

H. D. HUDSON MANUFACTURING COMPANY PROFESSIONAL DIVISION

IMPORTANT! READ THESE INSTRUCTIONS BEFORE USING SPRAYER.

Si usted no lee el idioma Francés, no use este pulverizador hasta que las instrucciones siguientes hayan sido traducidas o explicadas a usted.

Wenn Sie kein Französisch lesen, bitte dieses Gerät nicht verwenden bis die folgenden Anweisungen für Sie übersetzt oder erklärt worden sind.

Si usted no lee el idioma Inglés, no use este pulverizador hasta que las instrucciones siguientes hayan sido traducidas o explicadas a usted.

This equipment has been found to comply with the performance guidelines of the World Health Organization Specification number WHO/VBC/89.970.

How to Use and Maintain Hudson X-Pert® Disease Vector Control Sprayer

DANGER!

This sprayer operates with liquid under pressure. Failure to observe CAUTIONS and to follow instructions for use and maintenance can cause tank, hose or other parts to be corroded, weakened and/or burst under pressure. This can result in SERIOUS

INJURY from forcible ejection of parts or high pressure discharge of spray material. Do not use flammables in this sprayer as these can ignite or explode, causing SERIOUS INJURY.

CAUTION!

Do not use caustics (alkalines) or corrosives (acids) in this sprayer as these can corrode metal parts or weaken hose and gaskets.

BE SURE HOSE IS SECURELY ATTACHED TO THE TANK BEFORE EACH USE. A loosely connected hose can become disengaged when sprayer is under pressure and cause SERIOUS INJURY.

Inspect sprayer tank inside and outside as well as each part of the sprayer thoroughly before each use. Do not pressurize if tank is damaged, rusted or corroded, or if hose is loose, damaged or excessively stiff or soft.

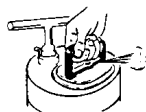
IMPORTANT: ALWAYS EMPTY, CLEAN AND DRAIN BOTH TANK AND HOSE IMMEDIATELY AFTER EACH USE IN ACCORDANCE WITH "HOW TO CLEAN" INSTRUCTIONS ON PAGE 6. FAILURE TO SO MAINTAIN THIS SPRAYER CAN RESULT IN CORROSION, WEAKENING OR BURSTING OF SUCH PARTS WHEN SPRAYER IS UNDER PRESSURE.

Pressurize sprayer only by the hand pump as use of mechanical device, such as an air compressor, can create excessive and dangerous pressure. Always release pressure:

1. Before removing pump.
2. Before removing extension tube, nozzle cap or other part.
3. Before trying to unclog nozzle or discharge line.
4. Before servicing sprayer in any way.
5. When sprayer is left in sun or other warm place.

IMPORTANT! HOW TO RELEASE PRESSURE

Turn cover handle 1/4 turn so it depresses pressure relief valve.



Do not pump or use sprayer with head or body over pump.

Before using any pesticide or other spray materials in this sprayer, READ THE LABEL ON ITS ORIGINAL CONTAINER THOROUGHLY AND FOLLOW ITS DIRECTIONS. Some spray materials are dangerous and should not be used in this sprayer as they can damage the sprayer and cause SERIOUS BODILY INJURY OR PROPERTY DAMAGE. Follow exactly, the instructions for mixing, application and safety. Be sure to wear protective clothing and goggles if so instructed on label.

KEEP SPRAYER AND SPRAY MATERIALS OUT OF REACH OF CHILDREN.

Use only appropriate Hudson replacement parts. Improper 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 Operate

HOW TO CLOSE TANK—

Hold cover upright, insert into tank. Fig. 1. Lift and

seat in tank opening. Fig. 2. Turn handle across width of opening Fig. 3.

Fig. 1

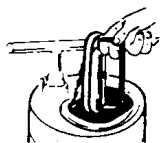


Fig. 2

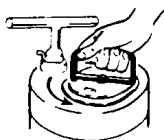


Fig. 3



HOW TO OPEN TANK—

Turn handle on cover either right or left so it depresses air release valve pin. Fig. 4.

This opens air release valve on cover to reduce tank pressure. Fig 5.

Fig. 4

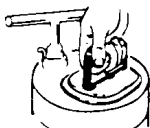
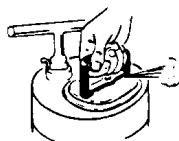


Fig. 5

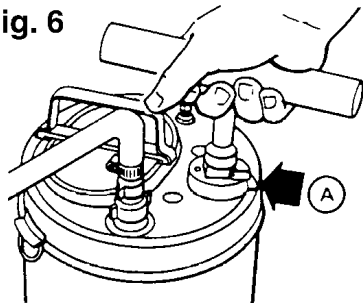


HOW TO PRESSURIZE TANK—

Unlock pump plunger by turning lever on pump cap A Fig 6. Using both hands raise plunger to its "up" position. Then push plunger downward. Continue this action using full, even strokes—all the way up, all the way down.

