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MASTER
MANUFACTURING

UTV SPRAYER



Rev 28 Aug 2012

UTO-21-060A-MM

Note: Do not return product to the distributor/dealer for warranty work. Call Master Manufacturing at (800) 864-1649 for any warranty work or replacement parts.

ASSEMBLY

Sprayer assembly has been mostly completed at the factory. The following instructions will guide you through the final assembly of your UTV sprayer. Please refer to the figures in this manual for reference to the following assembly instructions.

Frame Assembly: (Refer to the frame assembly figure)

- 1) Remove the sprayer and the other loose components from the carton and place sprayer on a work bench or stable surface.
- 2) To confirm the length the stabilizer arm should be set to, the cargo bed of the UTV needs to be measured. With the tailgate closed measure the inside length of the cargo box and record the measurement for future reference.
- 3) Obtain the two wand clips (item 20) from the accessory bag. Locate the two brass inserts in the tank as shown and attached wand clips to tank with two 10-24 screws provided in package.
- 4) Obtain two of the cylindrical mount rubber bumpers (item 16). On the opposite side of the tank from where the wand clips are located insert the bolts from the bumpers through the two holes located in the frame. Tighten the bumpers securely with two 5/16 serrated nuts (item 16).
- 5) Locate the one of the two sub assemblies consisting of the frame stabilizer (Item 2) and the frame tailgate bracket (item 6). Position the frame stabilizer as shown in the figure and slide it into the main frame assembly. Position the frame stabilizer so the distance from the bumper bolted to the frame, and the bumper attached to the stabilizer is slightly less than the measurement obtained from step 2. Align the slots in the main frame and the stabilizer maintaining the measurement. Using two 5/16"-18 x 1" bolts (item 13) and two 5/16 serrated nuts (item 16) tighten the stabilizer to the main frame securely.
- 6) Repeat step 5 for the stabilizer sub assembly on the opposite side. Make sure the same holes are used the two sub-assembly stabilizers extend from the frame the same amount.
- 7) Obtain the tailgate weldment bracket (item 7) and attach the bracket to the two uprights brackets (item 6) with two 3/8-16x1" bolts (item 18) and two 3/8" locknuts item (17). Ensure there is one bolt on each side of the bracket and the bolts are using the upper hole located in the vertical bracket. Tighten the bolts so the bracket assembly will pivot up and down easily, but is still secure.
- 8) Locate the two pins (item 21) and position both pins in the through the lower holes in the bracket upright (item 6) and the lower holes in the weldment bracket (item 7). This will position the boom in the spraying position. If the parts are assembled correctly these two pins can be removed and the weldment bracket can be hinged upward until the next set of holes is aligned and the pins reinserted. This will hold the bracket and boom assembly at approximately 45 degrees to allow the tailgate to be lowered.

Boom Mount Assembly: (Refer to the frame assembly figure)

- 1) Obtain the two boom tubes (item 3) and slide the tubes up through the square holes located in the bracket (item 7). Ensure the holes in the tube are facing away from the tank as shown in the figure.
- 2) Obtain the two 3/8 thumb screws (item 23) and screw them into the threaded hole on the side of the bracket (item 7) opposite the boom tubes. Tighten these screws hand tight to hold the boom tubes in position.
- 3) Attach the boom bracket (item 4) to the boom tube (item 3) with two 5/16-18x1.75" bolts and two 5/16 serrated flange nuts (item 16) as shown in the figure. Tighten securely
- 4) Attach the center section of the 10' boom to the boom bracket (item 4) with two 5/16-18x1.75" bolts and two 5/16 serrated flange nuts (item 16) as shown in the figure. Tighten securely. The thumb screws may need to be loosened to help align the holes. Once the boom is fastened, by loosening the thumb screws the boom can be re-positioned to the height required and then the thumb screws retightened to hold it into position.

Plumbing Assembly: (Refer to the pump and manifold assembly figure)

- 1) Attach the spray wand hose (item 15) to the pump manifold using the provided hose clamp.
- 2) Attach the spray boom hose to the manifold using the provided hose clamp.

Electrical hook up:

- 1) Attach the red (positive) battery clamp from the wiring harness to the positive side of the battery.
- 2) Attach the black (negative) battery clamp from the wiring harness to the negative side of the battery.
- 3) Ensure the switch is in the off position and then attach the harness two pin connector to the pump.

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.

