

HUDSON®

The World Standard of Value

PROFESSIONAL DIVISION

HOW TO USE AND MAINTAIN YOUR HUDSON® X-PERT® SPRAYER DISEASE VECTOR CONTROL SPRAYERS

HUDSON N

Leader in Worldwide Disease Vector Control

www.hdhudson.com
<http://www.hudsonpublichealth.org>

INSTRUCTION PART #: 723-504

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described.

Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

REMINDER: Keep your dated proof of purchase for warranty purposes! Attach it to this manual or file it for safekeeping.

▲ CAUTION

Read, understand, and follow the directions for using your Hudson® X-Pert® sprayer carefully.

The sprayer operates with liquid under pressure. Failure to follow the directions, understand the **PRECAUTIONS**, and abide by the instructions for its use and maintenance in this Guide may result in damage to the sprayer, its hose, or any other component, may result in corrosion, weaken the sprayer, or personal injury. This may cause it to burst under pressure, resulting in **SERIOUS INJURY** from forcible ejection of parts or material under high pressure and personal or environmental contamination as the result of catastrophic, accidental discharge of its contents.

Inspect the sprayer inside and out and all components thoroughly before each use. *Do not attempt to pressurize the sprayer* if the tank is damaged, rusted, punctured or corroded, or if the hose is loose, damaged, or excessively stiff or soft.

▲ WARNING **Make sure** *the hose is securely attached to the tank before pressurizing the sprayer. A loosely connected hose can detach while the sprayer is under pressure and cause **SERIOUS INJURY** and/or personal or environmental contamination.*

▲ WARNING **Do not use** *your Hudson® X-Pert® sprayer to apply caustic (alkalis) or corrosive (acids) materials, bleach, or ammonia. Many of these materials can produce a violent chemical reaction with the sprayer, can corrode metal parts, or weaken hose, gaskets, or other components.*

ALWAYS empty, clean, and drain both tank and hose immediately after each use following the Progressive Rinse Method and at the end of the work week following the “How to Clean” instructions in this pamphlet. Failure to maintain a clean sprayer can result in damage, corrosion, weakening, or bursting of some parts when sprayer is under pressure and may affect the sprayer’s calibration.

Always Pressurize the sprayer by hand. The use of mechanical devices like air compressors is not recommended as they can rapidly generate excessive and dangerous pressure.

Always remember to release the sprayer’s internal pressure before:

⚠ CAUTION

1. Removing the pump.
2. Removing the extension tube, nozzle cap or other parts.
3. Trying to unclog nozzle or discharge line.
4. Attempting to service the sprayer in any way.
5. Or if the sprayer must be left out in the sun or warm place for an extended period.

Do not pump or pressurize the sprayer with your head or body directly over pump.

Remember: The label of the material you are planning on spraying **IS the LAW**. Always read and understand the directions, safety precautions, signs of contamination, and first aid recommendations written specific for that material before pressurizing the sprayer. Some materials may not be suitable for use in this sprayer. Follow mixing, application, and safety recommendations as stated on the label. Be sure to follow and wear all recommended personal protection equipment (PPE) stated on the label.

ALWAYS KEEP SPRAYER AND SPRAY MATERIALS OUT OF REACH OF CHILDREN.

IMPORTANT!

Use only appropriate and genuine Hudson® replacement parts. Improper or after-market parts may not fit correctly and/or may be weakened by spray chemicals and fail under pressure, resulting in **SERIOUS INJURY** from forcible ejection of parts or high-pressure discharge of spray material.

HOW TO RELEASE SPRAYER'S INTERNAL PRESSURE

The pressure relief valve (PRV) is located on the fill cover. Twist the top portion of the PRV to release pressure. Twist again to close and reseal the PRV.

⚠ WARNING

California Proposition 65

This product can expose you to chemicals, including lead and/or Di(2-ethylhexyl)phthalate (EDHP), which are chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov. Wash your hands after handling this product.

PREPARING YOUR HUDSON® X-PERT® SPRAYER

Step 1. Identify and collect Hudson® X-Pert® sprayer you are planning to use. If this is a sprayer you will eventually use, identify the sprayer or mark in a way so you can recognize it when you get to your spray destination. GO TO Step 2.

Step 2. Sprayer is assembled and appears ready for use. GO TO Step 14: Operating the Hudson® X-Pert® Sprayer.

