

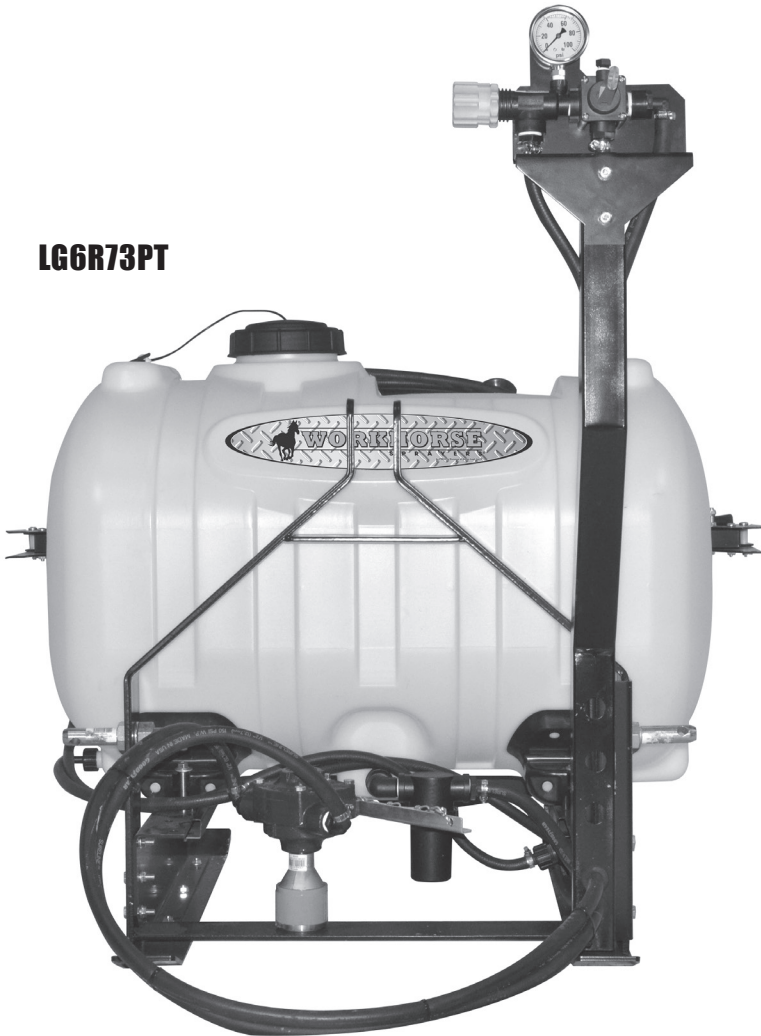
WORKHORSE

S P R A Y E R S

a Division of Green Leaf, Inc®

Assembly / Operation Instructions / Parts

LG6R73PT



60 GALLON

LG6R73PT DELUXE SPRAYER

Polyethylene Tank

10.5 G.P.M. Roller Pump (GPM dependant upon application)

Deluxe Pistol Grip Handgun with Adjustable Brass Tip

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

Pressure Gauge

Adjustable Pressure range (0-300 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:

- 1 - 3/16" Allen Wrench
- 2 - 1/2" End Wrenches
- 1 - Phillips Screwdriver
- 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 usage 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 a Cat 1 Tractor with standard 540 PTO. 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. Pressure may be regulated by adjusting the pressure regulator valve on the top of the unit. Also, the boom can be cycled on and off with this 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 distances. 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.

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.

