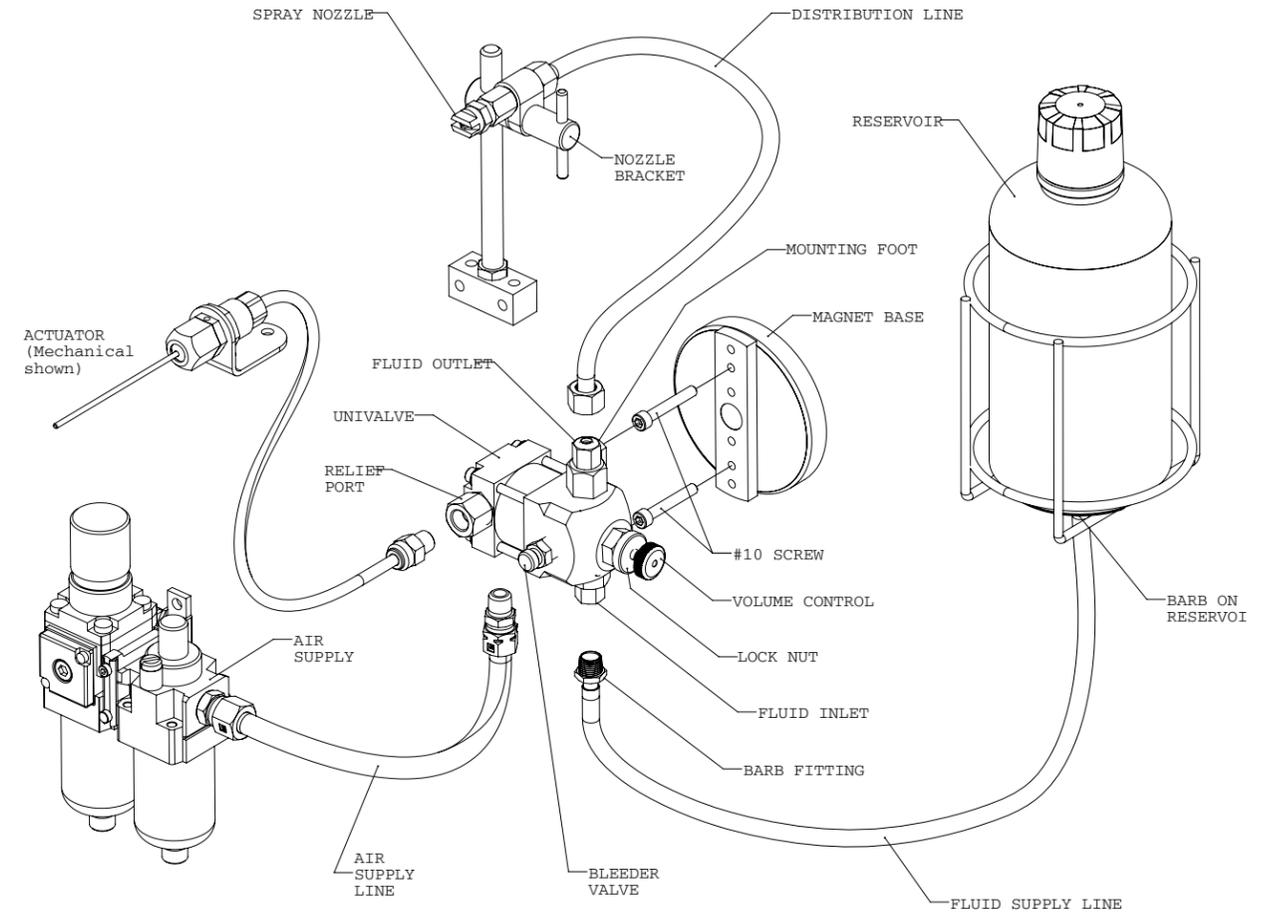


INSTALLATION, OPERATION, TROUBLESHOOTING & PARTS LIST

FOR MICROSPRAY MODEL No. **P010-A**
SUPERSEDES THE P-010



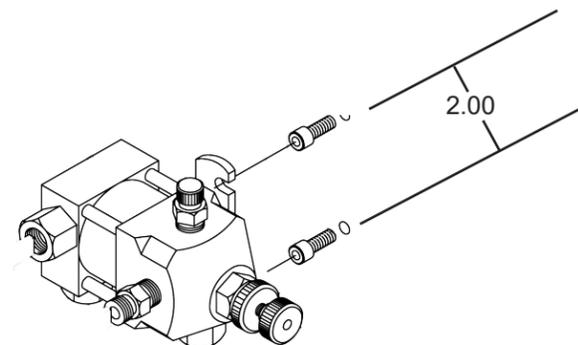
P.O.Box 5303, Rockford, IL • 61125
 5060-27th Ave, Rockford, IL • 61109
 Tel: 815-226-8090 • Fax: 815-226-9250
 E-mail: sales@lspind.com



INSTALLATION AND OPERATION INSTRUCTIONS

A. Installing the P010-A MICROSPRAY

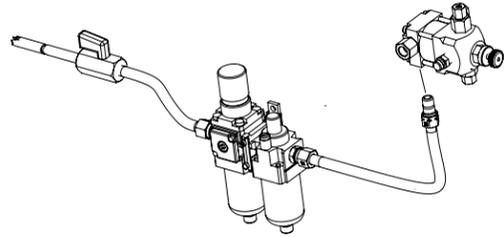
1. Always mount the MicroSpray on a wall or a surface.
 - A. The inlet fitting must always point down.
 - B. The outlet fitting must always point up.
2. USE TWO NUMBER 10 SCREWS AND WASHERS FOR MOUNTING.
3. For portability mount the MicroSpray to a P905 Magnet.
4. Mount it high enough so that the fluid inlet tubing has room to attach to the inlet fitting.



INSTALLATION AND OPERATION INSTRUCTIONS

B. Installing the Air supply

1. Air Supply Line must have at least a 3/16" I.D.
2. Air pressure 40 - 100 PSI
3. It is recommended that an On/Off Valve be inserted in the air line to shut off air during servicing of the unit.
4. Insert airline into the port in the bottom of the back plate.
5. Filter, Regulator, Oiler is recommended.

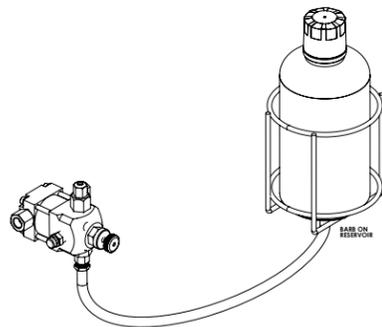


C. Operating the Air Supply

1. Turn the Air ON
