180 Lake Ave North
Paynesville, MN 56362
Phone: 1-800-864-1649
www.master-mfg.com

MASTER MFG

MASTER MANUFACTURING

40 & 60 GALLON 3-POINT SPRAYER

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ASSEMBLY

Sprayer assembly has been competed at the factory accept for the roller pump that must be supplied by the customer. This unit is designed to work with a 4 or 6 roller pump that will be attached directly to the tractor PTO. Depending on pump choice the spray nozzles may need to be changed to deliver optimum spray coverage. Please refer to the "Boom Operation" section for more information.

Two nylon hose fittings and hose clamps have been provided to join to the pump. Use a good quality thread sealant on each fitting to prevent leaks. After the fittings have been inserted to the pump, push on the two pump hoses to the fittings and secure with the clamps provided.

OPERATION

Check the inside of the tank for any foreign objects or material that could cause damage to the pump.

Fill the tank with clean water. It is always better to have the tank at least half full of water before adding the chemical to avoid possible damage to the sprayer components by an undiluted chemical concentrate.

Before initially running the sprayer, loosen the tee handle of the relief valve. This adjustment should be checked while spraying because a pressure increase will be noted when the sprayer is shut off and the output of the pump is by-passed back to the tank through the relief valve.

Limit the pressure to 150 psi. If, when adjusting the relief valve for more pressure, no increase in pressure occurs, it is an indication that the maximum output of the pump is being used. When the sprayer is shut off the pump will have to overcome the excessive tightness of the relief valve in order to by-pass back to the tank. This will cause pump strain and possible damage and should be avoided.

Choose an operating pressure that provides a spray pattern suitable for the particular operation. Follow the chemical manufacturer's recommendations for mixing and rates of application carefully. Judge the area sprayed tank full of spray material carefully to avoid over or under application rates. Do not use your sprayer for pumping petroleum products, strong acids, paint or other thick materials with heavy viscosity.

General Sprayer Maintenance

Most spray materials are highly corrosive. The most important aspect of long dependable service from the sprayer is a thorough cleaning immediately following each use. In addition, the residue of one type of chemical could cause an undesirable effect when a different chemical is used for a different purpose.

The most effective cleaning method is to pump several rinses of clean water through the tank, pump, hose and spray gun. A neutralizing agent such as a solution of Nutra-Sol, detergent or household ammonia as recommended by the chemical manufacturer can assist in removal of a persistent chemical. Avoid getting chemical on the engine and other external parts of the unit in order to preserve the finish. Remove external spray material deposits when cleaning and flushing unit. A coat of wax applied to the exterior will protect the paint and make clean up easier.

When the unit is thoroughly cleaned, remove the tank filter bowl and drain the water from the tank, spray gun, pump boom and spray gun hose.

Troubleshooting

In the event of inefficient operation or malfunction, check the following:

1. Clean the line strainer after each use or more often, if necessary. A plugged strainer will restrict the flow of liquid to the pump and cause it to perform poorly. Always use clean water and keep the strainer screen in place. Sandy or gritty liquids will damage the components of the pump.
2. Check the hoses for any kings or leaks. Be sure that suction hose is not collapsed or plugged.
3. Nozzle tips should be removed and cleaned with a toothpick or similar object. Avoid nails, wires, etc., that could damage the top opening. The nozzle screens of the boom accessory should also be removed and cleaned periodically. Inspect and replace worn tips to insure satisfactory spraying performance

Storage

This sprayer should always be cleaned and drained before storage. If the unit will be subjected to freezing temperatures, it is imperative that the whole sprayer; pump, hoses, spray gun, gauge, etc., be completely drained and dry. Any water left in the system could cause extensive damage when it freezes. Follow the recommendations of the pump instructions for preventing internal pump corrosion and protection against the rotor and rollers gumming and sticking during storage.

Boom Operation

The spray nozzles used in the boom are marked with the capacity in gallon per minute of water at a pressure of 40 psi. A 3 tip has a capacity of .3 gpm at 40 psi. A 5 has a capacity of .5 gpm at 40 psi. etc.

The spray width coverage of the nozzle will vary according to the pressure, and nozzle height. The wide angle flat spray pattern increases as the pressure is increased.

The amount of material applied by the nozzle is changed by variations in spraying speed, different capacity nozzles, different nozzle spray width and spraying pressures. Other factors such as a heavier or lighter (specific gravity) spraying solution, a change in the chemical-water concentration ratio, worn tip, a worn pump, wheel slippage, a pressure drop from the gauge to the boom, and a pressure gauge variation or malfunction can also cause variations in the rate of application. Uneven coverage can result from a clogged nozzle and a straining screen.

