires	26 PSI	31”
18.4 X 46 Radial Tires	20 PSI	31”

Keep in mind, that these pressure levels are intended as starting points only. The required amount of tire pressure may be varied to achieve the recommended footprint length when loaded, depending upon the tank solution (i.e. liquid fertilizer) and field conditions.

Wheel Bearing Replacement

1. Jack tire clear of the ground, block axle securely and remove wheel.

2. Remove hub cap from wheel hub.



3. Remove cotter pin, axle nut and spindle washer.

4. Slide hub from axle spindle, using a hub puller if necessary.

5. Remove bearing cups from hub and discard. Thoroughly clean wheel hub and dry.

6. Press in new bearing cups with thickest edges facing in.

7. Pack bearings with heavy-duty wheel bearing grease, thoroughly forcing grease between roller cone and bearing cage. Also fill the space between the bearing cups in the hub with grease.

8. Place inner bearing in hub and press in new grease seal with lip pointing toward bearing.

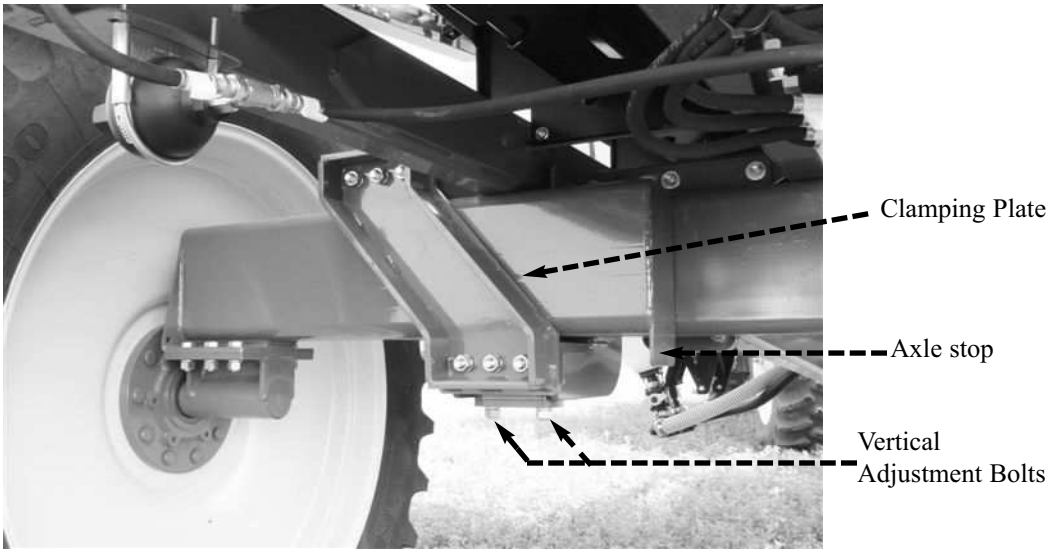
9. Clean axle spindle and install hub.

10. Install outer bearing, spindle washer and slotted hex nut. Tighten slotted hex nut while rotating the hub until there is noticeable drag. This assures that all bearing surfaces are in contact. Back off slotted nut to nearest locking slot and install cotter pin.

11. Fill hub cap half full of wheel bearing grease and install on hub.

12. Install wheel, tighten lug nuts to 265 foot pounds and remove jack and blocks.

Tread Width Adjustment



DANGER: **Make axle adjustments only when tank is empty and the sprayer is attached to an adequate towing vehicle that is in park.**

The tire tread width may be adjusted to accommodate a variety of row widths and cropping programs. The adjustable axle may be adjusted to any position between 88 and 132 inches.

To adjust the tread width to a narrower or wider position:

1. Jack tire clear of ground and block axle. Make sure you don't impede movement of the axle stub weldment.

DANGER: **Before making any adjustments to the axle make sure that the sprayer frame is adequately supported without any weight on the tire or axle.**

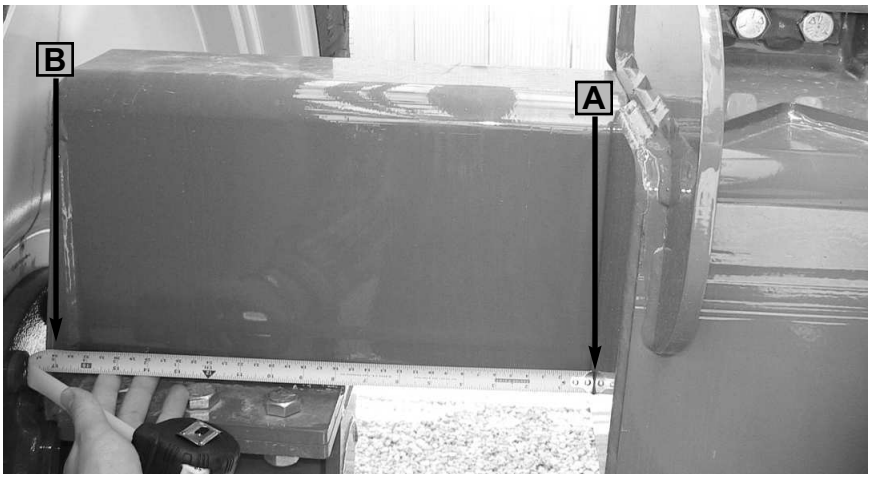
2. Loosen the (6) 3/4" x 3" mounting bolts that clamp the clamping plates to the axle.

3. Loosen the (2) 3/4" x 3-1/2" vertical adjustment bolts on the underside of the axle tube.

NOTE:

Do not remove the clamping plate that secures the axle stub in position. Loosen the mounting bolts only enough to allow the axle stub to move freely

4. Adjust axle tread width as required by axle width configuration. To help set the correct wheel spacing, measure the distance between the axle center end cap (point A) and the end plate of the axle stub tube (point B) as shown in the picture below. For the wheel spacings listed below this dimension should be as shown.



Wheel Spacing	A-B Measurement
88”	3/16”
120”	16 3/16”
132”	22 3/16”

When finished with the adjustment of both axle stubs, measure the center to center distance between the tires to verify spacing accuracy.

5. Tighten vertical adjustment bolts so that top of axle stub is snug against the stops on the top of the center axle tube. Do not torque these two bolts.

6. Tighten all clamping plate bolts. Torque these six bolts to 265 ft-lbs.

7. Repeat the process on the opposite wheel, making sure the measurement is equal on both sides.

Preparation For Storage

1. Always store the sprayer inside a building if possible. This protects vulnerable components like hoses, fittings, tires, valves and electronic relays from harmful ultraviolet rays, rain, snow and ice.

2. Thoroughly wash and flush the tank and plumbing system with a detergent solution; then rinse with clean water. Be sure to dispose of all rinse in a safe and careful manner.

3. Clean all exterior surfaces of the sprayer using clean water and detergent.

4. Touch up all metal surfaces where paint has been scratched or damaged to prevent rust.

5. Lubricate and grease all lubrication points.

6. Hand wash all nozzles, strainers and check caps. Install new diaphragms in the check caps and reinstall on the nozzle bodies.

7. Drain the foam marker tank by removing the strainer bowl. Clean and replace bowl.

8. Pour 10 to 15 gallons of non-toxic recreational vehicle (RV) antifreeze into the main tank and rinse tank. Operate the sprayer until all hoses have been filled and RV antifreeze has begun to spray out each of the spray nozzles before shutting off. Then make sure no RV antifreeze is leaking from any fittings, hoses or nozzles.

9. Pour one gallon of RV antifreeze into the foam marker tank. Operate the foam marker for two minutes per side on both sides of the wing.

WARNING:

Glycol is a primary component of antifreeze and is poisonous if ingested. Follow all precautions as if it were any pesticide. Be especially careful to avoid puddles that pets or other animals can get to.

10. Drain the personal wash tank completely. Wash the interior with a detergent solution, rinse and dry by hand.

11. Using a pressurized air hose, blow out all electrical connections, as well as the interior of the foam marker cabinet.

12. Clean the filter on the foam marker air pump.

13. Cover all unplugged connectors for protection against the weather.

14. If possible, block up the main trailer axle and reduce the air pressure in the tires during long term storage.

TROUBLESHOOTING GUIDE

Field-Pro IV Operation

Problem □ ***Probable Cause.*** Action

No pressure in spray system

- √ ***Pump not running.*** Make sure hydraulic hoses are hooked up correctly. Verify that impeller is turning.
- √ ***Pump not primed.*** Turn on tank valve. Make sure the pump volute is flooded.
- √ ***Pump impeller plugged.*** Remove volute and examine impeller for foreign material.
- √ ***Tank suction port blocked.*** Examine and clean.
- √ ***Throttling valve closed.*** Open valve at least partially open.
- √ ***Rinse valve or chemical inductor valve not shut off and the respective tanks empty.***

System pressure too low

- √ ***Pump running too slowly.*** Check oil flow setting on tractor while spraying and needle valve seating on pump motor.
- √ ***Tank sparge on 100%.*** Partially close tank sparge valve.
- √ ***Strainer plugged.*** Remove strainer bowl and clean.
- √ ***Pressure regulating valve closed too far.*** Open throttling valve.
- √ ***Tank spin rinse left on.*** Shut off spin rinse.

System pressure too high

- √ ***Throttling valve opened too far.*** Partially close valve while spraying
- √ ***Pressure regulating valve not adjusted properly.*** Refer to the owner's manual for the controller.
- √ ***Pump running to fast*** Check hydraulic flow to pump.

Erratic pressure while spraying

- √ ***Tank getting empty.*** Refill tank.
- √ ***Pump suction plumbing leaking air.*** Tighten all clamps and fittings between pump suction port and tank.

Boom valves won't turn on

- √ ***Valved not hooked up to 12 volts.*** Valves require 12-volt power in addition to the signal from the controller.
- √ ***Fuse has blown.*** Check tractor fuse panel for blown fuse.
- √ ***Wiring connection bad.*** Check all wiring connections.

Individual nozzles turning on and off erratically

- √ ***Spray pressure too low for diaphragm checks installed.*** Increase pressure or install lower PSI checks.
- √ ***Diaphragm checks are getting packed with dirt.*** Remove and clean with clean water. Check diaphragms and replace as necessary.

Pump will not pump liquid

- √ ***Shaft is not turning.*** Check for corrosion between the impeller and the volute or in the seal area.
- √ ***Hydraulic oil is by-passing the gears and failing to turn the shaft.*** Refer to the instructions in the pump manual to adjust the needle valve.
- √ ***Pump is not primed.*** Refer to the pump manual for instructions on checking and priming the pump.

Pump will not develop pressure

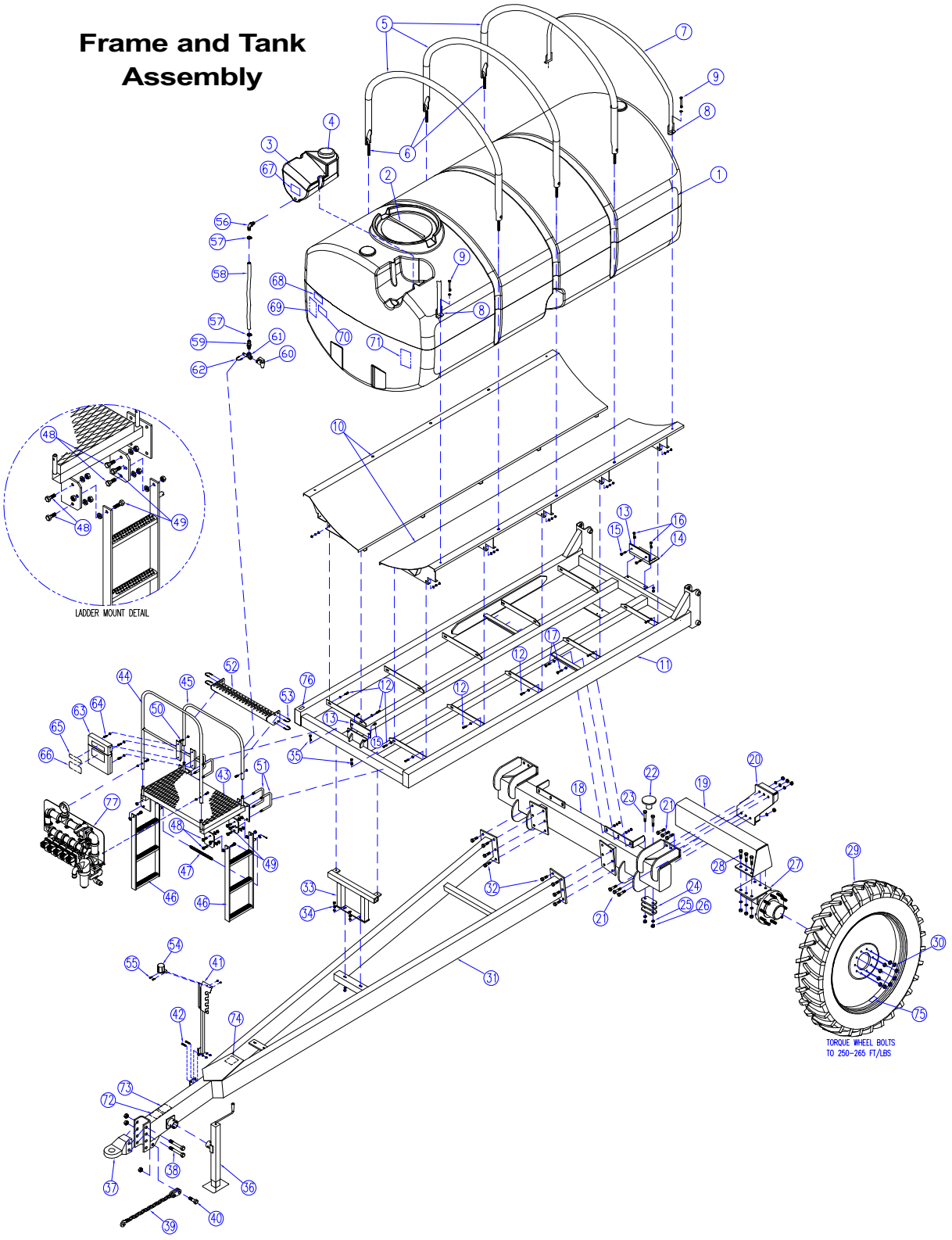
- √ ***Restrictions in the plumbing.*** Check for clogged strainers, collapsed hoses, standard port valves or undersized plumbing.
- √ ***Insufficient shaft speed.*** Have your tractor dealer verify the gallons per minute of oil going to the orbit motor. Also check the section titled "Regulating hydraulic flow to the sprayer pump" in the pump operator's manual.
- √ ***Internal leakage in pump.*** Refer to the pump manual concerning seal replacement or replacement of the impeller and/or volute.

Sprayer control fails to operate properly or flashes continuously.

