

# LANCASTER<sup>®</sup>

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# WATER TREATMENT

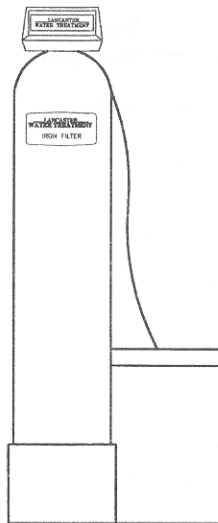
## INSTALLATION, OPERATING AND SERVICE MANUAL

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### FOR FULLY AUTOMATIC IRON FILTERS USING 5610PPB TOP MOUNT VALVE MODELS:

7-TPIM-1B

7-TPIM-2B



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Congratulations on purchasing your new **Lancaster Water Filter**. This unit is designed to give you many years of trouble free service. When installed in accordance with the following instructions and if given reasonable care, better water quality will be the result. For servicing and future inspection purposes, please file this booklet with your important documents.

**PRIOR TO INSTALLATION:** Oxidizing filters (iron, manganese, hydrogen sulfide) require a neutral or greater pH for proper chemical reaction. For iron and hydrogen sulfide a pH of at least 7 is required; manganese may require a pH of 8. If pH correction is required, a chemical feed pump (soda ash) is recommended. PH correction is done prior to the oxidizing filter.

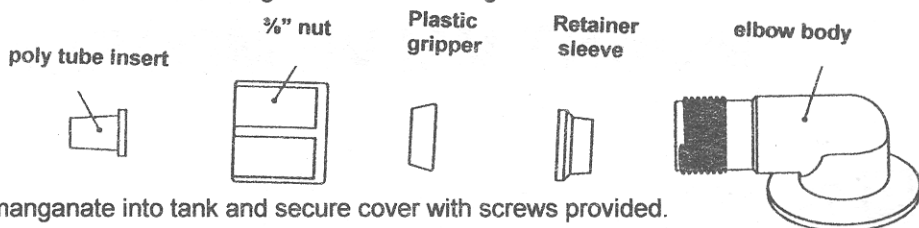
**PIPING INSTRUCTIONS:** The mineral tank must be reasonably level and solidly in place. The drain line may be constructed of 1/2 inch copper or plastic pipe. Avoid extremely long or complicated drain lines as they will cause excessive back pressure while regenerating. Prior to beginning work on the system, make sure that water pressure is shut off at the incoming water supply, and that several spigots are open to provide sufficient venting for drainage of the system. Arrows are molded into the control valve to show the direction of flow. A bypass valve should be installed so that water will be available if it should be necessary to shut off pressure in order to service the filter.

**All plumbing should be done in accordance with local plumbing codes.**

**DRAIN LINE:** Drain line fitting accommodates 1/2" I.D. flexible poly tube.

It is simplest to run the drain line into a sump pump pit or washing machine drain if possible. If this is not practical, a fitting with a trap must be installed in a sewer line. Place the trap as close to the vent as possible to prevent siphoning of the trap when large amounts of waste water go through the sewer line. **DO NOT** pipe the drain line solidly into the waste line, as this is prohibited by most plumbing codes. The drain line should enter the trap from above so the water will not back up in the drain line if sewer should become plugged up and the trap overflow. The trap should have a short pipe extending from it to prevent splashing when water runs into the trap from drain line.

**SOLUTION TANK CONNECTIONS:** 3/8" poly tube is shipped inside of the solution tank along with a fittings package. Loosen nut on solution tank connection. Push the tube insert into the provided 3/8" poly tube. Push the poly tube and insert into the nut until it is fully seated into the fitting. Do not use pipe dope or any other sealant on threads. Teflon tape is not needed on the threads. Tighten nut securely to create a pressure tight connection. Pliers or crescent wrench may be used. The nut, gripper and retainer sleeve is a three piece assembly that can come apart if removed from the elbow body. Parts must be reassembled exactly as shown to function properly. If the nut is completely removed from the body, slip the nut, plastic gripper and retainer sleeve on to the tube then tighten on to the fitting.



Pour granulated potassium permanganate into tank and secure cover with screws provided.