The spraying pressure is usually more in relation to the type of application and the type of tip used than to the rate of application. Since nozzle flow rate is almost proportional to the square root of pressure, it would take four times the amount of range from 10 to 40 psi. The rate of application can be changed somewhat by changing pressure but a considerable change is achieved by using a different capacity nozzle or (if possible) by changing the spraying ground speed.

Dividing the spraying width of the boom in feet into 1000 determines the travel distance required to cover 1000 sq. ft. For example, an 80” spray width will cover 1000 sq. ft. in 150 ft. of travel. Periodic calibration checks at the spraying speed and pressure assure correct application rates. The number of gallons required to refill the tank after spraying (starting with a full tank) over a test distance is the application rate for the area of the test distance.

Multiplying the application rate for the 1000 sq. ft. by 43.56 will determine the application rate per acre or dividing the rate per acre by 43.56 will determine the rate per 10000 sq. ft. If unknown, spraying speed can be determined by measuring the distance travelled in one minute. Every 88 ft. of travel is equal to 1 mph of speed. For instance, a distance of 308 ft. in one minute divided by 88 equals 3.5 mph.

A calibration check can also be made with the unit standing still and the boom spraying at the operation RPM and pressure. Catching the output of the one nozzle for the time it would take to travel the test distance and multiplying by the number of nozzles on the boom will yield the application rate. Water weighs 8.34 lbs. per gallon. Spraying solutions heavier than water will cause a reduction in nozzle output, while solutions lighter than water will increase the nozzle output.

Gallons per Acre, 40" spacing

Nozzle part #	PSI	Flow GPM	4 mph	5 mph	6 mph	7 mph	8 mph	9 mph	10 mph
DF2.0	15	0.24	8.9	7.1	5.9	5.1	4.5	4.0	3.6
Red colored	20	0.28	10.4	8.3	6.9	5.9	5.2	4.6	4.2
nozzle	30	0.35	13.0	10.4	8.7	7.4	6.5	5.8	5.2
	40	0.4	14.9	11.9	9.9	8.5	7.4	6.6	5.9
	60	0.49	18.2	14.6	12.1	10.4	9.1	8.1	7.3
DF2.5	15	0.31	11.5	9.2	7.7	6.6	5.8	5.1	4.6
Brown colored	20	0.35	13.0	10.4	8.7	7.4	6.5	5.8	5.2
nozzle	30	0.43	16.0	12.8	10.6	9.1	8.0	7.1	6.4
	40	0.5	18.6	14.9	12.4	10.6	9.3	8.3	7.4
	60	0.61	22.6	18.1	15.1	12.9	11.3	10.1	9.1
DF3.0	15	0.37	13.7	11.0	9.2	7.8	6.9	6.1	5.5
Gray colored	20	0.42	15.6	12.5	10.4	8.9	7.8	6.9	6.2
nozzle	30	0.52	19.3	15.4	12.9	11.0	9.7	8.6	7.7
	40	0.6	22.3	17.8	14.9	12.7	11.1	9.9	8.9
	60	0.73	27.1	21.7	18.1	15.5	13.6	12.0	10.8

Note: All GPA calculations above are per nozzle.

WARRANTY PARTS SERVICE

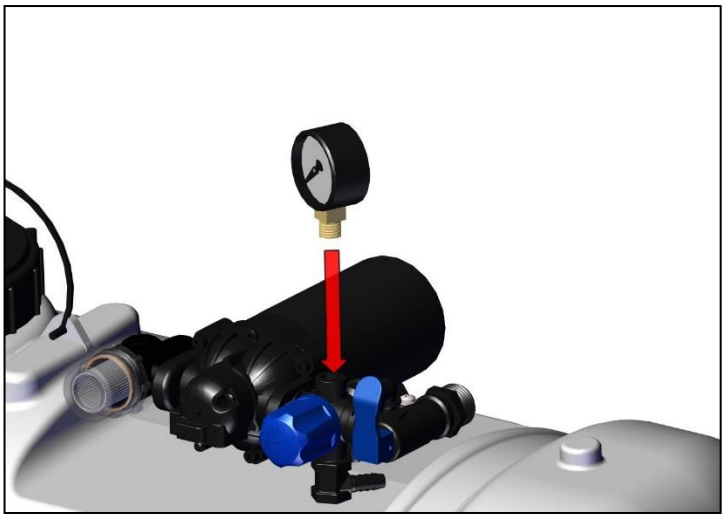
Products sold shall be warranted from defects in workmanship and material when used within the service and scope for which they were designed for a period of one year from date of purchase. Warranty covers replacement parts ONLY. Contact Master Manufacturing for warranty parts at (800) 864-1649. Do not return product to your distributor/dealer. Please have your original sales receipt or other proof of purchase date when requesting any warranty parts. To ensure the correct parts are acquired always provide the model number of your sprayer/attachment and the part number and description obtained from the illustrated parts breakdown in this manual.