- √ ***Refer to Troubleshooting Guide in sprayer control operator's manual.***

PARTS LISTING

Frame and Tank Assembly



Field-Pro IV Frame and Tank Assembly

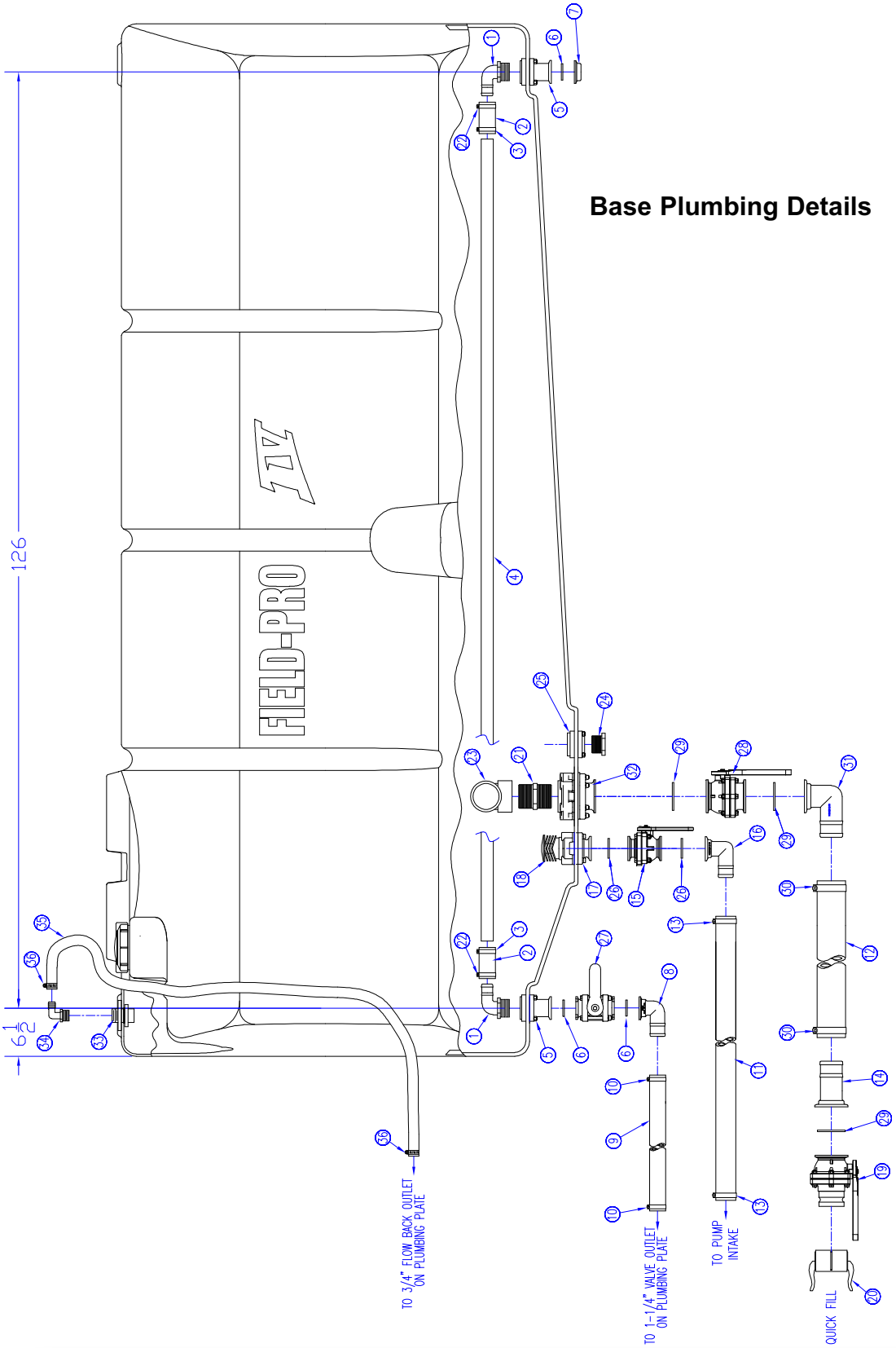
REF	P/N	DESCRIPTION	QTY
1	69818	Tank Assy. - FPIV 1600 Gal. w/Full Sump	1
	69820	Tank Assy. - FPIV 1850 Gal. w/Full Sump	1
2	62532	Fillwell w/Hinged Lid - 16"- 4" Vent Cap on Top	1
3	69617	Tank, Eyewash 1000/1200 gal. Replacement w/lid	1
4	TLA-5T	Tank Lid, 5" - ACE Tanks	1
5	73970	Hoop, Tank - 1600	3
	73971	Hoop, Tank - 1850	3
6	69815	J-Bolt, 5/8"NC ZP - 1600/1850 Tank Hoop	6
	FW58	Washer, Flat - 5/8" ZP	6
	N58	Nut, 5/8NC Gr5 ZP	12
7	74257	Strap, Tank Hold Down - 1600 Gal. Tank	2
	71253	Strap, Tank Hold Down - 1850 Gal. Tank	2
8	69553	Buckle, Tank Strap Hold Down	4
9	B38.5FT	Bolt, 3/8NC x 5 Full Thread Gr5 ZP	4
	FW38	Washer, Flat - 3/8" ZP	8
	LN38NYL	Lock Nut, 3/8NC Gr5 ZP	4
10	74615	Wment, Saddle - 1600/1850 FPIV	2
11	74611	Wment, Tank Frame - FPIV 1600/1850	1
12	B38.114	Bolt, 3/8NC x 1-1/4 Gr5 ZP	20
	FW38	Washer, Flat - 3/8" ZP	40
	LW38	Washer, Lock - 3/8" ZP	20
	N38	Nut, 3/8NC Gr5 ZP	20
13	72441	Flat, Tank Stop Wear Strip	2
14	72440	Plate, Tank Stop Front Top	1
15	B14.34FSC	Bolt, 1/4NC x 3/4, Flat Head Socket Cap	4
	LN14	Nut, Lock - 1/4NC ZP	4
16	B12.112	Bolt, 1/2NC x 1-1/2 Gr5 ZP	2
	LW12	Washer, Lock - 1/2" ZP	2
	N12	Nut, 1/2NC Gr5 ZP	2
17	B12.2	BOLT, 1/2NCx2 Gr5 ZP	6
	FW12	Washer, Flat - 1/2" ZP	12
	LW12	Washer, Lock - 1/2" ZP	6
	N12	Nut, 1/2NC Gr5 ZP	6
18	74603	Wment, Axle Center - FPIV1600/1850	1
19	74601	Wment, Axle Stub - FPIV 1600/1850	1
20	74616	Wment, Axle Adjust. Back Plate - Left Side	1
	74617	Wment, Axle Adjust. Back Plate - Right Side	1
21	B34.3G8	Bolt, 3/4NC x 3 Gr8 ZP	12
	LW34G8	Washer, Lock - 3/4" ZP	12
	N34G8	Nut, 3/4NC Gr8 ZP	12

REF	P/N	DESCRIPTION	QTY
22	74624	Wment, Axle Adjust. Brkt - FPIV	2
23	B34.312	Bolt, 3/4NC x 3-1/2 Gr5 ZP	4
24	74635	Push Plate	6
25	LW34	Washer, Lock - 3/4" ZP	4
26	N34	Nut, 3/4NC Gr5 ZP	4
27	74600A	Hub Assembly - FPIV 1200/1600/1850	2
28	B34.2	Bolt, 3/4NC x 2 Gr5 ZP	12
	LW34	Washer, Lock - 3/4" ZP	12
	N34	Nut, 3/4NC Gr5 ZP	12
29	69055	Tire, 380/90R46, 152 min. load index	2
	69441	Tire, 18.4R-46 /w 10 Bolt Wheel	2
30	69518	Nut, Flanged Wheel - A871/A873 Hubs	20
31	74610	Wment, Tongue - FPIV 1600/1850	1
32	B34.2	Bolt, 3/4NC x 2 Gr5 ZP	12
	LW34	Washer, Lock - 3/4" ZP	12
	N34	Nut, 3/4NC Gr5 ZP	12
33	74612	Wment, Standoff Bracket - FPIV 1200/1600/1850	1
34	B12.112	Bolt, 1/2NC x 1-1/2 Gr5 ZP	2
	FW12	Washer, Flat - 1/2" ZP	4
	LW12	Washer, Lock - 1/2" ZP	2
	N12	Nut, 1/2NC Gr5 ZP	2
35	B12.112	Bolt, 1/2NC x 1-1/2 Gr5 ZP	2
	LW12	Washer, Lock - 1/2" ZP	2
	N12	Nut, 1/2NC Gr5 ZP	2
36	61444	Jack, Tongue - 15", 7000lb	1
37	69359	Hitch Assy, Cat 3 /w Clevis - Painted	1
	69394	Hitch Kit, PPI331 Perfect Hitch Parts - Painted	1
	61394	Neoprene Cushion Replacement, Perfect Hitch	
	69360	Clevis, Complete for Cat 2/3 Hitch - Painted	
38	B1.658G8SP	Bolt, 1NC x 6-5/8 Gr8 ZP *Special*	2
	LW1	Washer, Lock - 1" ZP	2
	N10	Nut, 1NC Gr5 ZP	2
39	61041	Safety Chain, 41,000lb, 1/2”	1
40	B1.5	Bolt, 1NC x 5 Gr5 ZP	1
	LN10	Nut, Lock - 1”NC ZP	1
41	73548A	Hose & Cable Holder	1
42	B38.114	Bolt, 3/8NC x 1-1/4 Gr5 ZP	2
	LW38	Washer, Lock - 3/8" ZP	2
	N38	Nut, 3/8NC Gr5 ZP	2
43	73581	Wment, Platform	1

REF	P/N	DESCRIPTION	QTY
44	71580	Hand Rail - Long	1
45	73577	Hand Rail - Short	1
46	73927	Wment, Ladder - 3 Step FPIV 1600	2
47	74244	Spring, Ladder - FPIV 1600	1
	FW12	Washer, Flat - 1/2" ZP	2
	CP532.134	Pin, Cotter - 5/32 x 1-3/4 ZP	2
48	B12.1	Bolt, 1/2NC x 1 Gr5 ZP	8
	FW12	Washer, Flat - 1/2" ZP	8
	LN12	Nut, Lock - 1/2NC ZP	8
49	B12.112	Bolt, 1/2NC x 1-1/2 Gr5 ZP	4
	FW12	Washer, Flat - 1/2" ZP	4
	LN12	Nut, Lock - 1/2NC ZP	4
50	B38.112	Bolt, 3/8NC x 1-1/2 Gr5 ZP	4
	LN38	Nut, Lock - 3/8NC ZP	4
51	SU12.4.3	U-Bolt, Sq. - 1/2NC x 3 x 4 Gr5 ZP	4
	LW12	Washer, Lock - 1/2" ZP	8
	N12	Nut, 1/2NC Gr5 ZP	8
52	74142	Wment, Hand Rail Step	1
53	RU14.1.134	U-Bolt, Rnd - 1/4NC x 1-3/4 x 1	4
	FW14	Washer, Flat - 1/4" ZP	8
	LN14	Nut, Lock - 1/4NC ZP	8
54	69277	Electrical Receptacle Stow	1
55	B14.12	Bolt, 1/4NC x 1/2”	2
	LN14	Lock Nut, 1/4NC	2
56	EL-34PP	Elbow, 3/4 mpt x 3/4 hb Polypro	1
57	HC-34	Clamp, Worm Gear - 3/4" Hose, 11/16"-1 1/4" S.S.	2
58	EPDM34	Hose, EPDM 3/4", 300psi	
59	A-34PP	Barb, 3/4 mpt x 3/4 hb, Polypro	1
60	60146	Valve, Fresh Water	1
61	73865	Wment, Fresh Water Valve Mnt	1
62	RU14.1.134	U-Bolt, Rnd - 1/4NC x 1-3/4 x 1	1
	FW14	Washer, Flat - 1/4" ZP	2
	LN14	Nut, Lock - 1/4NC ZP	2
63	60030	Manual-Pak, 8 1/2" x 11" x 1 5/8"	1
64	B14.34	Bolt, 1/4NC x 3/4 Gr5 ZP	4
	FW14	Washer, Flat - 1/4" ZP	4
	LN14	Nut, Lock - 1/4NC ZP	4
65	DEC-BW007	Decal, Bestway - 6"x1.5" - 4 color	1
66	DEC-OM001	Decal, Operator's Manual - 6"x2.625" - Green/Yellow	1

REF	P/N	DESCRIPTION	QTY
67	67673	Decal, Caution - Do Not Drink, 3" x 5"	1
68	SW001	Decal, Warning - Read Manual	1
69	67671	Decal, Warning - General Info, 5-1/2" x 6-5/8"	1
70	67672	Decal, Caution - Chemical Safety, 3" x 5"	1
71	SW900	Decal, Danger - Toxic Chemicals	1
72	67657	Decal, Warning - Max Speed 25 MPH	1
73	DEC-HAZ08	Decal, Warning - Tip Over Hazard	1
74	DEC-HAZ01	Decal, Warning - High Pressure Fluid	1
75	DEC-HAZ09	Decal, Recommended Tire Pressure	2
76	DEC-S/N	Plate, Serial Number	1
77	70695	Control Plumbing, 5 section	1