OPERATION

Initial startup:

- 1.) Check the inside of the tank and remove any foreign objects or material that could cause damage to the pump.
- 2.) Fill the tank half full with clean water and confirm pump and boom operate normally as outlined below before adding any chemical. Check and repair any leaks.
- 3.) Before initially running the sprayer, loosen the tee handle of the regulating valve. The adjustment of this regulator controls the pressure at the gun or the boom, whichever is being operated. This adjustment should be checked while spraying because a pressure increase is expected when the pump is running but the wand nor the boom is activated. When the wand or the boom are both shut off, the output of the pump is by-passed back to the tank through the regulating valve.
- 4.) Limit the pressure to 50 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.
- 5.) Choose an operating pressure that provides a spray pattern suitable for the particular operation.
- 6.) Once the sprayer is confirmed to be setup correctly with no leaks etc., 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. 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.

Boom Operation

- 1.) Four things must be considered before spraying with the boom.
 - a. How much chemical must be mixed in the tank?
 - b. Rate of spray (gallons per acre to be sprayed.)
 - c. What pressure (P.S.I) will be used.
 - d. Speed traveled (M.P.H.) while spraying.
- 2.) Refer to the chemical label to determine the chemical mixture.
- 3.) See the tip chart to determine the pressure to be used. The chart will also show the speed used when spraying.
- 4.) Check the spray pattern. Usually you can see the coverage better on solid concrete surface, such as a driveway to ensure a good pattern.
- 5.) Raise or lower the nozzles so that you will have a good coverage pattern. If you can see dry spots on the concrete surface you will need to raise the nozzles. Too much solution in the pattern areas means you

need to lower the nozzles. Generally the proper height will be from 13 inches to 18 inches from the area to be sprayed. 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.

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, boom 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 pump, frame and other external parts of the unit in order to preserve the finish. Remove external spray material deposits when cleaning and flushing unit. When the unit is thoroughly cleaned, remove the tank drain cap 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 located inside the tank on the end of the hose 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 kinks 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.

WARNING

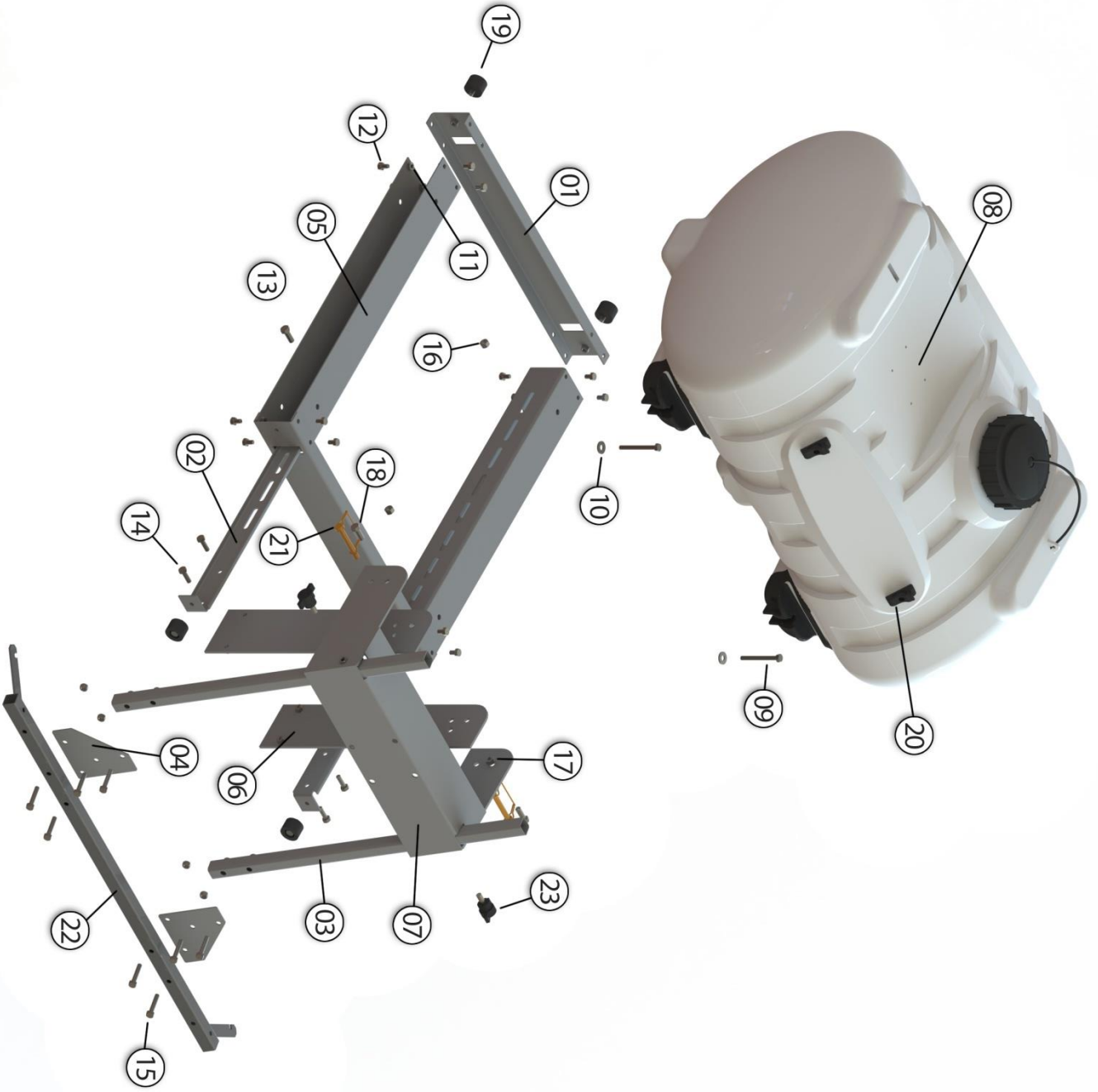
Some chemicals may damage the pump if allowed to soak untreated for a length of time. Always flush the pump and lines with clean fresh water or a neutralizing agent such as a solution of Nutra-Sol after each use.