NOTE #1

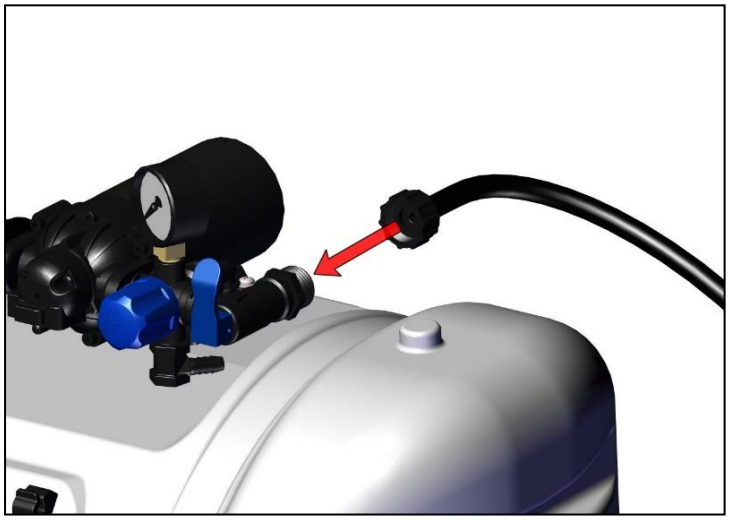
TDS1.5-55	TIE DOWN STRAP, POLYESTER, BLACK, 1.5"x55"(40 Gallon Tank)
TDS1.5-67	TIE DOWN STRAP, POLYESTER, BLACK, 1.5"x67"(60 Gallon Tank)

Pump Assembly

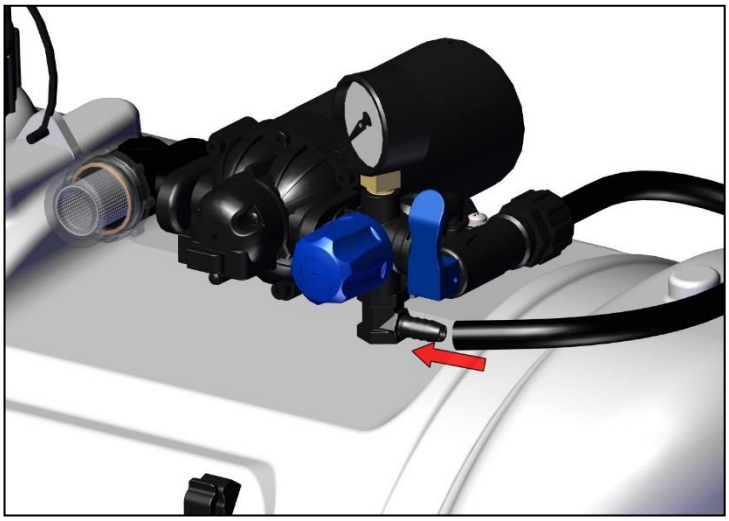
Y our pump comes attached to the tank with the Inlet Hose and Regulator Manifold already attached. You will need to attach the Boom to the pump following the steps below and the diagrams included.



Obtain the Pressure Gauge (1124DAB100) and thread into the Top Port on the Regulator manifold.



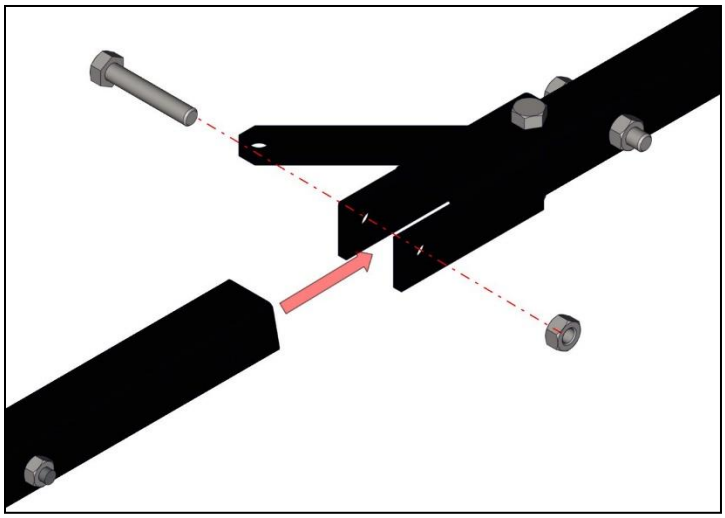
Obtain the Boom Hose and thread onto the Regulator Manifold.



Attach Spray Wand Hose to Elbow Port on bottom of the Regulator Manifold.