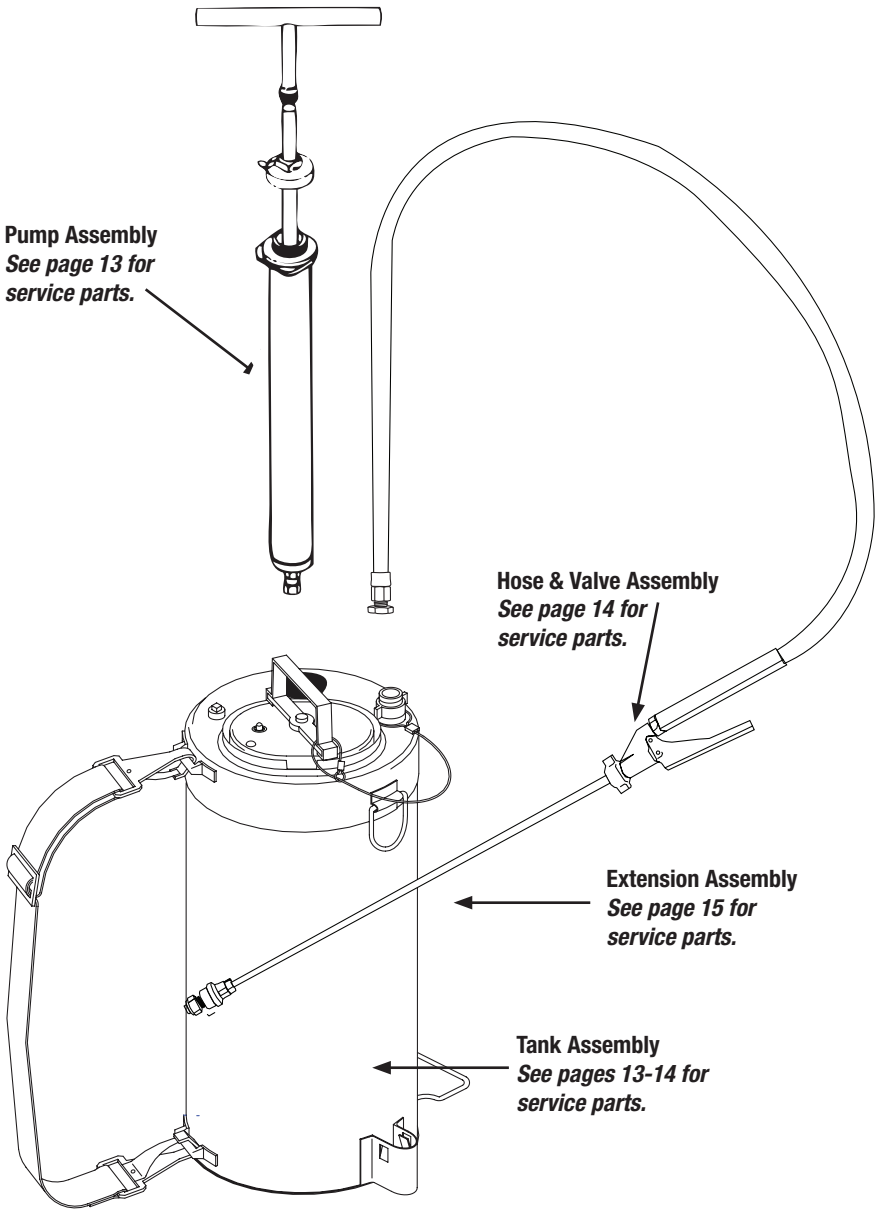
2.1 Sprayer is still in the box and has not been assembled, GO TO Step 3.

Step 3. Secure a clear, sturdy, clean, and flat surface with sufficient room so you can place all the components of your Hudson® X-Pert® sprayer on it and work on the sprayer comfortably. GO TO Step 4.

Step 4. Open the box. Remove the sprayer body and all of its components from the box and place them on a flat, leveled surface.

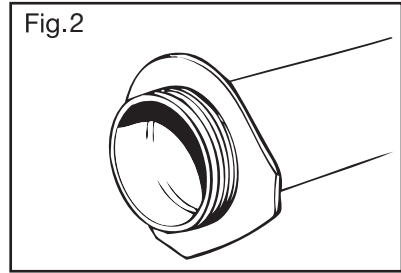
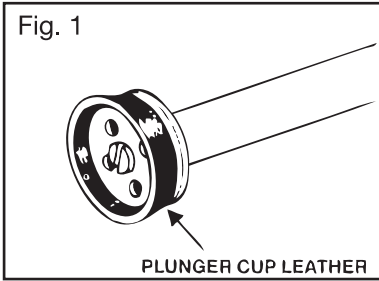
Make sure you have:

- a. this user's manual.
- b. the body of the sprayer (tank assembly).
- c. a black, flexible hose with a valve assembly (trigger) attached to one end.
- d. a lid assembly -look inside the sprayer tank if the lid is not closing the sprayer.
- e. an extension assembly (lance) with a Constant Flow Valve (colored) with a nozzle installed at the distal (far) end. See #67 on the "extension tube and nozzle service parts" diagram on page 15.
- f. a carrying strap with the Hudson® logo on it.
- g. a filter basket.
- h. GO TO Step 5.