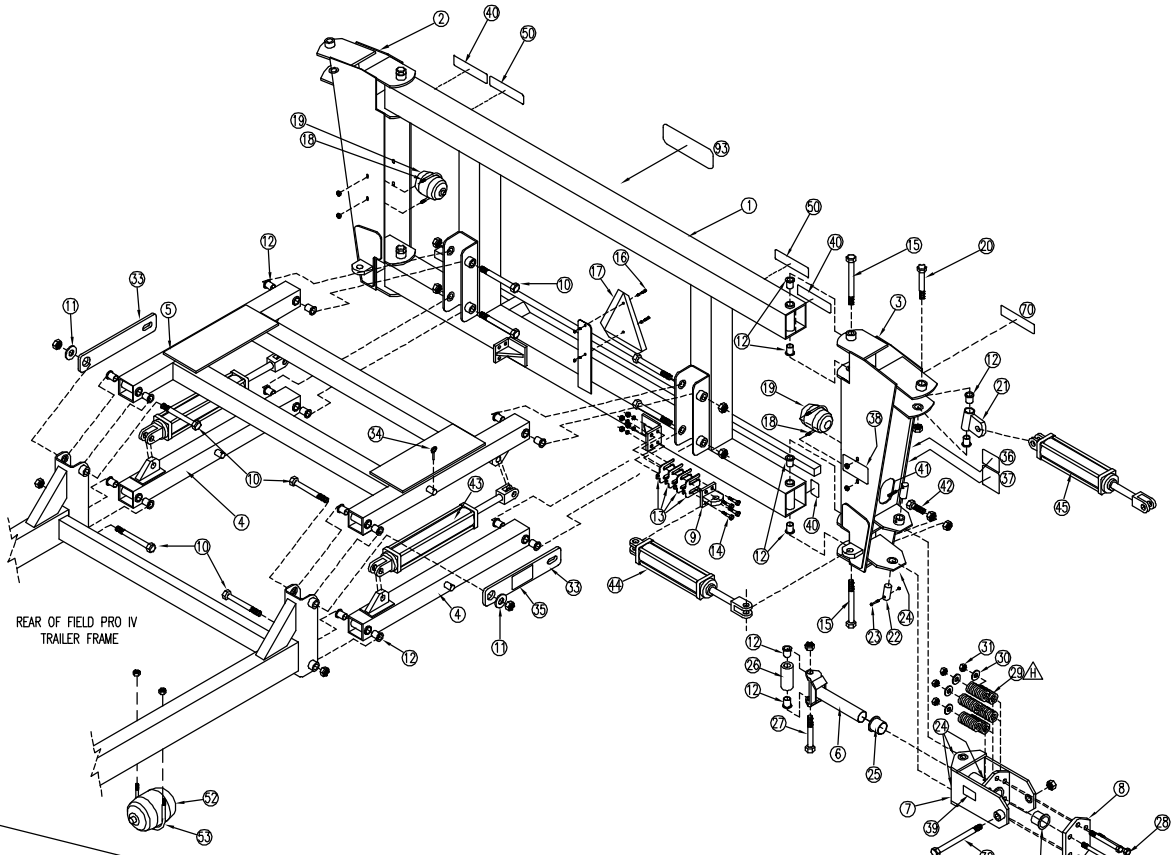
Base Plumbing Details

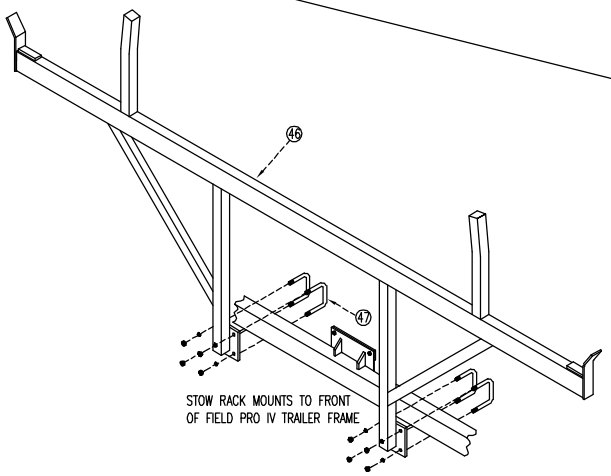


Base Plumbing Details for Field-Pro IV

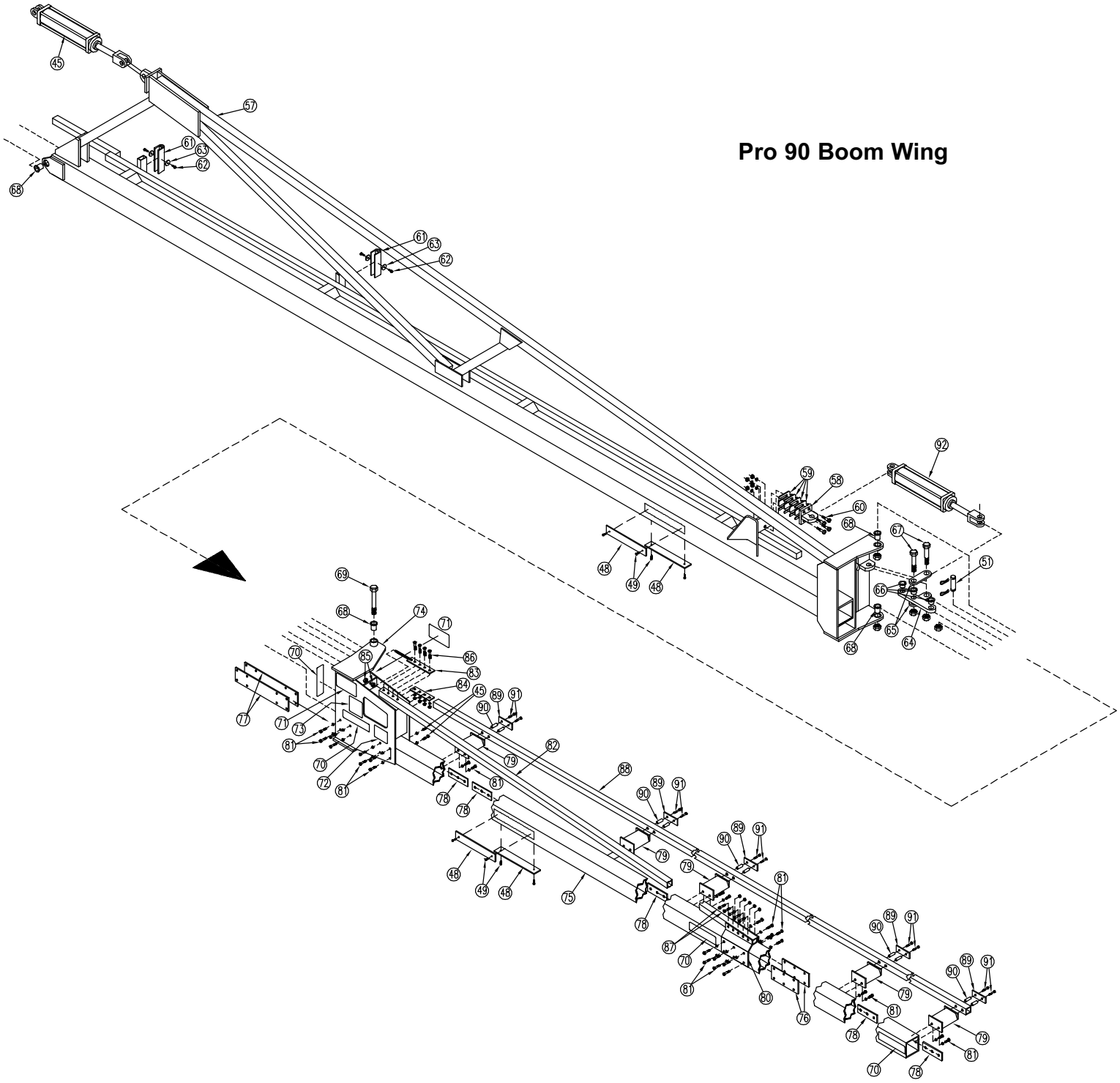
REF	P/N	DESCRIPTION	QTY
1	EL-200112PP	Elbow, 2 mpt x 1-1/2 hb, Polypro	2
2	EPDM112	Hose, EPDM 1-1/2", 200psi, 8"LG	2
3	HC-112HT	Hose Clamp - 1-1/2" Hose, S.S.	2
4	73901	Tube, Sparge - 1600E Raven	1
5	MBF200	Bolted Tank Flange, 2" Manifold x 2"mpt, Polypro	2
6	150-G	Gasket, 1-1/2" Coupler, EPDM	3
	FC200	Clamp, 2" Manifold Fitting	3
7	M200PLG	Plug, 2" Manifold, Polypro	1
8	M200125BRB90	Elbow, 2" Manifold x 1-1/4"hb, Polypro	1
9	EPDM114	Hose, EPDM 1-1/4", 200psi	
10	HC-114HT	Hose Clamp - 1-1/4" Hose, S.S.	2
11	PH200	Hose, Plastic Helix 2"	
12	PH300	Hose, Plastic Helix 3"	
13	HC-200HT	Hose Clamp - 2" Hose, S.S.	2
14	M300BRB	Barb, 3" Manifold x 3"hb, Polypro	1
15	MVS220CF	Ball Valve, 2" Full Port Manifold	1
16	M220BRB90	Elbow, 2" Full Port Manifold x 2" hb	1
17	MBF222BD	Bolted Tank Flange, 2"Full Port - Bottom Drain	1
18	VC200	Cap, Vent/Anti-Vortex - 2"	1
19	MVSF300	Ball Valve, 3" Manifold x 3" Male Adapter	1
	60898	Valve Mount Bracket	1
20	300CAP	Dust Cap, 3" Coupler	1
21	M-3000PP	Nipple, 3 mpt x 3 mpt, Polypro	1
22	HC-112HT	Hose Clamp - 1-1/2" Helix Hose, S.S.	2
23	TT-3000PP	Threaded Tee, 3 fpt, Polypro	1
24	F-2000PP	Plug, 2 hex x 2 mpt, Polypro	1
25	BF200	Bulkhead Fitting, 2" fpt, Bolted	1
26	200-G	Gasket, 2” Full Port Manifold Fittings	2
	FC220	Clamp, 2” Full Port Manifold Fittings	2
27	MVT200CF	Ball Valve, 2” Manifold	1
28	MVS300CF	Ball Valve, Stubby - 3” Manifold	1
29	300-G	Gasket, 3” Full Port Manifold Fittings	3
	FC300	Clamp, 3” Manifold Fittings	3
30	HC-300HT	Hose Clamp - 3" Helix Hose, S.S.	2
31	M300BRB90	Elbow, 3” Manifold x 2" hb	1
32	MBF335BD	Bolted Tank Flange, 3”FPT	1
33	RP-5032PE	Tank Fitting, 3/4”NPT, Double Thread	1
34	EL-34PP	Elbow, 3/4”mpt x 3/4”HB	1
35	EPDM34	Hose, 3/4”EPDM	1
36	HC-34	Hose Clamp, 3/4” Worm Gear	2