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 Red colored nozzle	15	0.24	8.9	7.1	5.9	5.1	4.5	4.0	3.6
	20	0.28	10.4	8.3	6.9	5.9	5.2	4.6	4.2
	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 Brown colored nozzle	15	0.31	11.5	9.2	7.7	6.6	5.8	5.1	4.6
	20	0.35	13.0	10.4	8.7	7.4	6.5	5.8	5.2
	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 Gray colored nozzle	15	0.37	13.7	11.0	9.2	7.8	6.9	6.1	5.5
	20	0.42	15.6	12.5	10.4	8.9	7.8	6.9	6.2
	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

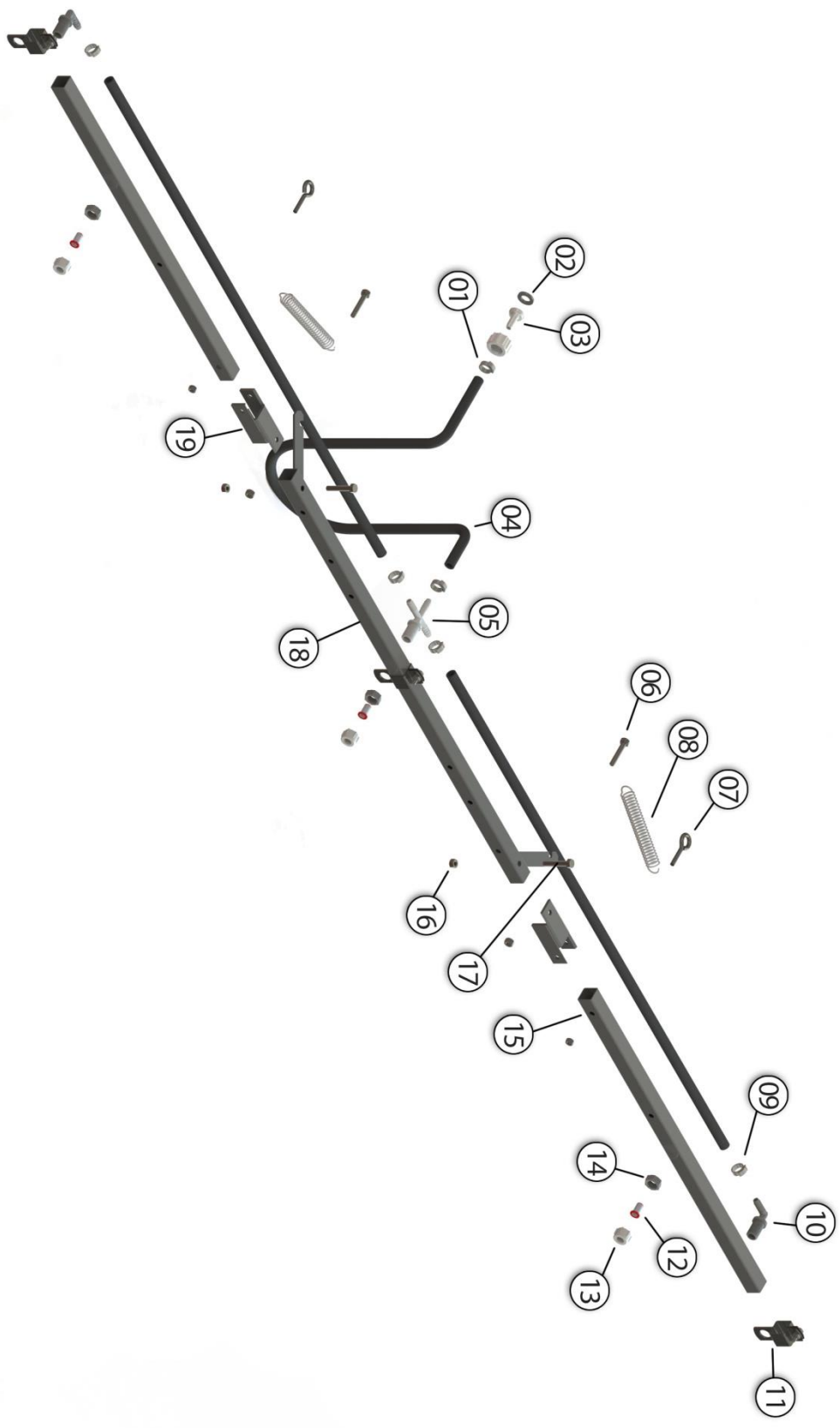
Products sold shall be warranted from defects in workmanship and material when used within the service and scope for which they were designed for a period of one year from date of purchase. Warranty covers replacement parts ONLY. Contact Master Manufacturing for warranty parts at (800) 864-1649. Do not 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.



