



WORKHORSE

S P R A Y E R S

a Division of Green Leaf, Inc.®

Assembly / Operation Instructions / Parts



DTS Series

40&60 GALLON

DTS Series DELUXE SPRAYERS

Polyethylene Tank

12 Volt Diaphragm Pump

2.2 or 5.0 G.P.M.

Deluxe Pistol Grip Handgun with Adjustable Brass Tip

25 Ft. of 3/8" Hose (handgun)

Pressure Gauge

Adjustable Pressure range (0-60 PSI Max.)

— GENERAL INFORMATION

The purpose of this manual is to assist you in assembling, operating and maintaining your lawn and garden sprayer. Please read it carefully as it furnishes information which will help you achieve years of dependable trouble-free operation.

— ASSEMBLY

Tools required:

- 2 - 1/2" End Wrenches
- 1 - Phillips Screwdriver
- 1 - Pliers
- 1 - Thread Sealant

— WARRANTY / PARTS / SERVICE

Workhorse products are warranted for one year from the date of purchase against manufacture or workmanship defects for personal or homeowner use with proof of purchase. Workhorse products are warranted for 90 days for commercial users. Any unauthorized modification of a Workhorse brand sprayer will void warranty.

Your authorized dealer is the best source of replacement parts & service. To obtain prompt, efficient service, always remember to give the following information:

1. Correct part description and part number.
2. Model number of your sprayer.

Part description and part numbers can be obtained from the illustrated parts list section of this manual.

Whenever you need parts or repair service, contact your distributor/dealer first. For warranty work always take your original sales slip, or other evidence of purchase date, to your distributor/dealer.

— OPERATION

This sprayer is designed to be attached to an ATV rack or other stable surface. The pumping system draws solution from the tank, through the strainer and to the pump. The pump forces the solution under pressure to the spray wand and spray boom. The pump has a pressure switch which will shut the pump off when it reaches 60 PSI. Pressure may be regulated by opening or closing the bypass valve located on the top of the tank. Also, the boom can be cycled on and off with this valve. See the illustration in this manual for more details on using the bypass valve.

Regularly inspect the suction supply screen on the inside of the tank. Flush with water to clear any accumulated debris.

— CALIBRATION

Chemical labels may show application rates in gallons per acre, gallons per 1000 square feet or gallons per 100 square feet. You will note that the tip chart shows all three of these rating systems. Once you know how much you are going to spray then determine (from the tip chart) the spraying pressure (PSI), and the spraying speed (MPH). Conditions of weather and terrain must be considered when setting the sprayer. Do not spray on windy days. Protective clothing must be worn in some cases. **Be sure to read the chemical label carefully.** Determining the proper speed of the tractor can be done by marking off 100, 200 and 300 feet. The speed chart indicates the number of seconds it takes to travel the distance. Set the throttle and with a running start travel the distances. Adjust the throttle until you travel the distances in the number of seconds indicated by the speed chart. Once you have reached the throttle setting needed, mark the throttle location so you can stop and go again (returning to the same speed). Add water and proper amount of chemical to tank and drive to the starting place for spraying. When you are ready to spray, turn the boom valve to the "on" position. This will start solution spraying from the tips once the pump is turned on. The pressure will decrease slightly when the boom is spraying.

— AFTER SPRAYING

After use, fill the sprayer part way with water. Start the sprayer and allow clear water to be pumped through the plumbing system and out through the spray wand and boom. Refill the tank about half full with plain water and use a chemical neutralizer such as Nutra-Sol® or equivalent and repeat cleaning instructions. Flush the entire sprayer with the neutralizing agent. Follow the chemical manufacturer's disposal instructions of all wash or rinsing water.

— WINTER STORAGE

Drain all water and chemical out of sprayer, paying special attention to pump and valves. These items are especially prone to damage from chemicals and freezing weather. The sprayer should be winterized before storage by pumping a solution of RV antifreeze through the entire plumbing. Proper care and maintenance will prolong the life of the sprayer.