Boom Assembly & Installation

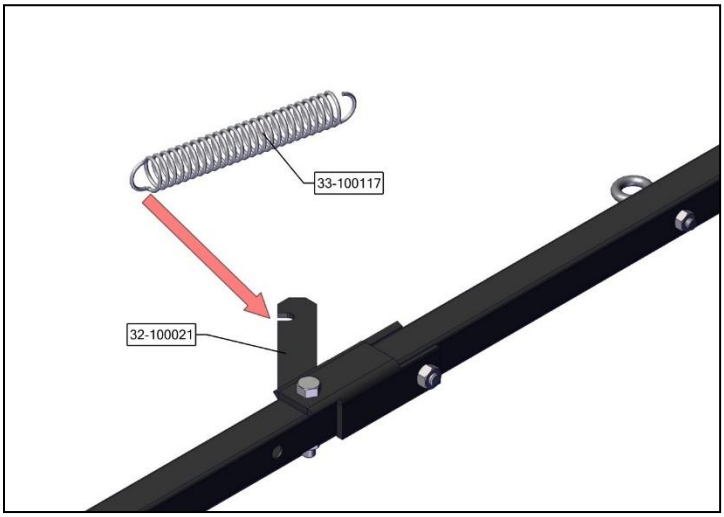
Most of your broadcast boom is put together, but you will need to attach the springs and insert nozzles to complete your boom. After assembling your boom, you can install it on to your 3-point sprayer frame.



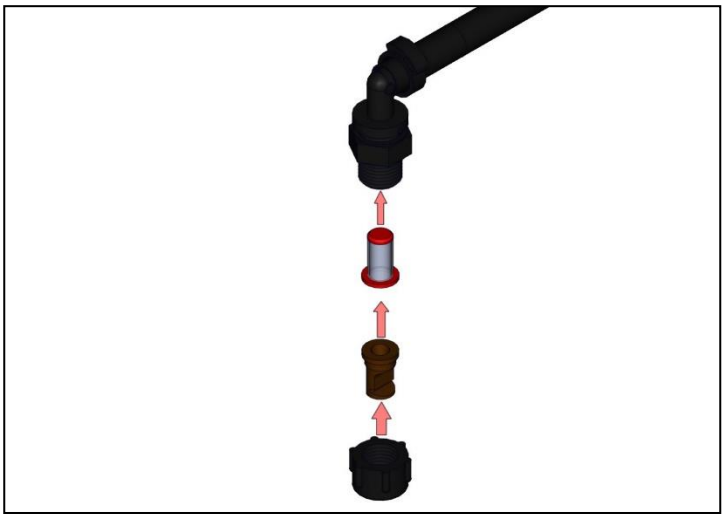
Unscrew Flange Nuts and remove Bolts from hinges on each end of the assembly.

Line up the Boom Extensions inside Hinge Wings.

Re-insert the Bolts and tighten the Flange Nuts with Socket Wrench.



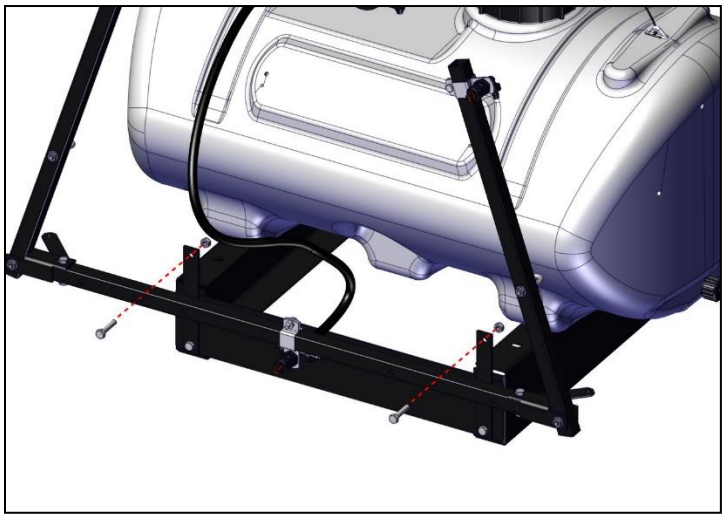
Extend and attach Spring from Boom Eye Bolts to the open holes on the upright portion of the Hinges.



Unthread Nozzle Body Nut and drop Nozzle into Nut for each.

Re-thread Nozzle Body Nuts onto Nozzle Bodies. Confirm that each Nozzle's orifice is facing out from the boom.

Note: Mesh inlet strainer might come out of nozzle body during unthreading of nut. Make sure it is inserted back into Nozzle Body in same orientation it came out.