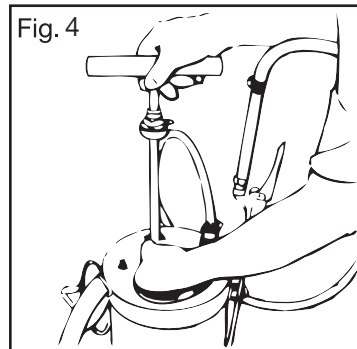
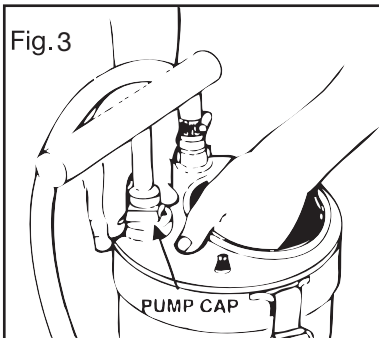
Step 5. Attach the carrying strap to the upper and lower attachments on the sprayer by clipping both ends of the strap to the “D rings” on the sprayer.; GO TO Step 6.

Step 6. Insert the cylinder pump into the sprayer through the pump opening. Rotate it so that the flat portion at the upper portion of the cylinder (see Fig. 2) is against the inside surface of the sprayer. NOTE: it is important that this is done correctly to ensure proper installation. Failure to do so may result in damage to the cylinder or the sprayer's body. Insert the thread up from inside the sprayer until the flat surface below the thread reaches the interior wall of the tank cover. GO TO Step 7.



Step 7. Insert the pump handle into the pump cylinder. Make sure the plunger cup (Fig. 1) is not bent or distorted while inserting the pump handle. Any distortion of the cup will cause the sprayer to fail to pressurize properly and may result in damage to the cup. GO TO Step 8.

Step 8. Slide the pump handle all the way into the cylinder (Fig. 4). Make sure to hold the pump cylinder in place while you are doing this. Screw the pump cap (Fig. 3) on the cylinder thread while holding the pump cylinder. Tighten by hand only. Do not use a wrench. This and other components can be tightened after the sprayer is fully assembled. GO TO Step 9.



Step 9. Attach the hose to the sprayer using the attachment on the end of the hose opposite the trigger assembly. Tighten by hand only. Do not use a wrench. This and other components can be tightened after the sprayer is fully assembled. GO TO Step 10.

Step 10. Attach the lance to the trigger assembly. Tighten the hose using a wrench or pliers (spanners), but do not over tighten. GO TO Step 11.

Step 11. Close sprayer. Pull the cover up from inside the sprayer. Hold it horizontally while in the sprayer making sure the handle is parallel to the body of the lid. GO TO Step 11.1.

11.1. Place the lid against the inside of the sprayer opening. Make sure it sits uniformly against the body of the sprayer. GO TO Step 11.2

11.2. Turn the lid handle while pulling on it lightly until the bottom edges reach the sprayer top. Make sure the handle does not make contact with the pressure release valve as you are closing the sprayer. GO TO Step 12.



Fig. 5

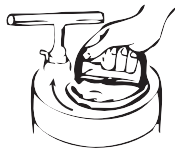


Fig. 6



Fig. 7

Step 12. Inspect the sprayer to make sure all parts are installed correctly. GO TO Step 13.

Step 13. Carefully tighten the pump cap, hose connector, and lance connector using a wrench or pliers (spanners). Do not over tighten. GO TO Step 14.

Congratulations! Your Hudson® X-Pert® sprayer is fully assembled and ready!

Operating the Hudson® X-Pert® Sprayer

Step 14. Inspect the sprayer to make sure all parts are installed correctly. GO TO Step 15.

Step 15. Sprayer has green pressure release valve. GO TO Step 16.
Sprayer has brass pressure release valve. GO TO Step 17.

Step 16. Make sure the tank has no internal pressure by twisting the top portion of the pressure release valve (PRV). See Fig. 8. Make sure the handle does not make contact with the pressure release valve as you wait until all pressure is released and the cover can be easily inserted in the tank by hand. GO TO Step 18.

Step 17. Turn the lid handle slowly until its bottom frame reaches and presses on the metal nipple emerging through one side of the cover. Wait until all pressure is released and the cover can be easily inserted in the tank by hand. GO TO Step 18.



