

- Up-Flow Design
- Low Maintenance
- Continuous Duty
- Integrated Cover Assembly
- Fluoridate Water Flows to 10,000 GPM

## **Fluoride Saturator**

### **Instruction Sheet**

**Manual No : 1075**

**Rev. : G**

**Rev. Date : 11/2015**



# FLUORIDE SATURATOR INSTRUCTION SHEET

## 1. UNPACKING

1. The LMI® Model 28850 Fluoride Saturator is shipped in two cartons: one containing the 50-gallon polyethylene tank and the other containing the cover assembly, distributor tube assembly, polyethylene inlet tubing, distributor anti-rise pipe, and 1/4" NPT male connector.

## 2. INSTALLATION

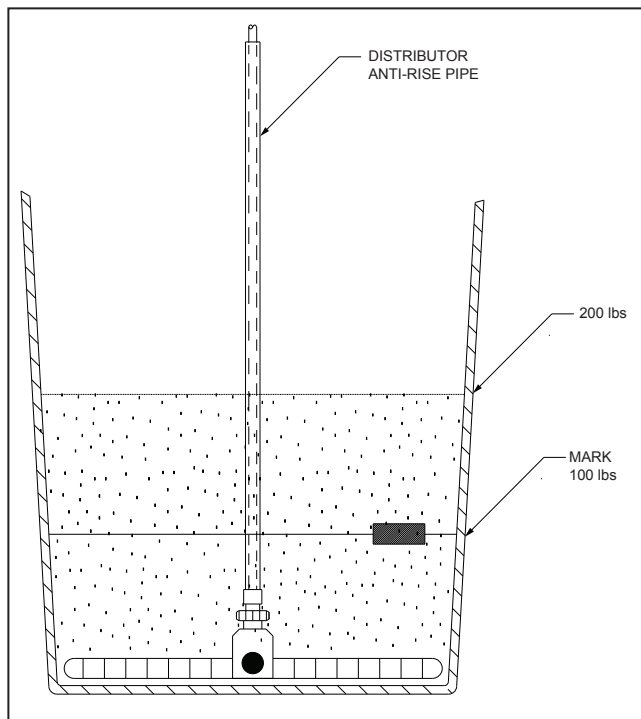


FIGURE 1.

1. Install suction tube strainer (Key No. 34 on Parts List) by removing metal conduit nut from threaded connector. Insert threaded connector up through saturator cover and hand tighten conduit nut to hold strainer firmly to cover.
2. Reassemble liquid level switch by sliding large white coupling nut up to saturator cover. While pushing the liquid level switch firmly up towards the cover hand tighten the nut onto the threaded connector.

3. Cut clear, flexible vinyl tubing to 34" length and add a tubing insert (Key No. 32 on Parts List) to each end. Slip free end of tubing into connector at outlet of syphon breaker and tighten compression nut until tubing is held securely. Slide PVC anti-rise pipe over tubing. Connect other end of tubing to distributor tube assembly in same manner. Distributor tube assembly should rest just at bottom of tank. (See Figure 1).

### NOTE:

*Tank bottom requires full, flat support-no overhang.*

4. Mount Cover Assembly on tank.
5. Position Saturator so as to facilitate plumbing of fresh water inlet line and overflow connections. All plumbing to and away from Saturator is customer supplied. (See Typical Installation, page 6).

### NOTE:

*All user supplied plumbing must be approved under local plumbing codes.*

6. Connect 1/4" NPT male x 3/8" OD tubing connector to inlet water supply piping; it is recommended that a shut off valve be installed before the connection to allow for easy replacement of tubing and servicing of Saturator. It is also recommended that a user-supplied Y strainer be installed on inlet line. Route stiff, white tubing from connector to inlet of Saturator Cover Assembly.
7. Slip ends of tubing through connectors at both ends and tighten compression nuts until tubing is held securely.