Manually index the filter control into the **BACKWASH** position. Slowly open bypass valve and allow water to flow into the mineral tank. When the water flows steadily to drain without the presence of air, index control to the **IN SERV** position. **NOTE:** the various regeneration positions may be dialed manually by turning the knob on the front of the control clockwise until the indicator shows that the filter is in the desired position.

Plug into the electrical cord and look in the sight hole in the back of the motor to see that it is running. Set the days that regeneration is to occur (see section on regeneration frequency) by sliding tabs on skipper wheel outward to expose trip fingers. Each tab is one day. Finger at red pointer is tonight. Moving clockwise from red pointer, extend or retract fingers to obtain the desired regeneration schedule.

Manually advance the control to the end of the settle rinse cycle and allow the control to return to the service position automatically. This puts the proper amount of water into the solution tank.

**MUST KNOW:**

- ◆ Amount of iron, manganese or hydrogen sulfide in PPM or mg/L
- ◆ Approximate daily water usage in gallons

**MAXIMUM REMOVAL CAPACITY PER CUBIC FOOT:**

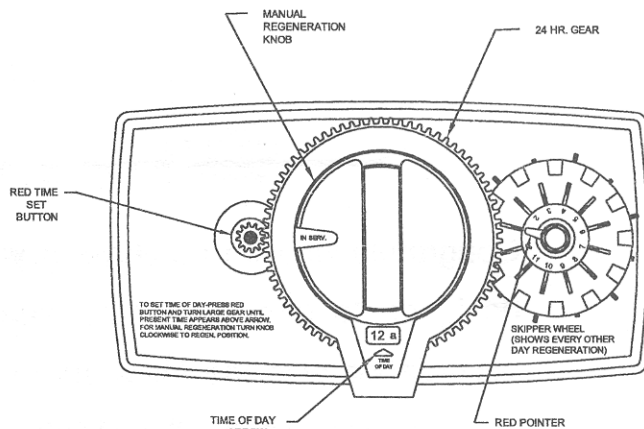
A mixture of elements may be removed but total capacity may not exceed 10,000 PPM per cubic foot and may be less depending on mixture proportions.

- ◆ Iron: 10,000 PPM or mg/L
- ◆ Manganese: 5,000 PPM or mg/L
- ◆ Hydrogen Sulfide: 2,000 PPM or mg/L

**REGENERATION FREQUENCY:**

- ◆ Gallons per day x PPM = PPM per day

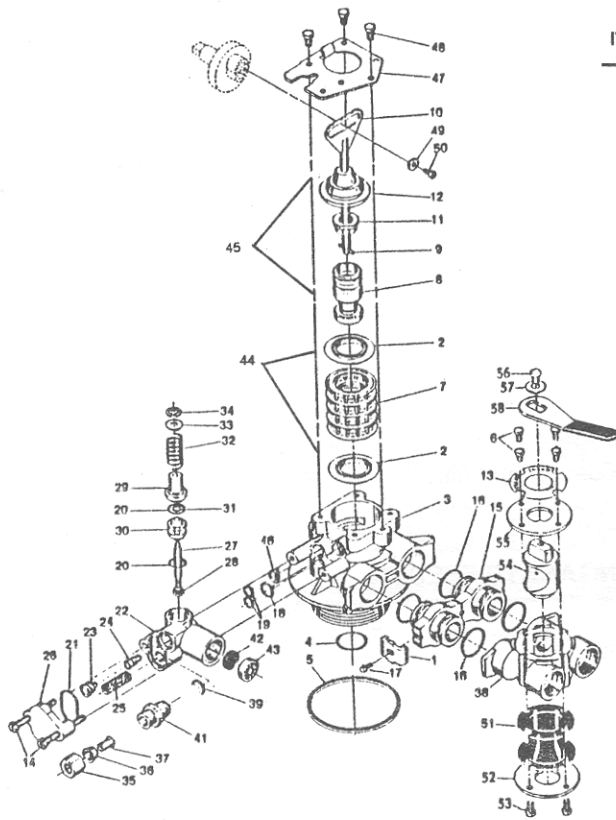
Example: 300 gallons x 5 PPM = 1500 PPM  
 1 cubic foot capacity if iron= 10,000 PPM  
10,000  
 1500 = 6 2/3 days (Set for maximum of 6 day cycle)