2. Shop air can only go as far as the UniValve, (Air valve) located in the block at the back of the MicroSpray until the Actuator sends a signal to open the Valve.
3. Adjust the air pressure to 60 PSI on the Air Regulator.
4. After the MicroSpray is spraying adjust the PSI either up or down to get the desired spray pattern and velocity.

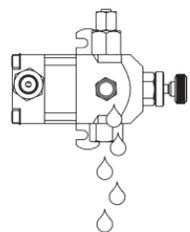
D. Installing the Reservoir

1. Reservoir and/or fluid level must always be higher than the Bleeder Valve to facilitate bleeding of air in the system.



E. Prime the MicroSpray

1. Reservoir is positioned.
2. Open the Bleed Valve by turning the Knob counter clockwise. Keep the Bleed Valve open until fluid flows from the side hole on the Bleeder Valve void of all air bubbles.
3. Close the Bleed Valve and tighten securely.
4. This process is to be repeated if when the MicroSpray is actuated the spray pattern is bad or there is no fluid dispensing.



Priming

F. Nozzle Distribution

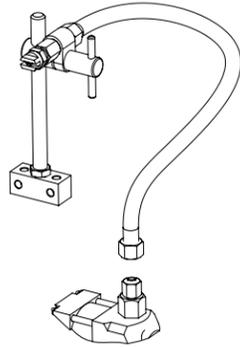
1. Reference front cover showing the correct position of the MicroSpray as mounted in the horizontal position

1. Nozzle is attached to the top port on the barrel of the Ejector
2. Use 5' of P943 LSP Heavy Wall tubing or Copper Tubing.
3. The P925 Swivel Bracket is recommended as a mounting bracket for the nozzle. It can be attached to a magnet.