### NOTE:

*Inlet water pressure must not exceed 120 PSI (8.6 Bar).*

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8. An overflow connection has been installed on the tank (3/4" NPT female). Plumbing from this connection should now be completed.
9. The LMI® chemical metering pump is mounted in the recess provided on the cover assembly.
10. The pump suction tubing should be cut so as to allow the foot valve assembly to sit at the bottom of the suction tube strainer after connection to the pump suction valve assembly. To accomplish this, connect the suction tubing to the foot valve assembly and drop into the suction tube strainer until it rests at the bottom, then cut the tubing at the appropriate height to allow connection to the suction valve fitting. Adjust and operate the pump as required. If the foot valve does not fit into the suction tube strainer because the coupling knob is too big, replace the coupling knob with a modified coupling knob, which is supplied with this product (P/N 50627).

### 3. OPERATION

1. Open hinged cover and add 100 lbs. (45 kg) of Sodium Fluoride to the tank. Evenly distribute powder/crystals and mark outside wall of the tank at the level of the Sodium Fluoride bed. (See Page 1).
2. Deposit an additional 100 lbs. of Sodium Fluoride, for a total of 200 lbs. start up quantity. Close hatch cover.
3. Open water supply to Saturator.

#### **NOTE:**

*If water hardness causes scale build up, a user-supplied water softener should be installed in the supply line ahead of the Saturator.*

4. Connect the Saturator power supply cord to a grounded 115 VAC electrical source capable of supplying 25 watts. This Saturator is equipped with a built in time delay relay. Opening of solenoid valve and water flow into tank will be delayed 5 to 6 minutes after connection to the power source. When fill cycle begins water will flow into tank, through distributor tube assembly, dissolving the Sodium Fluoride. At the proper level the liquid level switch will automatically close the solenoid valve. In this way, the proper solution level is maintained in the Saturator tank as saturated solution is pumped out.
5. The level of the Sodium Fluoride bed in the saturator tank should be checked daily. Push and hold the button switch on the cover to activate the light inside the tank for visual inspection of Fluoride level. When the level drops to a minimum 100 lbs mark an additional 100 lbs. should be added.
6. The float switch should be checked periodically and hosed with clear water if there are any signs of crystalline deposits.

#### **NOTE:**

*It will always take a minimum of 5 to 6 minutes before solenoid valve re-opens after float triggers time delay relay. This is to prevent rapid fill cycles as a result of waves on the fluoride solution surface. Time delay also occurs each time the unit is unplugged and reconnected to power. Light and switch are 12 volts AC.*

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## 4. CLEANING

1. It is recommended that the Fluoride Saturator be cleaned approximately every twelve months, or more frequently if necessary.
2. Allow the Sodium Fluoride bed level to drop to a point at which the distributor tubes become visible. Valve off inlet water. (See Figure 2)
3. Disconnect the power supply to the Saturator and to the chemical pump and remove the pump from the cover.
4. Disconnect tubing from underside of Cover Assembly. Remove cover being careful not to hit float switch assembly against side of tank. Attempt to raise and remove the distributor tube assembly. **DO NOT FORCE**. Stirring may be necessary to dislodge distributor tube assembly if embedded. Use caution to avoid damage to assembly. Replace vinyl tubing (Part No.10469) if necessary.
5. Flush interior of tank with water to remove deposits. Clean and flush distributor tube assembly and suction tube strainer.
6. Re-install tube assembly, remount pump and refer to Section 3 start-up instructions.