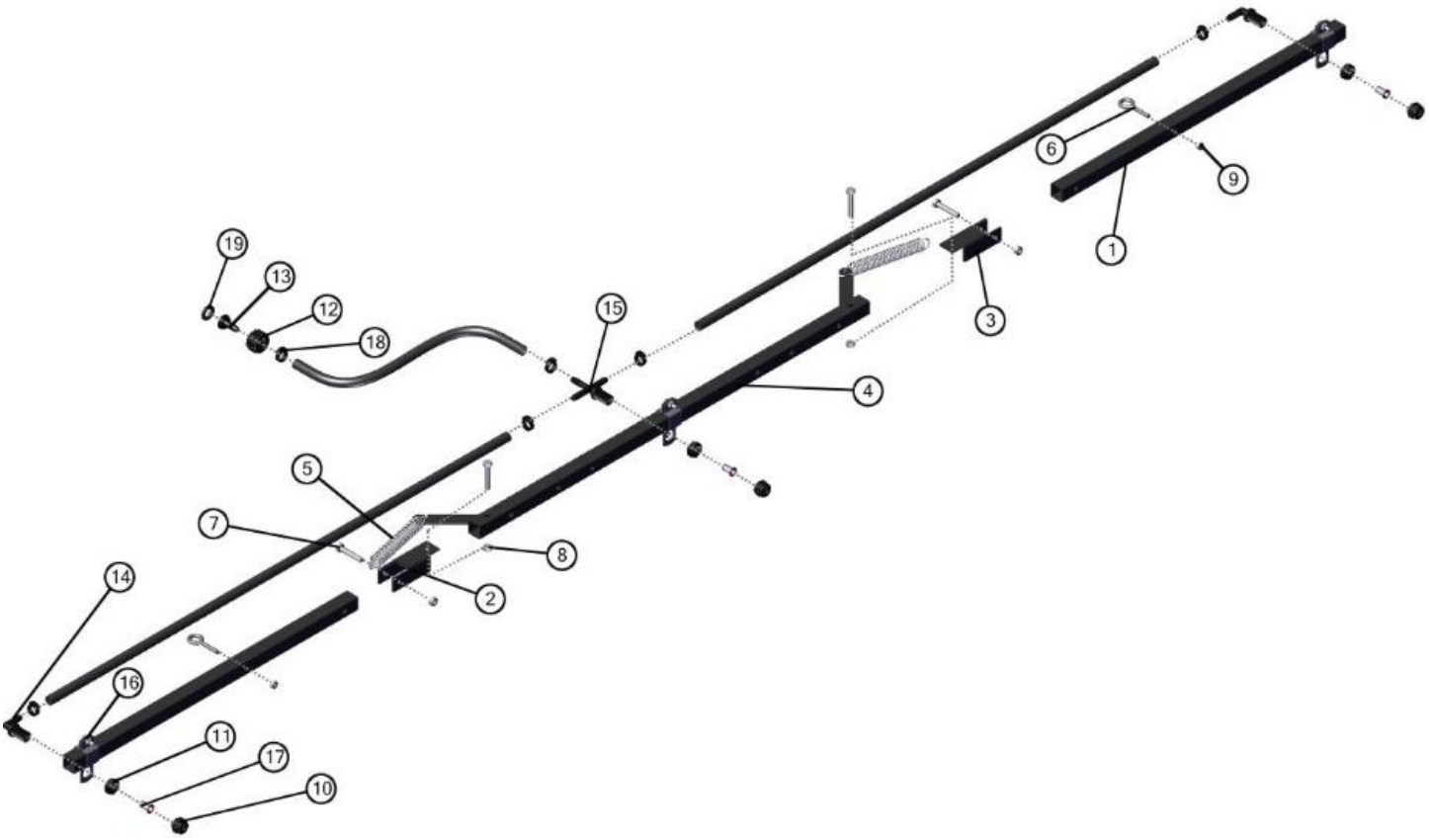


Align Boom Kit holes with open holes on back end of 3-Point Sprayer Frame.

Secure with 1" Bolts and Flange Nuts included with Boom Kit. Tighten with Socket Wrench.