Never pump more than 55 full plunger strokes with the tank 3/4 full.

Fig. 6



If sprayer has a pressure gauge, it is preferable to maintain a pressure range of between 25 and 55 pounds. *Do not exceed 60 psi.* Fig 7.

Always release pressure when sprayer is not in use, particularly if left standing in a warm place. Always release pressure when sprayer is being transported and not in use.

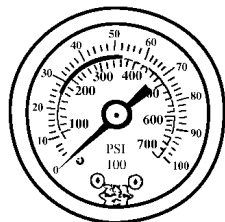
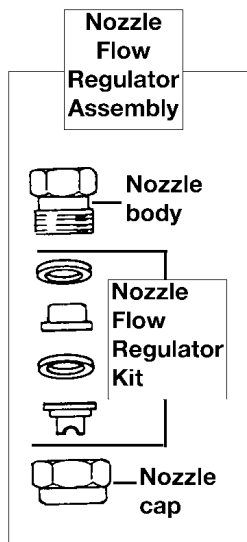


FIG. 7

NOZZLE FLOW REGULATOR

The nozzle flow regulator No. 148-000X is offered as an optional item. Its used to maintain a relatively even discharge rate from the sprayer as the tank pressure drops from 3.9 kg/cm² to 1.8 kg/cm² (55 to 25 psi) during spraying. It is introduced into the nozzle assembly and should always be used with a No. 153-400E nozzle tip. It is designed to minimize the decrease in flow rate observed (without nozzle flow regulator) when the tank pressure drops from 3.9 kg/cm² to 1.8 kg/cm² (55 to 25 psi).

The nozzle flow regulator should be positioned in the nozzle assembly as shown in the adjacent diagram. The alternate use of two nozzle flow regulators at one-day intervals is recommended to permit the evaporation of any chemical or solvent which may be absorbed during use. Continuous use without a normalizing period may result in a change in the rate of discharge.



HOW TO CARRY—Sprayer is carried most easily and comfortably on sprayer's back. Hold in place with strap over shoulder. Adjust strap length for greatest comfort. Do not carry by cover handle.

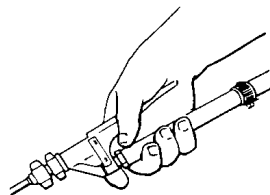


Fig. 8

HOW TO SPRAY—Squeeze handle of spray control valve to release spray material.

Fig. 8.

HOW TO MIX WETTABLE POWDERS AND FILL TANK

Mix spray materials carefully. When using wettable powders, first put powder in separate container with some water, stirring to make a paste. Thin the paste by adding small quantities of water until the desired volume is reached. Pour this mixture through a strainer into the sprayer tank.

Do not fill tank more than 3/4 full (indicated by arrow on tank wall), as top 1/4 space is necessary for air head. Fig. 11.

Wettable powders may settle out. To maintain suspension of the powder, shake tank from time to time. **NOTE:** When agitating spray, grasp sprayer by pump shaft and skirt at base of tank. Fig. 10. Do not hold tank by strap or with sprayer on shoulder, swing tank by bending body forward and backward.

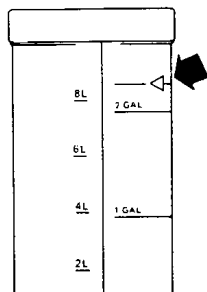


Fig. 9

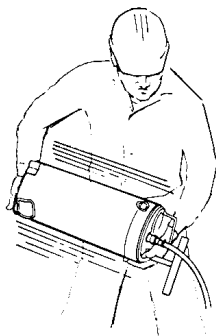


Fig. 10

HOW TO CLEAN

Clean daily, after spraying. Do not allow spray material to stand in tank after use. To clean, first rinse sprayer thoroughly. Second, remove nozzle. Put about 1 gallon of fresh water in tank, pressurize sprayer and flush water through system. Release tank pressure. Drain the discharge assembly by holding it pointed down and with spray control valve open. Drain tank and wipe interior wall.

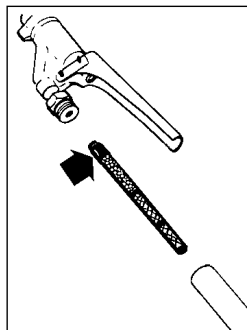


Fig. 11

Before or after flushing through discharge remove strainer at control valve. Fig. 11. **NOTE:** To remove strainer from valve, grasp it at its base, not by the screen. The strainer has a bayonet connection (not threaded). Twist strainer slightly as you pull it out. Rinse and clean strainer.