Pro 90/100 Booms

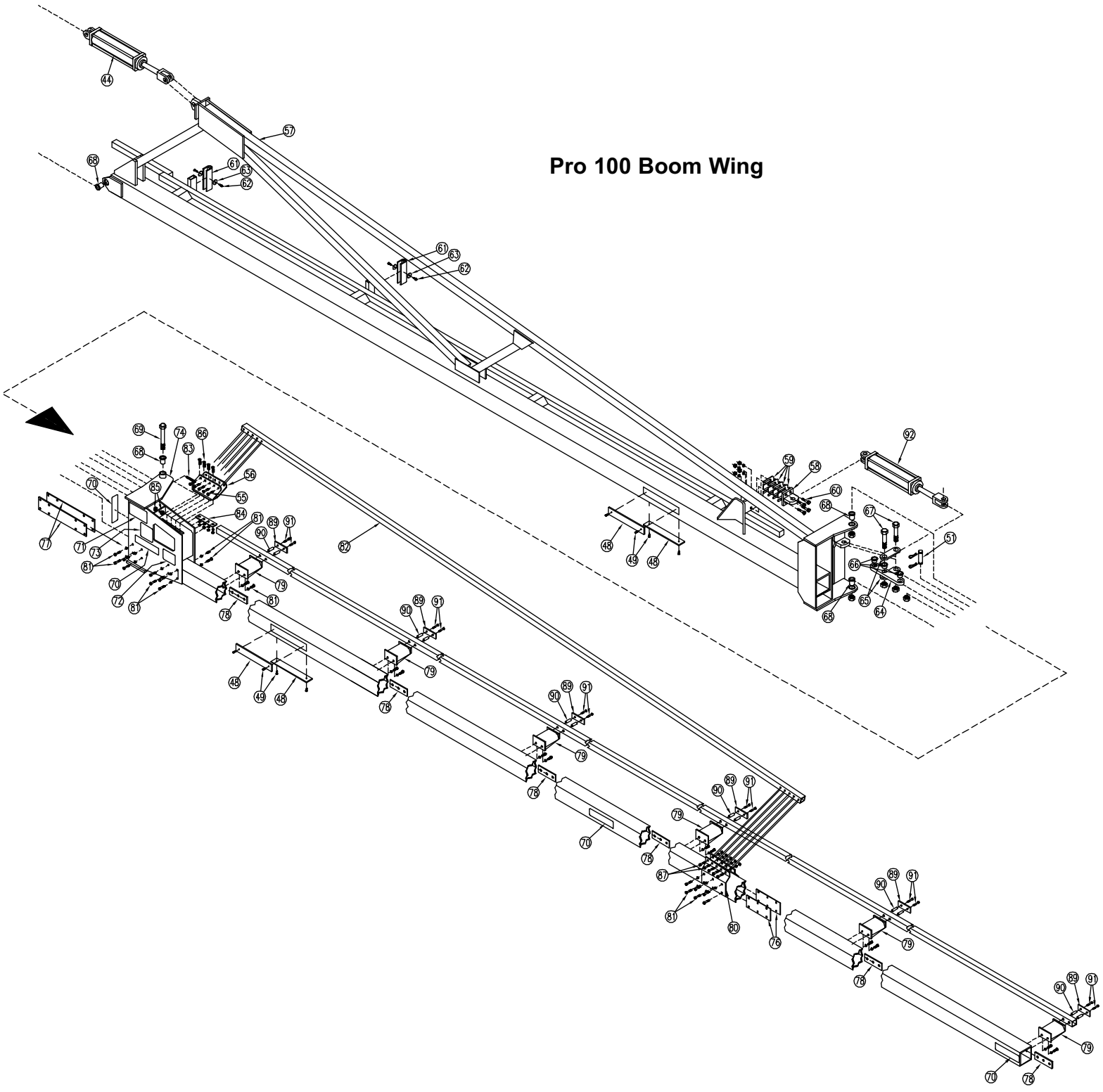




Pro 90 Boom Wing



Pro 100 Boom Wing



Pro90/100 Booms

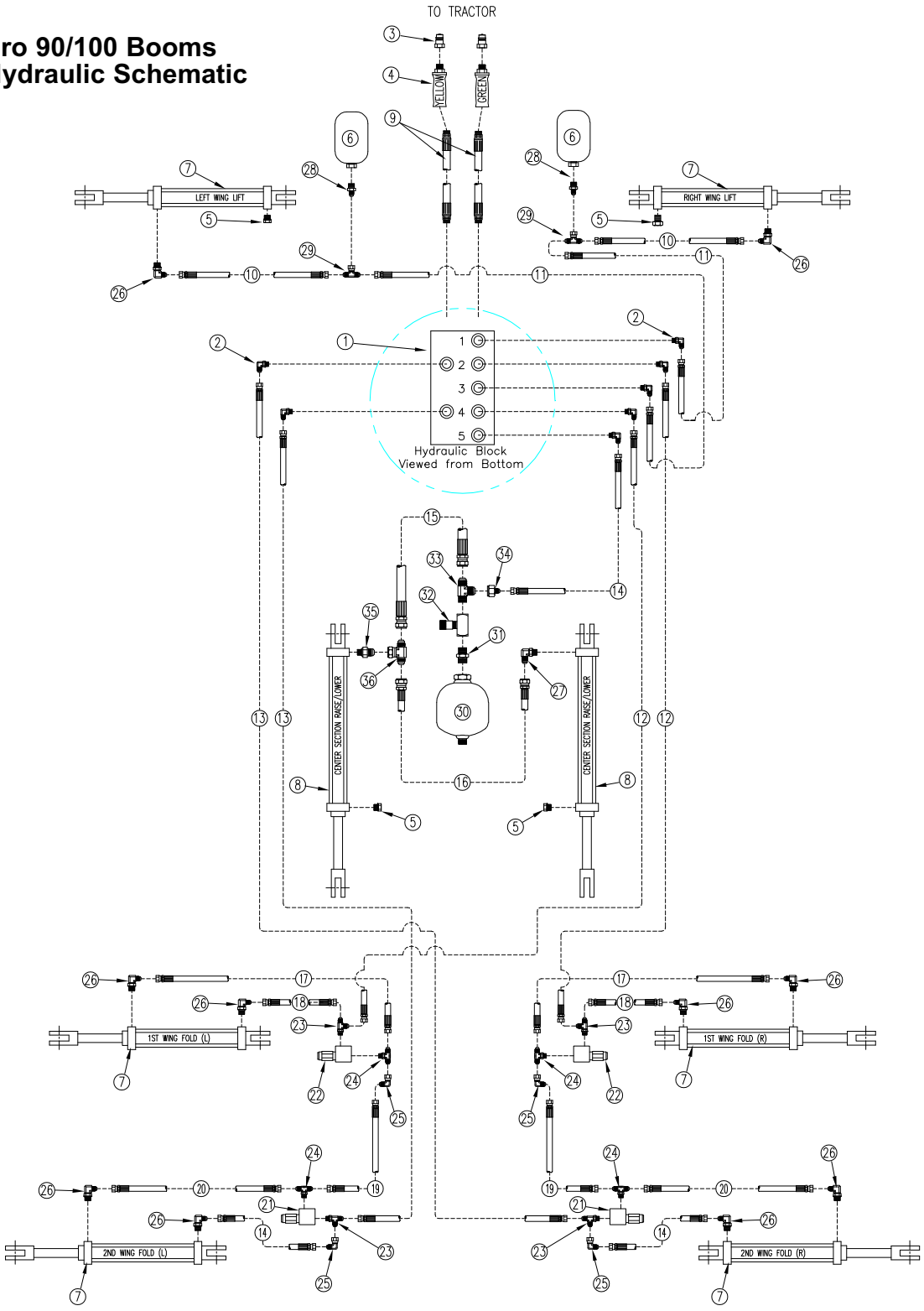
REF	P/N	DESCRIPTION	QTY
1	74111	Wment, Center Section	1
2	74119	Wment, Fold Arm Right	1
3	74118	Wment, Fold Arm Left	1
4	73888	Wment, Parallel Linkage Arm	2
5	74099	Wment, Parallel Linkage H-frame	1
6	76121	Wment, Break Away Shaft	2
7	76124	Wment, Break Away Box	2
8	69923	Flat, Break Away Push Plate	2
9	74138	Wment, Lug	2
10	B1.8	Bolt, 1NC x 8 Gr5 ZP	8
	LN10NYL	Nut, NyLock - 1NC ZP	8
11	FW1	Washer, Flat - 1" ZP	2
12	MFI-1618-24	Sleeve, M250 - 1" I.D. x 1-1/8" O.D x 1-1/2"lg	32
13	74213	PLB 69503-Shim, Cylinder Lug	10
14	B12.212	Bolt, 1/2NC x 2-1/2 Gr5 ZP	8
	LW12	Washer, Lock - 1/2" ZP	8
	N12	Nut, 1/2NC Gr5 ZP	8
15	B1.10	Bolt, 1NC x 10 Gr5 ZP	4
	LN10NYL	Nut, NyLock - 1NC ZP	4
16	B14.1	Bolt, 1/4NC x 1 Gr5 ZP	2
	FW14	Washer, Flat - 1/4" ZP	2
	LW14	Washer, Lock - 1/4" ZP	2
	N14	Nut, 1/4NC Gr5 ZP	2
17	69290	Emblem, SMV	1
18	69502	Clamp, Muffler - 3/8NC x 4", Hyd. Accum. Mnt	2
19	69501	Accumulator, Hyd. - .32 liter, 700psi Precharge	2
20	B1.8	Bolt, 1NC x 8 Gr5 ZP	2
	LN10NYL	Nut, NyLock - 1NC ZP	2
21	74123	Wment, Cylinder Lug	2
22	PIN1.418	Pin, 1" x 4 1/8"	4
23	B38.2	Bolt, 3/8NCx2 Gr5 ZP	4
	LN38	Nut, Lock - 3/8NC ZP	4
24	69573	Zerk, Grease 1/4-28 threaded	12
25	LFI-3235-32	Sleeve, L280 - 2"I.D. x 2-3/16" O.D. x 2"lg	4
26	74125	Tube, Break Away Roller	2
27	B1.658G8SP	Bolt, 1NC x 6-5/8 Gr8 ZP *Special*	2
	LN10	Nut, Lock - 1NC ZP	2
28	B34.712	Bolt, 3/4NC x 7-1/2 Gr5 ZP	12
29	69138	Spring, Die - 2.36"OD x 1.18"ID x 4.92"LG	12
30	74528	Washer, Flat - 3/4" ZP	12
31	LN34	Nut, Lock - 3/4NC ZP	12

REF	P/N	DESCRIPTION	QTY
32	B1.10SP	Bolt, 1NC x 10 Gr5 ZP	2
	LN10NYL	Nut, NyLock - 1NC ZP	2
33	74141	Flat, Transport Lock	2
34	LP14	Pin, Lynch - 1/4" YZ	2
35	DEC-HAZ05	Decal, Caution - Transport Lock	2
36	DEC-HAZ02	Decal, Danger - Electrocution Hazard	2
37	60962	Decal, Warning - Overhead Hazard	2
38	SW202	Decal, Warning - Frame Pinch Point	2
39	DEC-MT4163	Decal, Warning - Pinch Point	4
40	60984	Decal, Reflective - Red	2
41	74353	Edge Trim, Plumbing Hole	2
42	B1.3	Bolt, 1NC x 3 Gr5 ZP	2
	N10	Nut, 1NC Gr5 ZP	4
43	69912	Cylinder, Hyd. - 2-1/2" Bore x 12" Stroke x 1-1/8" Rod	2
44	69910	Cylinder, Hyd. - 2-1/2" Bore x 10" Stroke x 1-1/8" Rod	2
45	69910	Cylinder, Hyd. - 2-1/2" Bore x 10" Stroke x 1-1/8" Rod	2
46	74498	Wment, Stow Rack - Pro90	1
47	SU12.4.3	U-Bolt, Sq. - 1/2NC x 3" x 4" Gr5 ZP	4
	LW12	Washer, Lock - 1/2" ZP	8
	N12	Nut, 1/2NC Gr5 ZP	8
48	74249	Wear Strip	8
49	B14.114STS	Bolt, 1/4x1-1/4STS	16
50	60983	Decal, Orange Fluorescent	2
51	60069	Cylinder Pin, 1”x3-1/2”	2
52	69121	Hydraulic Accumulator, 2 liter, 210psi	1
53	RU38.634.8	U-bolt, 3/8NC x 6-3/4 x 8	1
	FW38SS	Flat Washer, 3/8”S.S.	2
	LW38SS	Lock Washer, 3/8” S.S.	2
	N38SS	Nut, 3/8NC S.S.	2
53	71490	Mount Strap, 2 liter Accumulator	1
	B56.312SS	Bolt, 5/16NC x 3-1/2 S.S.	2
	FW56SS	Flat Washer, 5/16” S.S.	2
	LN56	Lock Nut, 5/16NC	2
55	B38.234SS	Bolt, 3/8NC x 2 3/4 S.S. (100 ft. boom only)	10
	LN38NYLSS	Nut, 3/8NC Gr5 SS (100 ft. boom only)	10
56	72450	Truss Mount Adapter (100 ft. boom only)	2
57	74112	Wment, 1st Wing Left	1
	74113	Wment, 1st Wing Right	1
58	74138	Wment, Lug	2
59	74213	PLB 69503-Shim, Cylinder Lug	10

REF	P/N	DESCRIPTION	QTY
60	B12.112	Bolt, 1/2NC x 1-1/2 Gr5 ZP	8
	LW12	Washer, Lock - 1/2" ZP	8
	N12	Nut, 1/2NC Gr5 ZP	8
61	74259	Bumper, Fold	4
62	B#10.34STS	Bolt, Self Tapping, #10 x 3/4 SS Hex Head	16
63	FW732	Washer, Fender - 7/32"ID x 1"OD	16
64	74126	Flat, Cylinder Lever Arm Long	2
65	74127	Flat, Cylinder Lever Arm Short	4
66	MFI-1618-12	Sleeve, M250 - 1"I.D. x 1-1/8" O.D. x 3/4"lg	6
67	B1.4	Bolt, 1NC x 4" Gr5 ZP	4
	LN10NYL	Nut, NyLock - 1NC ZP	4
68	MFI-1618-24	Sleeve, M250 - 1" I.D. x 1-1/8" O.D x 1-1/2"lg	12
69	B1.5	Bolt, 1NC x 5 Gr5 ZP	4
	LN10NYL	Nut, NyLock - 1NC ZP	4
70	60985	Decal, Reflective - Amber	10
71	SW202	Decal, Warning - Frame Pinch Point	4
72	DEC-HAZ02	Decal, Danger - Electrocution Hazard	2
73	60962	Decal, Warning - Overhead Hazard	2
74	72973	Wment, 2nd Wing Hinge Left	1
	72974	Wment, 2nd Wing Hinge Right	1
75	74830	Tube, 2nd Wing (90 ft. boom)	2
	74832	Tube, 2nd Wing (100 ft. boom)	2
76	74134	Wment, 2nd Wing Truss Mnt Sleeve - Pro90	4
77	74195	Wment, 2nd Wing FW Back Plate Hinge End	4
78	69726	Backing Plate, 3"FW Tube, 3-3/8NC(90 ft. boom)	10
	69726	Backing Plate, 3"FW Tube, 3-3/8NC(100 ft. boom)	12
79	73968	Wment, Spray Bar Mount Brkt (90 ft. boom)	10
	73968	Wment, Spray Bar Mount Brkt (100 ft. boom)	12
80	74128	Flat, 2nd Wing Truss Mnt Right	2
	74129	Flat, 2nd Wing Truss Mnt Left	2
81	B38.112SS	Bolt, 3/8NC x 1-1/2 Gr5 S.S. (90 ft. boom)	76
	B38.112SS	Bolt, 3/8NC x 1-1/2 Gr5 S.S. (100 ft. boom)	80
	LW38SS	Washer, Lock - 3/8" S.S. (90 ft. boom)	76
	LW38SS	Washer, Lock - 3/8" S.S. (100 ft. boom)	80
82	74831	Tube, 2nd Wing Truss (90 ft. boom)	2
	74833	Tube, 2nd Wing Truss (100 ft. boom)	2
83	73012	Plate, 2nd Wing Truss Adjuster Bolt (90 ft. boom)	2
	B12.5CFTSS	Bolt, Carriage - 1/2NC x 5, S.S. (100 ft. boom)	2
84	72893	Plate, 2nd Wing Truss Adjuster Backing	2
85	N12SS	Nut, 1/2NC Gr5 SS	4
	FW12SS	Washer, Flat - 1/2" SS	2

REF	P/N	DESCRIPTION	QTY
86	B38.234SS	Bolt, 3/8NC x 2 3/4 stainless steel (90 ft. boom)	8
	B38.114SS	Bolt, 3/8NC x 1 1/2 stainless steel (100 ft. boom)	8
	LN38NYLSS	Lock Nut, 3/8NC Gr5 SS	8
87	B38.234SS	Bolt, 3/8NC x 2 3/4 stainless steel	10
	FW38SS	Washer, Flat - 3/8" SS	20
	LN38NYLSS	Lock Nut, 3/8NC Gr5 SS	10
88	72969	Tube, 2nd Wing Spray Bar (90 ft. boom)	2
88	74834	Tube, 2nd Wing Spray Bar (100 ft. boom)	2
89	73135	Plate, Spray Bar Mnt Backing (90 ft. boom)	10
	73135	Plate, Spray Bar Mnt Backing (100 ft. boom)	12
90	AA005	Pipe Insert, 1/4" DW Pipe (90 ft. boom)	20
	AA005	Pipe Insert, 1/4" DW Pipe (100 ft. boom)	24
91	B56.212SS	Bolt, 5/16NC x 2-1/2 Gr5 SS (90 ft. boom)	20
	B56.212SS	Bolt, 5/16NC x 2-1/2 Gr5 SS (100 ft. boom)	24
	N56SS	Nut, 5/16NC Gr5 SS (90 ft. boom)	40
	N56SS	Nut, 5/16NC Gr5 SS (100 ft. boom)	48
92	69910	Cylinder, Hyd. - 2-1/2" Bore x 10" Stroke x 1-1/8" Rod	2
93	DEC-BW008	Decal, Bestway	1