**VALVE POSITIONS**

- |                |                         |
|----------------|-------------------------|
| 1. IN SERV     | 5. CHEM DRAW            |
| 2. START REGEN | 6. RAPID RINSE          |
| 3. RINSE       | 7. SETTLE RINSE         |
| 4. BACK WASH   | 8. Solution Tank Refill |

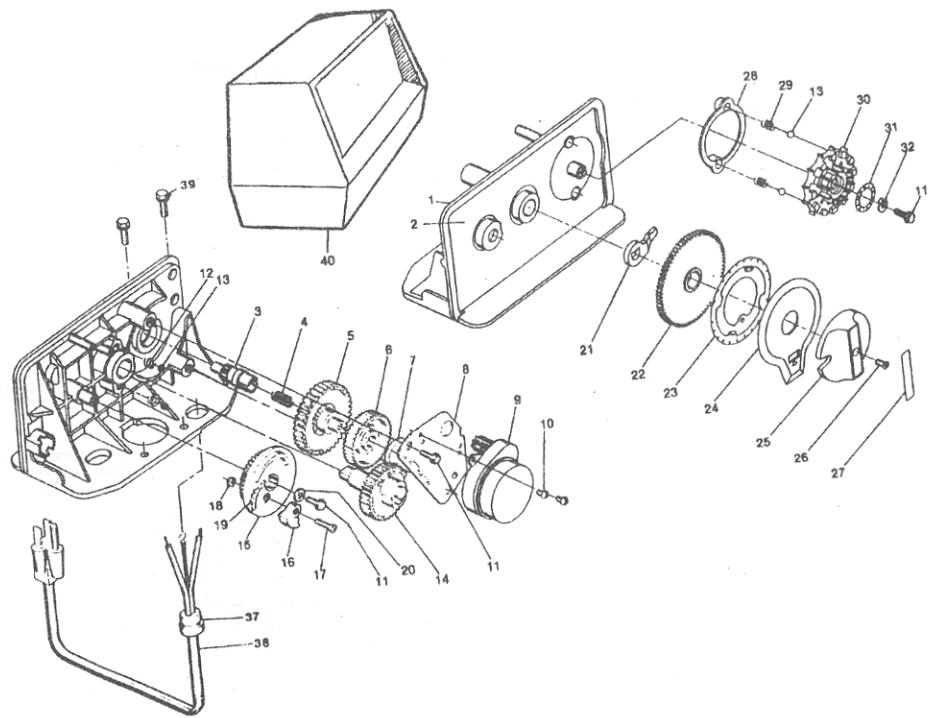
## MODEL 5610PPB CONTROL VALVE ASSEMBLY



ITEM #	QTY REQ'D	PART #	DESCRIPTION	ITEM #	QTY REQ'D	PART #	DESCRIPTION
1	2	13255	Adapter Clips	30	1	13167	Brine Valve Spacer
2	5	13242	Seals	31	1	12550	Quad Ring
3	1	14450	Valve Body	32	1	11973	Spring
4	1	10244	O-ring	33	1	12035	Washer
5	1	12281	O-ring	34	1	11981	Retaining Ring
6	8	15727	Screws	35	1	10329	Fitting Nut
7	4	14241	Spacers	36	1	10330	Ferrule
8	1	13852	Piston	37	1	10332	Insert
9	1	10896	Piston Pin	38	1	13254	Valve Body
10	1	13001	Piston Rod Assembly	39	1	12977	O-ring
11	1	12953	Piston Retainer	41	1	13244	Fitting
12	1	13446-10	End Plug Assembly	42	1	12092	5.0 GPM Button
13	1	13604	Valve Label		1	12408	7.0 GPM Button
14	2	13315	Screws	43	1	13173	Retainer
15	2	13709	Adaptor Coupling	44	1	60125	Seal Kit
16	4	13305	O-rings	45	1	60102-10	Piston Assembly
17	2	13314	Screws	46	1	13497	Air Disperser
18	1	12638	O-ring	47	1	13546	End Plug Retainer
19	2	13301	O-rings	48	3	12112	Screws
20	2	13302	O-rings	49	1	13363	Washer
21	1	13303	O-ring	50	1	13296	Screw
22	1	13163	Injector Body	51	1	11726	Valve Seat
23	1	12973	Injector Nozzle	52	1	11986	Side Cover
24	1	12974	Injector Throat	53	8	15727	Screws
25	1	10227	Injector Screen	54	1	11972	Valve Plug
26	1	13166	Injector Cover	55	1	11978	Side Cover
27	1	13172	Brine Valve Stem	56	1	11989	Screw
28	1	12626	Brine Valve Seat	57	1	11443	Washer
29	1	13165	Brine Valve Cap	58	1	11979	Valve Lever