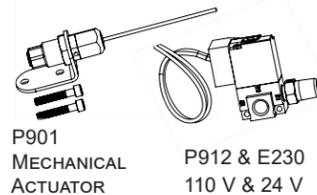
NOTE: LSP High Pressure Tubing.

The P943 is the only non metal Tubing to use for distribution tubing to the Nozzles. Other Tubing will give bad spray patters with an after-drip.

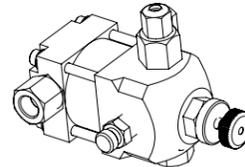
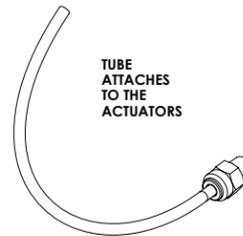
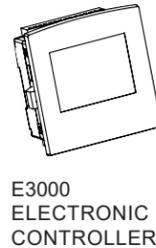
LSP uses only FIT017 Compression fittings with built in sleeves. These fittings secure the tubing without bending or deforming tubing.



G. Installing the ACTUATOR



P912 & E230
110 V & 24 V



1. The MicroSpray can be actuated with different Actuators
2. The Actuator is attached to the Actuator Port on the front side of the back plate of the unit.
3. The Mechanical Actuator is used remote, up to 5 feet away from the MicroSpray.
4. Supplied with a One Way Trip Bracket
5. To actuate the unit the wand must travel 30° in any direction. The One Way Trip Bracket allows just one actuation per cycle of the press. If two actuations per cycle is needed replace the One way Trip Bracket with an angle bracket so that the wand strikes it on both the up stroke and down stroke. Either the mechanical Actuator or the One Way Trip Bracket can be mounted on Magnetics for easy set ups.
7. A Solenoid can be used in place of the Mechanical Actuator. It can be located remote using the 3/16" tubing supplied with the valve or inserted directly into the Actuator Port with the fitting supplied. Mounting directly to the Actuator Port is the recommended installation.
8. The third means of actuating is the LSP Air timer. Set the speed for the frequency you want the PresSpray to actuate and it will actuate until disengaged of the cycle of the press.
10. The last means of actuating is the LSP Electronic Controller.
11. Reference the LSP Electronic Controller Operating Instructions for installation and operating instructions.