RATE CHART FOR 80/110-02 SPRAY TIP

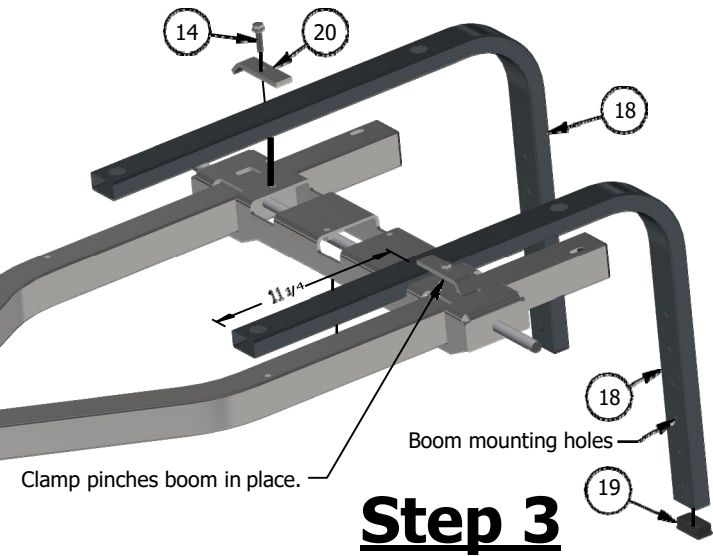
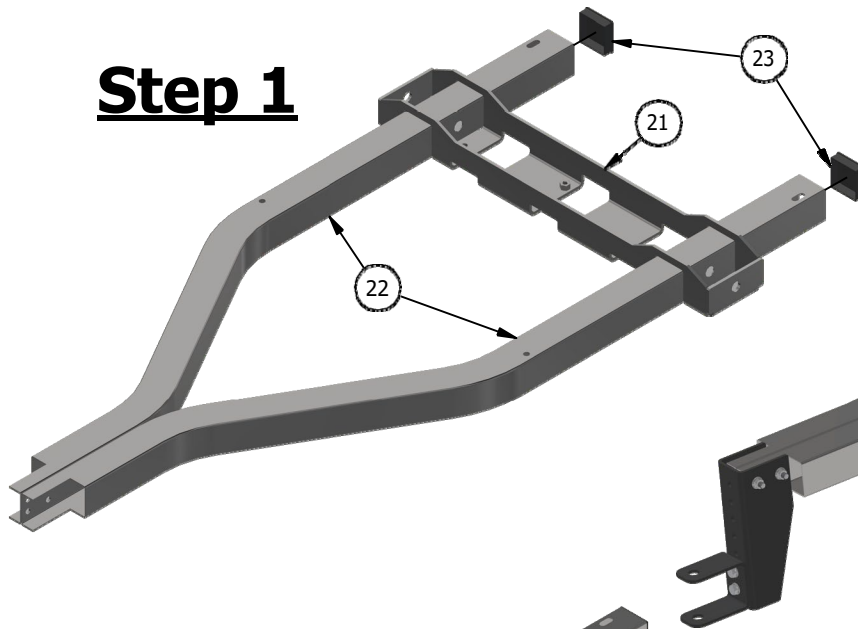
Pressure (PSI)	Capacity (GPM)	GALLONS PER ACRE BASED ON WATER - 20" SPACING							
		1 MPH 88 FPM	2 MPH 176 FPM	3 MPH 264 FPM	4 MPH 352 FPM	5 MPH 440 FPM	7.5 MPH 660 FPM	10 MPH 880 FPM	
20.0	0.14	41.8	20.9	14.0	10.5	8.4	5.6	4.2	
30.0	0.17	51.2	25.6	17.2	12.9	10.3	6.9	5.1	
40.0	0.20	59.2	29.6	19.8	14.9	11.9	7.9	5.9	
50.0	0.23	66.4	33.2	22.2	16.6	13.3	8.8	6.6	
Pressure (PSI)	Capacity (GPM)	GALLONS PER 1000 SQ. FT. BASED ON WATER - 20" SPACING							
20.0	0.14	.96	.48	.32	.24	.19	.13	.10	
30.0	0.17	1.18	.59	.39	.30	.24	.16	.12	
40.0	0.20	1.36	.68	.45	.34	.27	.18	.14	
50.0	0.23	1.52	.76	.51	.38	.31	.20	.15	
Pressure (PSI)	Capacity (GPM)	GALLONS PER 100 SQ. FT. BASED ON WATER - 20" SPACING							
20.0	0.14	.096	.048	.032	.024	.019	.012	.009	
30.0	0.17	.117	.059	.039	.029	.024	.015	.011	
40.0	0.20	.135	.066	.045	.034	.027	.018	.013	
50.0	0.23	.152	.076	.050	.038	.030	.020	.015	

MPH- Miles Per Hour • FPM- Feet Per Minute • PSI- Pounds Per Square Inch • GPM- Gallons Per Minute