## MODEL 5610PPB TIMER/DRIVE ASSEMBLY

ITEM #	QTY REQ'D	PART #	DESCRIPTION	ITEM #	QTY REQ'D	PART #	DESCRIPTION
1	1	15494	Drive Panel	32	1	13014	Regeneration
2	1	13955	Front Label	37	1	13547	Strain Relief
3	1	13018	Idler Pinion	38	1	11842	Electrical Cord
4	1	13312	Idler Spring	39	2	12473	Screw-Drive
5	1	13017	Idler Gear	40	1	60226	Black Cover
6	1	13164	Drive Gear				
7	1	13299	Curved Washer				
8	1	13175	Motor Mounting Plate				
9	1	18743	Motor - 110 V. 1/30 RPM				
10	3	11384	Screw				
11	3	13296	Screw				
12	2	14457	Spring				
13	2	13300	Ball				
14	1	13170	Main Gear & Shaft				
15	1	13168	Brine Cam Assy.				
16	1	13169	Time Fill Cam				
17	1	11980	Screw - Time Fill Cam				
18	1	11081	Nut - Time Fill Cam				
19	1	13489	Label - "Lbs of Salt - 6-36"				
20	1	12037	Washer				
21	1	13011	Cycle Actuator Arm				
22	1	13009	24 Hour Gear Assy.				
23	1	13959	24 Hour Label				
24	1	15478	Position Dial, Chem. Draw				
25	1	14177	Knob				
26	1	15151	Screw - Knob				
27	1	14207	Knob Label				
28	1	13864	Skipper Wheel Ring				
29	2	13311	Spring				
30	1	14381	Skipper Wheel Assy.				
31	1	13429	Skipper Wheel Label				



**OPERATING LIMITATION:**

- ◆ Iron or Manganese: no more than 15 PPM
- ◆ Hydrogen Sulfide: no more than 5 PPM
- ◆ pH: 6.2 to 8.5

For full capacity a pH of at least 7 is recommended. It is particularly important that low pH water be avoided and that regeneration be initiated before bed exhaustion in water containing hydrogen sulfide or sulfur compounds. Failure to do this may cause the manganese oxide coating on the base material to be dissolved and the filter bed ruined. Leaching of manganese oxide from the bed may also occur if inadequate amounts of potassium permanganate are dissolved due to unusually low temperatures in the solution tank or if excessive time between regeneration cycles is attempted. The float level in the solution tank is calibrated for 50° operation. Extremely cold temperatures (35°) will cause partial regeneration due to low solubility, high temperatures (75°) will waste potassium permanganate due to high solubility.

Operating results when organic materials such as tannins are present are unpredictable. Organic material is generally not removable with this equipment, and may prevent effective oxidation and filtration of iron, etc.

**TABLE FOR POTASSIUM PERMANGANATE FEEDER**

Oz. of Potassium Permanganate	Gallons of solution	Float Setting	Riser Pipe Length	Tank Capacity
2	3/4	2½"	11"	1 cu. ft.
4	1	4"	12½"	2 cu. ft.

CORRECT WATER TEMPERATURE IS IMPORTANT IN OBTAINING PROPER DISSOLVING OF POTASSIUM PERMANGANATE. TABLES BASED ON POTASSIUM PERMANGANATE SOLUBILITY OF 4 OZ. PER GALLON AT 50° F.

FLOAT SETTING BASED ON DISTANCE BETWEEN VALVE BODY NUT AND THE BOTTOM OF THE FLOAT WITH THE VALVE IN THE CLOSED (FLOAT UP) POSITION.