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

– 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

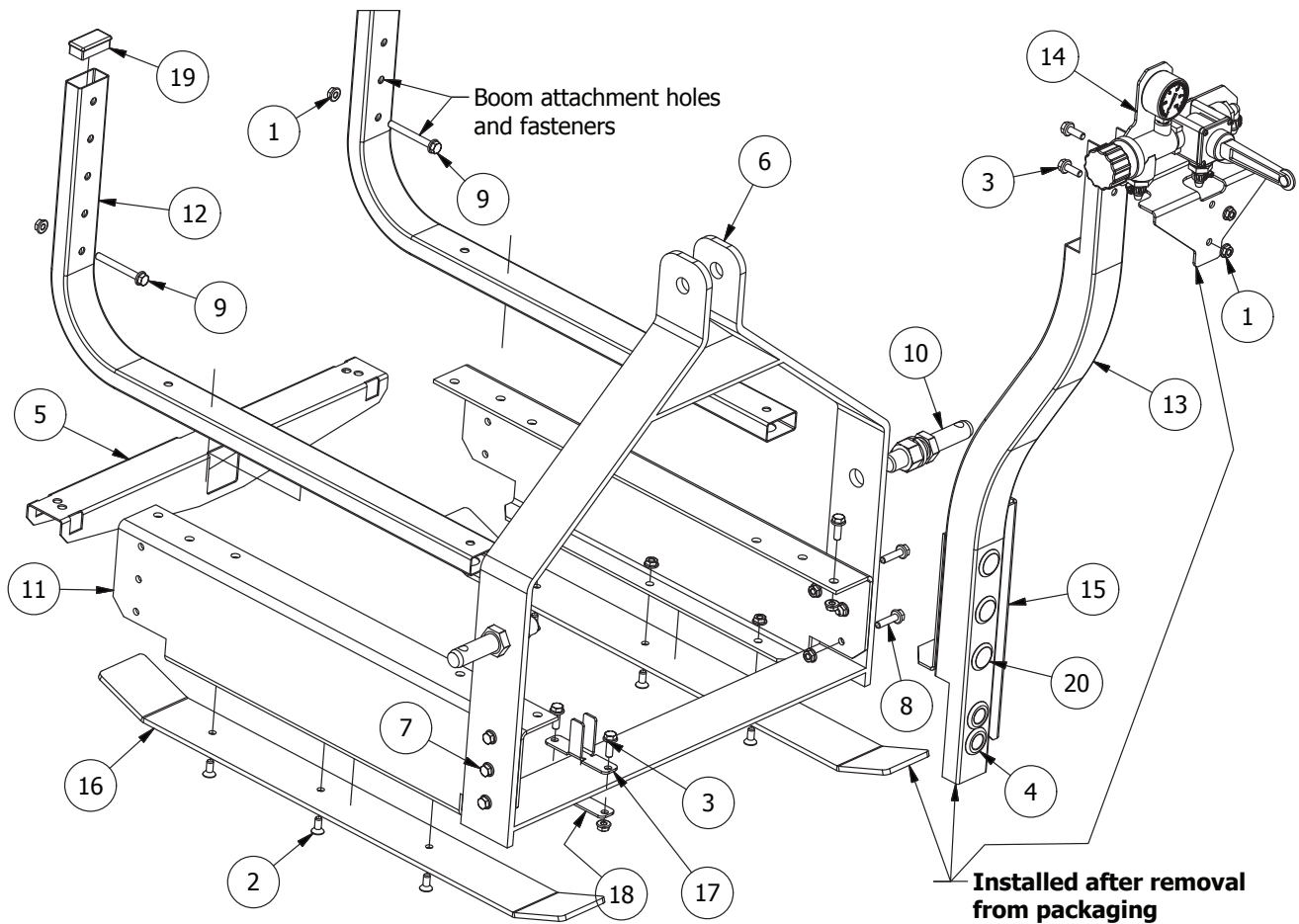
Pressure (PSI)	Capacity (GPM)	GALLONS PER ACRE BASED ON WATER - 20" SPACING							
		1 MPH 88 FPM	2 MPH 176 FPM	3 MPH 264 FPM	4 MPH 352 FPM	5 MPH 440 FPM	7.5 MPH 660 FPM	10 MPH 880 FPM	
20.0	0.14	41.8	20.9	14.0	10.5	8.4	5.6	4.2	
30.0	0.17	51.2	25.6	17.2	12.9	10.3	6.9	5.1	
40.0	0.20	59.2	29.6	19.8	14.9	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							
		.96	.48	.32	.24	.19	.13	.10	
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							
		.096	.048	.032	.024	.019	.012	.009	
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	