 **WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer. www.P65Warnings.ca.gov

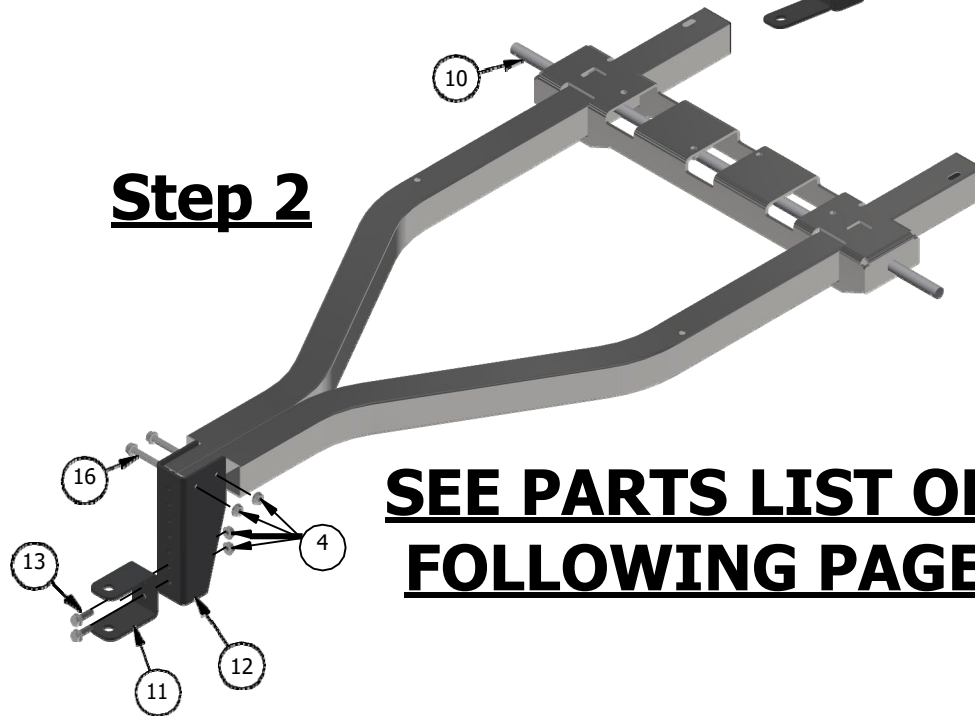
WARNING: Some chemicals will damage the pump valves if allowed to soak untreated for a long period of time. Always flush the pump with water after use. Do not allow chemicals to sit in pump for extended times of idleness. Follow chemical manufacturers instructions on disposal of all waste water from the sprayer.