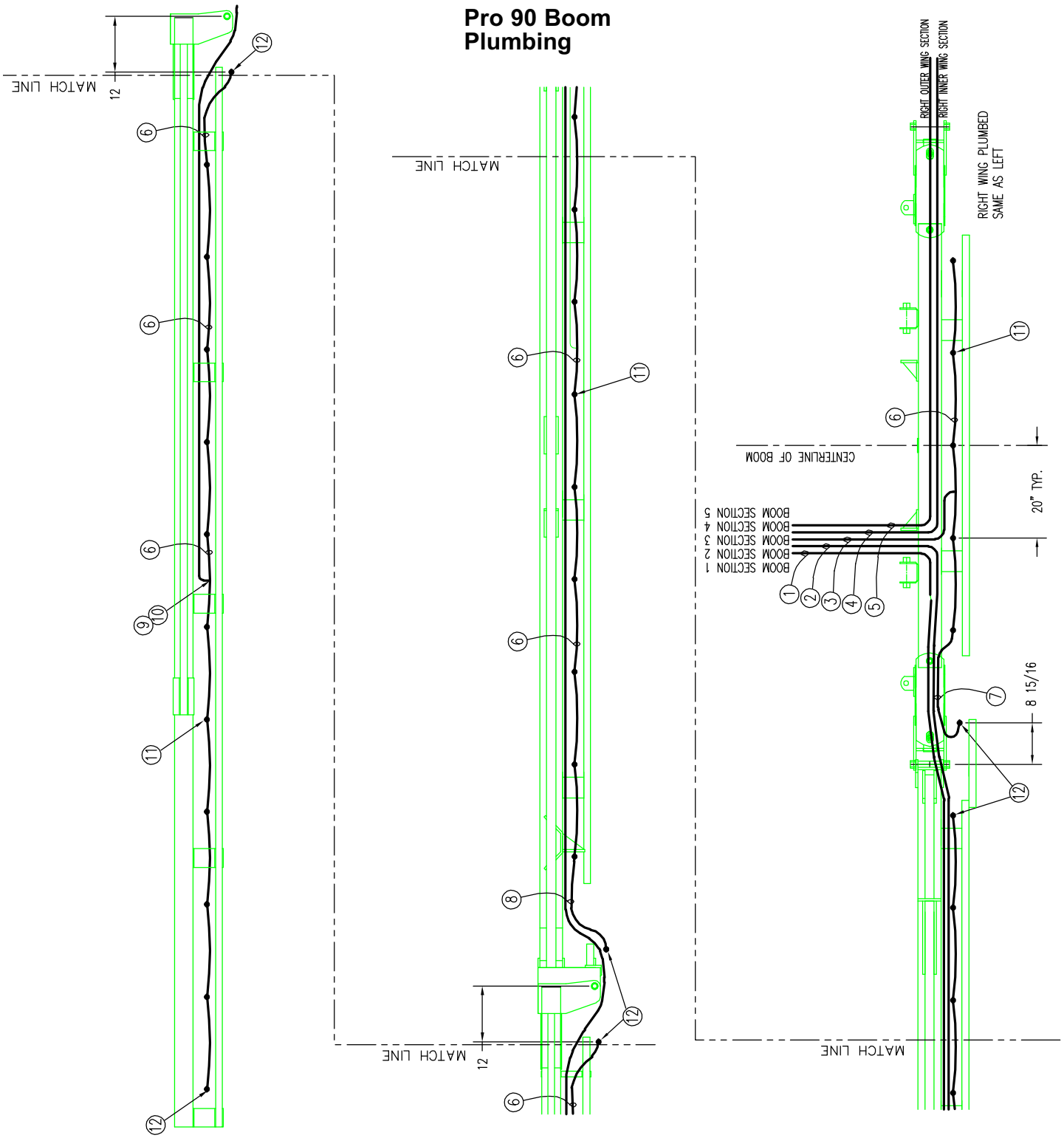
Pro 90/100 Booms
Hydraulic Schematic



Hydraulic Schematic For Pro90/100 Booms

REF	P/N	DESCRIPTION	QTY
1	69984	Hyd. Valve Manifold Assy.-Fasse	1
2	6MJ-6MB90	Hyd. Adapter Elbow, #6MJIC x #6MORB	7
3	8FB-QM	Hyd. Quick Disconnect - Male Tip x #8 ORB	2
4	69822	Hydra Grips - One Pair, Green/Yellow	1
5	8MB-VENT	Vent Plug - #8MORB	4
6	69501	Accumulator, Hyd. - .32 liter, 700psi Precharge	2
7	69910	Cylinder, Hyd. - 2-1/2" Bore 10" Stroke 1-1/8" Rod	6
	69523	Repair Kit, Prince Hyd. Cylinders	
8	69912	Cylinder, Hyd. - 2-1/2" Bore 12" Stroke 1-1/8" Rod	2
	69523	Repair Kit, Prince Hyd. Cylinders	
9	69165	Hose, Hyd. - 3/8" x 302”, #8 MORB x #6 MORB	2
10	65432	Hose, Hyd. - 1/4” x 48”, #6 female JIC ends	2
11	65437	Hose, Hyd. - 1/4” x 132”, #6 female JIC ends	2
12	65436	Hose, Hyd. - 1/4” x 108”, #6 female JIC ends	2
13	65438	Hose, Hyd. - 1/4” x 348”, #6 female JIC ends	2
14	65430	Hose, Hyd. - 1/4” x 24”, #6 female JIC ends	3
15	65447	Hose, Hyd. - 3/4” x 29”, #12 female JIC ends	1
16	65446	Hose, Hyd. - 1/2” x 66”, #8 FJIC x #12 FJIC	1
17	65434	Hose, Hyd. - 1/4” x 29”, #6 female JIC ends	2
18	65433	Hose, Hyd. - 1/4” x 12”, #6 female JIC ends	2
19	65439	Hose, Hyd. - 1/4” x 251”, #6 female JIC ends	2
20	65435	Hose, Hyd. - 1/4” x 36”, #6 female JIC ends	2
21	69915	Pressure Relief Valve, 1500 PSI	2
22	69918	Pressure Relief Valve, 1800 PSI	2
23	6MJ-6MB-6MJ	Hyd. Adapter, Run Tee - #6MJICx#6MORBx#6MJIC	4
24	6MJ-6MJ-6MB	Hyd. Adapter, Branch Tee - #6MJICx#6MJICx#6MORB	4
25	6MJ-6FJS90	Hyd. Adapter, Elbow- #6MJICx#6FJIC	4
26	6MJ-8MB90	Hyd. Adapter, Elbow- #6MJICx#8MORB	10
27	8MJ-8MB90	Hyd. Adapter, Elbow- #8MJICx#8MORB	1
28	6MJ-8MB-R055	Hyd. Restrictor, .055 - #6MJICx#8MORB	2
29	6MJ-6MJ-6FJ	Hyd. Adapter, Branch Tee - #6MJICx#6MJICx#6FJIC	2
30	69121	Accumulator, Hyd. - 2 liter, 210 psi	1
31	12MB-12MP	Hyd. Adapter - #12MORB x #12MPT	1
32	69122	Needle Valve	1
33	12MJ-12MP-12MJ	Hyd. Adapter, Run Tee - #12MJICx#12MPTx#12MJIC	1
34	12FJ-6MJ	Hyd. Adapter - #12FJIC x #6MJIC	1
35	12MJ-8MB	Hyd. Adapter - #12MJIC x #8MORB	1
36	12MJ-12MJ-12FJ	Hyd. Adapter, Branch Tee - #12MJICx#12MJICx#12FJIC	1

Pro 90 Boom Plumbing



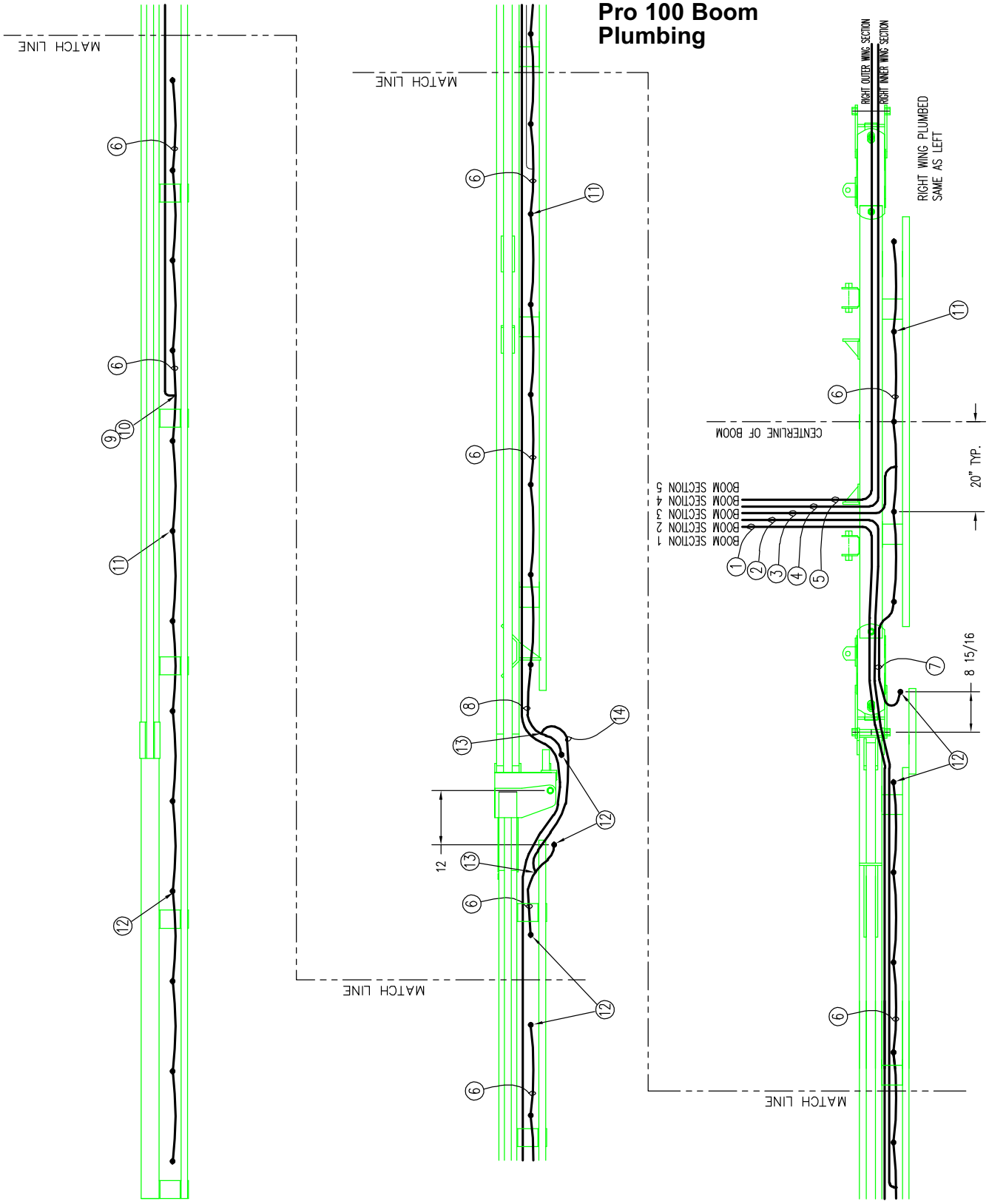
Pro 90 Boom Plumbing

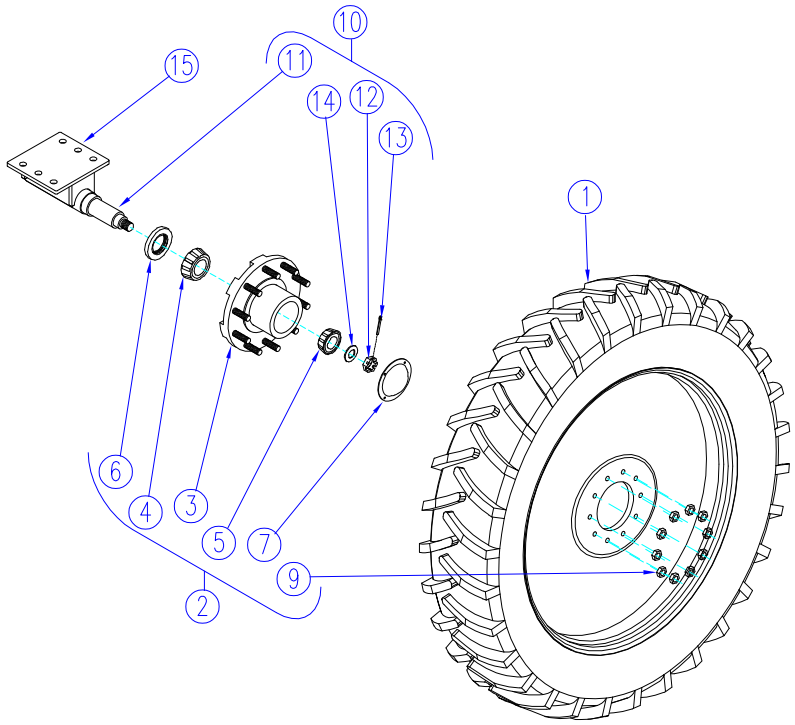
REF	P/N	DESCRIPTION	QTY
1	EPDM10	Hose, EPDM 1" x 57 Feet	1
2	EPDM10	Hose, EPDM 1" x 35 Feet	1
3	EPDM10	Hose, EPDM 1" x 20.5 Feet	1
4	EPDM10	Hose, EPDM 1" x 35 Feet	1
5	EPDM10	Hose, EPDM 1" x 57 Feet	1
6	71409	Hose, EPDM 3/4" x 19"Lg.	46
7	EPDM34	Hose, EPDM 3/4" x 54" Lg.	2
8	EPDM34	Hose, EPDM 3/4" x 25" Lg.	2
9	EL-3410PP	Elbow, 3/4 mpt x 1 hb Polypro	5
10	T-3434F	Barb, Female Tee - 3/4 fpt x 3/4 hb	5
11	QJ363B7502NYBVI	Hose Shank, 3-way T-body, 3/4"	45
	QJ111SQ112303SS	Nozzle Clamp, 1-1/2”Sq. S.S.	45
12	QJ363B7501NYBVI	Hose Shank, 3-way L-body, 3/4"	10
	QJ111SQ112303SS	Nozzle Clamp, 1-1/2”Sq. S.S.	10

Pro 100 Boom Plumbing *(next page)*

REF	P/N	DESCRIPTION	QTY
1	EPDM10	Hose, EPDM 1" x 59 Feet	1
2	EPDM10	Hose, EPDM 1" x 37 Feet	1
3	EPDM10	Hose, EPDM 1" x 20.5 Feet	1
4	EPDM10	Hose, EPDM 1" x 37 Feet	1
5	EPDM10	Hose, EPDM 1" x 59 Feet	1
6	71409	Hose, EPDM 3/4" x 19"Lg.	52
7	EPDM34	Hose, EPDM 3/4" x 54" Lg.	2
8	EPDM34	Hose, EPDM 3/4" x 25" Lg.	2
9	EL-3410PP	Elbow, 3/4 mpt x 1 hb Polypro	5
10	T-3434F	Barb, Female Tee - 3/4 fpt x 3/4 hb	5
11	QJ363B7502NYBVI	Hose Shank, 3-way T-body, 3/4"	47
	QJ111SQ112303SS	Nozzle Clamp, 1-1/2”Sq. S.S.	47
12	QJ363B7501NYBVI	Hose Shank, 3-way L-body, 3/4"	14
	QJ111SQ112303SS	Nozzle Clamp, 1-1/2”Sq. S.S.	14
13	T-34	Barb Tee Fittig, 3/4” Hose Barb	4
14	EPDM34	Hose, EPDM 3/4" x 48" Lg.	2