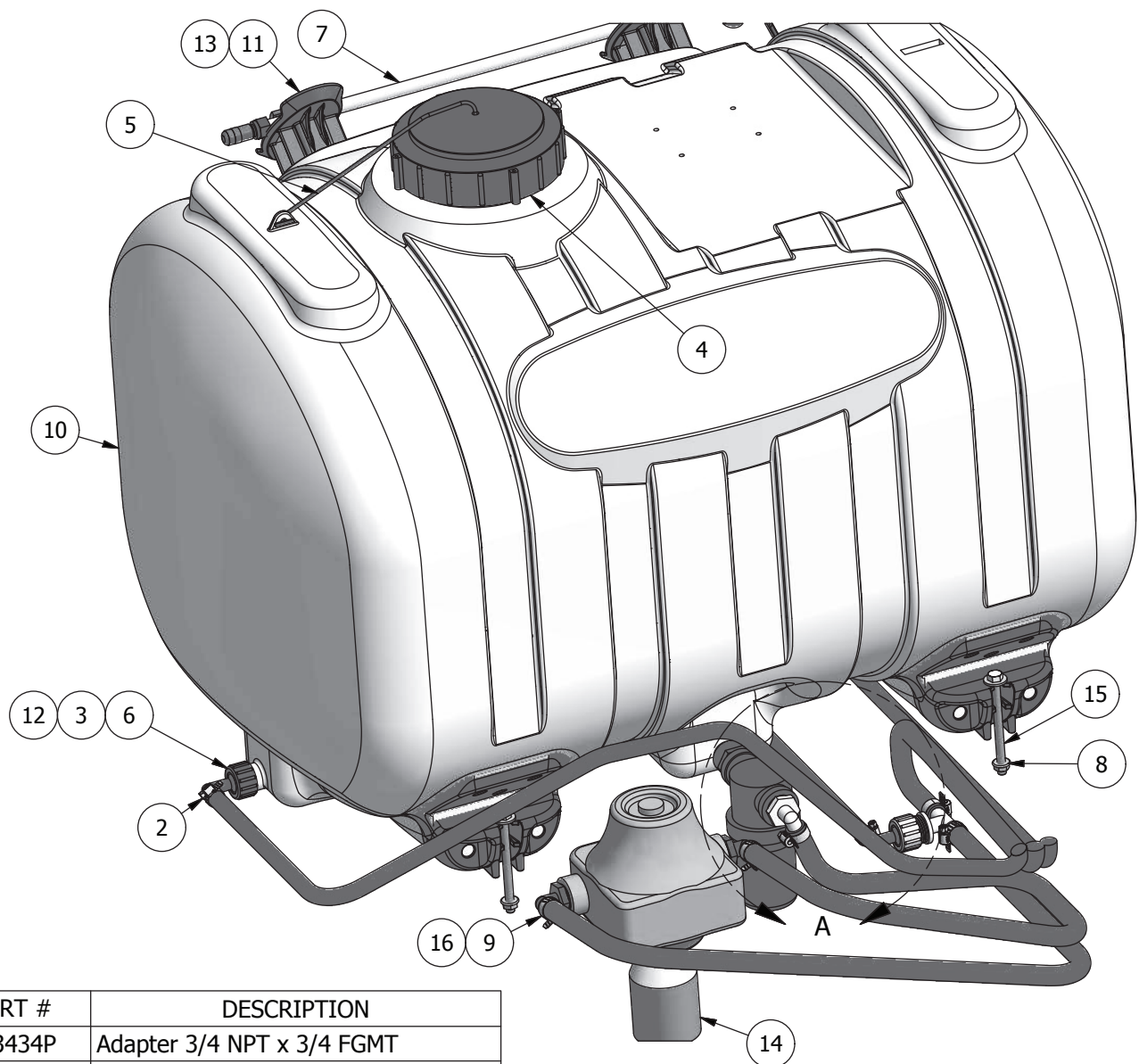
MPH- Miles Per Hour • FPM- Feet Per Minute • PSI- Pounds Per Square Inch • GPM- Gallons Per Minute

— 3PT Frame Parts List

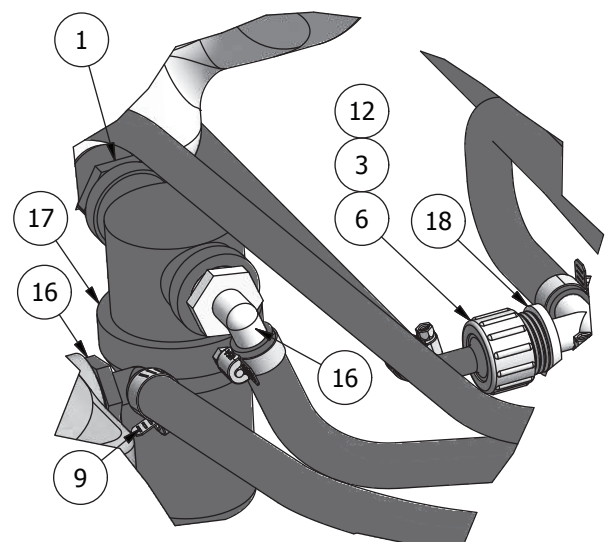


PARTS LIST			
ITEM	QTY	PART #	DESCRIPTION
1	26	600172	5/16-18 Hex Flange Nut
2	6	600188	5/16-18 x 3/4 Flat Socket Head Cap Screw
3	8	600269	5/16-18 x 7/8 Hex Flange Screw
4	2	600284	1/2" Hose Rubber Grommet
5	1	640400	Front Support
6	1	640403	3 Point Arm
7	4	640420	5/16-18 x 1 Hex Flange Screw
8	2	640421	5/16-18 x 1 1/4 Hex Flange Screw
9	2	640423	5/16-18 x 2 3/4" Hex Flange Screw
10	2	640425	Lower Link Pin
11	2	640438	Heavy Duty Side Panel
12	2	640463	Bottom Bar - Bent
13	1	640476	VALVE STAND TUBE
14	1	640477	VALVE PLATE
15	1	640478	Valve Stand Mounting Bracket
16	2	640479	Skid Pad
17	1	640480	Roller Pump Holder Upper
18	1	640481	Roller Pump Holder Lower
19	2	640485	1x2 Rectangular Cap
20	3	640487	Plastic Round Plug

