

## LIQUID HANDLING ASSEMBLIES

LE 71FS/LE 81FS

## LE 71FS

For Series A, B & D  
with 1.8 Liquifram

**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 pump.

**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.
2. Purpose of injection check valve is to prevent backflow from treated line.
3. A ½" NPT female fitting with sufficient depth will accept the injection check valve.
4. In order to insure correct seating of the ball inside the check valve, the injection check valve must be installed vertically upwards.

**B. CONNECTING DISCHARGE TUBING**

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 discharge valve housing 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.

*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 a length such that the foot valve hangs just above the bottom of the 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.

## LE 81FS

For Series A & B  
with 0.9 Liquifram

**MATERIALS**

Fittings	PVC
Seal Rings	Hypalon
Balls	Teflon
Head	Acrylic
Liquifram	Teflon Face
Suction	.5" OD Vinyl
Discharge	.5" OD Polyethylene

5. Dip end of PVC pipe in hot water for at least 1 minute.

6. Push pipe over small end of coupling nut on top of foot valve.

**D. PRIMING**

1. Connect pressure release tubing to pressure release port.
2. Route tubing to solution reservoir and anchor with plastic tie provided.
3. Set pump at 80% speed and 100% stroke. Start pump.
4. Pull on Pressure Release knob, (red or black knob) holding knob out until chemical is visible through translucent return tubing.
5. Pump is now primed.

**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 the above steps (D1 thru D3) are followed.
- (b) If the pump does not self-prime, remove Anti-Syphon/Pressure Release Valve Assembly and discharge valve ball, and pour water or chemical slowly into discharge port until head is filled. Replace valve ball and follow steps, D1 thru D5 thereafter.

**E. DEPRESSURIZING DISCHARGE LINE**

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

*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 relief tubing is connected and run to chemical reservoir.*

2. Pull on both anti-syphon and relief knobs.
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 chemical to drain back to tank.



# LIQUID METRONICS INCORPORATED

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**NOTE:**  
Threaded connections into pump head are 3/4"-16 straight threads. **Do not use Teflon tape.** These joints are sealed by seal ring valve seats (Item 4 on exploded view).

1. Maximum pump pressure rating is reduced by 25 psi (1.7 bar) with anti-syphon spring installed.
2. Do not remove anti-syphon spring if pressure at injection point is less than 20 psi (1.4 bar).

## 71 FS

Ref No.	Part No.	Description	Quantity
1	10296	Injector Fitting w/Hypalon Flapper	1
2	10339*	Spring, Teflon PFA Coated	1
3	10444*	Ball, Teflon	4
4	10107*	Seal Ring, Hypalon	4
5	10492	Valve Seat, PVC	2
6	10211	Coupling Nut, gray PVC	4
7	10142-10	Tubing, Polyethylene, .5" OD	1
8	10493	Valve Housing	1
9	10340	Screw, 10-24 x 1/4" S.S.	4
10	10305*	Liquifram, 1.8 Sl, Teflon Face	1
11	10104	Head, Acrylic	1
13	10978	Foot Valve Seat, black Polypropylene	1
14	10123	Strainer, white Polypropylene	1
15	25273	Injection/Anti-Syphon Valve Assy	1
17	25272	Suction Valve Assy	1
18	25274	Foot Valve Assembly	1
19	25857	Head Assembly, LE 71FS	1
20	10141-06	Tubing, Vinyl, .5" OD	1
21	25700	Anti-Syphon/Pressure Release Valve Assy	1
22	25691	Pressure Release Cap Assy	1
23	25692	Anti-Syphon Cap Assy	1
24	25627	Screw, 6-32 x 1 1/4" S.S.	4
25	25449	Flapper Nut, PVC or Polypropylene	1
26	10226	Flapper, Hypalon, green dot	1
27	10294	Injector Fitting, PVC or Polypropylene	1
35	25500	Valve Body	1
36	25628	Nut, 6-32 Hex S.S.	4
37	25631	Nut, Ferrule	1
38	25636-03	Tubing, Polyethylene, .250" OD	1
41	10156	Plastic Tie (Not shown)	1

\*Parts included in Spare Parts Kit No. SP-U4.

## 81 FS

Ref No.	Part No.	Description	Quantity
1	10296	Injector Fitting w/Hypalon Flapper	1
2	10339*	Spring, Teflon PFA Coated	1
3	10444*	Ball, Teflon	4
4	10107*	Seal Ring, Hypalon	4
5	10492	Valve Seat, PVC	2
6	10211	Coupling Nut, gray PVC	4
7	10142-10	Tubing, Polyethylene, .5" OD	1
8	10493	Valve Housing	1
9	10340	Screw, 10-24 x 1/4" S.S.	4
10	10302*	Liquifram, 1.8 Sl, Teflon Face	1
11	10113	Head, Acrylic	1
13	10978	Foot Valve Seat, black Polypropylene	1
14	10123	Strainer, white Polypropylene	1
15	25273	Injection/Anti-Syphon Valve Assy	1
17	25272	Suction Valve Assy	1
18	25274	Foot Valve Assembly	1
19	25842	Head Assembly, LE 71FS	1
20	10141-06	Tubing, Vinyl, .5" OD	1
21	25700	Anti-Syphon/Pressure Release Valve Assy	1
22	25691	Pressure Release Cap Assy	1
23	25692	Anti-Syphon Cap Assy	1
24	25627	Screw, 6-32 x 1 1/4" S.S.	4
25	25449	Flapper Nut, PVC or Polypropylene	1
26	10226	Flapper, Hypalon, green dot	1
27	10294	Injector Fitting, PVC or Polypropylene	1
35	25500	Valve Body	1
36	25628	Nut, 6-32 Hex S.S.	4
37	25631	Nut, Ferrule	1
38	25636-03	Tubing, Polyethylene, .250" OD	1
41	10156	Plastic Tie (Not shown)	1

\*Parts included in Spare Parts Kit No. SP-U3.