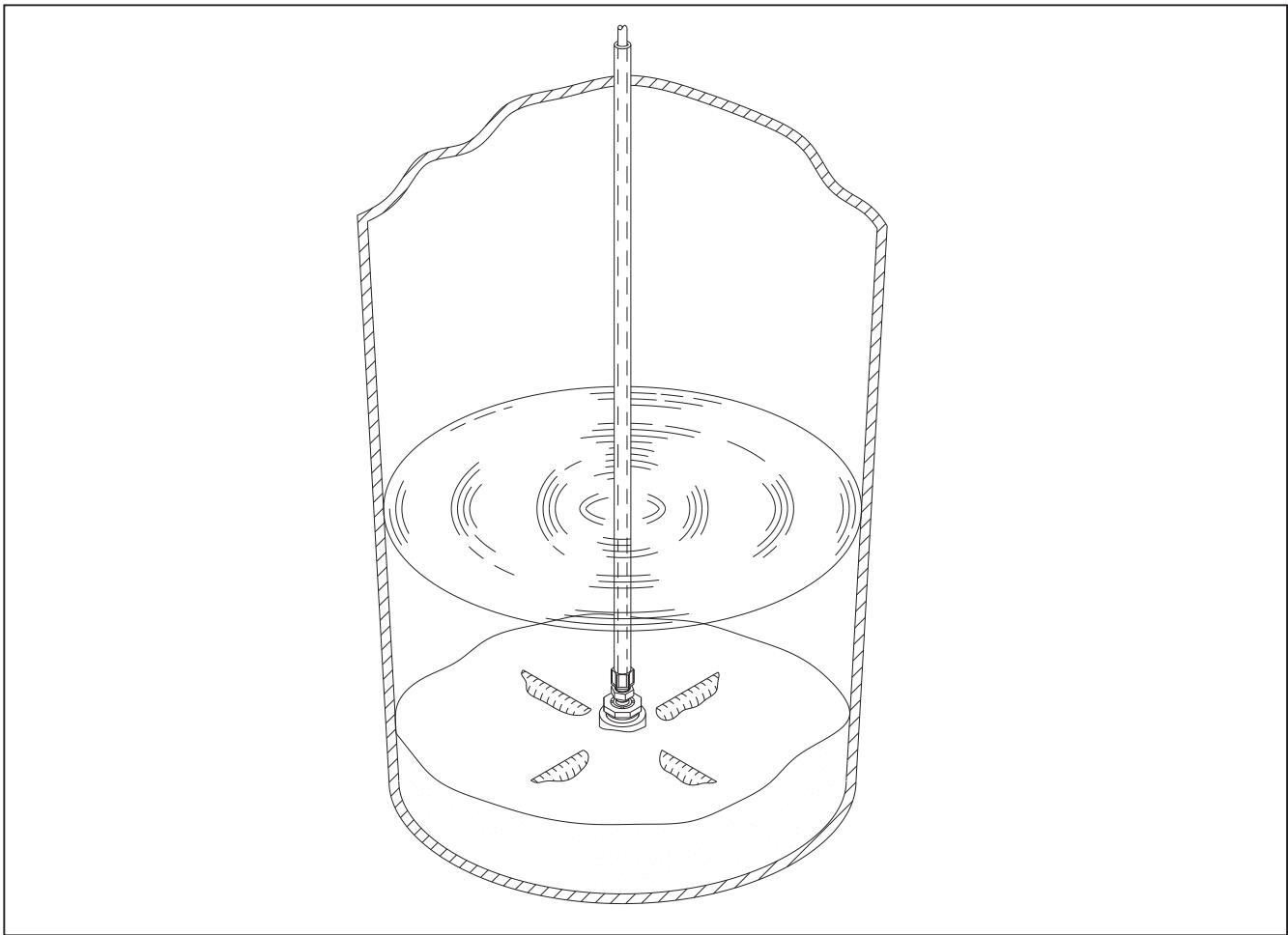


FIGURE 2.