— Tank & Pump Assembly

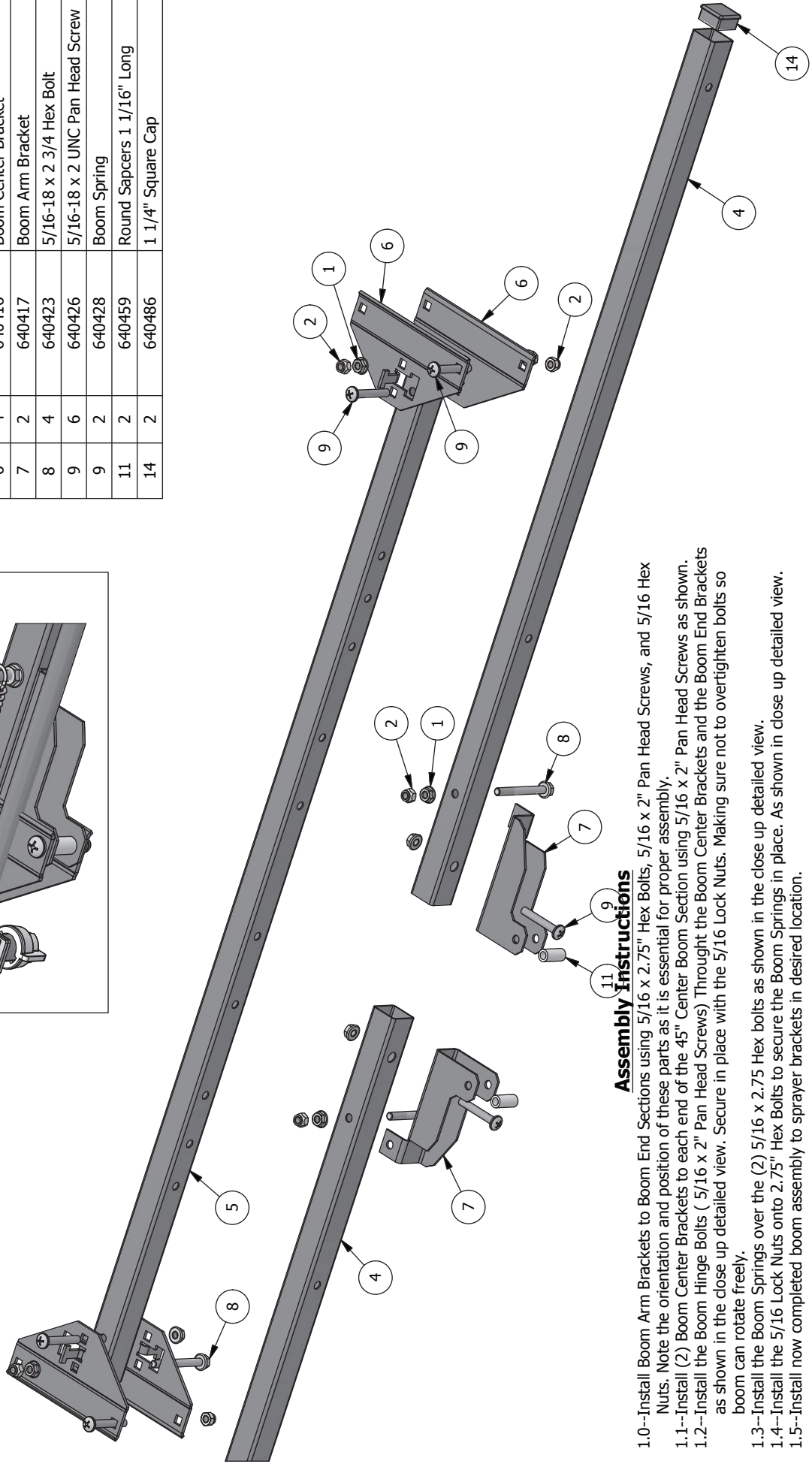
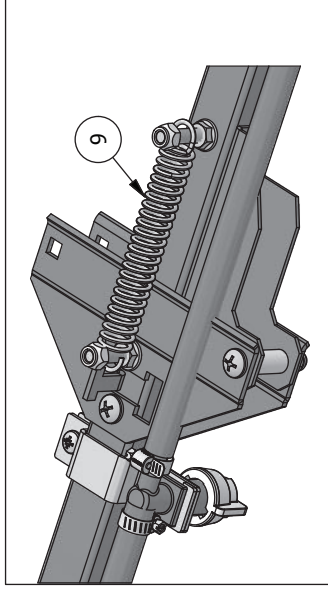


