

Technical Bulletin M0005

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Solo® 400 Series Backpack Sprayers

No. 13193

Solo Model 473, 3 gal. piston

No. 13195

Solo Model 425, 4 gal. piston

No. 13174

Solo Model 475, 4 gal. diaphragm

No. 13288

Solo Model 425D, 4 gal. piston

No. 13289

Solo Model 475D, 4 gal. diaphragm

No. 13181

Solo Model 435, 5 gal. piston

No. 13182

Solo Model 485, 5 gal. diaphragm

Tech Support

800-430-5566

If you need more information or would like advice from an experienced professional, call our Technical Support team.

Sales

800-647-5368

Our sales department will gladly fax you an order form, update you on pricing, or take your order over the phone.

Online

www.forestry-suppliers.com

For credit card and open account orders, visit our web site to place your order.



Solo® 400 Series Backpack Sprayers

Cleaning

- After spraying, clean the tank thoroughly. If some spray liquid is left inside, drain tank completely.
- Pumping causes air to be taken in and the remaining liquid to be discharged. Pump until liquid and air are coming out through the nozzle.
- Refill tank with a few quarts of clean water and pump the water out as explained above (if necessary, repeat this procedure several times).
- If the shut-off valve is removed, the pump can be flushed quickly. Improper spray distribution is the result of a clogged nozzle, which is easily removed and cleaned.
- Soap and water may also be used to clean tank.
- Do not use aggressive cleaning agents or abrasives.
- Follow the recommendations of the chemical manufacturer for disposal of waste water and chemicals.
- Activated charcoal in liquid or other form may be used to absorb chemicals in tanks or spills.

Maintenance and Storage Tips

To protect the piston, cylinder and Viton® collar, a fine mesh, stainless steel screen is located on the pressure cylinder inlet.

If you find that your sprayer will not empty the formula tank, check for a clogged inlet screen (2). The inlet screen is located at the bottom of the pressure cylinder on the side that faces your back.

One indication that it needs cleaning is that when you let go of the pump handle, it “springs” to the down position. The screen can be cleaned with a small bristle brush or a discarded toothbrush. See diagram for location of screen.

- After operation, the sprayer should be stored away from direct sunlight to prevent UV damage.
- After removing the pump or when mounting a new Viton collar, treat both the collar and the piston with water-resistant grease.
- Before winter, drain all liquid in tank, lines and air chamber. Leave shut-off valve locked in the “open” position.
- Regularly inspect hose, wand, pump, tank and shut-off valve for wear, damage or leaks. Repair promptly.

Avoid excessive wear by (1) Regular lubrication of Viton collar, cylinder and piston with water resistant grease, and (2) Prompt and thorough cleaning and flushing of sprayer.

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Solo® 400 Series Backpack Sprayers Troubleshooting

Problem	Cause	Solution
Difficulty in moving pump lever	Dirty bushing	Remove pump lever, clean and grease bushings
	Dirty cylinder walls	Remove piston, clean/replace (43) 425 Series
	Collar swollen from long term exposure	Replace collar (44) and maintain according to operating instructions 425 Series
	Lack of lubrication	Lubricate Viton collar 425 Series
Insufficient resistance during repeated pumping and no pressure	Damaged/dirty valve plates	Clean or replace valve plates (20) or cylinder (40)
	Damaged O-ring at valve seat	Replace O-ring (12)
	Collar or piston worn	Replace collar (44) or piston (43) 425 Series
High resistance after pumping just a few strokes, pressure lasts only briefly	Pressure regulator seal is leaking	Check seal and valve seat
	Little or no air cushion in pressure cylinder	Remove PVC hose, drain pressure cylinder, reconnect hose. Preventive measure: empty pressure cylinder after each use.
During spraying, upward pumping becomes more difficult and tank walls may indent inwards	Wrong tank cap used (no vent hole)	Replace with original vented cap
	Vent hole clogged	Clean vent hole
	Lower valve plate sticks	Replace valve plate (20)
	Intake channels clogged	Clean channels and tank
When handle is pulled up, it wants to move itself forcibly back down	Screen at base of pressure cylinder clogged	Clean intake screen with a small brush and detergent
Leaks inside cylinder	Damaged/dirty collar or piston	Clean or replace collar (44) and possibly cylinder (40) if worn 425 Series
Leaks outside cylinder	Damaged O-ring on cylinder	Replace O-ring (13) 425 Series
	Damaged O-ring on pressure cylinder	Replace O-ring (11)
Leaks on diaphragm pump	Damaged diaphragm	Replace diaphragm (66)
	Damaged O-ring on diaphragm housing	Replace O-ring (13) 475 Series
	Damaged O-ring on pressure cylinder	Replace O-ring (11)
Leaks from end of spray wand	Worn or damaged shut-off valve	Inspect and rebuild shut-off valve (Kit #7)