Step 1

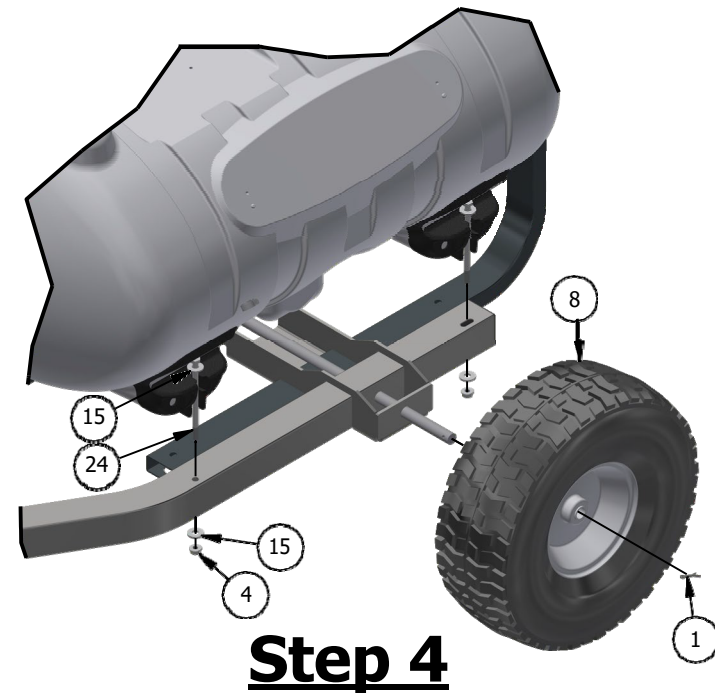


Step 3

Step 2



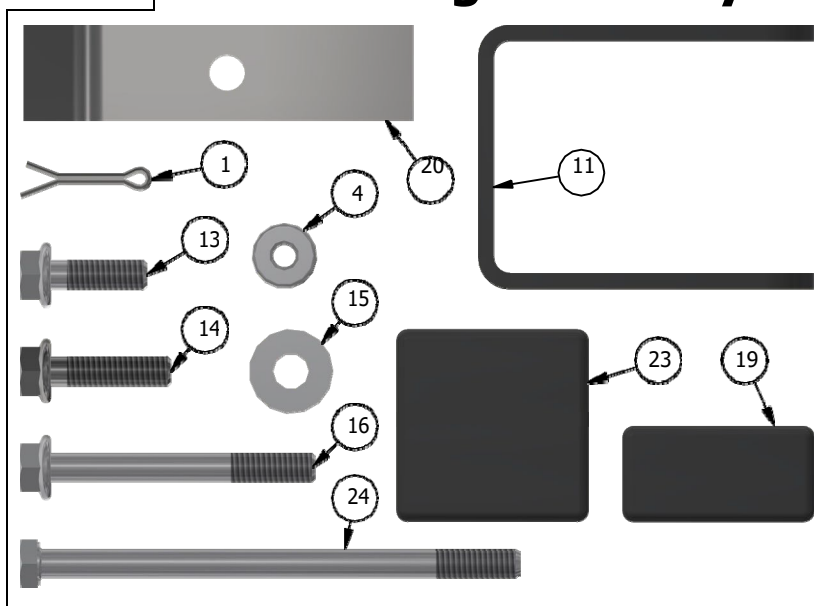