ITEM	QTY	PART #	DESCRIPTION
1	1	H3434P	Adapter 3/4 NPT x 3/4 FGMT
2	3	600120	5/8" Hose Clamp
3	3	600124	W 406
4	1	600133	Tank Lid
5	1	600134	Tank Lid Tether
6	2	600139	B 3400 P
7	1	600147	18" Deluxe Spray Wand
8	26	600172	5/16-18 Hex Flange Nut
9	5	600288	1/2" Hose Clamp
10	1	640000	60 Gallon Tank
11	2	640105	Hose Wrap Horn 3c Small Hole
12	2	640448	Flat Seat Swivel x 3/8" Elbow
13	6	640458	10-24 x 1/2 Pan Head Screw
14	1	640484	Roller Pump Assembly
15	4	640488	5/16-18 x 4 Hex Head Screw
16	3	EL3412P	Elbow 3/4 NPT x 1/2 BRB
17	1	LST07550	3/4" Poly T-Strainer 50 Mesh
18	1	MT3412GP	Tee Adapter 3/4" MGHT x 1/2" BRB



— Boom Assembly

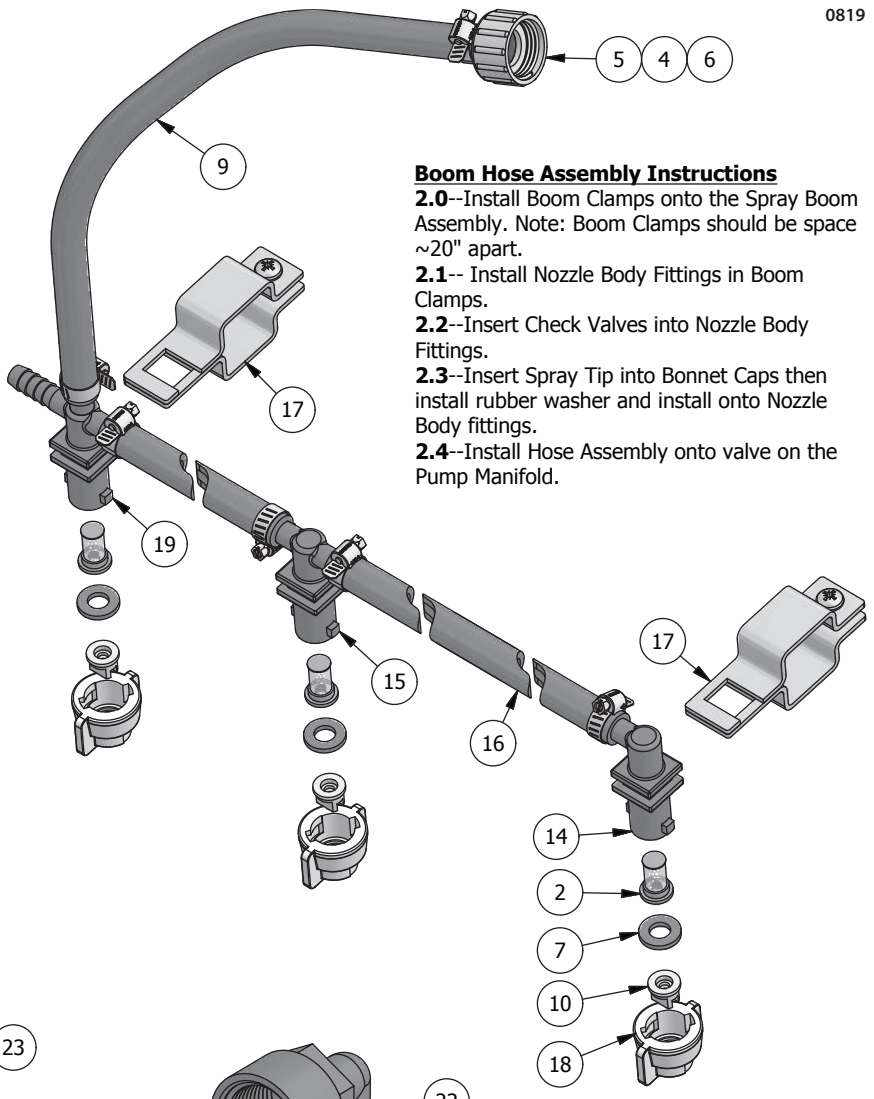
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	12	600172	5/16-18 Hex Flange Nut
2	6	620106	5/16-18 UNC Lock Nut
4	2	640413	7 Nozzle End Section
5	1	640414	45" Center Boom Section Rev 1
6	4	640416	Boom Center Bracket
7	2	640417	Boom Arm Bracket
8	4	640423	5/16-18 x 2 3/4 Hex Bolt
9	6	640426	5/16-18 x 2 UNC Pan Head Screw
9	2	640428	Boom Spring
11	2	640459	Round Sappers 1 1/16" Long
14	2	640486	1 1/4" Square Cap