Solo Backpack Sprayer Accessories

Stock No.	Description
13165	Diaphragm Conversion Kit
12921	Nozzle, Brass – for applying Surflan 11002LP
13280	Flat Spray Jet
13038	Nozzle, Adjustable Brass – adjusts from cone to straight stream.
12920	Nozzle, Brass .0003 (Spike Nozzle) – straight stream, for Spike herbicide.
13172	Two-Nozzled, 24" Spray Boom – 24" Tip spacing
13183	R&D Hand-held 3-Tip Spray Boom with Pressure Gauge – quick breakdown. 18" Tip spacing, 110° Flat Fan Nozzle. Requires 13189.
13171	4-Tip Rear-Mounted Spray Boom – mounts directly to sprayer. 16" Tip spacing.
13184	R&D Hand-held 4-Tip Spray Boom with Pressure Gauge – quick breakdown. 18" Tip spacing, 110° Flat Fan Nozzle. Requires 13189.
13189	R&D Adapter with Clamps – allows Solo Backpack Sprayers to accept R&D spray booms
13163	Pressure Limiting Valve – with three springs for three settings: 5 psi/2.2 pints/min.; 10 psi/3.5 pints/min.; 15 psi/4.3 pints/min.
13170	Drift Guard Assembly
13290	Fold-Away Handle – permits easier storage than standard handle on Solo 425 and 475 backpack sprayers.
13190	20" Extension Tube
13571	27" Plastic Spray Wand – replaces existing wand
13291	20" Brass Spray Wand – replaces existing wand
13096	60" Brass Replacement Wand

Solo Backpack Sprayer Repair Kits

Stock No.	Description (Refer to corresponding legend on page 3)
13440	Wand Repair Kit 7, 8, 9, 10, 22, 26, 34, 49, 103
13439	Piston Repair Kit 10, 11, 12, 13, 20 (2), 24, 25, 44
13441	Piston, Rod, Collar Kit 41, 42, 43, 44, 54
13438	Diaphragm Pump Repair Kit 8, 11, 12, 13, 20 (2), 24, 25, 66
13209	Shut-off, Wand, Elbow & Nozzle Assy. 0, 22, 31, 33, 35, 45, 47

Note: 13422, 13142, 13457 and 13135 must be used to attach handle to hose.



13210
Solo® 29" Universal Wand

Stainless steel wand, flat fan nozzle, and filter screen with commercial grade shut-off valve and fittings



13230, 13231
Controlled Flow Valves

Controlled to 1.5% with flow rates of .001 to .005 gallons per minute. 14.5 psi (13230) and 21 psi (13231).



13224
Shoulder Saver Harness

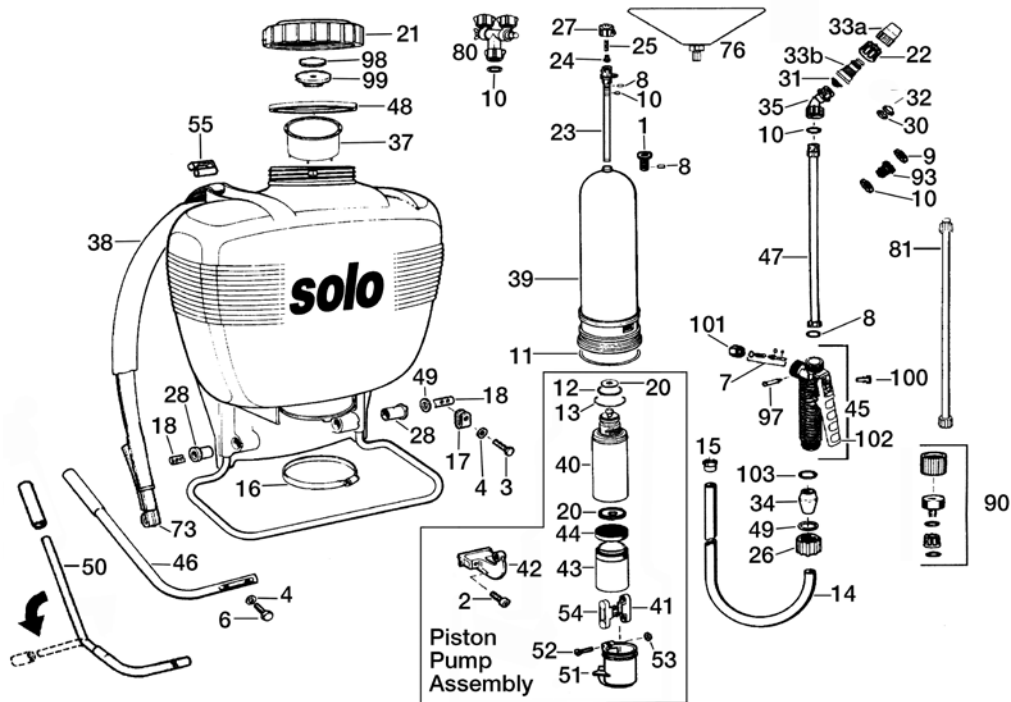
Distributes weight evenly and assures maximum comfort while operating your sprayer.