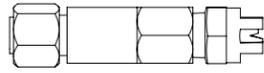
ADDITIONAL TROUBLESHOOTING INSTRUCTIONS

PROBLEMS	SOLUTIONS
I. Fluid will not flow from the Bleed Valve when opened.	<p>A. Make sure the Reservoir is full and fluid in the reservoir is higher than the Bleeder Valve.</p> <ol style="list-style-type: none"> 1. If using a LSP one quart RESERVOIR (Gravity Feed). <ol style="list-style-type: none"> a. Hold finger over hole in cap and squeeze bottle until fluid exits the Bleeder Valve. b. Wait for fluid to be void of air bubbles and close Bleeder Valve. <p>B) If the fluid is very heavy, it may be too viscous to run through the FLUID SUPPLY LINE.</p> <p>C. Unscrew the VALVE SCREW on the Bleeder Valve until it comes completely out. Inspect the VALVES passage for obstruction.</p> <p>D. Insure that fluid is getting to the MicroSpray. Check below per method of fluid supply being used.</p> <ol style="list-style-type: none"> 1. Disconnect fluid line from the Reservoir where it enters the inlet on the MicroSpray, do not remove fitting so that you do not lose inlet Check Ball. 2. If fluid is flowing to that point hold finger over tubing and take a 3/16" drill or other object and move in the inlet fitting and dislodge inlet Check Ball. 3. Reconnect tubing and proceed with bleeding..
II. The built-in air valve (UniValve) does not actuate when the Actuator is cycled.	<p>A. Check the operating air pressure. It should be at least 40 P.S.I.</p> <p>B. Ascertain if the problem is with the UniValve or ACTUATOR as follows.</p> <ol style="list-style-type: none"> 1. Turn off the AIR SUPPLY and disconnect the ACTUATOR from the MicroSpray. (If ACTUATOR TUBING is being used, disconnect it at the ACTUATOR not at the MicroSpray.) 2. Turn AIR SUPPLY back on. Air should be escaping where the ACTUATOR was disconnected. 3. Prevent this air escaping by placing your thumb over the vent hole. 4. If the MicroSpray operates when you plug and unplug this hole, the problem is with the ACTUATOR. Continue with the "INSTRUCTIONS" supplied with that ACTUATOR. 5. If the MicroSpray will not operate by this method, check the ACTUATOR TUBE and/or UNIVALVE described below. <p>C. If ACTUATOR TUBING is being used, do the following: Else, go on to Step D.</p> <ol style="list-style-type: none"> 1. Insure the TUBE has been installed properly. See the "INSTRUCTIONS" for the ACTUATOR being used. 2. Inspect the TUBE for leakage (cuts, cracks, bad connections, etc.) 3. Inspect the TUBE for blockage (obstructions, kinks, crimps, etc.) 4. An ACTUATOR TUBE longer than four feet will affect response. If too long, the UNIVALVE will not operate. <p>D. Investigate the UNIVALVE. See "INSPECTING the UniValve" for direction. If simple cleaning and lubrication solves the problem, but if it repeats consistently, it installing an AIR FILTER AND AIR LUBRICATOR would probably cure the problem for good.</p>
III. Fluid does not eject from Spray Nozzle when the MicroSpray is activated.	<p>A. Insure fluid is present. Check per PROBLEM I. at Steps B. and C.</p> <p>B. Insure the UNIVALVE is operating. if not, see PROBLEM II.</p> <p>C. The VOLUME CONTROL may be set too far in to allow operation. Open by turning counter-clockwise.</p> <p>D. The MicroSpray may require priming. See "OPERATING INSTRUCTIONS" at Step B.</p> <p>NOTE: If priming solves the problem, but it reoccurs often, see PROBLEM V.</p> <p>E. Ascertain if the problem is with the MicroSpray or SPRAY NOZZLE as follows.</p> <ol style="list-style-type: none"> 1. Disconnect the DISTRIBUTION LINE at the MicroSprays FLUID OUTLET. 2. Operate the MicroSpray and check the ejection from the FLUID OUTLET. 3. If an appropriate amount of fluid is forcefully ejected, see "INSPECTING the Spray Nozzle". <p>Look for an obstruction in the DISTRIBUTION LINE or SPRAY NOZZLE.</p> <ol style="list-style-type: none"> 4. If no fluid is ejected, or very little is with little force, see "INSPECTING the MicroSpray". Check everything as directed.
IV. The pattern of the spray ejected from the Spray Nozzle is unsatisfactory.	<p>A. If the SPRAY NOZZLE drips during or after ejection: This indicates there is air in the system or "soft" DISTRIBUTION TUBING is being used. See "OPERATING INSTRUCTIONS" at Step H.</p> <p>B. If the spray is erratic, off-center, or unevenly dispersed: See "INSPECTING the Spray Nozzle", and look for a contaminated NOZZLE TIP.</p> <p>C. If the spray is not atomized finely enough: Indicates not enough power for the weight of fluid being used. Increase air pressure, or use lighter fluid.</p>
V. The MicroSpray must be primed frequently to maintain good performance	<p>This indicates air is getting into the MicroSpray somehow. The more common causes of this are listed below.</p> <p>A. If a PUMP is being used to supply the fluid, it may be introducing air into the system.</p> <p>B. The FLUID SUPPLY LINE may be cracked or punctured, or it's connections may be loose.</p> <p>C. An O-RING Seal may be bad, allowing air to be drawn into the MicroSpray. See "INSPECTING the MicroSpray" and check O-RING(2), (18), and (20), and those in SEAL ASSEMBLY(25). If these O-RINGS are good and the problem still exists, then disassemble the MicroSpray and check those in SEAL ASSEMBLY(25).</p>

ACCESSORIES

ITEMS LISTED BELOW ARE AVAILABLE TO HELP WITH THE APPLICATION OF THE MICROSPRAY.