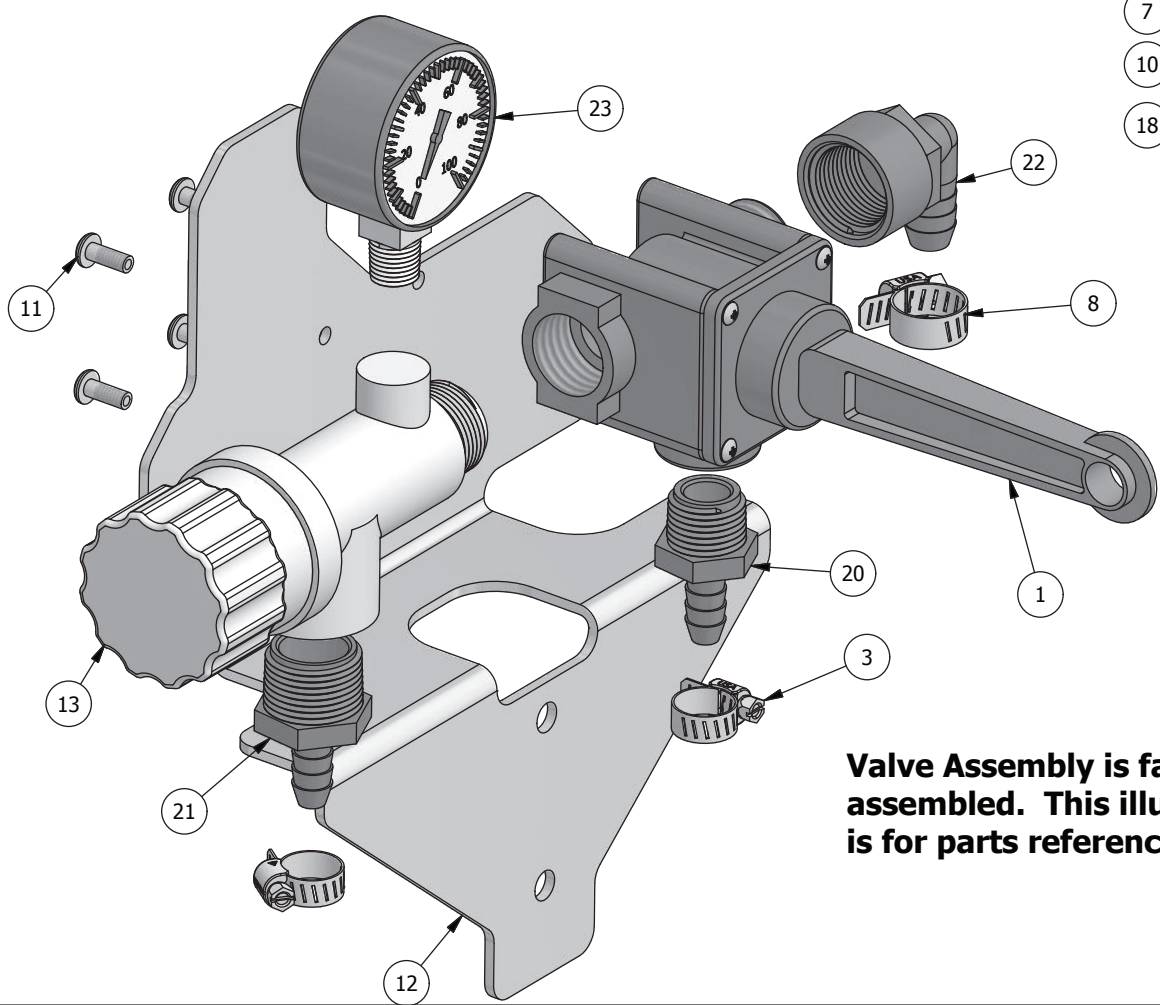
Assembly Instructions

- 1.0--Install Boom Arm Brackets to Boom End Sections using 5/16 x 2.75" Hex Bolts, 5/16 x 2" Pan Head Screws, and 5/16 Hex Nuts. Note the orientation and position of these parts as it is essential for proper assembly.
- 1.1--Install (2) Boom Center Brackets to each end of the 45" Center Boom Section using 5/16 x 2" Pan Head Screws as shown.
- 1.2--Install the Boom Hinge Bolts (5/16 x 2" Pan Head Screws) Through the Boom Center Brackets and the Boom End Brackets as shown in the close up detailed view. Secure in place with the 5/16 Lock Nuts. Making sure not to overtighten bolts so boom can rotate freely.
- 1.3--Install the Boom Springs over the (2) 5/16 x 2.75 Hex bolts as shown in the close up detailed view.
- 1.4--Install the 5/16 Lock Nuts onto 2.75" Hex Bolts to secure the Boom Springs in place. As shown in close up detailed view.
- 1.5--Install now completed boom assembly to sprayer brackets in desired location.

PARTS LIST			
ITEM	QTY	PART #	DESCRIPTION
1	1	2750	Manual Shutoff Valve
2	7	600117	Check Valve / Strainer
3	14	600120	5/8" Hose Clamp
4	1	600124	W 406
5	1	600139	B 3400 P
6	1	640448	EL38CP Fitting
7	7	600276	Rubber Washer
8	1	600288	7/8" Hose Clamp
9	1	600302	φ3/8" x 60" Rubber Hose
10	7	640432	Spray Tip
11	4	640458	10-24 x 1/2" Pan Head Screw
12	1	640477	Valve Plate
13	1	640483	Pressure Relief Valve
14	2	640491	Nozzle Body Elbow Quick Outlet
15	4	640492	Nozzle Body TEE Quick Outlet
16	3	640494	7 Nozzle Boom Hose Assy.
17	7	640496	Quick Clamp 1 1/4" Square
18	7	640497	Bonnet Cap 10mm Across Flats
19	1	640498	Nozzle Body Cross 3/8 w/ Quick Outlet
20	1	A1238P	Adapter 1/2 NPT x 3/8 BRB
21	1	A3438P	Adapter 3/4 NPT x 3/8 BRB
22	1	EL3412FP	Elbow - 3/4 NPT Female x 1/2 BRB
23	1	LG100	Liquid Filled Gauge 0-100 PSI



Boom Hose Assembly Instructions
2.0--Install Boom Clamps onto the Spray Boom Assembly. Note: Boom Clamps should be space ~20" apart.
2.1-- Install Nozzle Body Fittings in Boom Clamps.
2.2--Insert Check Valves into Nozzle Body Fittings.
2.3--Insert Spray Tip into Bonnet Caps then install rubber washer and install onto Nozzle Body fittings.
2.4--Install Hose Assembly onto valve on the Pump Manifold.



Valve Assembly is factory assembled. This illustration is for parts reference only.