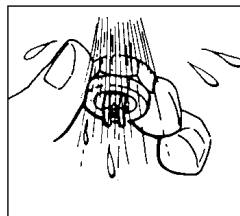


Fig. 12

Clean all residue from inside surfaces of nozzle parts by washing or flushing out under running water. Fig. 12.

Reassemble parts. Hang tank up side down with cover open. Allow discharge to hang downward, keeping valve open by tying lever down with string. Fig. 13.

HOW TO STORE

Before storing for a period of weeks or months, each sprayer should be completely disassembled and all parts cleaned and dried. Do not oil any parts (except plunger cup and threaded fittings as noted on pages 6 and 8).

When removing sprayer from storage, check thoroughly to be sure it is in good operating condition.

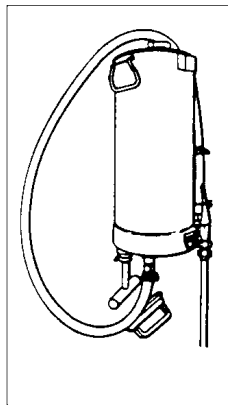


Fig. 13

HOW TO SERVICE

NOTE: If sprayer is pressurized, release air pressure before servicing.

IF PUMP DOESN'T BUILD PRESSURE—

In most instances, failure of the pump to build air pressure in the sprayer is due to a dry or worn plunger cup leather. To work on cup leather, always remove plunger from pump cylinder. Do not attempt to oil cup leather through breather hole in pump cap.

First, unthread pump cap A, Fig. 14. If cap is too tight, and if pump will build even slight temporary pressure, pressurizing the tank will make it easier to loosen cap. Once cap is loosened, release tank pressure. Hold pump cylinder by inserting hand through tank filler opening Fig. 15, and unscrew cap all the way. Pull plunger from cylinder, and remove cylinder from inside the tank.

Place a few drops of clean oil (not heavier than SAE 30) on leather, and massage into leather until it is soft. Replace plunger cup leather if damaged. Fig. 16. To remove plunger leather assembly, use coin rather than screw driver in the slot of the plunger cup retainer.

To reassemble, hold pump cylinder in tank opening, with squared edge of flange, at top of cylinder, toward tank wall.

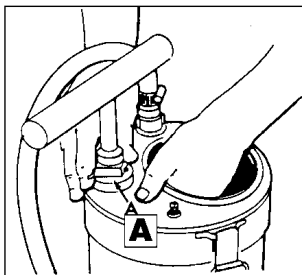


Fig. 14

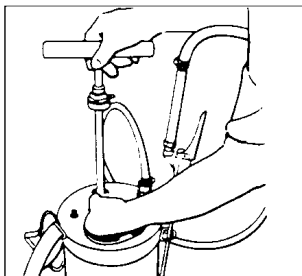


Fig. 15

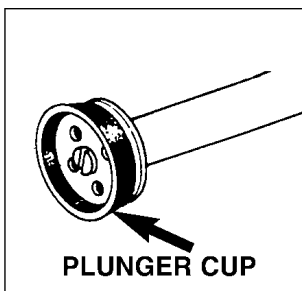


Fig. 16

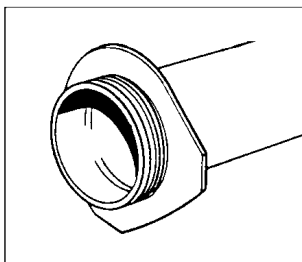


Fig. 17

IF SPRAYER DOESN'T SPRAY—If, when under pressure, spray stops, becomes erratic or radically drops off, look for the problem in the discharge line.

First, release pressure. Clean nozzle tip. Fig. 18. Use broom straw or sliver of wood to clear orifice if plugged. **DO NOT USE WIRE.**

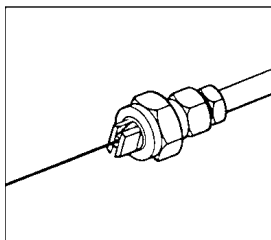
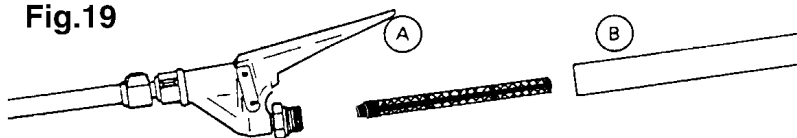


Fig. 18

Fig.19



Check strainer A at spray control valve by unthreading strainer housing B, Fig 19. Strainer has a bayonet connection (not threaded) and is removable by hand; twist it slightly as you pull it out. Always grasp base; never grasp screen section.