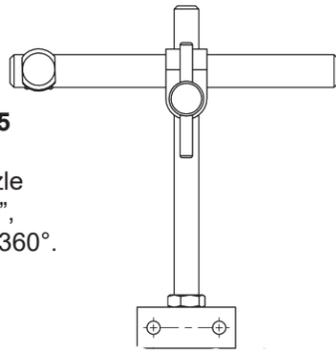
A NOZZLES



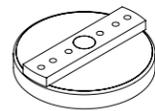
1. 110° FAN SPRAY -- MODEL NO: P230
2. 95° FAN SPRAY -- MODEL NO: P232 (INCLUDED W/ UNIT)
3. 80° FAN SPRAY -- MODEL NO: P233
4. 65° FAN SPRAY -- MODEL NO: P234
5. 25° FAN SPRAY -- MODEL NO: P235
6. DROP NOZZLE -- MODEL NO: P236 (NO DISPERSION)

NOTE:
Spray Nozzles have a 3/16" O.D. which adapts to MicroSpray Fittings.

B Nozzle Accessories

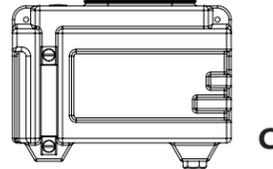


1. **Nozzle Bracket - P925**
Used to support the Spray Nozzle the nozzle can move up/down 5", tilts 180°, and rotates 360°. Can be mounted on a MagnaBase for still more Convenience.



2. **MagnaBase--Model No: P907**
Holds the Nozzle Bracket, Actuators, Trip Brackets, and one qt. reservoir.. Allows easy positioning and adjustments.

3. FLUID RESERVOIRS FOR USE AS CONTAINERS FOR SUPPLYING THE LUBRICANT TO BE DISPENSED BY THE MICROSPRAY.

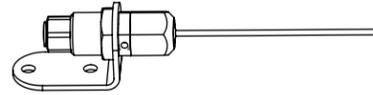


- a. **One Quart Reservoir -- No: P301**
One-quart capacity. Comes with a fluid filter, supply tubing, and a wire bracket for mounting.
Add a magnet to One Quart Reservoir - No: P305
Adding a high-strength magnetic base allows for easy placement and removal.
- c. **1-1/2 Gallon Reservoir -- No: P306**
A 1-1/2 gallon container with built-in mounting tabs, sight-glass, fluid filter, and snap-on lid.

A. ACTUATORS,(MECHANICAL,ELECTRICAL, AIR TIMER).

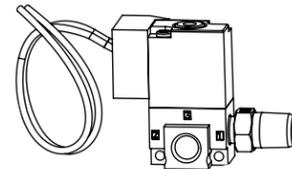
Any Actuator described below may be used to operate the MicroSpray. They include all the necessary fittings, tubing, brackets, etc. required to adapt to the MicroSpray.

1. MECHANICAL ACTUATOR -- MODEL NO: P901



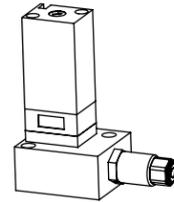
Used for manual or mechanical actuation. Operates by having a probe deflected off-center in any direction. This may be done by hand or by using a moving machine member.

2. ELECTRICAL ACTUATOR -- MODEL NO: P912



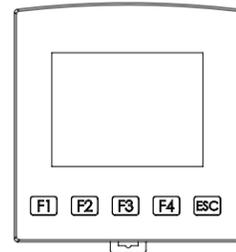
Used for electrical actuation. Operates when supplied with a 110Vac 60Hz. Other voltages are available.

3. AIR TIMER ACTUATOR -- MODEL NO: P908



Used to actuate repeatedly at a set cycle rate. Air Operated. Actuates continuously while air is applied. Cycle rate set by screwdriver in a recessed slot.