Pro 100 Boom Plumbing





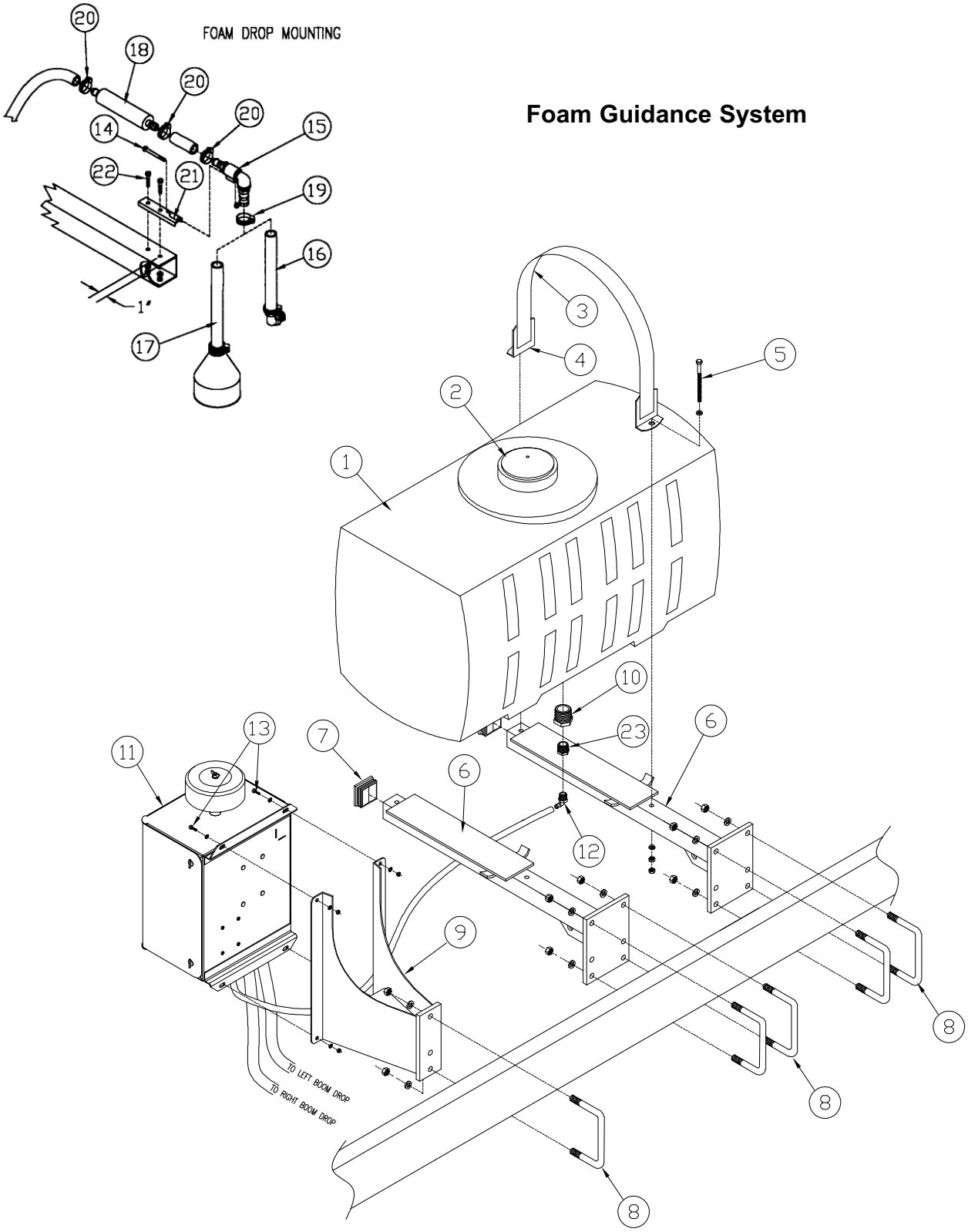
Wheel / Hub Assembly

REF	P/N	DESCRIPTION	QTY
1	69055	Tire, 380/90R46 /w 10 Bolt Wheel	2
	69441	Tire, 18.4R-46 /w 10 Bolt Wheel	2
2	79512	Hub Assembly	2
*3	-------	Hub, Studded w/Cups (66#)	2
	69516	Bearing Cup, Inner-A873 Hub, 33462 Timken	2
	69515	Bearing Cup, Outer-A873/A871 Hubs, 453A Timken	2
	69519	Stud Bolt, 3/4-16 x 2-3/4 - A873/A871 Hubs	20
*4	69521	Bearing, Inner - A873 Hub, 33275 Timken	2
*5	69522	Bearing, Outer - A873/A871 Hubs, 460 Timken	2
*6	69520	Seal, Grease - A873 Hub, CR33772	2
*7	69517	Cap, Dust - A871/A873 Hubs, 100274	2
*8	B56.114	Bolt, Dust Cap Mounting (not shown)	8
*9	69518	Nut, Flanged Wheel - A871/A873 Hubs	20
10	69513	Spindle Assembly	2
**11	69526	Spindle	2
**12	69527	Nut, Spindle - A871/A873 Hubs	2
**13	CP732.3	Pin, Cotter - 7/32" x 3" ZP	2
**14	69525	Washer, Spindle - A873/A871 Hubs	4
15	74600	Spindle Weldment (hub not included)	2

* indicates parts included in hub assembly (item 2)

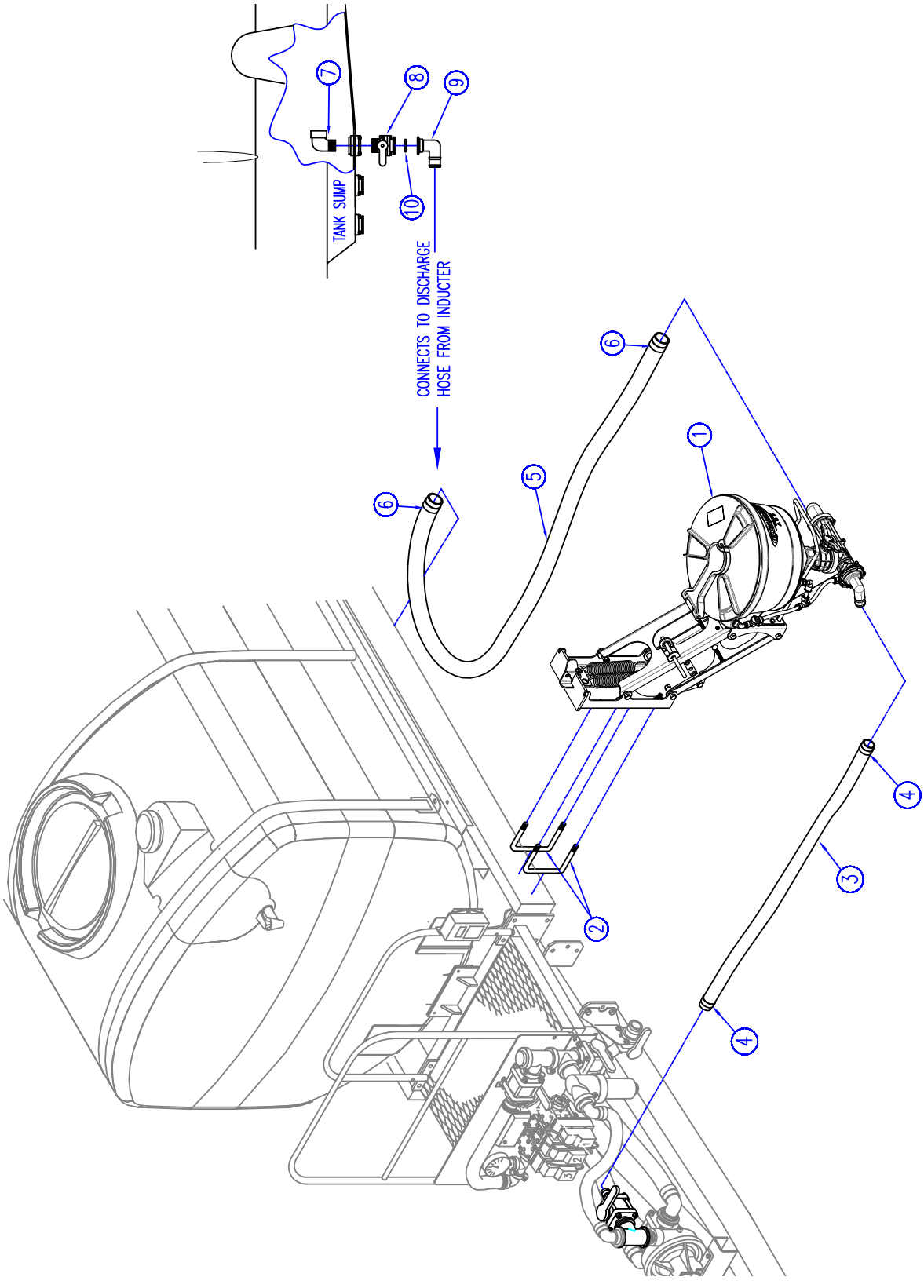
** indicates parts included in spindle assembly (item 10)

Foam Guidance System



Foam Guidance System

REF	P/N	DESCRIPTION	QTY
1	61809	Tank, 50 Gal PCO Poly - Yellow, 1-1/4"fpt Sump Ftg	1
2	TLA-5T	Tank Lid - Ace Tanks with Bestway Logo	1
3	71920	Strap, Tank Hold Down - 66" Nylon	2
4	69553	Buckle, Tank Strap Hold Down	4
5	B38.5FT	Bolt, 3/8NC x 5 ZP, Full Thread	4
	FW38	Washer, Flat - 3/8" ZP	8
	LN38NYL	Lock Nut, 3/8NC Gr5 ZP	4
6	74684	Wment, 50gal PCO Tank Mnt Bracket	2
7	69267	Plug, 1.75sq x 14-18ga. Black	2
8	SU12.6.412	U-Bolt, Sq. - 1/2NC x 4-1/2" x 6" Gr5 ZP	5
	LW12	Washer, Lock - 1/2" ZP	10
	N12	Nut, 1/2NC Gr5 ZP	10
9	AB331	Wment, Foam Guidance System Mnt Bracket	1
10	RB-11434PP	Reducer Bushing, 1-1/4”mpt x 3/4”fpt	1
11	OBK-10	Premium Foam Guidance, Model M-10	1
12	EL-1238PP	Elbow, 1/2 mpt x 3/8 hb Polypro	1
13	B56.1	Bolt, 5/16NC x 1 Gr5 ZP	4
	FW56	Washer, Flat - 5/16" ZP	8
	LN56	Nut, Lock - 5/16NC ZP	4
14	B56.3	Bolt, 5/16NC x 3 Gr5 ZP	2
	LN56	Nut, Lock - 5/16NC ZP	2
15	AB367	Universal Foam Drop Coupler	2
16	AB366	Ribbon Foam Drop Assembly	2
17	AB365	Boot Drop Assembly	2
18	69551	SALAMANDER Foam Tube	2
19	HC-10	Clamp, Worm Gear - 1" Hose, S.S.	2
20	HC-34	Clamp, Worm Gear - 3/4" Hose, 11/16"-1 1/4" S.S.	6
21	AB368	Wment, Foam Drop Mnt	2
22	B38.112SS	Bolt, 3/8NC x 1-1/2 Gr5 S.S.	4
	FW38	Washer, Flat - 3/8" ZP	4
	LN38NYL	Nut, NyLock - 3/8NC ZP	4
23	RB-3412PP	Reducer Bushing, 3/4”mpt x 1/2”fpt	1


TANK SUMP
CONNECTS TO DISCHARGE HOSE FROM INDUCTER
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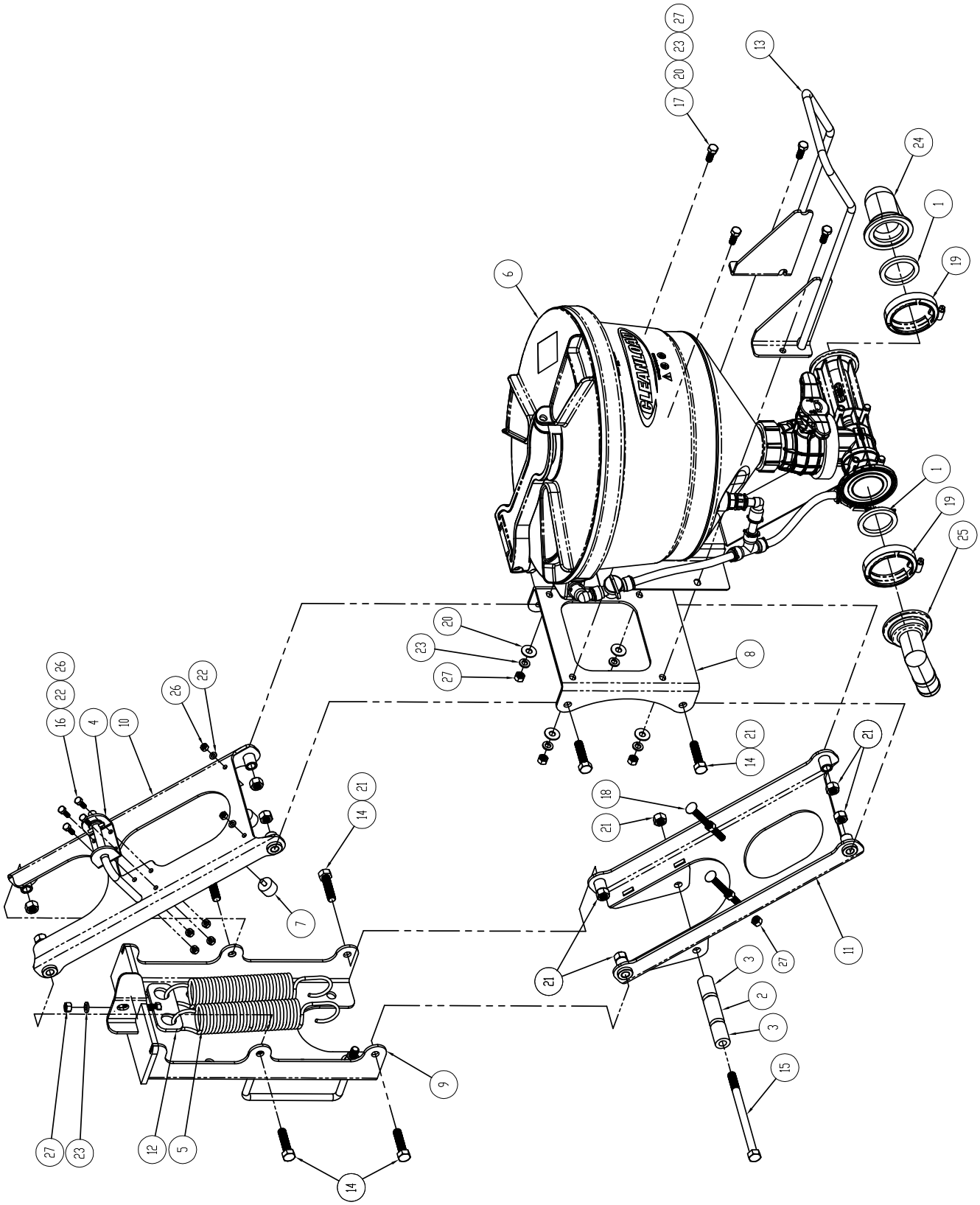
Eductor Kit