Fig. 8

Fig. 9

Step 18. Remove the cover and place it on top of the sprayer. GO TO Step 1

Filling the sprayer

Step 19. Place the filter basket on the opening of the sprayer. GO TO Step 20.

Step 20. Place an insecticide sachet on the filter basket. GO TO Step 21.

Step 21. Carefully add water to the sprayer to the fill level desired. GO TO Step 22.

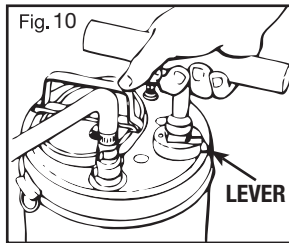
Step 22. Carefully remove the filter after all the water has drained from it. Place any remnant of the sachet in the sprayer. GO TO Step 23.

Step 23. Close sprayer. Insert the cover in the sprayer. Hold it vertically while inserting it in the sprayer making sure the handle is parallel to the body of the cover. GO TO Step 23.1.

23.1. Once inside, rotate it until it is horizontal and parallel to the internal surface of the body of the sprayer. Place the cover against the inside of the sprayer opening. Make sure it sits uniformly against the body of the sprayer. GO TO Step 23.2.

23.2. Turn the lid handle while pulling on it lightly until the bottom edges reach the sprayer top. Make sure the handle does not make contact with the pressure release valve as you are closing the sprayer. GO TO Step 24.

Step 24. Return the filter basket to a safe container away from dust or other debris. GO TO Step 25.



Pressurizing the sprayer

Step 25. Unlock the pump plunger by turning lever on the pump cap, Fig. 6. GO TO Step 26.

Step 26. Using both hands, raise plunger to its “up” position. Then push plunger downward with a smooth and steady motion. Continue this action using full, even strokes -all the way up, and all the way down- until the pressure gauge on the sprayer reads 55 psi or a pressure higher than the pressure setting of the CFValve. At a lower pressure, the CFValve will not allow liquid through. GO TO Step 27.

Carrying the sprayer

Step 27. Lower the pump handle and secure it with the locking device on the pump cap nut. GO TO Step 28.

Step 28. Grab the sprayer by the strap. Slowly raise the strap until all the slack is taken off. Do not attempt to lift or carry the sprayer by the cover handle or any other component. They are not designed for this purpose and may be damaged or broken. Lift the sprayer by the strap and place the strap on your shoulder. Adjust strap's length for greatest comfort. GO TO Step 29.

Step 29. Hold the trigger assemble as shown in Fig. 11. Go To step 30.

Step 30. Proceed to the location where the material in the sprayer will be sprayed. Make sure the sprayer is depressurized (see Step 19.) If it needs to be placed on a transport (jeep, truck, donkey, bicycle, etc) on the way to the spray site. Re-pressurize the sprayer (see Step 25.) Once at the spray site. GO TO Step 31.

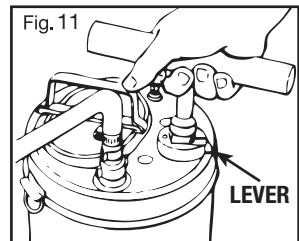
Spraying

NOTE: Training on the details related to the required distance from the nozzle to the sprayed surface, spray overlap, spray deposition rates, spraying in difficult areas, troubleshooting, safety, etc. is available at: international@hdhudson.com. Follow the procedures identified and explained during the IRS capacity-building sessions and the IRS Operational Manual.

Step 31. Once at the spray site, locate the sprayer to make sure it is the one you started with in Step 1 and inspect it for any damage or problems. Make sure it suffered no damage during transport and all external parts are intact and in place. GO TO Step 32.

Step 32. Lift the sprayer by the shoulder strap and place it on your shoulder (see Step 27). Proceed to the spray site. Make sure the insecticide (or other material) in the sprayer is properly dissolved and remains in suspension by slightly agitating the sprayer while on your shoulder. GO TO Step 33.

Step 33. Hold the trigger assembly as shown in Fig. 11. GO TO Step 34.



Step 34. Depress lock-off lever on the trigger assembly. The sprayer will not produce an output with the lock-off lever in the “on” position. GO TO Step 35.

Step 35. Aim the lance at the spot you want to spray. Make sure you maintain the required distance from the nozzle to the surface to be sprayed. Squeeze the trigger handle. See Fig. 12. Continue to spray as explained during the training session. This will ensure you end up with a uniform deposition and thorough coverage. Make sure there are no gaps on the surfaces sprayed. Make any corrections as needed and continue to spray until the entire surface is sprayed. Go to Step 25 to re-pressurize the sprayer if you need to do so. Make sure the spray is complete, thorough, and uniform. Continue spraying. Return to Step 25 to pressurize as needed.