Delavan RollerPRO®

Tractor PTO Installation

1. Secure the PTO coupling to the pump shaft by sliding the coupling as far forward as possible without touching the bearing shield and tightening the set screws down on the key of the pump shaft. Slide coupling onto PTO shaft and secure by pulling collar back on PTO quick coupler, sliding onto PTO shaft and locking into place.
2. Check pump rotation. An arrow on the pump indicates proper rotation direction.
3. To keep the pump from rotating with the shaft, set a torque arm and short length of chain. Bolt one end of the chain to the torque arm and secure the other to a stationary part of the tractor. Be sure the chain is at a point directly above or below the torque arm. Fastening torque chain to a point forward or backward from pump center will create a bending force on pump. Do not fasten pump rigidly to the tractor.
4. With the pump in position, connect the inlet hose to the "IN" port and the discharge hose to the "OUT" port. Make sure the inlet hose connection is tight. A loose connection will permit air to be drawn in and the pump will not prime itself. Use at least a 3/4" diameter hose on the inlet line.

Engine Installation

The pump base can be mounted on a frame and aligned for either direct-drive or belt and pulley drive. When mounting for direct-drive, be sure pump and engine shafts are in alignment. A flexible drive coupling will compensate for fractional misalignment. When mounting for pulley drive, be sure the engine and pump shafts are parallel. Align pulleys and keep them as close to the shaft bearings as possible. Please review pump maximum pump RPM specification.

Operation

1. With a clear inlet line and open discharge line, the pump should displace liquid within 15 seconds. A squirt of oil in the inlet side of the pump before starting will accelerate priming action.
2. Never run the pump dry. Excessive heat will damage rollers and seals.
3. Do not pump abrasive white wash, paints or other abrasive liquids.
4. Do not use rusty supply barrels or sandy water.
5. Do not close the discharge line of the pump while it is running unless a means of bypassing the liquid has been installed. A simple relief or bypass valve can be easily installed in the discharge side.