REF	P/N	DESCRIPTION	QTY
1	*(see page G27)*	Eductor Assembly	1
2	SU12.6.412	U-Bolt, 1/2NC x 4-1/2 x 6	2
	LW12	Lock Washer, 1/2” ZP	4
	N12	Nut, 1/2NC ZP	4
3	EPDM112	Hose, EPDM 1-1/2”	
4	HC-112HT	Hose Clamp, 1-1/2”	2
5	PH200	Hose, 2” Helix	
6	HC-200HT	Hose Clamp, 2”	2
7	SE-200PP	Street Elbow - 2”mpt x 2”fpt	1
8	VSMT200CF	Ball Valve, Stubby - 2”Manifold x 2”mpt	1
9	M200BRB90	Elbow, 2” Flange x 2” Hose Barb	1
10	150-G	Manifold Gasket	1
	FC200	Manifold Clamp, 2”	1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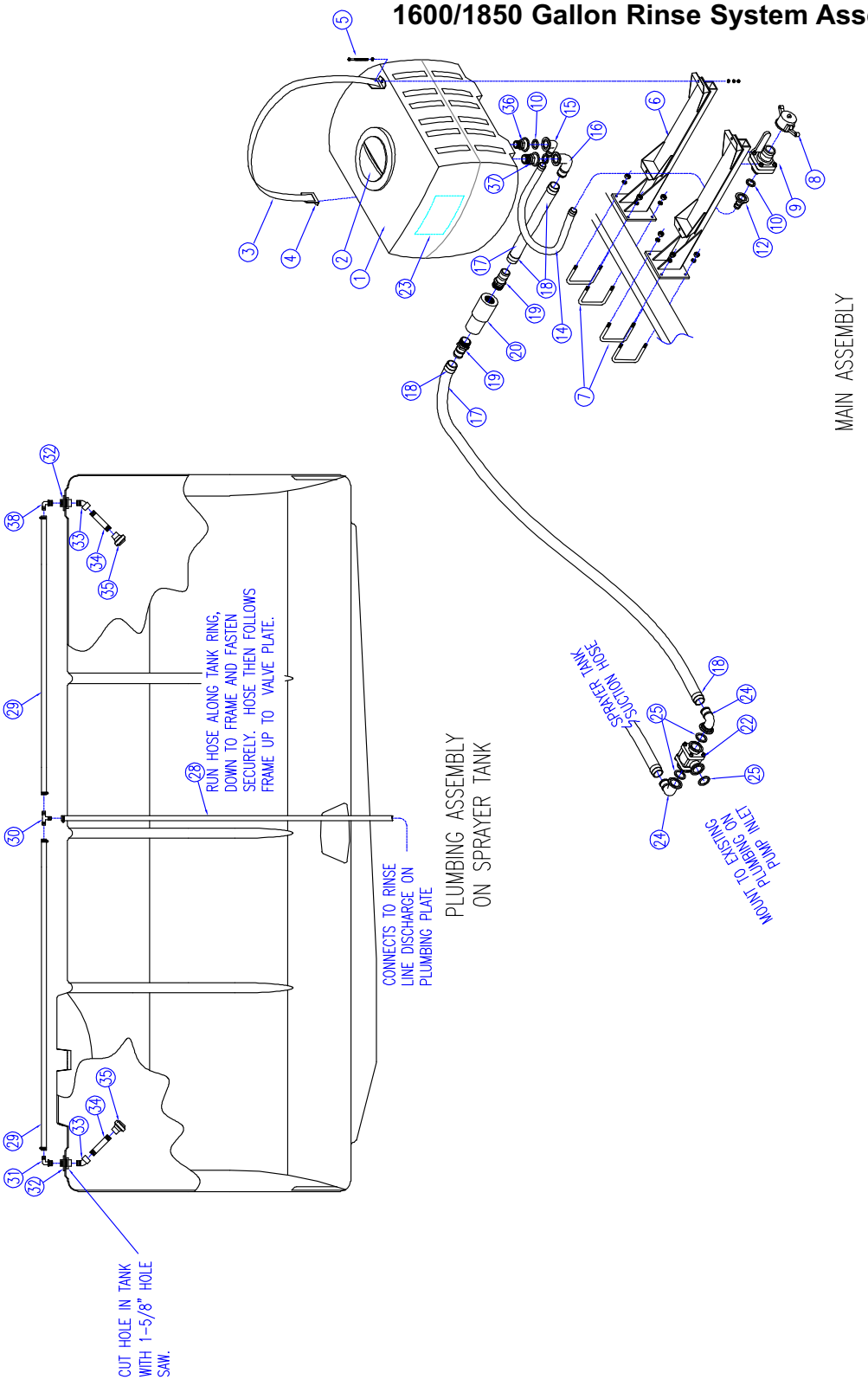
Eductor Assembly

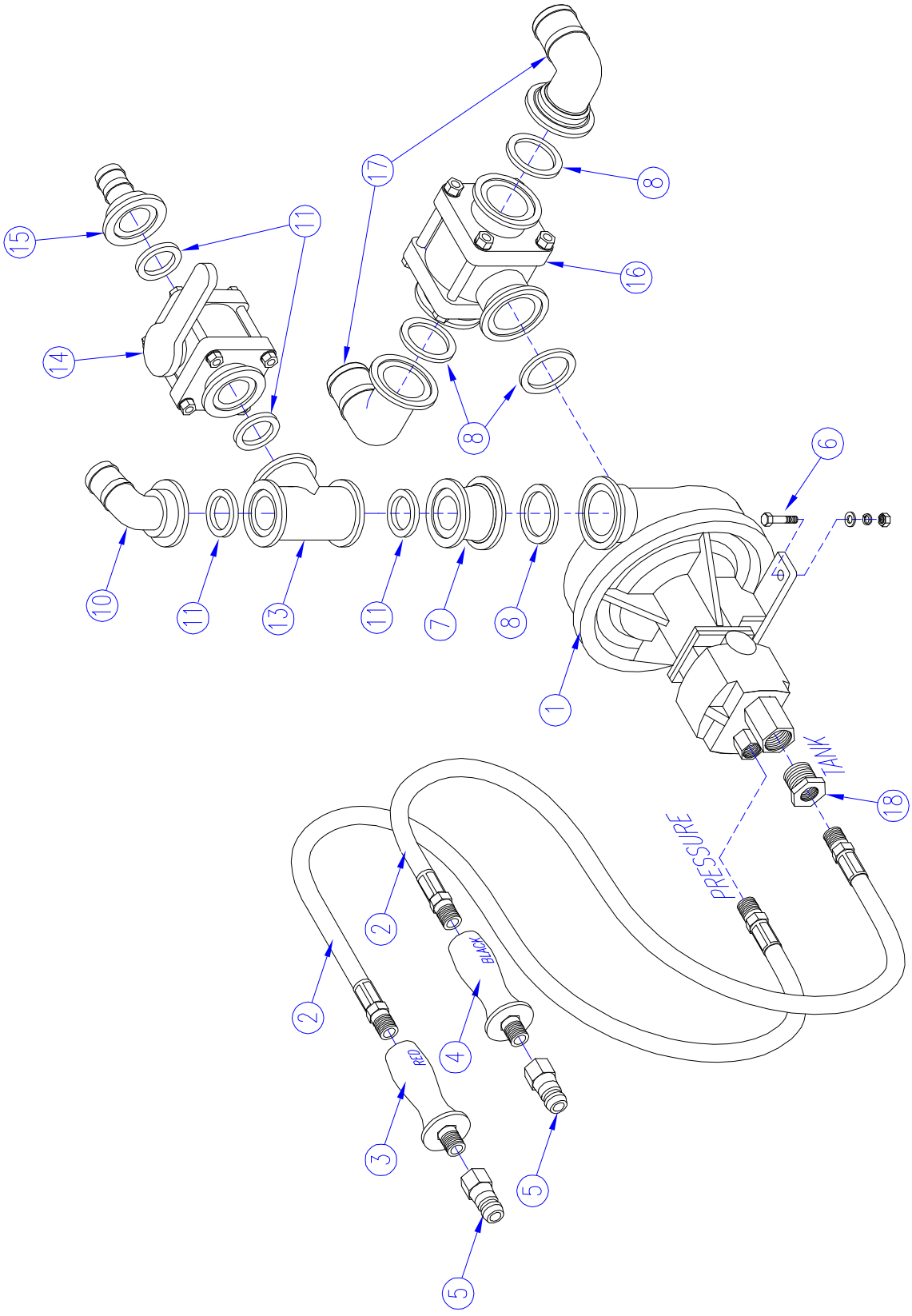
REF	P/N	DESCRIPTION	QTY
1	200-G	GASKET, 2" COUPLER, EPDM	2
2	61352	POLY SPACER, 1"OD X .51"ID X 2" LONG	1
3	61353	POLY SPACER, 1"OD X .51"ID X 1.50" LONG	2
4	61354	LATCH, SPRING LOADED, 3" X 1.75	1
5	61355	SPRING, 10" FREE X 2"OD X .207" WIRE	2
6	61356	EDUCTOR, CLEANLOAD	1
7	62134	BUMPER 8926T31	2
8	76215	EDUCTOR MOUNTING PLATE	1
9	76217	EDUCTOR MOUNTING BRACKET	1
10	76218	EDUCTOR LIFT ARM, TOP	1
11	76219	EDUCTOR LIFTARM, BOTTOM	1
12	76239	SPRING TENSIONER	1
13	76244	HANDLE, EDUCTOR	1
14	B12.2	BOLT, 1/2NC X 2.00" GR5	8
15	B12.7	BOLT, 1/2NC X 7.00" GR5	1
16	B14.34	BOLT, 1/4NC X 3/4" GR5	4
17	B38.1	BOLT, 3/8NC X 1.00" GR5	4
18	B38.5C	BOLT, CARRIAGE - 3/8NC X 5.00"	2
19	FC220	CLAMP, 2" FULL PORT MANIFOLD FITTING	2
20	FW38	WASHER,FLAT-3/8" ZP	4
21	LN12	NUT .50NC GR5 ZP	9
22	LW14	WASHER, LOCK - .25" ZP	6
23	LW38	WASHER, LOCK- .38" ZP	5
24	M220BRB90	ELBOW, 2" FULL PORT MANIFOLD X 2" HB	1
25	M220150BRB90	ELBOW, 2" FULL PORT MANIFOLD X 1 1/2 HB	1
26	N14	NUT .25NC GR5 ZP	6
27	N38	NUT .38NC GR5 ZP	10

1600/1850 Gallon Rinse System Assembly



Rinse System Assembly

REF	P/N	DESCRIPTION	QTY
1	61810	Tank, 100 Gal PCO Poly - Yellow	1
2	TLA-8SL	Lid, Tank - 8" Threaded	1
3	71921	Strap, Tank Hold Down - Nylon	2
4	69553	Buckle, Tank Strap Hold Down	4
5	B38.5FT	Bolt, 3/8NC x 5 ZP, Full Thread	4
	FW38	Washer, Flat - 3/8" ZP	8
	LN38NYL	Lock Nut, 3/8NC Gr5 ZP	4
6	74665	Wment, 100gal PCO Tank Mnt Bracket	2
7	SU12.6.412	U-Bolt, Sq. - 1/2NC x 4-1/2" x 6" Gr5 ZP	4
	LW12	Washer, Lock - 1/2" ZP	8
	N12	Nut, 1/2NC Gr5 ZP	8
8	200-CAP	Dust Cap, 2" Coupler	1
9	VSF200CF	Ball Valve, 2" Manifold x 2" Male Adapter	1
10	150-G	Gasket, 1-1/2" Coupler, EPDM	3
11	FC200	Clamp, 2" Manifold Fitting, (not shown)	3
12	M200125BRB	Barb, 2" Manifold x 1-1/4"hb, Polypro	1
14	PH114	Hose, Plastic Helix 1-1/4", 28"LG	1
	HC-114HT	Clamp, HiTorque - 1-1/4" Hose, S.S	2
15	M200125BRB90	Elbow, 2" Manifold x 1-1/4" hb, Polypro	1
16	M200BRB90	Elbow, 2" Manifold x 2" hb	1
17	PH200	Hose, Plastic Helix 2"	1
18	HC-200HT	Clamp, Hi-Torque - 2" Hose, S.S.	4
19	A-200	Barb, 2 mpt x 2 hb Polypro	2
20	NRV-2000	Non Return Valve, 2"	1
22	MV220SLCF	Ball Valve, 3-way 2"Full Port SL, 2"FPT x 220 Flg.	1
23	61827	Decal, Instruction - Tank Rinse/Flush	1
24	M220BRB90	Elbow, 2" Full Port Manifold x 2" HB	1
25	200G	Gasket, 2" Full Port Manifold Fitting	3
26	FC220	Clamp, 2" Full Port Manifold Fitting, (not shown)	3
27	HC-34	Clamp, Worm Gear - 3/4" Hose, 11/16"-1 1/4" S.S.	6
28	EPDM34	Hose, EPDM 3/4", 300psi	1
29	EPDM34	Hose, EPDM 3/4", 300psi	1
30	T-34	Barb, Tee - 3/4 hb x 3/4 hb, Polypro	1
31	EL-34PP	Elbow, 3/4 mpt x 3/4 hb Polypro	2
32	RP-5032PE	Fitting, 3/4" Double Threaded	2
33	SE-34-45	Street L, 45deg - 3/4"fpt x 3/4"mpt, Polypro	2
34	M-34-6PP	Nipple, 3/4mpt x 3/4mpt x 6, Polypro	2
35	55270-3/4-18-POM	Nozzle, Tank Wash	2
36	M200125MPT	Ftg, 2" Manifold x 1-1/4" mpt	1
37	M200MPT	Ftg, 2" Manifold x 2" mpt	1


17
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TANK
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PRESSURE
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BLACK
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RED
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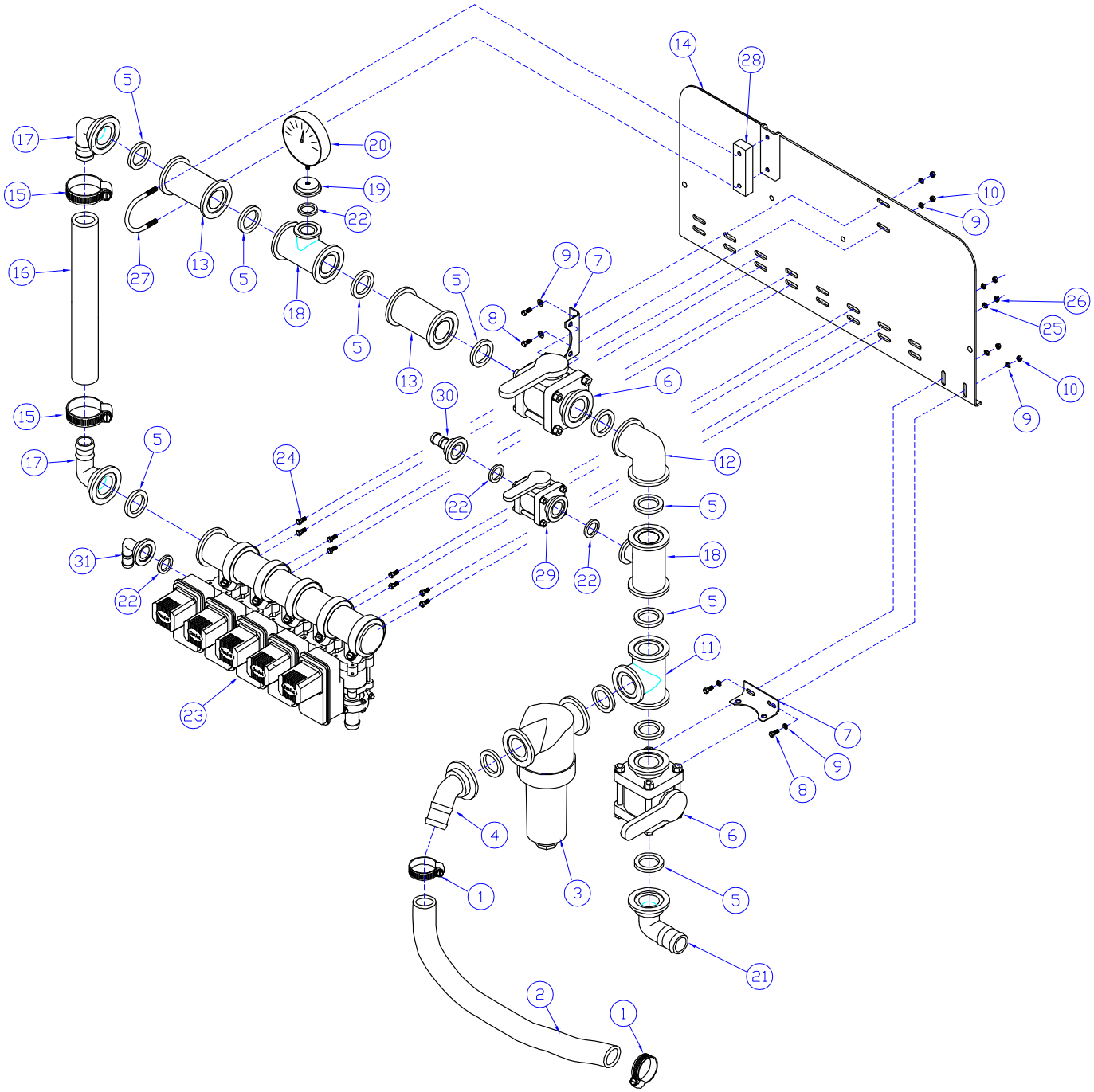
5