IF SPRAYER DOESN'T SEAL AGAINST PRESSURE—Check cover gasket A, Fig. 20. Check pump cylinder gasket B, Fig. 21 (See “IF PUMP DOESN'T BUILD PRESSURE”, page 6, on how to remove pump cylinder.)

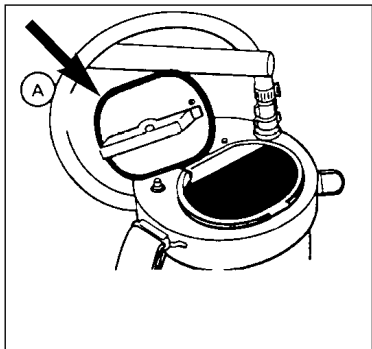


Fig.20

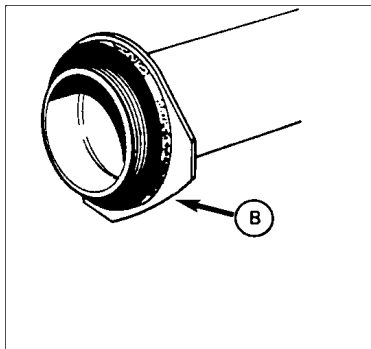


Fig. 21

IF SPRAYER DOESN'T SHUT

OFF—Depressurize the sprayer and disconnect spray control valve from hose by unscrewing at strainer housing. Remove strainer and extension tube.

Remove cotter pins A from spray control valve, Fig. 22. Unthread winged valve body cap B, maintaining a firm grip on cap and valve body to prevent spring from rapidly ejecting parts. Clean, check and, if necessary, replace valve seat in cap B, O-ring, spacer, washer and valve pin packing.

Assemble all elements on valve pin, C. Press pin back into valve with cap B. Tighten cap B and replace pins A.

HOW TO TIGHTEN

FITTINGS—All fittings for most general servicing, can be tightened or loosened by hand. If they become dry and difficult to turn, add a drop of oil to the thread of cap B, Fig. 22.

TRANSPORTING SPRAYER

—To carry sprayer, first release all pressure. Keep cover locked in position or hanging outside of tank. Do not let cover hang inside tank where it can strike and possibly damage the pump cylinder.

HOW TO CHECK FOR AIR

LEAKS—If air leaks cannot be easily located, test fittings by applying a soapy solution to area around openings and connections.