B. ELECTRONIC ACTUATOR, E-3000



A solid-state programmable Actuator. It is activated by a proximity sensor that sends a signal to a solenoid to trip the MicroSpray

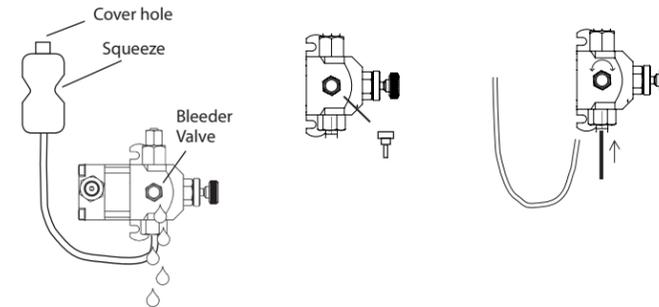
TROUBLE-SHOOTING THE MICROSPRAY

1. THE UNIT WILL NOT BLEED THE AIR FROM THE FLUID WHEN OPENING THE BLEEDER VALVE.

If using the LSP one quart Reservoir make sure Reservoir is higher than the Bleeder Valve. Open the Bleeder Valve, place finger over the hole in the cap of the reservoir and squeeze bottle to force fluid out the Bleeder valve

Remove screw on Bleeder Valve to eliminate possible obstructions and try again.

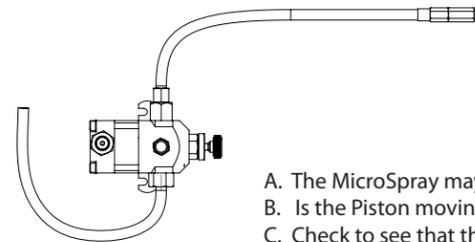
Remove inlet tube and insert 1/8" drill or rod and make sure check ball is free floating.



Reference item #1 on the trouble shooting page, Pg 6.

2. FLUID DOES NOT DISPENSE FROM THE NOZZLE WHEN MICROSPRAY IS ACTUATED.

No fluid coming out of the Nozzle when the unit is activated.



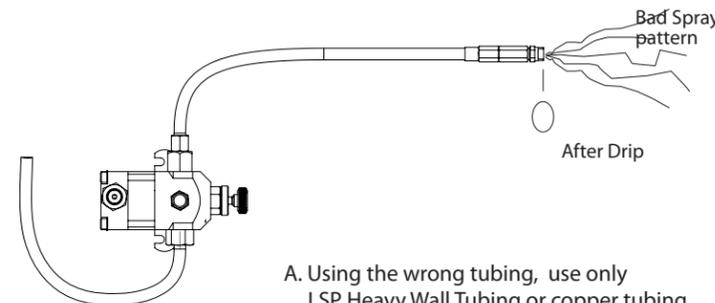
- A. The MicroSpray may need to be bleed.
- B. Is the Piston moving?
- C. Check to see that the volume control is not in all of the way.
- D. Is the MicroSpray Actuator getting a signal from the Controller?
- E. The Nozzle tip may be plugged and have to be replaced.*
- F. Unit works but stops and constantly has to be bleed.

1. O-Ring in the Seal Assembly, (210SLV02) worn, suggest it be replaced
2. O-Ring, RGO071, on the Piston may be worn or nicked. Replace if worn and may want to replace all wear parts at this time.

* Disconnect the tubing to the nozzle at the nozzle and fire the unit. If fluid does not come out of the tube the problem lies in the MicroSpray Ejector. Check the Outlet Check Valve and the Inlet Check Valve to see if the check balls have to be replaced.

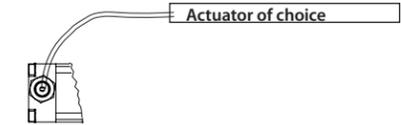
Reference item #4 on the trouble shooting page, Pg 6.

3. POOR SPRAY PATTERN & AFTER-DRIP



- A. Using the wrong tubing, use only LSP Heavy Wall Tubing or copper tubing.
- B. Fluid is too heavy.