34-140059

Assy., 10' Folding Boom

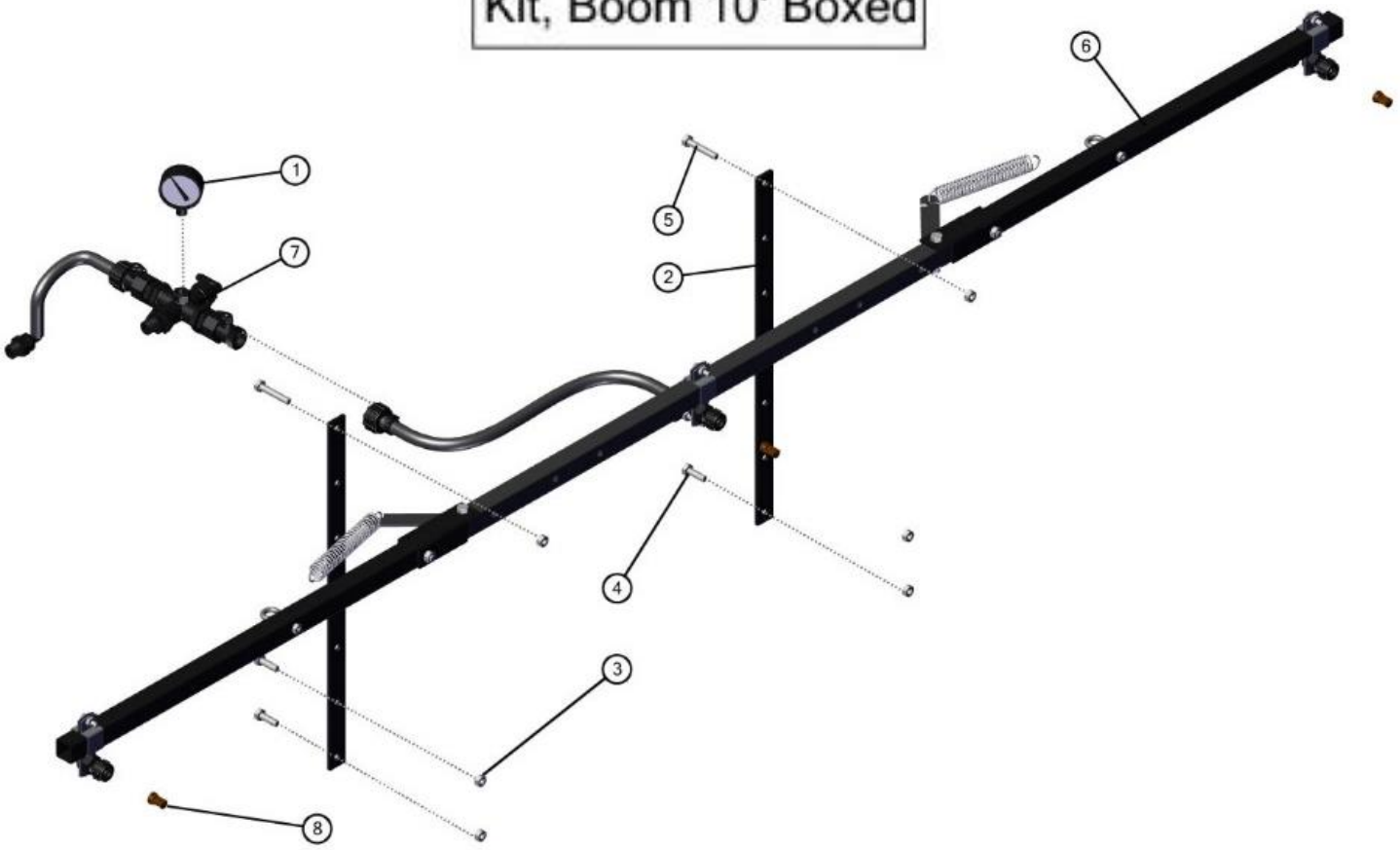


BOM ID	Name	Description	Qty
1	31-100136	L & R BOOM	2
2	31-100137-L	LEFT BREAKAWAY BOOM	1
3	31-100137-R	RIGHT BREAKAWAY BOOM	1
4	32-100021	CENTER BOOM WELDMENT	1
5	33-100117	Spring, EXT>, .75 OD x 6.5" LN	2
6	33-100118	EYE BOLT, 1/4"X1-1/2"X2-1/2"	2
7	33-100119	BOLT, 5/16"-18 X 1.75"	4
8	33-100120	Nut, Lock, 5/16-18	4
9	33-103149	1/4-20 SF Nut	2
10	38027	Nozzle Nut, 11/16"FPS, Poly	3

BOM ID	Name	Description	Qty
11	3B12	Nozzle Nut: 11/16" Poly	3
12	3B34	Swivel Nut: Knurled 3/4"FGHT	1
13	3C38	Flat Seat Hose Barb: 3/8"HB	1
14	3NTL38-C	Elbow: NxTHd-11/16"MPS x 3/8"HB	2
15	3T38C-C	CROSS:NZTHD:11/16	1
16	BCS-100	Boom Clamp, 1", Square	3
17	NS-50	Nozzle Strainer, 50M Red	3
18	SHC-F	SNAPPER HOSE CLIP	6
19	W406V	WASHER: 1"OD X 3/4" ID	1