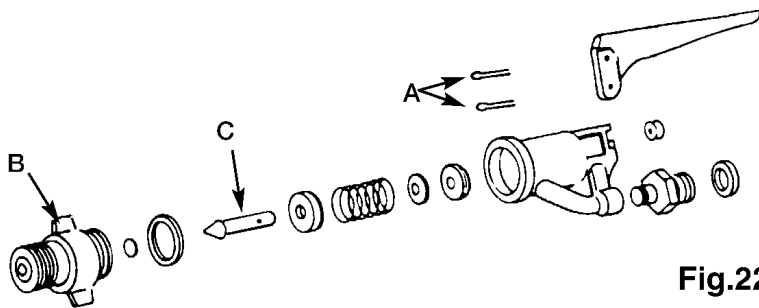


Fig.22

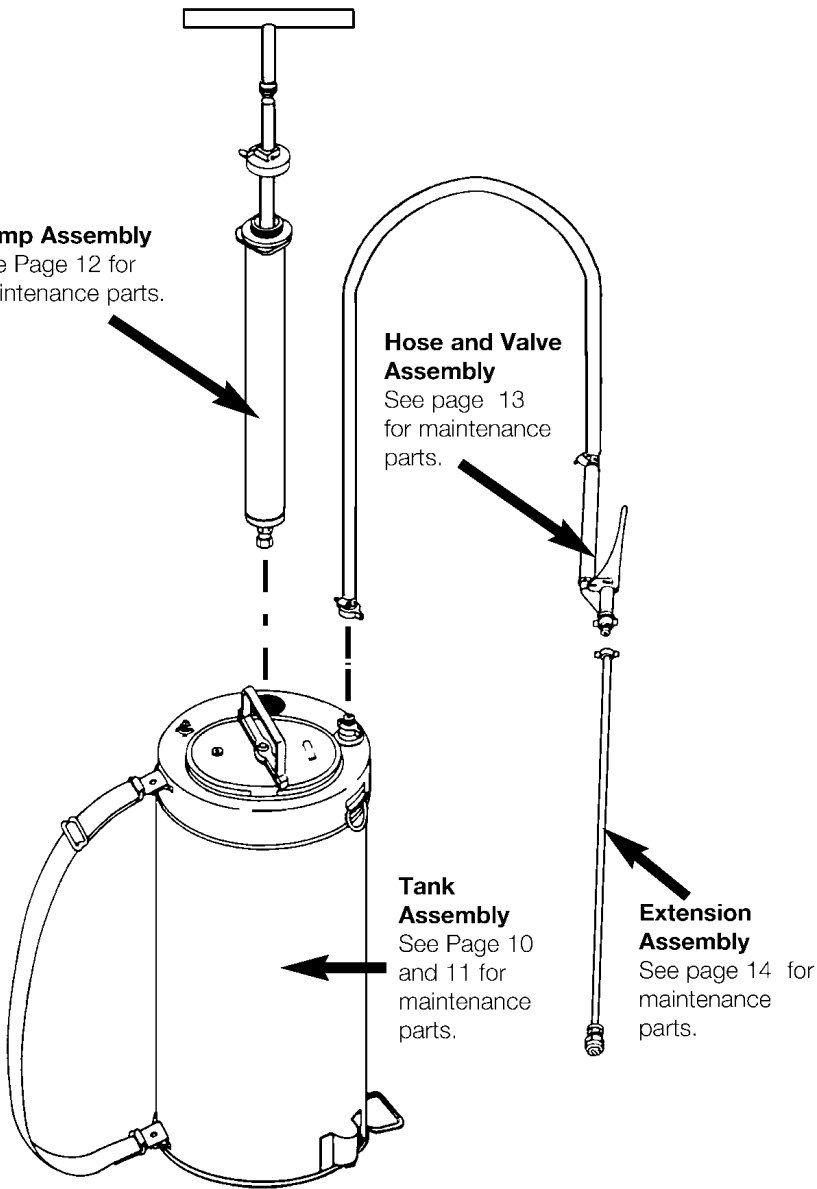
SPRAYER ASSEMBLY

Pump Assembly
See Page 12 for
maintenance parts.

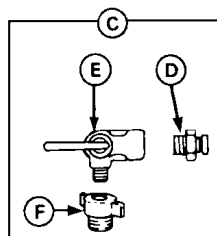
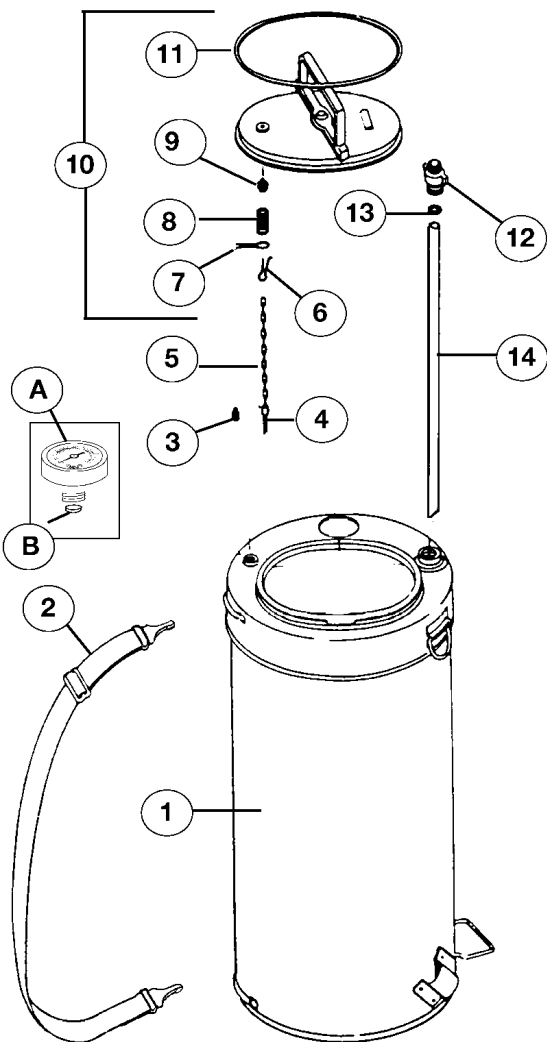
**Hose and Valve
Assembly**
See page 13
for maintenance
parts.