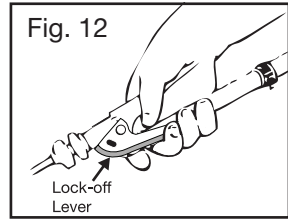


Fig. 12

At the end of the day, return to the central location and proceed with the Progressive Rinse method. This will result in a clean sprayer and will recycle a good portion of the mixture remaining in the sprayer. (Consult your program manager or let us know if you need more details or need assistance setting up the Progressive Rinse method in your area.) Do not allow spray material to remain in the sprayer after use. GO TO Step 36. To be done after completing the Progressive Rinse cycle. Do not allow spray material to remain in the sprayer after use.

Step 36. Release the internal pressure of the sprayer. See Step 15 if you need to refresh your memory. GO TO Step 37.

Step 37. Drain the discharge assembly by holding it pointed down into a container with spray control valve open. Drain tank and wipe exterior wall. GO TO Step 38.

Step 38. If the sprayer will be used within a day or so, hang it upside down by its footrest allowing the discharge assembly to hang downward see Fig. 13. If the sprayer is to be stored for an extended period, longer than a month, GO TO Step 39.

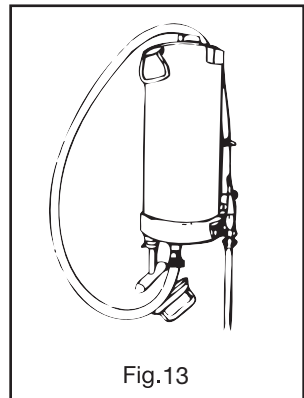


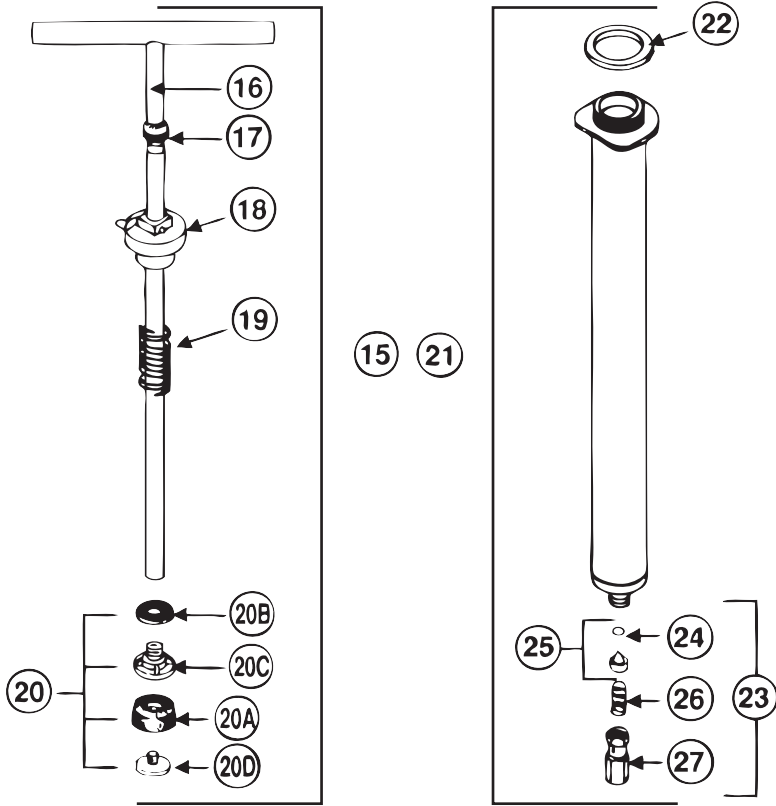
Fig.13

Storing the Sprayer for Extended Period

Step 39. After going through the Progressive Rinse Method, disassemble the sprayer. Components should be kept in covered, properly labeled storage containers in a secure location. All parts should be clean and dry before storing for a period of weeks or months. Do not lubricate any parts except plunder cup and threaded fittings. Lubricate the leather cup with SW30 engine oil only or similar lubricant. Do not use grease.