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## 5. TYPICAL INSTALLATION

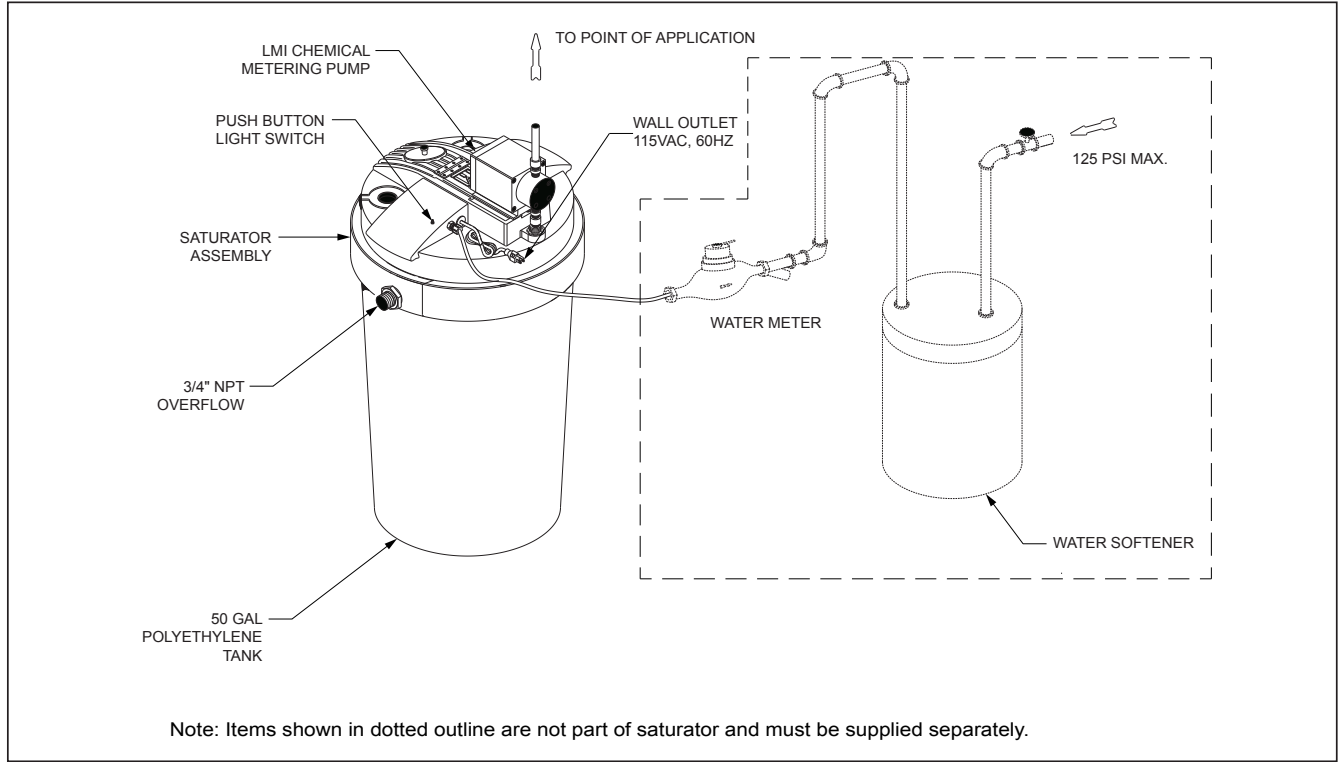


FIGURE 3.