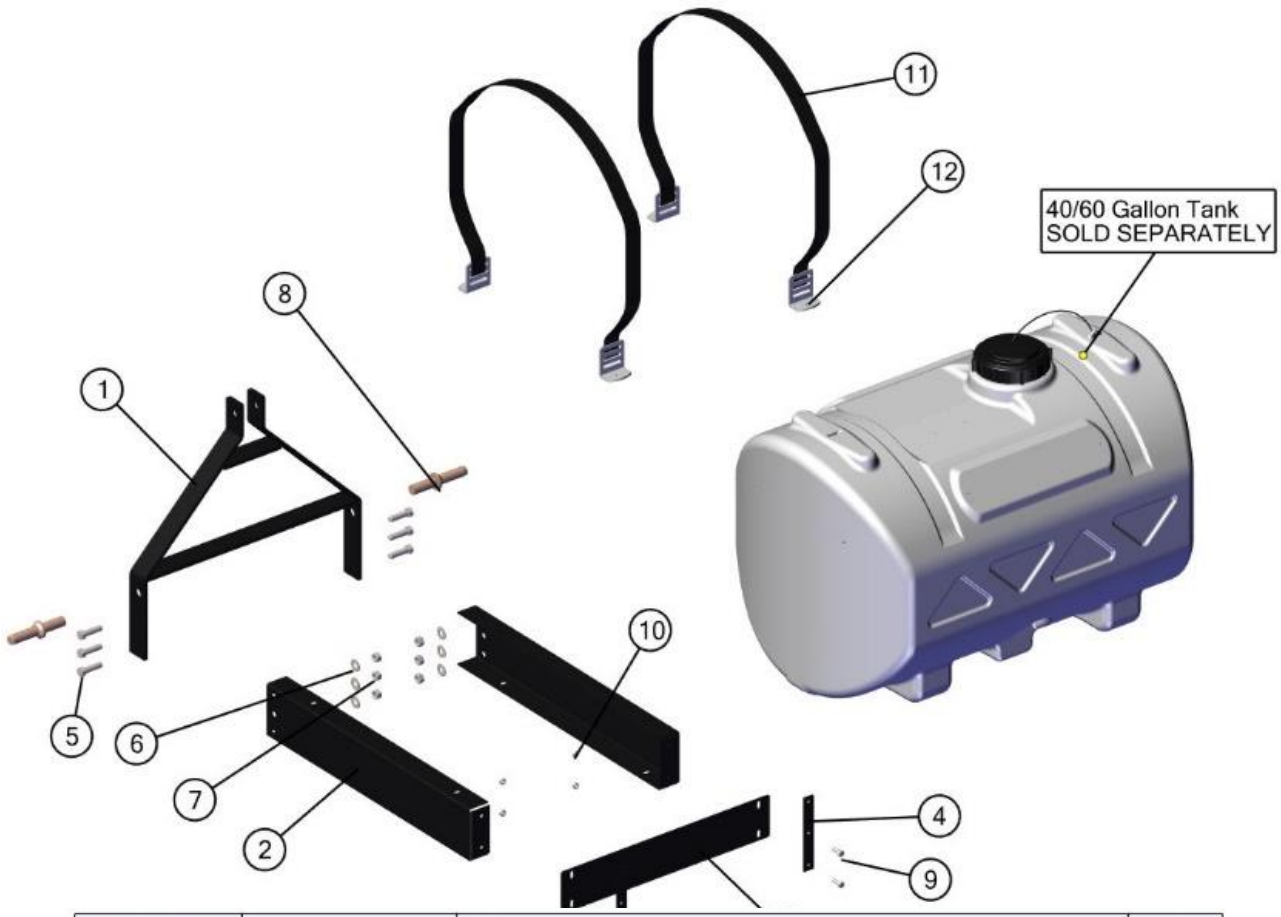
SSBK-10FB

Kit, Boom 10' Boxed



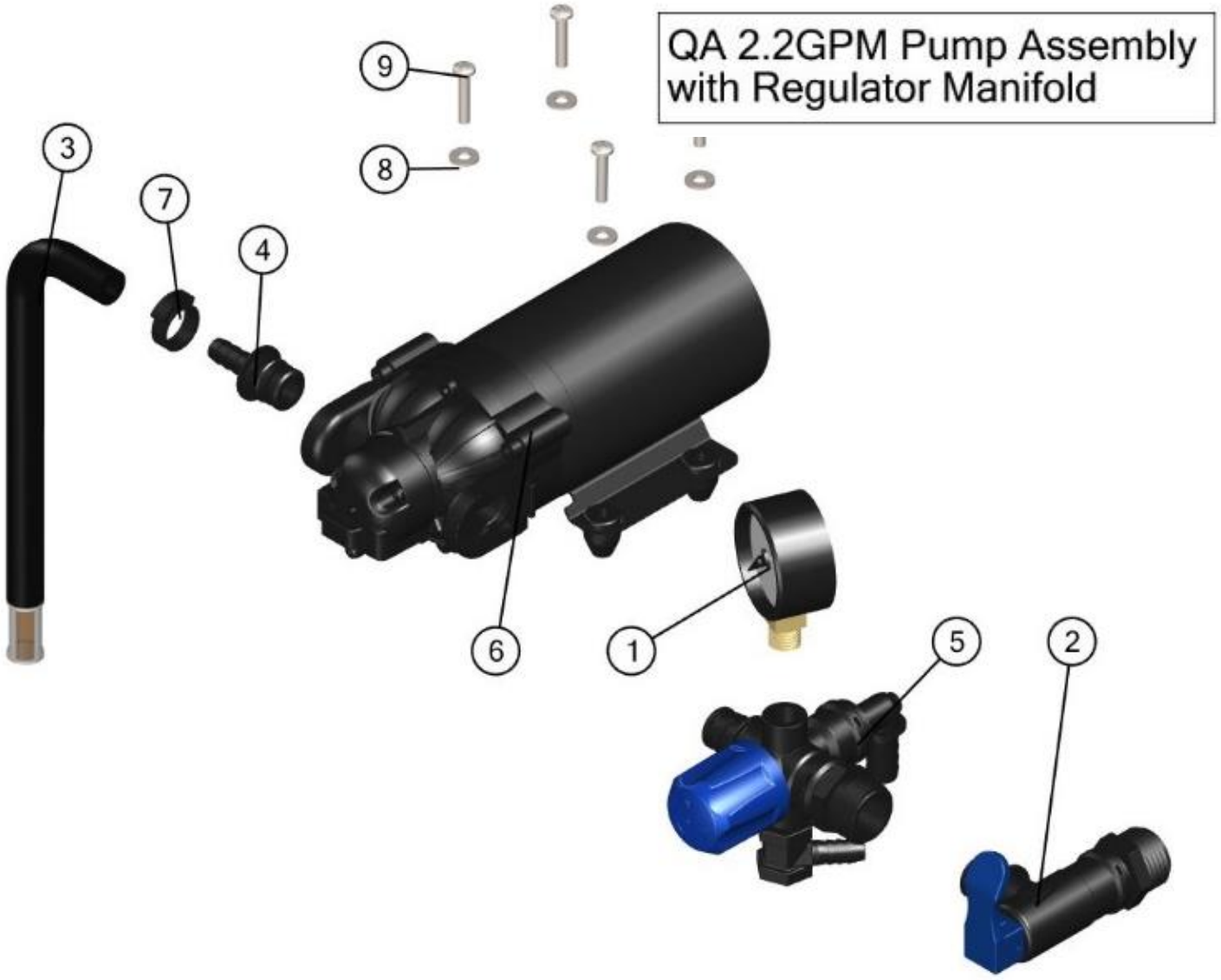
BOM ID	Name	Description	Qty
1	1124DAB100	Gauge, 2"ABS 1/4"LM 100psi	1
2	31-100160	Bracket, Upright, Spray Booms	2
3	33-100113	Nut, 5/16-18, Serrated Flange	6
4	33-100116	Bolt, 5/16-18 x 1"	4
5	33-100119	Bolt, 5/16-18 x 1.75"	2
6	34-140059	ASSY, 10' FOLDING BOOM	1
7	34-140068	MANIFOLD ASSEMBLY WITH RETURN	1
8	DF2.5	Nozzle, Deflect Top, 2.5	3

3 Point Frame Assembly



BOM ID	Part No	Description	Qty
1	32-100079	Frame, 3PNT Link, 40/60 Econo 3PNT	1
2	31-100181	Rail, 40/60 Econo 3PNT	2
3	31-100182	Mount, Boom, 40/60 Econo 3PNT	1
4	31-100187	Bracket, Boom, Econo 3PNT	2