**SEE PARTS LIST ON
FOLLOWING PAGE**



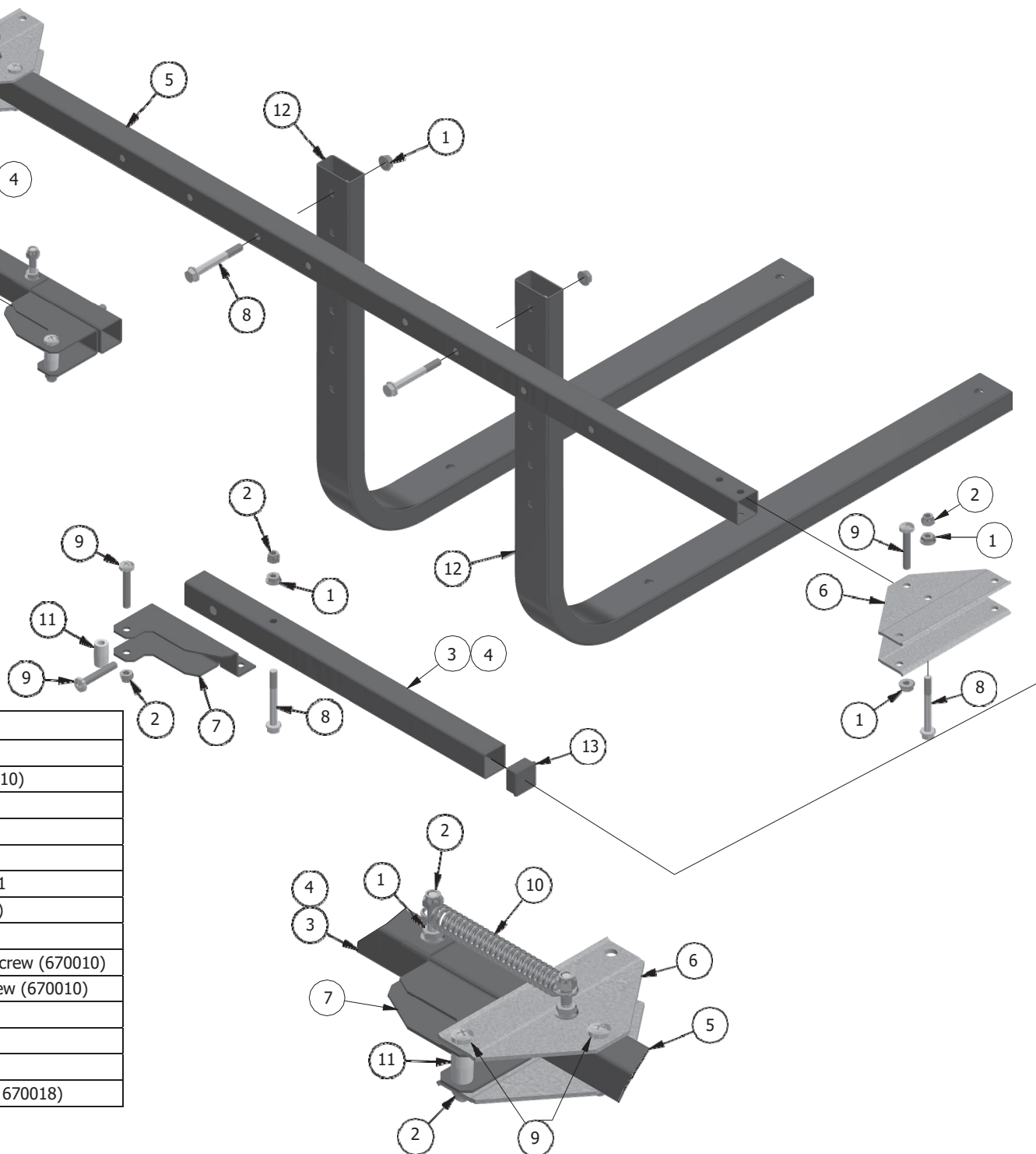
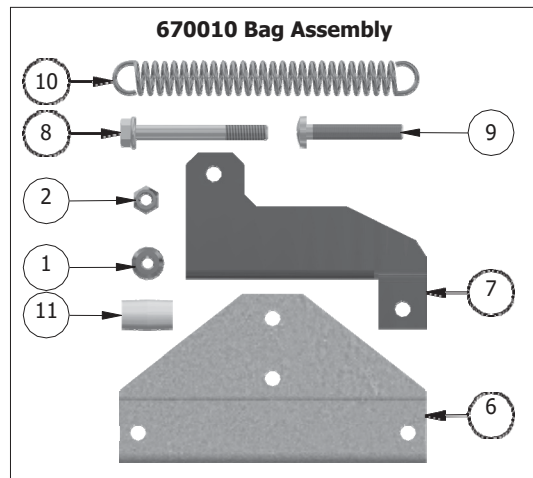
Step 4