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Solo® 400 Series Backpack Sprayers Replacement Parts



Dia. No.	Stock No.	Description
1	13404	Pressure Cylinder Plug
2	13279	Screw
3	13407	Screw
4	13406	Washer
6	13407	Screw
7	13408	Shut-Off Valve Repair Kit
8	13118	O-Ring
9	13101	O-Ring
10	13119	O-Ring
11	13120	O-Ring
12	13121	O-Ring
13	13122	O-Ring
14	13123	Hose w/Connecting Piece
15	13124	Hose Clamp
16	13125	Clamp
17	13409	Stop Plate
18	13410	Tube
20	13129	Valve Plate (2 required)
21	13433	Tank Cap w/valve assembly and gasket, #48, 98, 99
22	13131	Retaining Nut
23	13411	Adjustment Piece
24	13412	Sealing
25	13413	Spring
26	13135	Screw Cap
27	13414	Adjustment Cap

Dia. No.	Stock No.	Description
28	13137	Bushing
29	13280	Flat Spray Jet
30	13139	Swirl Plate
31	13140	Jet Filter Element
32	13141	Jet Cap
33	13039	Plastic Adjustable Nozzle Assembly
34	13142	Connecting Piece
35	13143	Elbow
37	13145	Filter Basket Assembly
38	13416	Strap, padded, with hook, 435/485/425/475
39	13147	Pressure Cylinder
40	13148	Cylinder Assembly item 12,13, 20 incl.
41	13149	Connecting rod w/o stud
42	13277	Lever
43	13151	Piston
44	13152	Viton Collar
45	13417	Shut-Off Valve Assembly
46	13127	Straight Lever w/ Hand Grip, mounts left only
	13418	Curved Lever w/Hand Grip, mounts left or right
47	13155	20" Spray Wand
48	13559	Gasket
49	13157	Washer

Dia. No.	Stock No.	Description
50	13290	Fold-Away Handle
51	13159	Protection Cap
52	13160	Fill Head Screw
53	13161	Hex Nut
54	13162	Connecting Rod w/ Stud
55	13419	Strap Holder
73	13420	Hook
74	13421	Hollow Cone Jet Assembly w/ items #9, 30, 32
76	13170	Drift Guard Assembly
80	13099	Twin Nozzle
81	13096	60" Brass Replacement Wand
84	13423	Gasket
87	13104	110° Deflector Nozzle
88	13105	100° Deflector Nozzle
90	13426	Pressure Gauge Assembly
92*	13190	20" Extension Tube
93	13427	Check Valve
97	13431	Plastic Pin
98	13435	Vent Diaphragm
99	13436	Vent Cap
100	13437	Lock Clip
101	13442	Retaining Nut
102	13432	Lever
103	13422	O-Ring

*Requires 13155

Diaphragm Parts for Solo Models

Dia. No.	Stock No.	Description
12	13121	O-Ring
64	13268	Screw
13	13122	O-Ring
65	13269	Plunger
20	13129	Valve Plate
66	13270	Diaphragm
60	13264	Housing
67	13271	Lever

Dia. No.	Stock No.	Description
61	13265	Flange
68	13272	Wrist Pin
62	13266	O-Ring
69	13273	Right Bracket
63	13267	Threaded Collar Assembly
70	13274	Left Bracket
72	13276	Screw