5. UNIVALVE, (AIR VALVE) ON BACK OF THE MICROSPRAY WILL NOT ACTIVATE

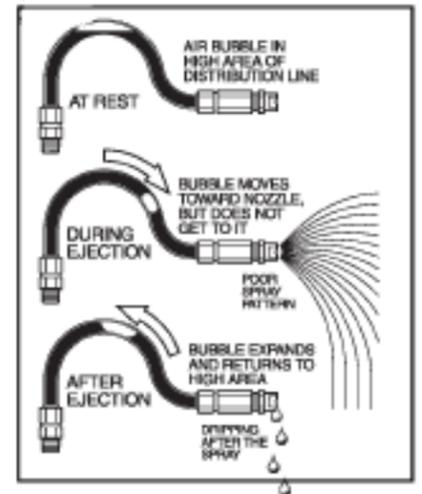


- A. Make sure pressure into MicroSpray is at least 40 PSI.
- B. Electronic Actuators attached DIRECT to the MicroSpray with NO tubing
 1. Check Actuator to make sure they are working and getting a signal.
 2. If it is determined that the Actuator is not working or getting a signal either replace the Actuator or fix the Controller.
- C. For Electronic Actuators attached to the MicroSpray with plastic tubing
 1. Shut off air to the MicroSpray.
 2. Disconnect tubing from the Actuator and turn air back on.
 - a. Air should be exhausting out of the tube.
 1. Hold finger over the tube and then remove finger, MicroSpray should actuate.
 2. If it actuates the problem is with the tubing or the Actuator, replace the tube with 3/16 plastic tubing.

Reference item #2 on the trouble shooting page, Pg 6.

1. Removing Trapped Air.

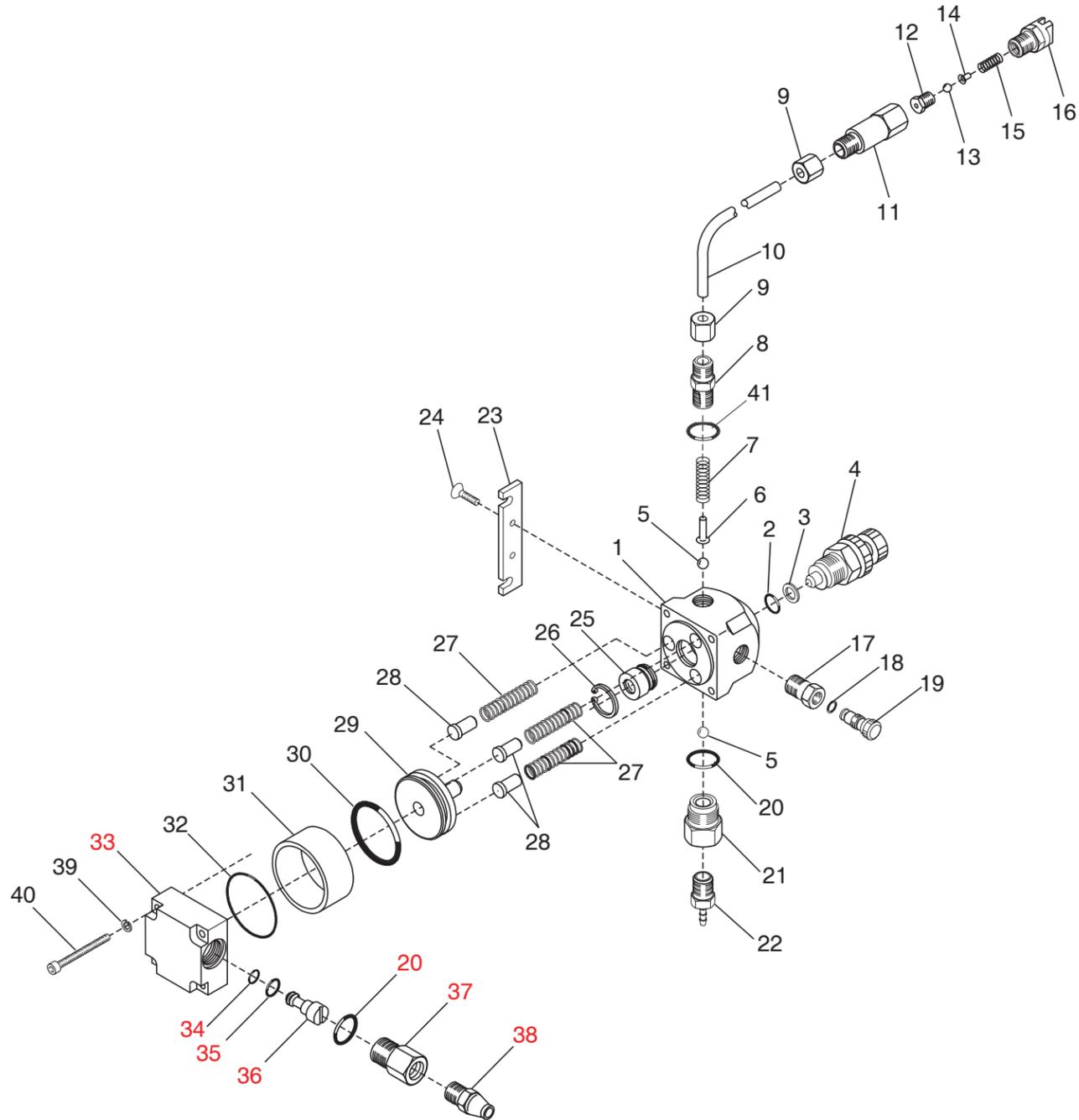
- A. If creating a manifold for an in-die nozzle do not create blind Passages such as in FIG1. These Blind Passages will create air pockets that will effect the spray pattern.
- B. Avoid trapped air by making manifold as in FIG 2. or other designs that will eliminate blind passages.