## 6. DIMENSIONAL DRAWING (all dimensions in inches)

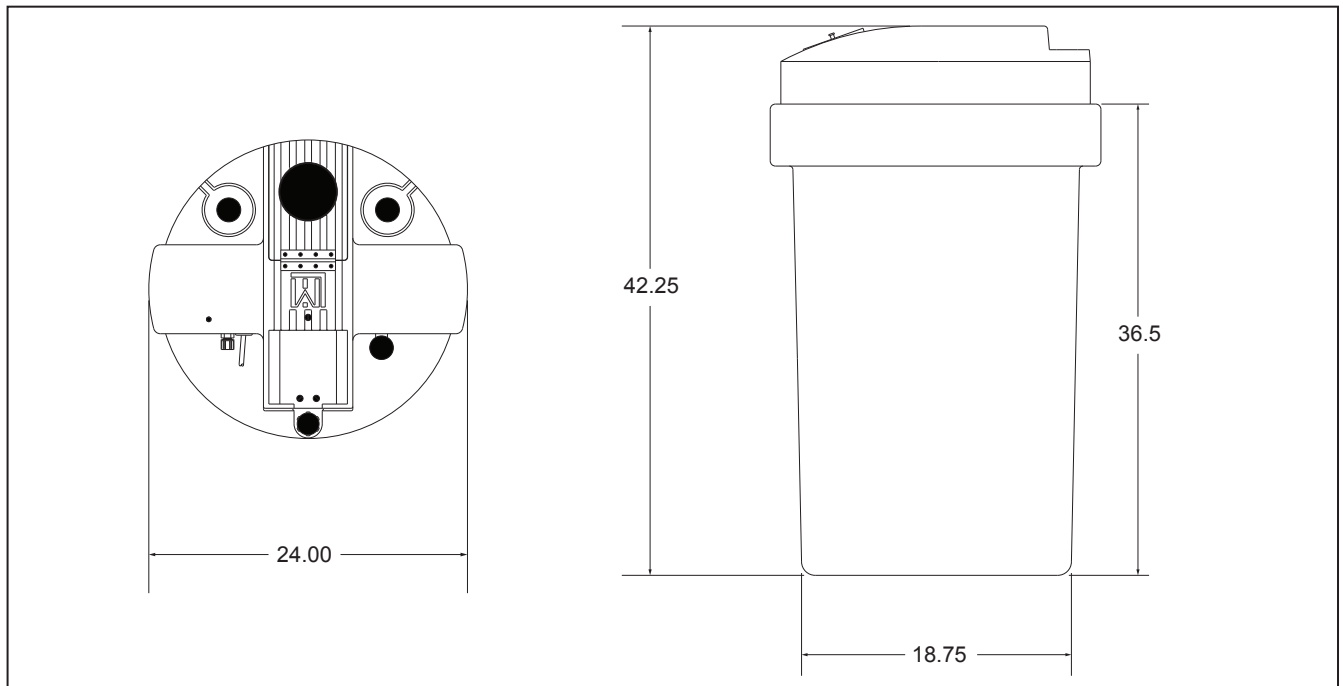


FIGURE 4.

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## MODEL 28850 FLUORIDE SATURATOR PARTS LIST

Key	Part No.	Description	Qty
1	27161	Cover Assembly	1
2	34493	Control Assembly	1
3	10346	Cap Plug	2
4	25985	Cap Plug Assembly	1
5	27084	Screw	2
6	27311	Nut	4
7	52396	Breaker, Vacuum	1
8	10468	Nut, 1" NPT	1
9	25537	Grommet	1
10	10833	Connector	2
11	27242	Cord Assembly	1
12	34492	Adapter	1
13	34433	Screw	1
14	10828	Valve, Solenoid	1
15	34473	Box	1
16	10834	Elbow 3/8" Tube x 1/4" NPT	3
18	50680	Timer	1
19	31289	Adapter	3
20	10182-1	Terminal	10
21	10342-10	Tubing 3/8" OD, Polyethylene	1
22	27085	Bracket, FG	1
23	27241	Transformer Assembly	1
24	10191	Nut, 6-32 Hex Keps	6
25	34433	Screw, 6-32 x 3/8" PH S.S	8
26	34474	Panel	1
27	31172	Screw, 10-32 x 3/8" FH S.S	2
28	31571	Clamp Cord	2
29	27243	Switch Assembly	1
30	26651	Light Assembly	1
31	10679	Screw, 6-32 x 5/8" PH S.S	2
32	25079	Insert, Tubing 3/8" OD	4
33	10469-06	Tubing, Vinyl, 3/8" OD	1
34	10847-1	Strainer	1
35	28291	Switch Assembly, Float	1
36	27166	Pipe, Anti-Rise	1
37	10968	Distributor Assembly	1
38	27354	Fitting, Bulkhead	1
41	26900	Tank Assembly, 50-Gallon	1
42	35472	Screen	1