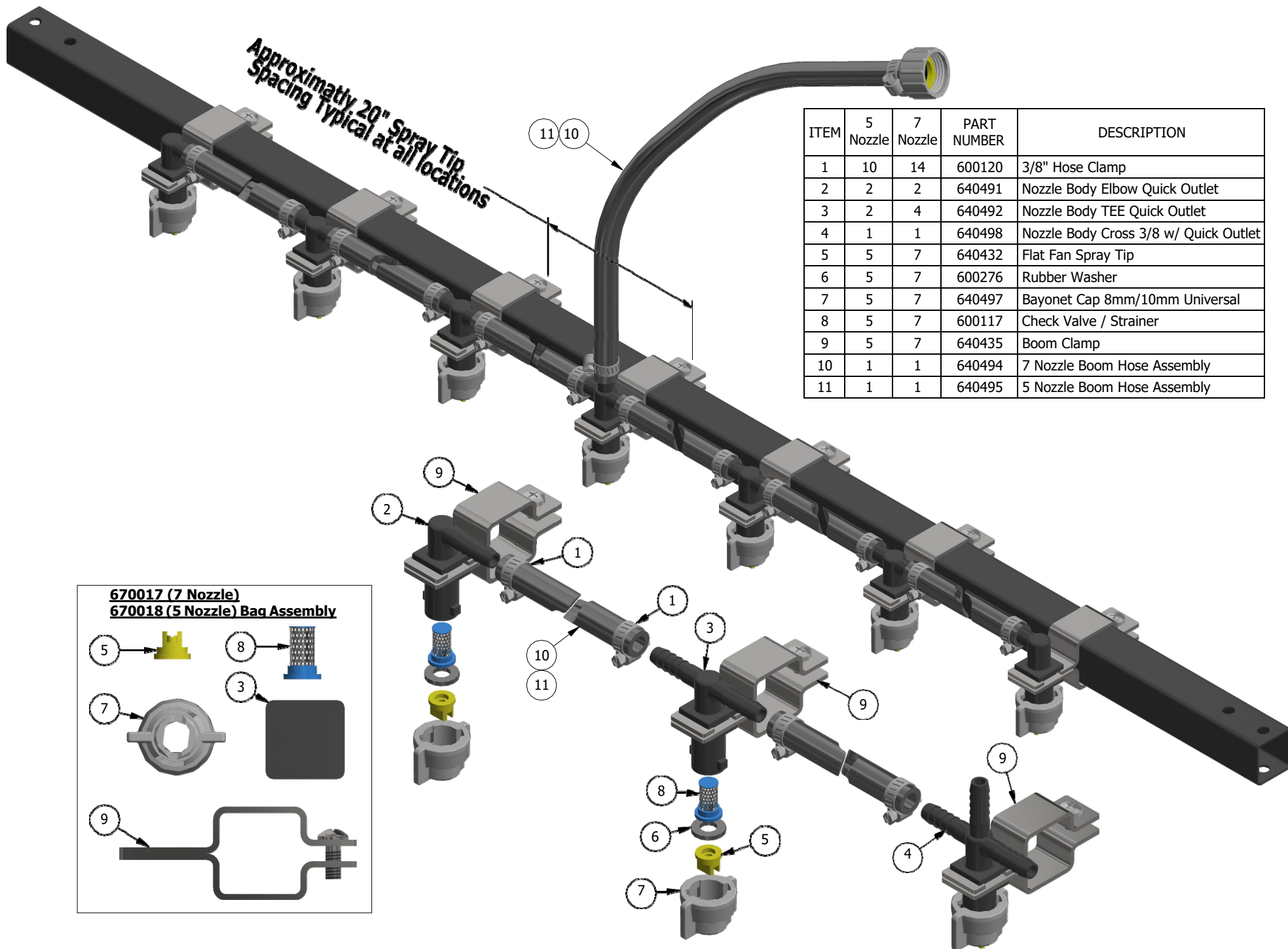
670023 Bag Assembly



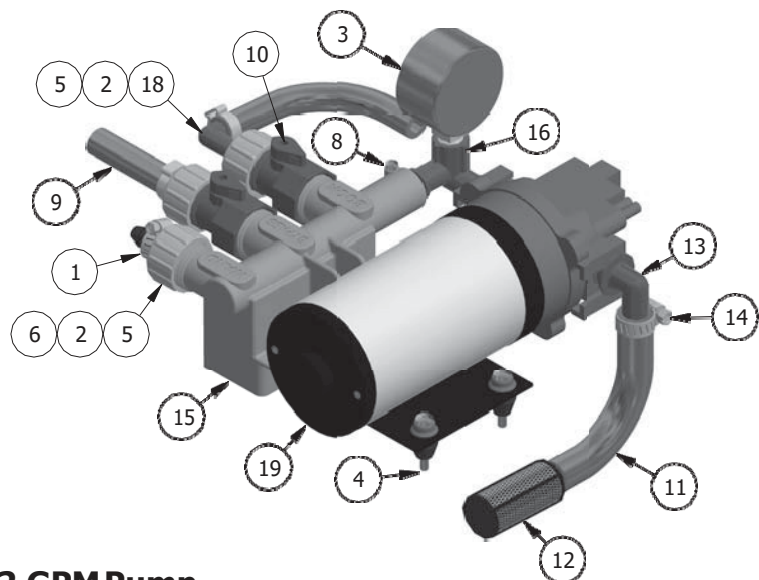
PARTS LIST			
ITEM	QTY	PART #	DESCRIPTION
1	2	600108	Cotter Pin 1/8" x 1 1/8"
2	1	600133	Tank Lid
3	1	600134	Lid Lanyard
4	10	600172	5/16-18 Hex Flange Nut
5	1	600240	40 Gallon Tank (Dependent on Model)
6	1	600259	Deluxe Wand with 25ft Hose
7	1	640000	60 Gallon Tank (Dependent on Model)
8	2	640104	15x6-6 Tire Assy
9	2	640105	Hose Wrap Horn 3c Small Hole
10	1	640405	5/8 Axle
11	1	640409	Hitch Bracket
12	1	640410	Hitch
13	2	640420	5/16-18 x 1" Flange Cap Screw
14	2	640421	5/16-18 x 1 1/4" Flange Cap Screw
15	8	640422	Washer 5/16" Wide ϕ 7/8
16	4	640423	5/16-18 x 2 3/4" Flange Cap Screw
17	2	640458	10-24 x 1/2" Truss Head Screw
18	2	640463	Bottom Bar - Bent Rev 1
19	2	640485	1x2 Rectangular Cap
20	2	640505	Boom Retainer
21	1	640506	40/60 Axle Support
22	2	640507	40 Gal Trailer Frame Steel
23	2	640508	2"x2" Square Cap
24	4	640511	Bolt 5/16-18 X 5"



PARTS LIST			
ITEM	QTY	PART #	DESCRIPTION
1	10	600172	5/16-18 Hex Flange Nut (670010)
2	6	620106	5/16-18 Locknut (670010)
3	2	640412	5 Nozzle Boom Arm
4	2	640413	7 Nozzle Boom Arm
5	1	640414	45" Center Boom Section Rev 1
6	4	640416	Boom Center Bracket (670010)
7	2	640417	Boom Arm Bracket (670010)
8	6	640423	5/16-18 x 2 3/4" Flange Cap Screw (670010)
9	6	640426	5/16-18 x 2" Phillips Head Screw (670010)
10	4	640428	Spring (670010)
11	2	640459	Boom Spacer (670010)
12	2	640463	Bottom Bar - Bent Rev 1
13	2	640486	1 1/4" Square Cap (670017 or 670018)