REPLACEMENT PARTS LISTING

NOTE: ITEMS MARKED ()** ARE AVAILABLE IN A REPAIR KIT UNDER THE PART No. 210-ACY-01

NOTE: ITEMS MARKED IN RED ARE AVAILABLE AS AN ASSEMBLY UNDER PART No. SP0210VAL01



Key No:	Part Number	Qty. Used	Description of Part
1	BRL-027	1	BARREL
2	RGO-050	1**	O-RING SEAL
3	RGB-016	1**	BACKUP RING
4	210-SCR-01	1	VOLUME ADJUST SCREW
5	BAL-022	2**	CHECK BALL, 1/4"
6	EYE-004	1**	BALL SEAT, 1/4"
7	SPG-023	1**	CHECK SPRING 1/4"
8	OUT-045	1	FLUID OUTLET
9	FIT-018	2	COMPRESSION CAP & SLEEVE
10	TUB-063	1	DISTRIBUTION LINE
11	HSG-073	1	NOZZLE HOUSING
12	SET-019	1	1 NOZZLE SEAT
13	BAL-021	1	CHECK BALL, 3/16"
14	EYE-001	1	BALL SEAT, 3/16"
15	SPG-005	1	CHECK SPRING, 3/16"
16	NOZ-107	1	NOZZLE TIP
17	SET-004	1	BLEEDER SEAT
18	RGO-028	1**	O-RING SEAL
19	SCR-203	1	BLEEDER SCREW
20	RGO-034	2**	O-RING SEAL
21	INL-021	1	FLUID INLET
22	FIT-067	1	BARB FITTING
23	PLT-047	1	MOUNTING FOOT
24	SCR-019	2	FLAT HEAD SCREWS
25	210-SLV-01	1**	SEAL ASSEMBLY
26	RGR-032	1**	RETAINER RING
27	SPG-029	3**	RETURN SPRING
28	GID-012	3	SPRING GUIDE
29	210-PIS-01	1	PISTON RAM
30	RGO-071	1**	O-RING SEAL
31	CYL-040	1	AIR CYLINDER
32	RGO-033	1**	O-RING SEAL
33	210-HAI-01	1	VALVE HOUSING
34	RGO-005	1**	BACKUP RING
35	RGO-009	1**	O-RING SEAL
36	SPL-026	1	1 VALVE SPOOL
37	CYL-039	1	VALVE CYLINDER
38	FIT-020	1	TUBE FITTING
39	WAS-008	4	LOCK WASHER
40	SCR-056	4	TIE ROD SCREW
41	RGO-020	1	O-RING SEAL

NOTE: ITEMS MARKED ()** ARE AVAILABLE IN A REPAIR KIT UNDER THE PART No. 210-ACY-01