Maximum Recommended Operating Temperature:
140°F (60°C)

Maintenance

Your Delavan pump is equipped with permanently lubricated bearings. They do not require further lubrication.

AFTER SPRAYING — Thoroughly flush the pump with clear water or use a solution of approximately one cup of ammonia in 10 gallons of water. This will dissolve most residue remaining in the pump. Squirt a light oil in the pump and rotate to cover the inner surfaces with a protective film.

STORAGE. If the pump is to be out of service for several days or stored, flush pump with clear water or use a solution of one cup of ammonia in 10 gallons of water. Then pump a 50 percent permanent antifreeze solution through the pump. Plug ports.

Caution: Do not use gasoline, kerosene, or fuel oil. Cast iron not recommended for Round Up®.

Servicing & Repair

Exclusive, patent pending Delavan RollerPRO® pumps are the only field-serviceable pump on the market! The only tool required to service RollerPRO® pump is a wrench. The pump remains mounted on drive shaft – no plumbing disassembly is required. Pump servicing takes about 3 minutes:

1. Loosen and remove four bolts on end plate of pump, and slide off
2. Replace rollers (and other parts from RollerPRO Repair kit as necessary— see next page for kit details)
3. Slide on end plate, tighten bolts and go!

Troubleshooting Guide

Problem	Causes and Remedies
No pressure or no capacity	Inlet line not fully immersed in tank, or low tank level.
	Pump not properly primed.
	Clogged inlet strainer.
	Inlet line air leaks. Use plumber's joint compound or Teflon tape. Tighten all connections. Check hoses for cracks or pin holes.
	Inlet line blocked or hose collapsed.
	Pump is air-bound. Check for dry tank, or "traps" in the line. Try removing one nozzle until pump starts priming.
	Worn and leaking seals. Replace.
Pump runs, but low pressure and capacity	Pump turning in wrong direction. (A reverse direction pump will not work on a tractor PTO).
	Inlet line and fittings partially blocked or too small. Hose kinked
	Worn rollers. Replace with new (see parts list).
Pump pressure good, but low output through the nozzles	Clogged inlet strainer.
	Nozzle orifices too small. Install larger sizes.
	Outlet line too small or blocked.
	Bypass partially open. Close it.
Excessive noise or vibration	Possible loose coupler...bent or damaged shaft.
	Excessive PTO speed...1200 rpm maximum.
	Inlet line leaks or clogged strainer
	Worn rollers. Replace with new.
Impossible to rotate shaft	Corrosion or foreign object in pump. Disassemble and thoroughly clean all parts. Replace worn parts. See section on Maintenance.

Warranty

Delavan warrants RollerPRO Series Pumps for a period of two years from date of manufacture.

All products sold by Delavan are warranted only to purchasers from Delavan for resale or for use in purchasers' own business or original equipment manufacture, against defects in workmanship or materials under normal use, maintenance and service (rental use excluded).

The sole and exclusive obligation of Delavan under this or any implied warranty shall be to replace or, at its option, to repair, without charge, any product which is determined by Delavan to be defective in workmanship or materials after the product is returned to the Delavan factory*, shipping costs prepaid.

In no event shall Delavan be liable to any person for indirect or consequential damages or for injury or commercial loss resulting from any use or inability to use any Delavan product. Delavan expressly negates any other warranty, express or implied, including any warranty of merchantability or fitness for a particular purpose, or arising from any course of dealing or custom or usage of trade.

No person, including any dealer or representative of Delavan, is authorized to make any representation or warranty on behalf of Delavan in addition to or inconsistent with these provisions. Purchasers to whom these provisions apply agree to hold Delavan harmless from claims by their customers in excess of the obligations of Delavan expressly set forth herein.

* Important Return Safety Instructions

Since pumps can contain residues of toxic chemicals the following steps are necessary to protect all the people who handle return shipments, and to help pinpoint the reason for the breakdown. When you return your pump for warranty or repair, you must always do the following:

1. Flush chemical residue from the pump (best done in the field).
2. Tag pump with type of chemicals having been sprayed.
3. Include complete description of operation problem, such as how pump was used, symptoms of malfunction, etc.

DEHAVAN
PUMPS, INC.

1228 Chestnut Avenue, Minneapolis, MN 55403
Toll Free: 1-866-DEHAVAN (335-2826) PH: 612-333-3189
Toll Free Fax: 1-888-726-5906 Fax: 612-333-3231
Website: delavanagumps.com