**Tank
Assembly**
See Page 10
and 11 for
maintenance
parts.

**Extension
Assembly**
See page 14 for
maintenance
parts.



TANK MAINTENANCE PARTS



Shutoff Cock

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 tank 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 supply tube
14	129-074	Supply Tube only, for 3 gallon tank
	129-075	Supply Tube only, for 4 gallon tank

OPTIONAL ITEMS

PRESSURE GAUGE ASSEMBLY (See Page 10)

A	803-311	100 lb. Pressure Gage
B	146-605	Filter Assembly, for pressure gauge

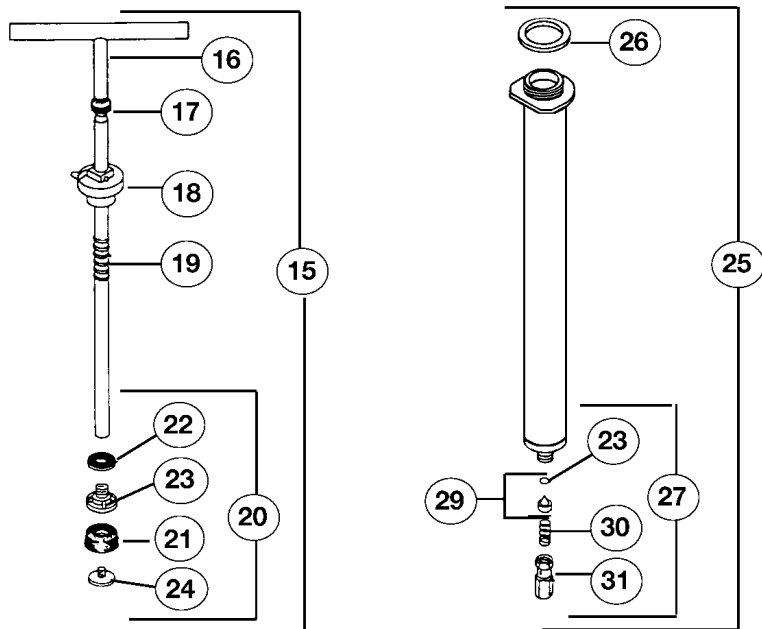
NOZZLE FLOW REGULATOR (See Page 14)

	148-001	Nozzle Flow Regulator Kit, includes 153-400E nozzle tip
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SHUTOFF COCK (See Page 10)

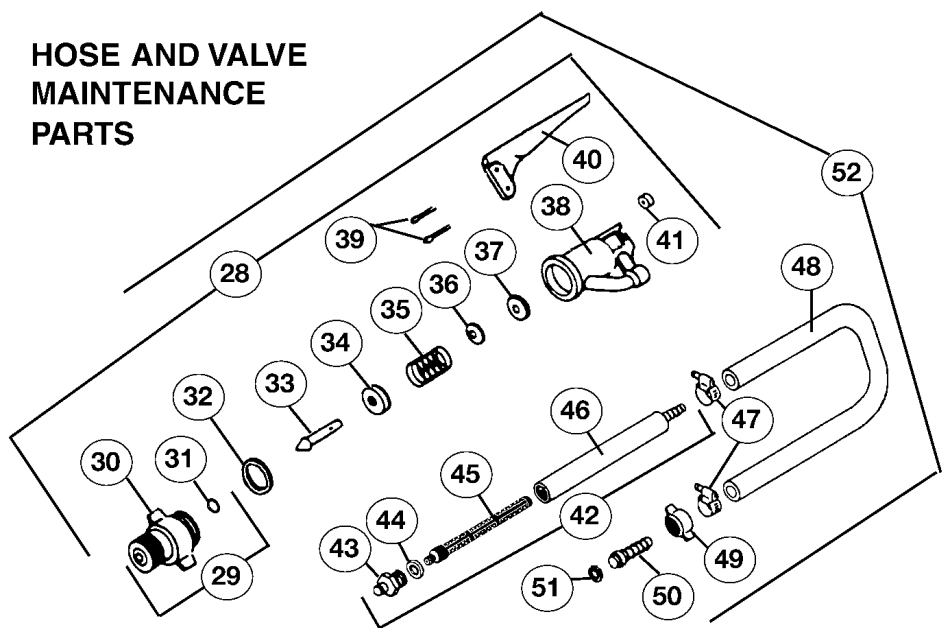
C	148-704	Hose Adaptor Assembly
D	115-960	Hose Adaptor
E	806-428	Shutoff Cock
F	115-968	Supply Tube Adaptor, with wing fitting

