

Liquid End Sheet

LE-199SB

When pumping solutions, make certain that all tubing is securely attached to the fittings. It is recommended that tubing or pipe lines be shielded to prevent possible injury in case of rupture or accidental damage. Always wear protective clothing and face shield when working on or near your metering pump.

Note: See parts list for materials of construction

A. INSTALLING INJECTION CHECK VALVE

1. The purpose of the injection check valve is to prevent backflow from the treated line.
2. A ½" NPT female fitting with sufficient depth will accept the injection check valve.
3. To insure correct seating of the ball inside the injection check valve, the injection check valve should be installed upwards (vertically) into bottom of the pipe.

B. CONNECTING DISCHARGE TUBING

NOTE: Cut tubing to length needed for discharge line.

1. Route tubing from the injection check valve to the metering pump, making sure it does not touch hot or sharp surfaces, or is bent so sharply that it kinks.
2. Slide the small end of the coupling nut onto tubing.
3. Slide the long, straight end of the ferrule onto tubing such that tubing exits at the cone shaped end of the ferrule.
4. Insert tubing into the valve housing so that tubing butts up against valve housing and will not go any further.
5. Slide ferrule down so that the cone shaped end fits snugly into valve housing.
6. Slide the coupling nut to the threads and engage. While pushing the tubing into valve housing, tighten the coupling nut by hand until tubing is held securely in place.

**Excessive force will crack or distort fittings.
DO NOT USE PIPE WRENCH.**

C. CONNECTING SUCTION TUBING

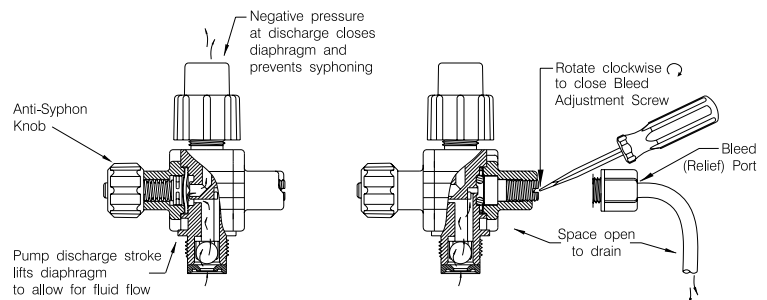
1. Cut suction tubing to a length so that the foot valve hangs just above the bottom of the solution container. Maximum recommended vertical suction lift is 5 ft (1.5 m).
2. Follow same procedure in connecting suction tubing to suction valve and foot valve (see **B. Connecting Discharge Tubing**).

D. PRIMING

1. Connect bleed return tubing to bleed (relief) port.
2. Route tubing to solution tank. Be sure the end of the tubing is above the maximum solution level. (Do not submerge tubing in solution.)
3. Set pump at 80% speed and 100% stroke. Start pump. With screwdriver rotate bleed adjustment screw counter-clockwise ↺ 2 full turns. When solution begins to flow through translucent bleed return tubing, the pump is primed.
4. Stop pump.

NOTE:

- (a) Pump is normally self-priming if suction lift is not more than 5 ft (1.5 m), valves in the pump are wet with water (pump is shipped from factory with water in pump head) and the above steps (**D. Priming**) are followed.
- (b) If the pump does not self prime, remove Bleed/4 Function Valve and Discharge Valve Ball, and pour water or solution slowly into discharge port until it is filled. Replace Ball and Valve, and follow steps **A1** through **A3** thereafter.




E. BLEED ADJUSTMENT

1. Start pump and let pump inject solution into the discharge line.
2. Close the bleed adjustment screw by rotating it clockwise ↻ with a screwdriver.



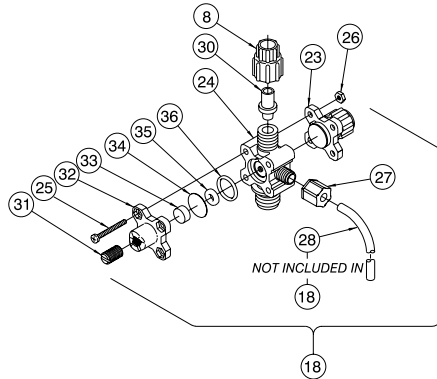
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3. Now adjust the pump stroke length and/or speed (frequency) to a range approximately 25% higher than you would normally want for the process.
4. Slowly rotate bleed adjustment screw counter-clockwise  until just a small amount of solution begins to trickle down inside the bleed return tubing. A small amount of solution pumped back to the tank with each stroke of the pump will allow gas and air to escape without air or gas locking in the pump head.

F. DEPRESSURIZING DISCHARGE LINE


1. It is possible to depressurize the discharge line and pump head without removal of tubing or loosening of fittings.



KEY NO.	PART NO.	DESCRIPTION	QTY.
			LE -199SB
1	27352	Flapper Valve, Flexiprene™	1
2	10294	Injector Fitting, PVC	1
3	10339*	Spring, PVDF	1
4	10338*	Ball, Ceramic .375	4
5	29443*	Seal Ring, Polyprel®	4
6	30383	Valve Seat, PVC	2
8	10299	Coupling Nut	4
9	25636-16	Tubing, 1/4" O.D. PE	1
10	30913	Head, 0.9 SI PVC	1
11	10340	Screw, 10-24 x 3/4" SS	4
12	30917*	Liquifram™, 0.9 SI PTFE Co-Polymer	1
14	30375	Valve Housing, PVC .250	1
15	10978	Foot Valve Seat	1
16	10123	Strainer, Polypropylene	1
17	30919	Inj. Check Valve Assembly	1
18	34638	Anti-Syphon/ Bleed Valve Asm	1
19	30924	Suction Valve Asm	1
20	30921	Foot Valve Asm	1
21	35652	Head Asm, LE-199SB	1
23	27045	Anti-Syphon Cap Assembly	1
24	28704	Valve Body, PVC	1
25	25627	Screw, 6-32 x 1 1/4" SS	4
26	25628	Nut, Hex 6-32 SS	4
27	25631	Coupling Nut	1
28	25636-10	Tubing, 1/4" O.D. PE	1
30	28663	Ferrule	1
31	34876	Screw, Bleed	1
32	32171	Cap, Relief	1
33	34868	Disc	1
34	32173	Diaphragm	1
35	32175	O-Ring, Small Polyprel®	1
36	32176	O-Ring, Large Polyprel®	1
--	32293	Suction Tubing Straightener (not shown)	1

* Parts included in Spare Parts Kit SP-U7.

Be sure injection check valve is properly installed and is operating. If a gate valve or globe has been installed downstream of injection check valve, it should be closed. Be certain bleed return tubing is connected and run to solution supply tank.

2. With a screwdriver, rotate bleed adjustment screw counter-clockwise  2 full turns. A small amount of solution in discharge line should drain back to the supply tank.
3. The discharge line is now depressurized.
4. If injection check valve is of higher elevation than pump head, disconnecting tubing at injection check valve end will allow air to enter and cause solution to drain back to tank.