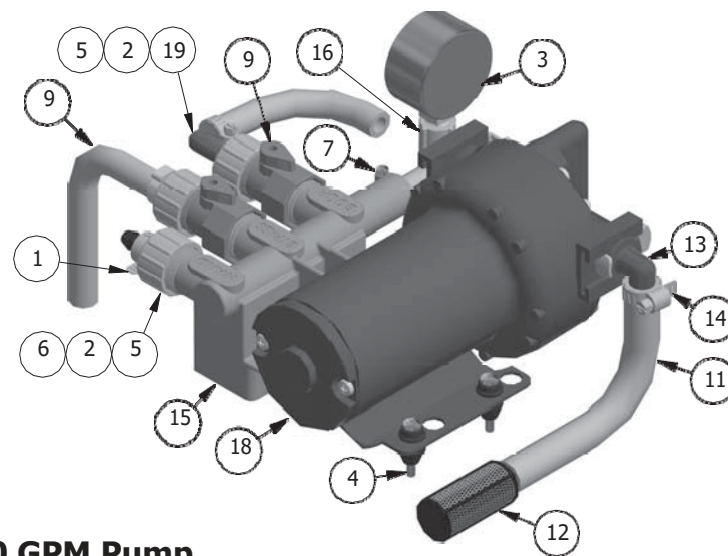
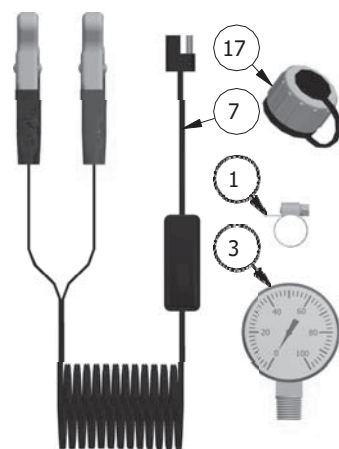
— Pump & Valve Assembly



2.2 GPM Pump

PARTS LIST			
ITEM	QTY	PART#	DESCRIPTION
1	1	600120	3/8" Hose Clamp (670001)
2	3	600124	W 406
3	1	600129	Gauge 0-100 PSI (670001)
4	4	600130	10-24 x 1 1/4" Pan Head Screw
5	3	600139	B 3400 P
6	2	600140	C3800 P Fitting
7	1	600153	2.2 GPM Wire Assembly (670001)
8	1	600199	#8-3/4" Self Tapping Screw
9	1	600213	Relief Hose Assembly
10	2	600216	Inline Garden Hose Shutoff Valve
11	1	600285	1/2" Hose 24" Long
12	1	600286	Strainer
13	1	600287	QD EL 12
14	1	600288	1/2" Hose Clamp
15	1	600289	3 Outlet Manifold Body
16	1	600291	Manifold Supply Fitting for Flex Pump
17	1	600298	Drain Cap Assembly (670001)
18	1	640448	Flat Seat Swivel x 3/8" Elbow
19	1	640451	2.2 GPM Flex Pump

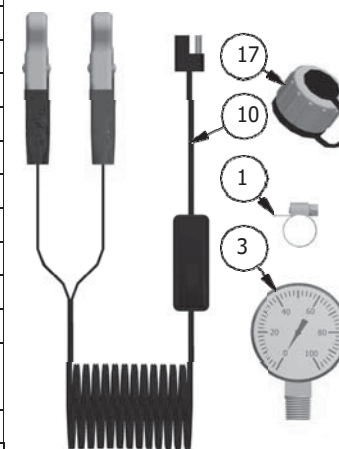
670001 Bag Assy



5.0 GPM Pump

PARTS LIST			
ITEM	QTY	PART#	DESCRIPTION
1	1	600120	3/8" Hose Clamp (670002)
2	3	600124	W 406
3	1	600129	Gauge 0-100 PSI (670002)
4	4	600130	10-24 x 1 1/4" Pan Head Screw
5	3	600139	B 3400 P
6	2	600140	C3800 P Fitting
7	1	600199	#8-3/4" Self Tapping Screw
8	1	600213	Relief Hose Assembly
9	2	600216	Inline Garden Hose Shutoff Valve
10	1	600270	5.0 GPM Wire Assembly (670002)
11	1	600285	1/2" Hose (32" for 60 gal 24" for 25 & 40 gal)
12	1	600286	Strainer
13	1	600287	QD EL 12
14	1	600288	1/2" Hose Clamp
15	1	600289	3 Outlet Manifold Body
16	1	600292	Manifold Supply Fitting for 4.0 Pump
17	1	600298	Drain Cap Assembly (670002)
18	1	630031	12V 5.0 GPM Pump
19	1	640448	Flat Seat Swivel x 3/8" Elbow

670002 Bag Assy





3300 Series: 2.2 GPM

PUMP INFORMATION:

Type - 3 chamber diaphragm pump, self priming, capable of being run dry

Pressure Control - Demand

Liquid Temperature - 140°F (60°C) Max.