PUMP PLUNGER AND CYLINDER



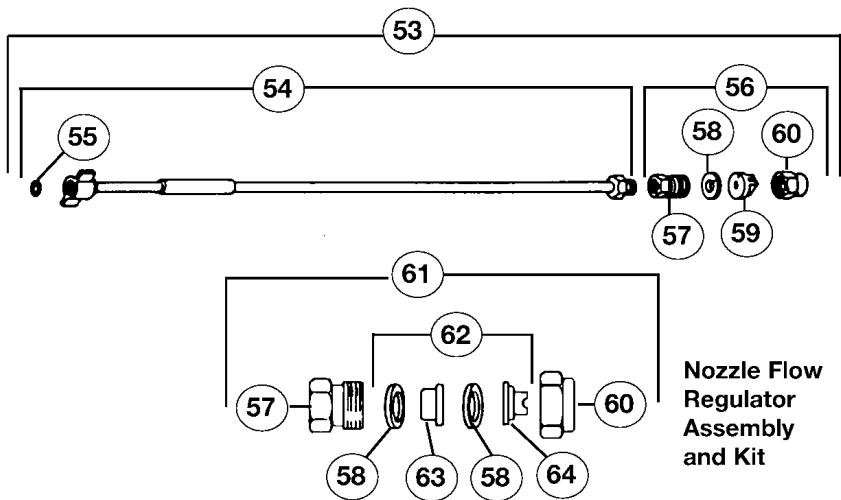
Ref. No.	Part Number	Description
15	147-541	Plunger Assembly, complete
16	147-501	Plunger Tube and Handle, only
17	151-028	Bumper Pad
18	149-102	Pump Cap Assembly, only (brass)
19	150-409	Spring
20	148-833	Cup Replacement Kit
21	154-007	Cup Leather only
22	123-908	Washer
23	153-812	Plunger Adaptor
24	153-816	Cup Retainer
25	147-202	Pump Cylinder Assembly, Complete
26	151-030	Pump Cylinder Gasket
27	140-055	Pump Cylinder Check Valve Assembly, complete
28	805-401	O-ring, for pump cylinder check valve
29	140-054	Pump Cylinder Check Valve Assembly
30	150-604	Spring, for pump cylinder check valve
31	110-790	Housing, for pump cylinder check valve
OPTIONS FOR PLUNGER ASSEMBLY		
23	153-812B	Plunger Adaptor, brass
24	153-816B	Cup Retainer, brass

HOSE AND VALVE MAINTENANCE PARTS



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	115-716	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	153-377	Shutoff Valve Body
39	801-423	1/8 x 1/2 Cotter Pin
40	123-899	Shutoff Operating Lever
41	110-234	Teflon Bearing, for valve pin
42	146-617	Strainer Assembly, complete
43	114-905	Male Fitting, for strainer housing
44	805-310	O-ring Gasket, for male strainer fitting
45	152-356	Strainer
46	146-627	Strainer Housing
47	803-623	Hose Clamp
48	115-902	Hose Only
49	115-970	Wing Nut
50	115-950	Hose Connector
51	805-307	O-ring Gasket, for hose connector
52	146-689	Hose, with Thrustless shutoff and strainer assembly

EXTENSION TUBE AND NOZZLE MAINTENANCE PARTS



Ref. No.	Part Number	Description
53	141-966	Extension Tube and Nozzle Assembly
54	141-967	Extension Tube Assembly Only
55	805-337	O-ring Gasket for Extension Tube
56	141-989	Nozzle Assembly Complete, Standard
57	114-791	Nozzle Body
58	123-950	Polyethylene Nozzle Gasket
59	805-855	No. 8002HSS Hardened Stainless Steel Nozzle Tip (standard)
60	115-680	Nozzle Cap
61	141-983	Nozzle Flow Regulator Assembly Consists of 57, 58, 60, 63, 64
62	114-791	Nozzle Flow Regulator Kit Consists of 58 (2 gaskets), 63, 64
63	148-000X	Nozzle Flow Regulator
64	148-001	Nozzle Tip 153-400E

HOW TO SILVER BRAZE

Materials Needed

For brass to brass, stainless to stainless and brass to stainless, use Handy and Harmon No. 35 Silver Brazing Alloy and Flux (or its equal).

Handy & Harmon, 850 Third Avenue, New York, NY 10022, U.S.A.

—Medium grade sandpaper and emery cloth for cleaning areas to be brazed.

—Water for cleaning area and removing excess flux.

—Rags for cleaning.

—Acetylene torch.

How to Silver Braze

1. Wipe area with clean rag to remove loose dirt and oil.
2. Thoroughly clean surfaces to be brazed with sandpaper or emery cloth.
3. Apply flux to the area to be silver brazed.
4. Heat the area with the acetylene torch until the flux is molten. Apply the silver brazing material and continue to heat this area and the braz-

ing material until the brazing material has melted at one point of the area to be repaired. Immediately move the torch flame to the next area to be brazed in order not to heat the parent metal above the melting point of the brazing material. It is very important not to overheat stainless steel in order to minimize the carbide precipitation within the metal itself.