5	33-100177	Bolt, 1/2-13 x 1.25"	6
6	33-100134	Lock Washer, 1/2"	6
7	33-100133	Nut, 1/2-13	6
8	152IP	Implement Pin	2
9	33-100116	Bolt, 5/16-18 X 1"	4
10	33-100133	Nut, 5/16-18 SF	4
11	TDS	SEE NOTE 1	2
12	TD-150	Clamp, Tie Down, 1.5" Strap, Zinc	4

QA 2.2GPM Pump Assembly with Regulator Manifold



BOM ID	Name	Description	Qty
1	1124DAB100	GAUGE, 2" ABS 1/4" LM 100PSI	1
2	34-140161	Valve, On/Off, Male QA x Female QA Ports	1
3	33-103133	HOSE ASSEMBLY, 3/8`X21`, W/FIL	1
4	EF-QC-A38	FITTING, QA x 3/8"HB, BLACK, STRAIGHT	1
5	34-140118	REGULATOR, ASSY, SPRAYER	1
6	EF2200-QA	PUMP, 2.2GPM, 12V, EVERFLO,	1
7	SHC-F	SNAPPER HOSE CLIP	1
8	33-103131	WASHER, #10, ZINC	4
9	33-103127	SCREW, MACHINE, 10-24 X 1"	4