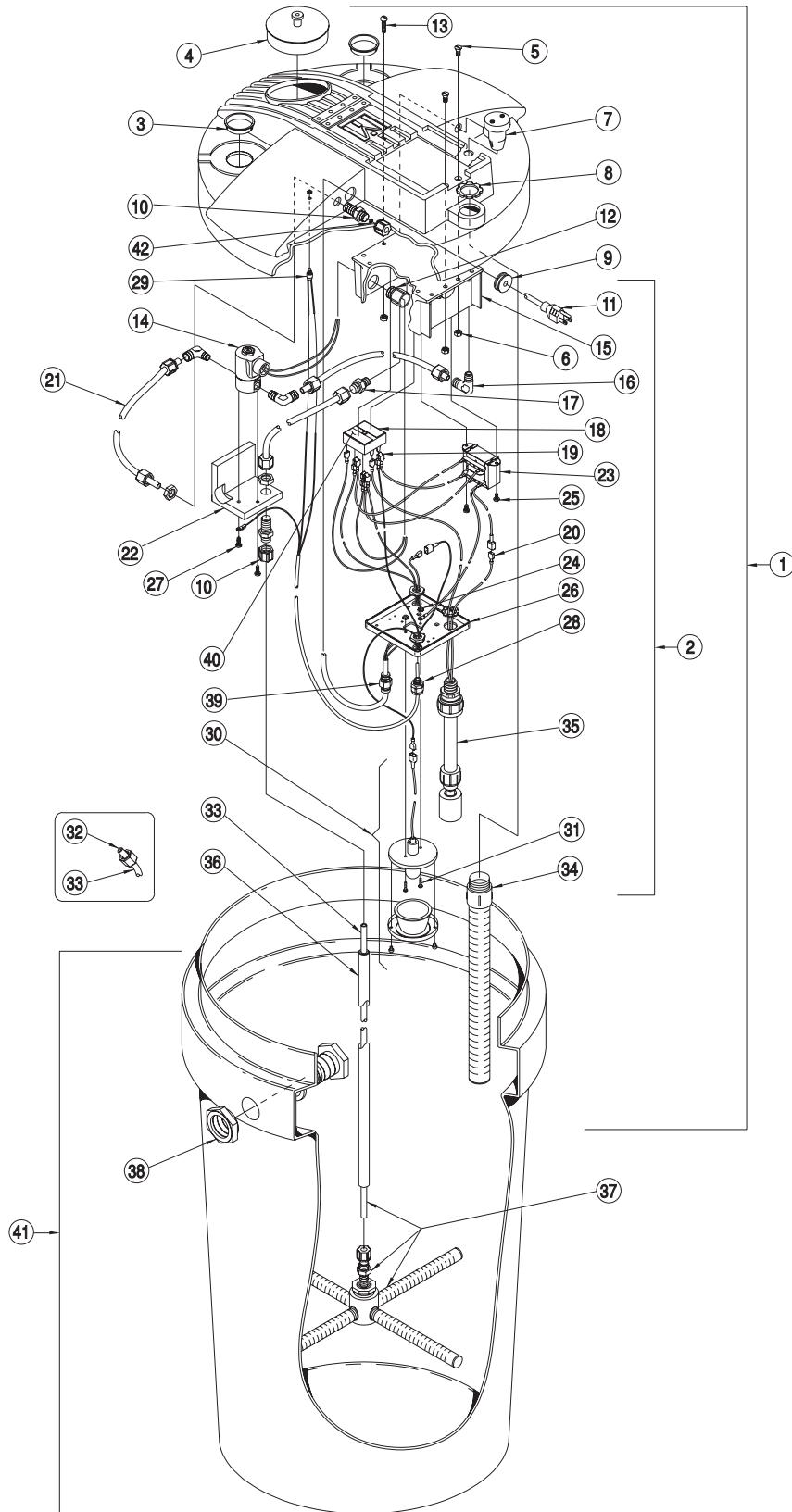


FIGURE 5.

*We are a proud member of Accudyne Industries, a leading global provider of precision-engineered, process-critical, and technologically advanced flow control systems and industrial compressors. Delivering consistently high levels of performance, we enable customers in the most important industries and harshest environments around the world to accomplish their missions.*



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