UTV Frame Parts List

Item#	Part #	Description	Qty.
1	31-100301	Frame, UTV, Cross Brace	2
2	31-100302	Frame, UTV, Stabilizer	2
3	31-100305	Frame, UTV, Boom Tube	2
4	31-100306	Frame, UTV, Boom Bracket	2
5	31-100307	Frame, UTV, Side Rail	2
6	31-100308	Frame, UTV, Tailgate, Bracket	2
7	32-100081	Frame, UTV, Tailgate Weldment	1
8	33-103246	Tank, 60 Gallon, Spot	1
9	33-100122	Bolt, 5/16-18 x 3"	4
10	33-100115	Washer, 5/16", Zinc Plated	8
11	33-100120	Nut, Lock, 5/16-18	4
12	33-100114	Bolt, 5/16-18 x 1/2"	16
13	33-100112	Carriage Bolt, 5/16-18 x 1"	4
14	33-100116	Bolt, 5/16-18 x 1"	4
15	33-100119	Bolt, 5/16-18 x 1.75"	8
16	33-100113	Nut, 5/16-18, Serrated Flange	36
17	33-100136	Nut, Nylon 3/8"	2
18	33-100124	Bolt, 3/8-16 x 1"	2
19	CM-125	Cylindrical Mount	4
20	GC-100-Kit	Clip, Gun, Packaged	1
21	905PA	Pin, Lock for PTO Adaptor	2
22	SSBK-10FB	Kit, Boom, 10' Boxed	1
23	TS-T-3/8-16-1	Screw, Thumb, "T" 3/8"-16 x 1", Black	2