9306C-HM5C Pump Kit

REF	P/N	DESCRIPTION	QTY
1	9306C-HM5C-BU	Pump, Hyd. Centrifugal - 2"fpt x 1 1/2"fpt, Black	1
2	69161	Hose, Hyd. - 1/2" x 96", 1/2"mpt x #8MORB	2
3	69821	Hydra Grip - One Pair, Red and Black, RED	1
4	69821	Hydra Grip - One Pair, Red and Black, BLACK	1
5	8FB-QM	Adapter, Hyd. Quick Disconnect-Male Tip x #8ORB	2
6	B38.112	Bolt, 3/8NC x 1-1/2 Gr5 ZP	2
	FW38	Washer, Flat - 3/8" ZP	2
	LW38	Washer, Lock - 3/8" ZP	2
	N38	Nut, 3/8NC Gr5 ZP	2
7	M220200CPG	Red. Coupler, 2” Full Port Manifold x 2” Manifold	1
8	200G	Gasket, 2” Full Port Manifold Fitting	1
9	FC220	Clamp, 2" Full Port Manifold Fitting, (not shown)	1
10	M200BRB45	Elbow, 2” Manifold x 45 degree	1
11	150-G	Gasket, 2" Coupler, EPDM	4
12	FC200	Clamp, 2" Manifold Fitting, (not shown)	4
13	M200TEE	Tee, 2” Manifold, PP	1
14	MV200CF	Ball Valve, 2” Manifold	1
15	M200150BRB	Elbow, 2” Manifold x 1-1/2”HB	1
16	MV220SLCF	Ball Valve, 2” Full Port Flange, 3-way	1
17	M220BRB90	Elbow, 2’ Full Port Flange x 2” HB	2
18	12MP-8FP	Reducer Bushing *(required on pumps mfg. after mid 2010)*	1

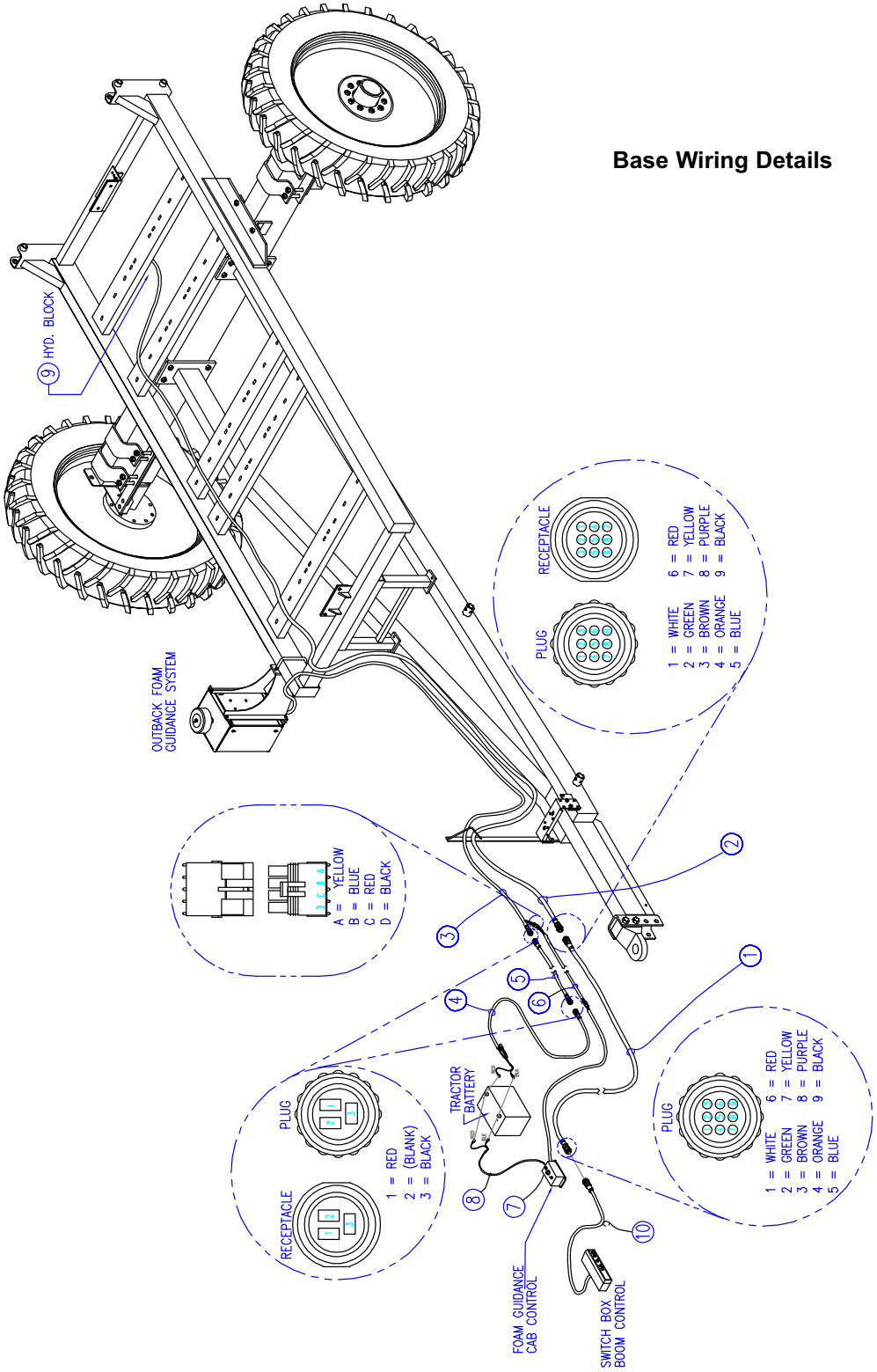
Deluxe Plumbing Plate with 5 Valve Stack Assembly



Deluxe Plumbing Plate with 5 Valve Stack Assembly

REF	P/N	DESCRIPTION	QTY
1	HC-200HT	Clamp, High Torque -2" Hose, S.S	2
2	EPDM200	Hose, EPDM 2", 300psi	1
3	MLST150-50	Strainer, 2" Manifold, "T", 50 mesh	1
4	M200BRB45	Elbow, 2" Manifold x 2" hb, Polypro	1
5	150-G	Gasket, 1-1/2" Coupler, EPDM	12
	FC200	Clamp, 2" Manifold Fitting, (not shown)	12
6	MV200CF	Ball Valve, 2" Manifold	2
7	69423	Bracket, Valve Mount - V150	2
8	B14.34	Bolt, 1/4NC x 3/4 Gr5 ZP	4
9	FW14	Washer, Flat - 1/4" ZP	8
10	LN14	Nut, Lock - 1/4NC ZP	4
11	M200TEE	Tee, 2" Manifold, Polypro	1
12	M200CPG90SH	Coupling Elbow, 2" Manifold, Polypro	1
13	M200CPG	Coupling, 2" Manifold, Polypro	2
14	75423	Wment, Valve Mount Plate	1
15	HC-112HT	Clamp, High Torque - 1-1/2" Hose, S.S	2
16	EPDM112	Hose, EPDM 1-1/2", 300psi, 8"LG	1
17	M200150BRB90	Elbow, 2" Manifold x 1-1/2" hb, Polypro	2
18	M200100TEE	Tee, 2" Manifold x 1” Manifold, Polypro	2
19	M100PLG-025	Plug, Modified - 1/4"fpt, 1" Manifold	1
20	ASG-1604	Gauge, 160# NH3, 4"	1
21	M200125BRB90	Elbow, 2" Manifold x 1-1/4" hb, Polypro	1
22	M100G	Gasket, 1" Manifold, EPDM	6
	FC100	Clamp, 1" Manifold Fitting, (not shown)	6
23	455BEC-3FBF-COC	Ball Valve Manifold (5) 450 Spraying Systems	1
	451BEC-3FBF-COC	Single Replacement Valve	
	50515-7	Motor Drive, COC Connection	
	46070	Clamp & O-Ring Kit	
	7717-2/222-VI	O-Ring	
24	B56.34	Bolt, 5/16NC x 3/4” LG	4
25	FW56	Flat Washer, 5/16	4
26	LN56	Nut, Lock - 5/16NC	4
27	RUB200	U-bolt, S.S. - Manifold Ftg Mount	1
28	60526	Spacer, U-bolt Mount	1
29	MV100CF	Ball Valve, 1" Manifold	1
30	M100075BRB	Barb Fitting, 1” Manifold x 3/4” Hose Barb	1
31	M100075BRB90	Elbow Fitting, 1” Manifold x 3/4” Hose Barb	1

Base Wiring Details

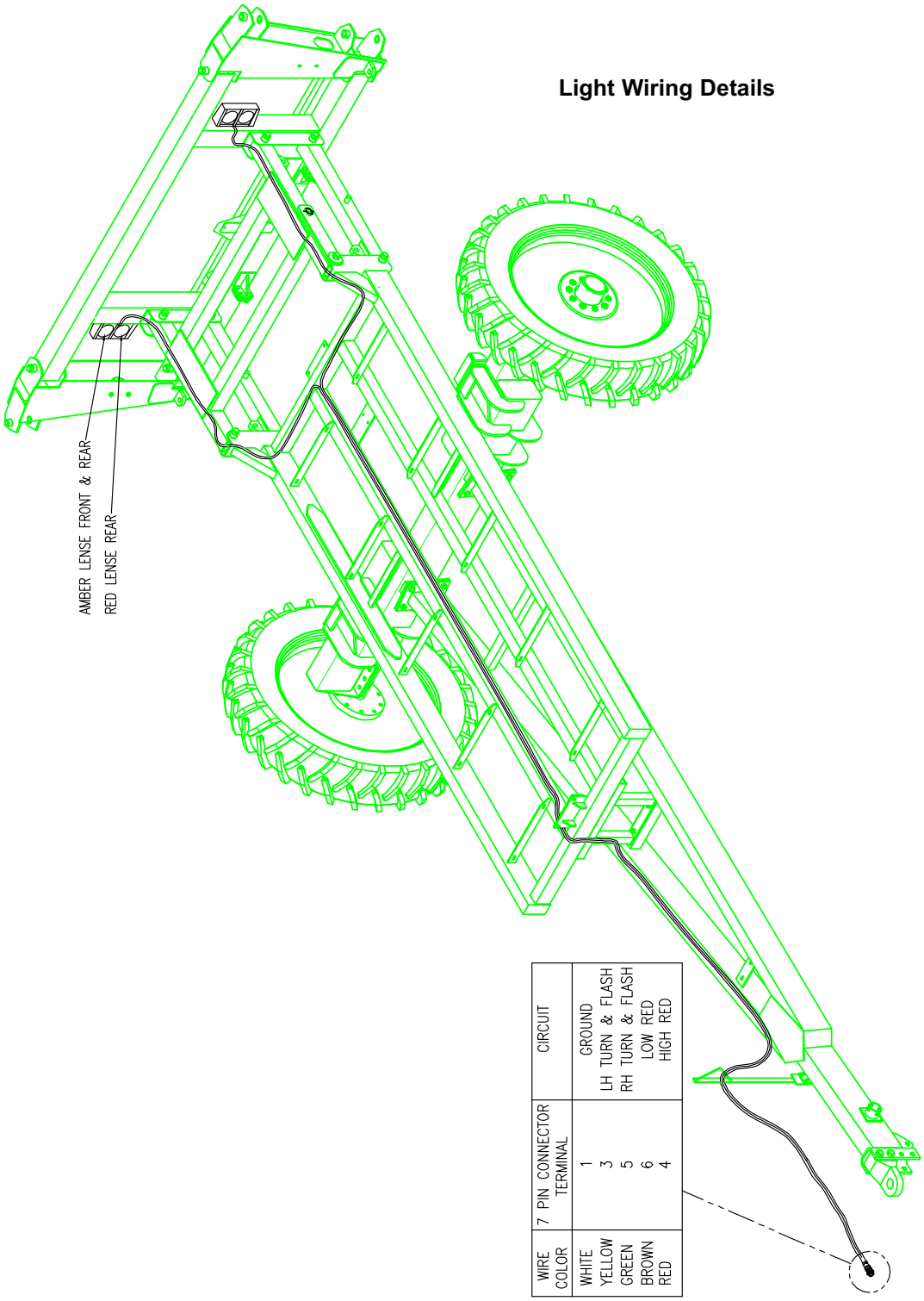


ELECTRICAL WIRING DETAILS

Base Wiring Details

REF	P/N	DESCRIPTION	QTY
1	AB479	Wiring Extension, 10ft - 5 Function Hyd. Control	1
2	69985	Wiring Harness for Hydraulic Boom Manifold	1
3	AB474	Wiring Harness - Main Cable - OBK10	1
	*AB383	Wiring Harness, Models OBK6 & OBKRA	1
4	AB473	Wiring Harness, Battery Cable - OBK10	1
5	AB462	Wiring Extension, 10ft - OBK10 Power, (Optional)	
6	EXT4/14X10	Wiring Extension, 10ft - 14ga x 4wire, (Optional)	
7	AB371	Cab Control Box, OBK Markers	1
8	AB421	Wiring Harness, Battery Cable - 14ga x 12ft	1
9	69784	Hydraulic Manifold Assy.-Prompt(includes item 2)	1
	69984	Hydraulic Manifold Assy.-Fasse (includes item 2)	1
10	AB484	Control, Switch Box - 5 Function	1
10	69982	Pendant Grip Control (optional in place of AB484)	1
	*OBK6 Harness (AB383) does not require a power cable to the battery (item 4)		

Light Wiring Details



WIRE COLOR	7 PIN CONNECTOR TERMINAL	CIRCUIT
WHITE	1	GROUND
YELLOW	3	LH TURN & FLASH
GREEN	5	RH TURN & FLASH
BROWN	6	LOW RED
RED	4	HIGH RED