

LE-190AS LIQUID HANDLING ASSEMBLY

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 1/2" 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. 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.
2. Slide small end of 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 discharge valve housing so that tubing butts up against valve housing and will not go any further.
5. Slide ferrule down so that cone shaped end fits snugly into discharge valve housing.
6. Slide down the coupling nut until threads are engaged. Tighten coupling nut by hand, maintaining pressure on tubing towards valve housing until tubing is held securely in place.

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

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

C. CONNECTING SUCTION TUBING

1. 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).
2. Follow same procedure (seeB) in connecting

MATERIALS

Fittings	Polypropylene
Seal Rings	Teflon
Balls	Ceramic
Head	Polypropylene
Liquitram	Teflon
Suction	.250 O.D. Polyethylene
Discharge	.250 O.D. Polyethylene

suction tubing to suction valve and 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 D5) 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 valve assembly 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.



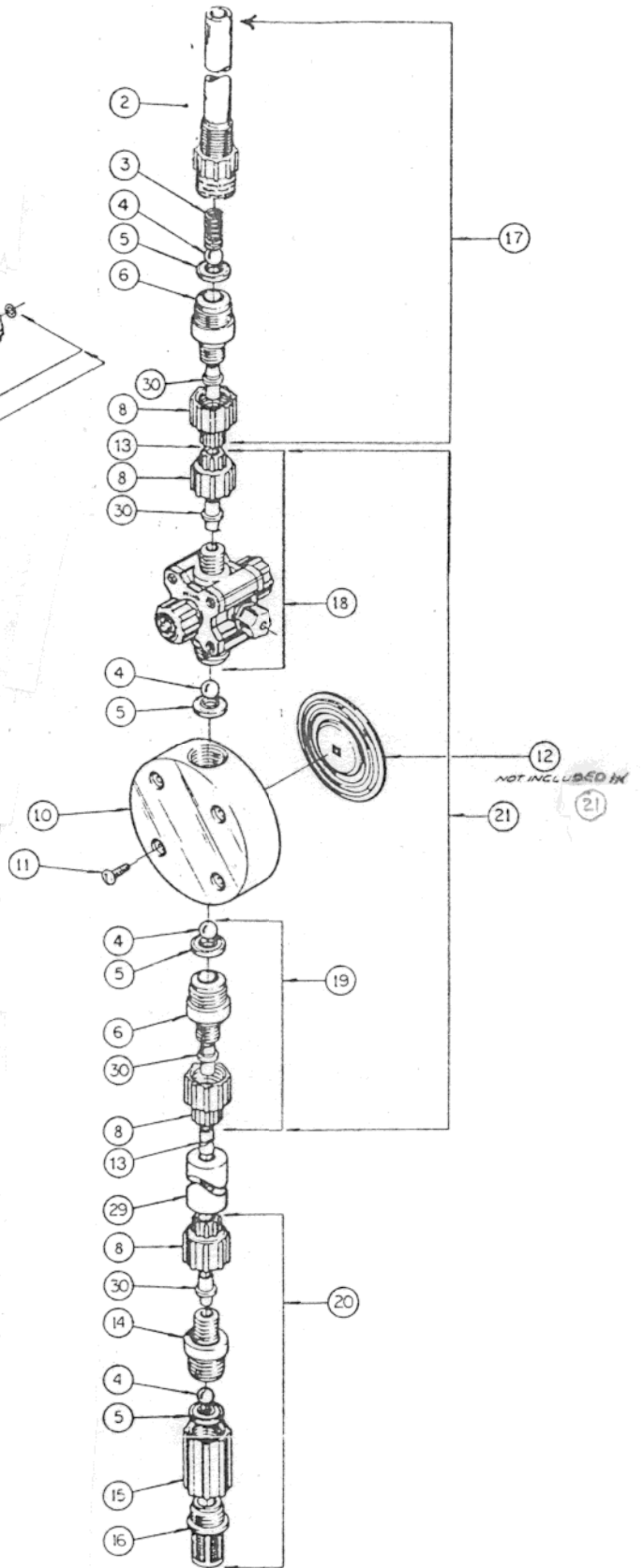
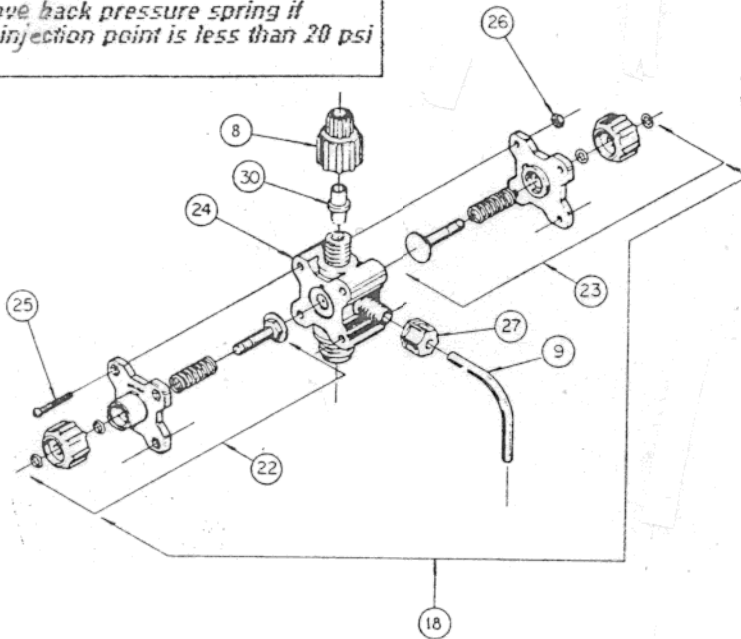
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Threaded connections into pump head are 3/4"-16 straight threads. **Do not use Teflon tape.** These joints are sealed by seal ring valve seats (item 4 on exploded view).

Maximum pump pressurizing is reduced by 25 psi (1.7 bar) with back pressure spring installed. **Do not remove back pressure spring if pressure at injection point is less than 20 psi (1.4 bar).**



KEY NO.	PART NO.	DESCRIPTION	QTY
2	10361	Injection Nozzle Fitting	1
3	10339*	Spring	1
4	10338*	Ball, Ceramic	4
5	29443*	Seal Ring, Polyprel	4
6	28664	Valve Seat, GFR Polypropylene	2
8	10299	Coupling Nut	4
10	29610	Head, 0.9 SI GFR Polypropylene	1
11	10340	Screw, 10-24 x 3/4" SS	4
12	27889*	Liquitram, 0.9 SI PFA	1
13	25636-16	Tubing, .250" OD Polyethylene	1
15	10978	Foot Valve Seat	1
16	10123	Strainer, Polypropylene	1
17	30220	Inj. Check/Back Pressure Valve Asm	1
18	28010	Anti-Syphon/Pressure Relief Valve Asm	1
19	28279	Suction Valve Asm	1
20	28002	Foot Valve Asm	1
21	28909	Head Asm, LE-191AS	1
22	28446	Relief Cap Assembly	1
23	25838	Anti-Syphon Cap Asm	1
24	28703	Valve Body, GFR Polypropylene	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
30	28663	Ferrule	4
	10156	Plastic Tie (not shown)	1

* Parts included in Spare Parts Kit SP-U8