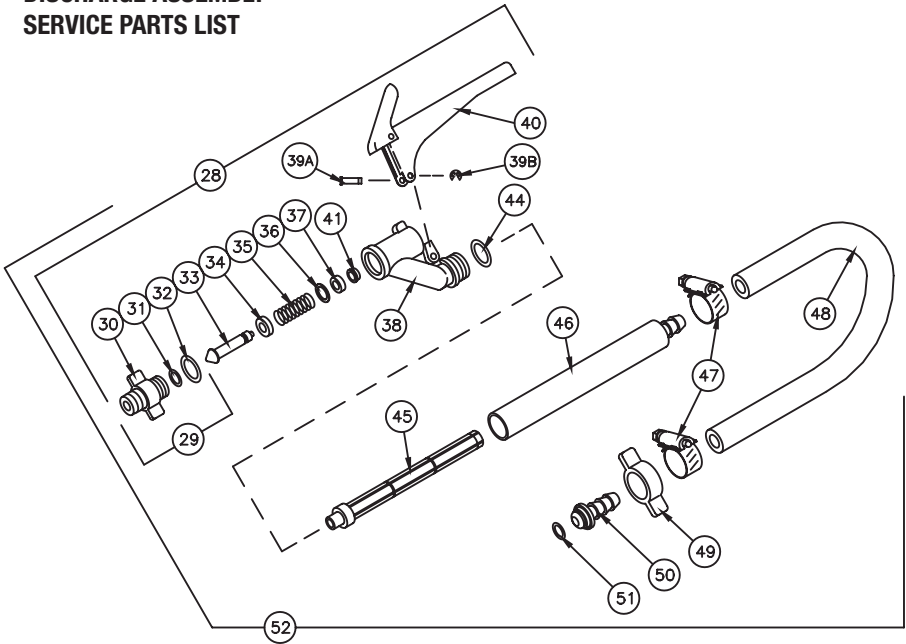
Returning a Sprayer to Duty after Extended Storage GO TO Step 1.

PUMP AND CYLINDER SERVICE PARTS



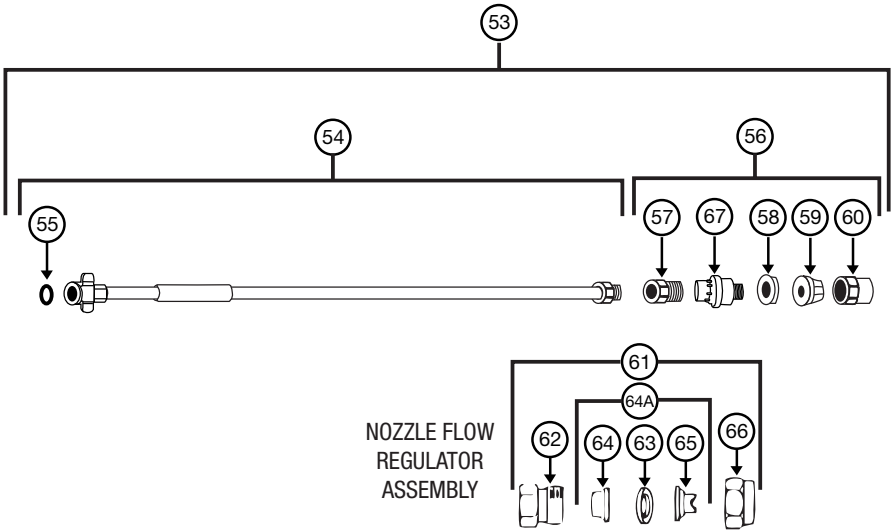
Ref. No.	Part Number	Description
15	147-541	Plunger Assembly, complete for 3 & 3.5 gallon unit
	147-537	Plunger Assembly, complete for 2 gallon (8L) unit
16	147-501	Plunger Tube and Handle, only for 3 & 3.5 gallon unit
	147-504	Plunger Tube and Handle, only for 2 gallon unit
17	151-028	Bumper Pad
18	149-102	Pump Cap Assembly, Brass
19	150-409	Bumper Spring
20	148-833	Cup Replacement Kit
20A	154-007	Cup Leather Only
20B	123-908	Washer
20C	153-812	Plunger Adaptor
20D	153-816	Cup Retainer
21	147-202	Pump Cylinder Assembly, complete for 3 & 3.5 gallon unit
	147-199	Pump Cylinder Assembly, complete for 2 gallon (8L) unit
22	151-030	Pump Cylinder Gasket
23	140-055	Pump Cylinder Check Valve Assembly, complete
24	805-401	O-Ring, for pump cylinder check valve
25	140-054	Pump Cylinder Check Valve Assembly
26	150-604	Spring, for pump cylinder check valve
27	110-790	Housing, for pump cylinder check valve