SSBK-10FB

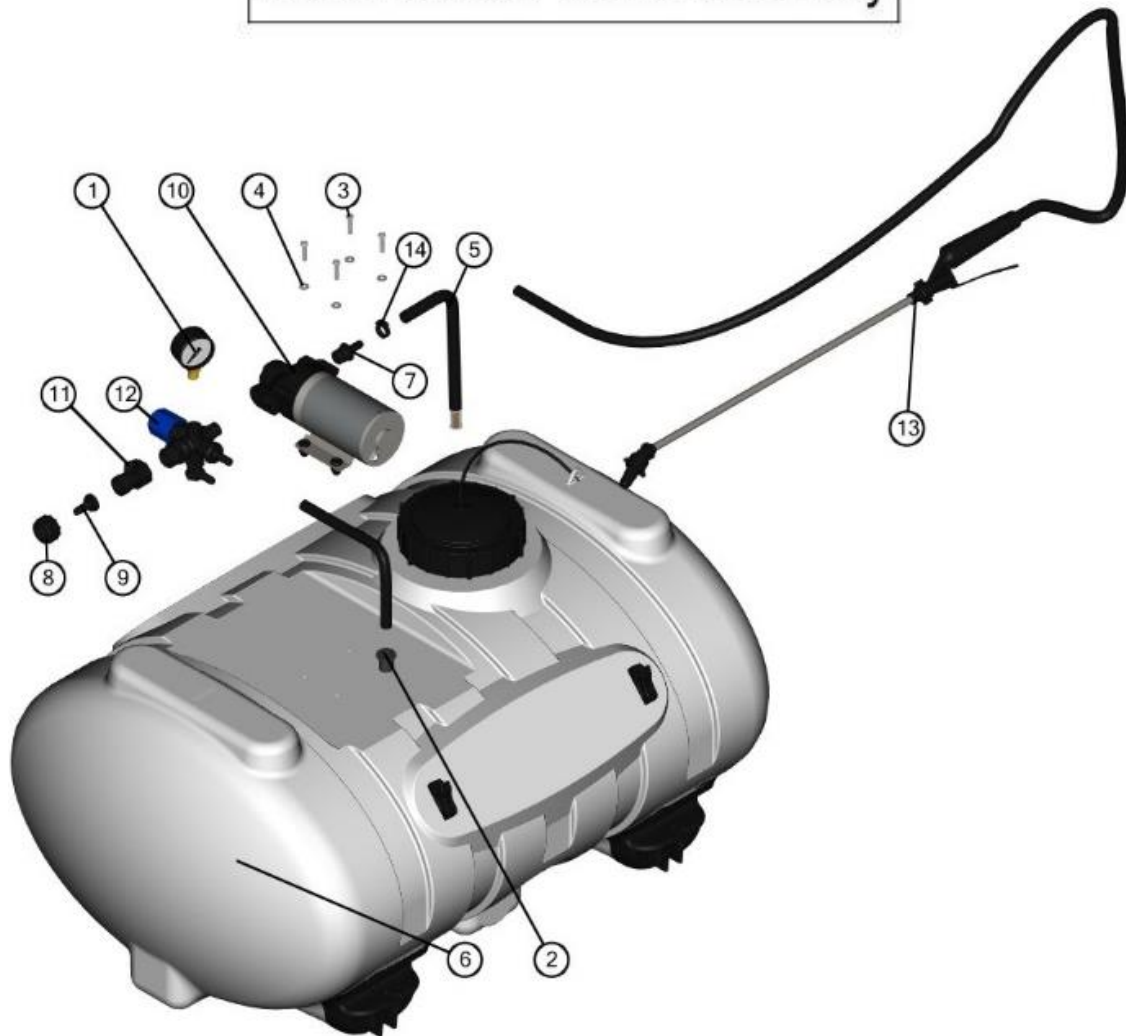


SSBK-10FB Parts List

Item #	Part Number	Qty	Description
1	B34	1	Swivel Garden hose nut
2	W406V	1	Garden Hose washer
3	C38	1	Flat seat 3/8" hose barb
4	3204-1407	3	3/8" Rubber hose x 40"
5	T38C-C	1	3/8" cross nozzle body
6	33-100119	4	Bolt 5/16-18 x 1.75"
7	33-100118	2	Eye bolt, 1/4" x 1.5"
8	33-100117	2	Spring, Extension
9	SHC-F	6	Snapper hose clamp
10	NTL38-C	2	3/8" EL nozzle body
11	BCS-100	3	Boom clamp 1" sq
12	NS-50	3	Nozzle strainer, 50 mesh
13	8027	3	Nozzle nut
14	B12	3	Nozzle body nut
15	31-100136	2	Left and right 10' boom wing
16	33-100120	4	Lock nut 5/16-18
17	31-100137-R	1	Hinge, right
18	32-100021	1	Boom center section
19	31-100137-L	1	Hinge, left

Figure #1

40/60 Gallon Tank Assembly



BOM ID	Name	Description	Qty
1	1124DAB100	Gauge, 2"ABS 1/4"LM 100PSI	1
2	33-100099	Top Hat Grommet	1
3	33-103127	Screw, Machine, 10-24 x 1"	4
4	33-103131	Washer, #10, Zinc	4
5	33-103133	Hose Assembly, 3/8" x 21", W/Fil	1
6	33-103245	Tank, 40 Gallon	1
7	EF-QC-A38	Fitting, 3/8"HB x QC	1
8	3B34	Swivel Nut: Knurled 3/4"FGHT	1
9	3C38	Flat Seat Hose Barb: 3/8"HB	1
10	EF2200-QA	Pump, 2.2GPM Everflo, 12V, Quick Connect	1
11	GHV-1-BLK	Valve, 3/4" FGHT x 3/4" MGHT	1
12	34-140118	Regulator, Assy, Sprayer	1
13	SG-4507F-38-RUB15-P	Spray Gun Assembly, 3/8"x15'	1
14	SHC-F	SNAPPER HOSE CLIP	1