5. A cloth saturated with water should be placed over the heated area to prevent the flux from hardening to the point where it is difficult to remove. Apply more water to the cloth as needed.
7. After the brazed area has cooled enough to handle, sandpaper or emery cloth should be used to remove the last traces of flux. This is most important because the flux is very corrosive.

HOW TO SOLDER

Materials Needed

- 50% tin and 50% lead alloy soft solder (National Lead Co., 900 W. 18th Street, Chicago, IL 60608, U.S.A. or equal).
- Liquid acid flux for stainless steel (Ruby Chemical Co., Glenn & McDowell Streets, Columbus, OH 43216 or equal).
- Water for cleaning and removing excess flux.
- Medium grade sandpaper or emery cloth for cleaning areas to be soldered.
- Medium weight soldering form (about 1 inch square end and 2-1/2 inches long).
- Sal ammoniac in bar form for cleaning tip of soldering iron (any chemical house).
- Blow torch for pre-heating soldering iron and surface to be soldered.
- Rags for cleaning.
- Small paint brush for applying flux.

HOW TO SOFT SOLDER

1. Wipe area with clean rag to remove loose dirt and oil.
2. Thoroughly clean with sandpaper all surfaces to be soldered.
3. Heat soldering iron to point where solder melts readily when it is applied to tip of the iron.
4. Bush liquid soldering flux over area to be soldered.
5. Clean the soldering tip with sal ammoniac. "Tin" the tip of the iron by applying solder.
6. Use soldering iron to bring temperature of metal to soldering heat, and at the same time, apply a small amount of solder to the tip of the iron.
7. As soon as the solder begins to unite with the metal, apply more solder to the tip and move slowly across the area to be soldered. Cover the area with sufficient solder, moving the iron slowly so the solder will flow evenly into the seam or opening. *Do not pile up solder.*
8. Remove soldering iron and allow applied solder to completely harden without artificial cooling.
9. After the solder is cool, remove the excess flux by washing the soldered area thoroughly with water. Dry the area with a cloth.

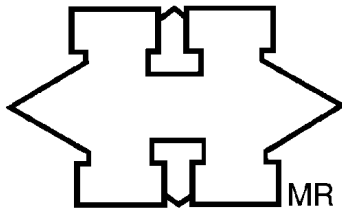
MODEL COMPONENT BREAKDOWN

3 Gallons (11,5 litres)	4 Gallons (15 litres)	Pressure Gage	Shutoff Cock	Nozzle Flow Regulator	Thrustless Shutoff	Strap
67322AD	67422AD	X			X	X
67322WD	67422WD	X	X		X	X
67332AD	67432AD				X	X
67362AD	67462AD	X		X	X	X
67362WD	67462WD	X	X	X	X	X
67322WB	67422WB	X	X		X	X

SYMBOLS EMBOSSED ON TANK INDICATING YEAR OF MANUFACTURE

Year	Symbol	Year	Symbol	Year	Symbol
1948-49	□	1970-71	•	1992-93	⊥•
1949-50	◇	1971-72	• •	1993-94	⊥•
1950-51	○	1972-73	• ••	1994-95	⊥• •
1951-52	⊙	1973-74	• •••	1995-96	⊥• ••
1952-53	◻	1974-75	• ••••	1996-97	⊥• •••
1953-54	◊	1975-76	⊥	1997-98	⊥• ••••
1954-55	△	1976-77	⊥•	1998-99	⊥• •••••
1955-56	◀△	1977-78	⊥••	1999-2000	⊥• ••••••
1956-57	×	1978-79	⊥•••	2000-01	⊥• •••••••
1957-58	×•	1979-80	⊥••••	2001-02	⊥• ••••••••
1958-59	×••	1980-81	⊥•••••	2002-03	⊥• •••••••••
1959-60	×•••	1981-82	⊥••••••	2003-04	⊥• ••••••••••
1960-61	×••••	1982-83	⊥•••••••	2004-05	⊥• •••••••••••
1961-62	—	1983-84	⊥••••••••	2005-06	⊥• ••••••••••••
1962-63	•	1984-85	⊥•••••••••	2006-07	⊥• •••••••••••••
1963-64	••	1985-86	⊥••••••••••		
1964-65	•••	1986-87	⊥•••••••••••		
1965-66	••••	1987-88	⊥••••••••••••		
1966-67	•••••	1988-89	⊥•••••••••••••		
1967-68	••••••	1989-90	⊥••••••••••~		
1968-69		1990-91	⊥•••••••••••		
1969-70	•	1991-92	⊥		

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