**DISCHARGE ASSEMBLY
SERVICE PARTS LIST**



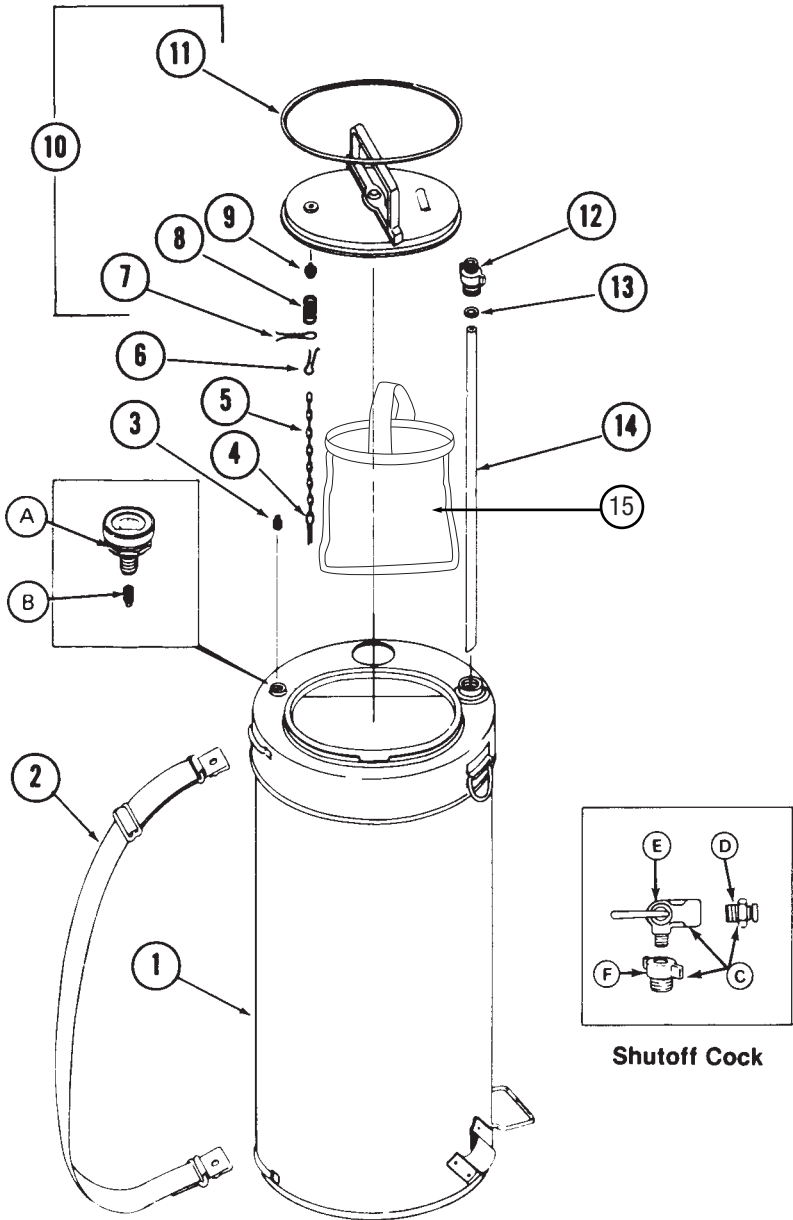
Ref. No.	Part Number	Description
28	149-706	Shutoff Assembly, complete, Thrustless™
29	149-702	Valve Body Cap, with O-Ring gaskets
30	115-733	Shutoff Valve Body Cap
31	805-335	Valve Body Cap O-Ring, for valve pin
32	805-309	Valve Body Cap O-Ring
33	115-726	Shutoff Valve Pin
34	110-243	Teflon Valve Pin Spacer
35	150-400	Shutoff Valve Pin Spring
36	123-911	Shutoff Valve Pin Washer
37	151-016	Shutoff Valve Pin Packing
38	153-381	Shutoff Valve Body
39A	115-779	Operating Lever Retaining Pin
39B	801-649	Operating Lever Clip Ring
40	149-490	Operating Lever, with lock-off lever
41	110-262	Teflon Bearing, for valve pin
44	805-310	O-Ring Gasket, for male filter fitting
45	152-356	Filter
46	146-627	Filter Housing Assembly
47	803-623	Hose Clamp
48	115-902	Hose Only
49	115-970	Nut
50	115-950	Hose Connector
51	805-307	O-Ring Gasket, for hose connector
52	146-689	Hose, with Thrustless™ shutoff and filter assembly

