For use on LMI Series A, and B chemical metering pumps.

CAUTION

When pumping chemicals 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 when working on or near chemical metering pumps.

NUMBER 81A
LIQUID HANDLING ASSEMBLY

A. INSTALLING INJECTION CHECK VALVE

1. The injection check valve should always be installed as close as possible to the point of chemical injection, at the very end of the tubing run.

CAUTION

Do not operate pump using 81A Liquid Handling Assembly without injection / anti-syphon valve properly installed.

2. Purpose of injection / anti-syphon valve is to prevent backflow from *treated line* and to prevent syphoning or overpumping of chemical.
3. A ½" NPT female connection or tee will accept the injection / anti-syphon valve.
4. In order to insure correct seating of the ball inside the check valve, the injection / anti-syphon valve should be installed upwards.

B. CONNECTING DISCHARGE TUBING

Note: Cut tubing to length needed for discharge line making sure sufficient amount is left for suction line.

1. Discharge tubing is relatively stiff translucent tubing.
2. Route tubing from injection check valve to chemical metering pump making sure it does not touch hot surfaces, sharp surfaces, or is bent so sharply that it kinks.
3. Slide small end of coupling nut onto tubing.
4. Push tubing over tapered nozzle of pump head so that tubing flares out and reaches the shoulder. (If tubing is stiff from cold, dip end in hot water.)
5. Slide down the coupling nut until threads are engaged. Tighten by hand until tubing is held securely in place.

CAUTION

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

6. Follow the same procedure for connecting tubing to injection valve.

C. CONNECTING SUCTION TUBING

1. Suction tubing is soft transparent tubing.
2. Cut suction tubing to length necessary between suction valve of chemical metering pump and foot valve. Foot valve should just sit at the bottom of chemical container. Maximum recommended vertical suction lift is 5 ft. (1.5m)
3. Follow same procedure (see B) in connecting suction tubing to suction valve and foot valve.
4. If a suction tube straightener is desired, one may be fabricated from a 3 ft. (1m) piece of ¾" Schedule 80 PVC pipe.
5. Dip end of PVC pipe in hot water for at least 1 minute.
6. Push pipe over small end of coupling nut.

D. PRIMING

1. Temporarily remove tubing from injection / anti-syphon valve and hold the end of tubing so it is above pump level.
2. Set pump at maximum speed and 100% stroke and start pump.
3. As soon as chemical is visible through translucent discharge tubing just past the discharge valve, stop the pump.
4. Pump is now primed.
5. Reconnect tubing to injection / anti-syphon valve.

Note:

(a) Pump is normally self-priming if suction lift is no more than 5 ft. (1.5m), valves in the pump are wet with water (Pump is shipped from factory with water in pump head and therefore valves are wet) and the above steps (D1 thru D3) are followed.

(b) If the pump does not self prime, remove discharge valve housing and ball and pour water or chemical slowly into discharge port until it is filled. Follow steps D2 through D5 thereafter.

CAUTION

Do not remove injection / anti-syphon valve spring if pressure at injection point is less than 20 psi (1.4 kg/cm^2) with electronic metering pumps, otherwise overpumping will occur.

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NOTE: Maximum pump pressure rating is reduced by 25 psi (1.7 bar) with anti-syphon spring installed.

PARTS LIST
NO. 81A LIQUID HANDLING ASSEMBLY

Key No.	Part No.	Description	Quantity
1	10361	Injection Nozzle	1
2	10339	Spring, Teflon PFA coated	1
3	10338	Ball, Ceramic	4
4	10107	Seal Ring, Hypalon, green dot	3
5	10492	Valve Seat, gray PVC	2
6	10211	Coupling Nut, gray PVC	4
7	10142	Tubing Polyethylene ½" OD x ⅜" ID	10 ft.
8	10493	Valve Housing, gray PVC	2
9	10113	Head, Plexiglas	1
10	10102	Liquifram, 0.9 SI Hypalon	1
11	10340	Screw, 10-24 x ¾" S.S.	4
12	10322	Weight, Ceramic	1
13	10978	Foot Valve Seat, black Polypropylene	1
14	10123	Strainer, white Polypropylene	1
15	10375	Injection/Anti-Syphon Valve Assy	1
16	10512	Discharge Valve Assembly	1
17	10513	Suction Valve Assembly	1
18	10514	Foot Valve Assembly	1
19	10515	Head Assembly, L.E. 81	1
22	10207	Seal Ring, Viton	1
24	10141	Tubing, Vinyl ½" OD x ⅜" ID	6 ft.