Priming Capabilities - 8 feet (2.4 m)

Max Pressure - 200 PSI (14 bar)

Inlet/Outlet Ports - 3/4" Quick Attach

Weight - 6 lbs (2.7 kg)

MOTOR INFORMATION

Leads - 14 AWG, 7" long with 2-Pin

Temperature Limits - Motor is not equipped with thermal protection. For user safety, optimal performance, and maximum motor life, the motor surface temperature should not exceed 180°F (82°C)



3200 Series: 3.2-4.0 GPM

PUMP INFORMATION:

Type - 3 chamber diaphragm pump, self priming, capable of being run dry

Pressure Control - Demand

Liquid Temperature - 140°F (60°C) Max.

Priming Capabilities - 10 feet (3 m)

Max Pressure - 100 PSI (6.9 bar)

Inlet/Outlet Ports - 3/4" Quick Attach

Weight - 5 lbs (2.3 kg)

MOTOR INFORMATION

Leads - 14 AWG, 7" long with 2-Pin

Temperature Limits - Motor is not equipped with thermal protection. For user safety, optimal performance, and maximum motor life, the motor surface temperature should not exceed 180°F (82°C)



5500 Series: 4.0-5.3 GPM

PUMP INFORMATION:

Type - 5 chamber diaphragm pump, self priming, capable of being run dry

Pressure Control - Demand

Liquid Temperature - 140°F (60°C) Max.

Priming Capabilities - 14 feet (4 m)

Max Pressure Capabilities - 150 PSI (10 bar)

Inlet/Outlet Ports - 3/4" Quick Attach

Weight - 8 lbs (3.62 kg)

MOTOR INFORMATION

Leads - 14 AWG, 7" long with 2-Pin

Temperature Limits - Motor is not equipped with thermal protection. For user safety, optimal performance, and maximum motor life, the motor surface temperature should not exceed 180°F (82°C)

Installation and Operation Precautions

- The pump is equipped with a pressure sensing demand switch that controls the maximum operating pressure.
- In addition, never subject the pump to pressures above factory set/max pressure rating.
- As long as there is inlet water pressure, the pump will not stop forward flow of water even if the motor is turned off. Be sure the system has positive means of shutting off water supply.
- Do not operate pump in an explosive environment. Arcing from the motor brushes, switch or excessive heat from an improperly cycled motor may cause an explosion.
- Do not locate the pump motor near low temperature plastics or combustible material. The surface temperature of the motor may exceed 180°F (82°C).
- Do not pump gasoline or other flammable liquids. Pump head materials are designed for use with water only. Do not use with petroleum products.
- Do not assume fluid compatibility. If the fluid is improperly matched to the pumps' elastomers, a leak may occur.
- To prevent electrical shock, disconnect power before initiating any work. In the case of pump failure, the motor housing and/or pump fluid may carry high voltage to components normally considered safe. Therefore, always consider electrical shock hazard when working with and handling electrical equipment. If uncertain, consult an electrician. Electrical wiring should only be done by a qualified electrician per local and state electrical codes.

Servicing —

- Every Year: Check system against operating standards. Flush with clean water and store in warm dry place.
- Every 2-3 Years: We recommend replacing the valves and checking against operating standards.

Recommendations —

Electrical:

- The ProFlo™ series pumps are designed for intermittent duty. Make sure that "OFF" periods are sufficient. Consult the factory for particular data and design criteria.
- Be sure power supply used is adequate for the application.
- Pump and motor specifications are based on an alternator charged battery (13.6 VDC)
- Use sufficient battery supply power. UTV and lawn tractor batteries may affect pump performance due to low voltage and amp ratings
- Rapid On/Off Cycling must be limited to no more than 6 times per minute, even if the pump is operating in the Continuous Duty zone. Cycling could cause the motor to heat beyond the recommended maximum temperature, and reduce the operational life of the pump and pressure-sensing switch.

Important return safety instructions -

When returning your pump for warranty or repair, you must always do the following:

- Contact factory for RMA number.
- Flush chemical residue from the pump (best done in the field).
- Tag pump with type of chemical having been sprayed.
- Include complete description of operation problem, such as how pump was used, symptoms of malfunction, etc. Since pumps can contain residues of toxic chemicals these steps are necessary to protect all the people who handle return shipments, and to help pinpoint the reason for the breakdown.