EXTENSION TUBE AND NOZZLE SERVICE PARTS



Ref. No.	Part Number	Description
53	141-966	Extension Tube and Nozzle Assembly
	141-968	Extension Tube and Nozzle Flow Regulator Assembly for 67362 & 67462
54	141-967	Extension Tube Assembly Only
55	805-337	O-Ring Gasket for Extension Tube
56	141-989	Nozzle Assembly, complete
57	114-791	Nozzle Body
58	123-950	Polyethylene Nozzle Gasket
59	805-855	No. 8002E Hardened Stainless Steel Nozzle Tip
60	115-680	Nozzle Body Cap
61	141-983	Nozzle Flow Regulator Assembly. Consists of 114-791 Nozzle Body, 123-950 (uses 2), 148-000X Nozzle Flow Regulator, 153-400E Nozzle Tip and 115-680 Nozzle Body Cap.
62	114-791	Nozzle Body
63	123-950	Nozzle Gasket, Polyethylene
64	148-000X	Nozzle Flow Regulator
64A	148-001	Nozzle Flow Regulator Kit. Consists of 123-950 Gasket, 148-000X Nozzle Flow Regulator, 153-400E Nozzle Tip.
65	153-400E	Hardened Stainless Steel Nozzle Tip
66	115-680	Nozzle Body Cap
67	98662V	Constant Flow Valve

TANK SERVICE PARTS



Shutoff Cock

PARTS LIST

Ref. No.	Part Number	Description
1	142-612	Spare Tank Only, less cover, 3 gallons
	142-615	Spare Tank Only, less cover, 4 gallons
2	152-829	Shoulder Strap, 2" Wide
3	114-152	Plug for gauge adaptor fitting on top
4	801-423	1/8 x 1/2 Cotter Pin
5	116-426	Cover Chain
6	801-411	3/32 x 1/2 Cotter Pin
7	801-419	3/32 x 7/8 Cotter Pin
8	150-605	Valve Pin Spring
9	143-000	Valve Pin Assembly
10	140-205	Cover Assembly, complete
11	151-401	Cover Gasket
12	115-965	Male Fitting
13	805-312	O Ring, for dip tube
14	129-074	Supply Tube Only, for 3 gallon tank
	129-075	Supply Tube Only, for 4 gallon tank
15	673-001	Filter for Filler Opening
OPTIONAL ITEMS		
PRESSURE GAUGE ASSEMBLY (See Page 3)		
A	803-311	100-lb. Pressure Gauge
B	146-605	Filter Assembly, for pressure gauge
NOZZLE FLOW REGULATOR (See Page 14)		
	148-001	Nozzle Flow Regulator Kit; includes 153-400E nozzle tip
SHUTOFF COCK (See Page 10)		
C	148-704	Hose Adaptor Assembly
D	115-960	Hose Adaptor
E	806-428	Shutoff Cock
F	115-968	Supply Tube Adaptor, with wing fitting

MODEL COMPONENT BREAKDOWN

11.3 Liter (3.0 Gallons)	13.2 Liter (3.5 Gallons)	Pressure Gauge	Shutoff Cock	Nozzle Flow Regulator	Thrustless Shutoff	Strap 50 mm (2 in.)
67322AD	67422AD	X			X	X
67322WD	67422WD	X	X		X	X
67362AD	67462AD	X		X	X	X
67362WD	67462WD	X	X	X	X	X

**SYMBOLS EMBOSSED ON TANK
INDICATING YEAR OF MANUFACTURING**

<u>YEAR</u>	<u>SYMBOL</u>	<u>YEAR</u>	<u>SYMBOL</u>	<u>YEAR</u>	<u>SYMBOL</u>
1948-49	□	1973-74	⋮	1998-99	⋮
1949-50	◇	1974-75	⋮	1999-00	⋮
1950-51	○	1975-76	⊥	2000-01	⋮
1951-52	⊙	1976-77	⊥	2001-02	⋮
1952-53	◻	1977-78	⊥	2002-03	⋮
1953-54	◊	1978-79	⊥	2003-04	⋮
1954-55	△	1979-80	⊥	2004-05	⋮
1955-56	▲	1980-81	⊥	2005-06	⋮
1956-57	×	1981-82	⊥	2006-07	⋮
1957-58	⊗	1982-83	⊥	2007-08	⊥
1958-59	⊗	1983-84	⊥	2008-09	⊥
1959-60	⊗	1984-85	⊥	2009-10	⊥
1960-61	⊗	1985-86	⊥	2010-11	⊥
1961-62	—	1986-87	⊥	2011-12	⊥
1962-63	—	1987-88	⊥	2012-13	⊥
1963-64	⋮	1988-89	⊥	2013-14	⊥
1964-65	⋮	1989-90	⊥	2014-15	⊥
1965-66	⋮	1990-91	⊥	2015-16	⊥
1966-67	⋮	1991-92	⊥	2016-17	⊥
1967-68	⋮	1992-93	⊥	2017-18	⊥
1968-69		1993-94	⊥	2018-19	⊥
1969-70	·	1994-95	⊥	2019-20	⊥
1970-71	··	1995-96	⊥	2020-21	⊥
1971-72	··	1996-97	⊥	2021-22	⊥
1972-73	··	1997-98	⊥	2022-23	⊥

Sign of the Best Buy



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