INSTALLATION, OPERATING AND SERVICE MANUAL

LANCASTER WATER TREATMENT

WATER FILTERS

2850F

WATER FILTER VALVE 1½"

ACID NEUTRALIZERS:
The mineral used is CALCITE and will dissolve in proportion to the amount of acid in the raw water. When the unit is installed measure the distance from the top of the tank to the mineral bed. Every four to six months the mineral should be measured and the mineral used should be replaced.

This unit will add approximately 6 grains per gallon to the original hardness of the raw water. This should be kept in mind when figuring regeneration for a water softener.

The Acid Neutralizer will precipitate iron and filter it up to several ppm, but the unit is not meant to be an iron filter and should be followed by a softener or iron filter to insure complete iron removal.

IRON FILTERS:

This Filter is the most efficient for general iron removal, and will not add hardness to the water. These filters will normally be shipped with Birm fill unless ordered otherwise. If the mineral ordered is Birm, no regeneration is required; just periodic backwash.

When the PH is less than 7 or if the oxygen content is less than 15% in the raw water, an iron filter is ineffective, and a water softener should be used in place of the iron filter.

COLOR, TASTE AND ODOR FILTERS:

Used for removal of sulphur, chlorine, etc., except taste caused by iron. The mineral bed should be backwashed weekly or semi-weekly, but will in time become fouled or will reach its maximum absorbancy. When this occurs, the bed should be completely replaced. In rare conditions a white scum might be noticed immediately after installation. If this should occur, flushing the Filter for several hours will clear the water and once clear, the condition will not re-occur.

SEDIMENT AND TURBIDITY FILTERS:

This filter will filter out dirt, silica, etc. It has a lifetime fill and should be backwashed semi-weekly or weekly depending on local conditions. Head loss is very low.

LANCASTER WATER TREATMENT A DIVISION OF C-B TOOL CO.
1340 MANHEIM PIKE LANCASTER, PA 17601-3124 Area Code (717) 397-3521

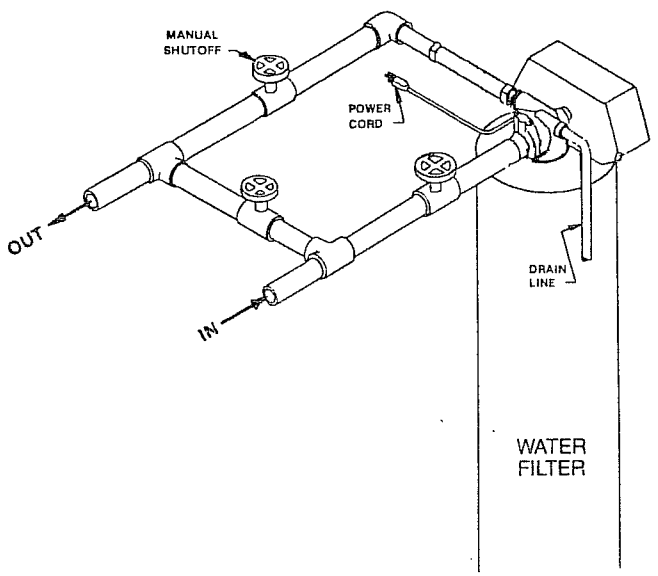
PACKAGING:

All filters are shipped from the factory in cartons, complete with fiberglass mineral tank, main valve, mineral, and gravel.

INSTALLATION:

Remove valve and add gravel and mineral. Allow 12″ free board between mineral and top of tank. *Do not overfill.*

Facing the unit, the inlet is the 1½″ opening (Marked →) on the rear of the valve. The outlet is the 1½″ opening (Marked →) on the right side of the valve. The ¾″ opening is the drain line.



If possible, the drain pipe should slope down and run into an open floor drain or laundry tub. If it is necessary to run the drain pipe overhead (not to exceed 5 ft.), be sure to increase the pipe size to follow all plumbing procedures to hold friction and restriction to a minimum.

Manually index the filter control into the service position and let the water flow into the mineral tank. When the water flow stops, open a water tap until all air is released from the lines, then close the tap.

Manually index the control to the backwash position and allow water to flow at the drain for 3 to 4 minutes. Manually index the control to rapid rinse, then to the service position.

The electric clock is set at the factory. If any change is necessary, follow the directions on page 4.

Plug in 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 backwash is to occur 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 backwash schedule.

PROGRAMMING INSTRUCTIONS:

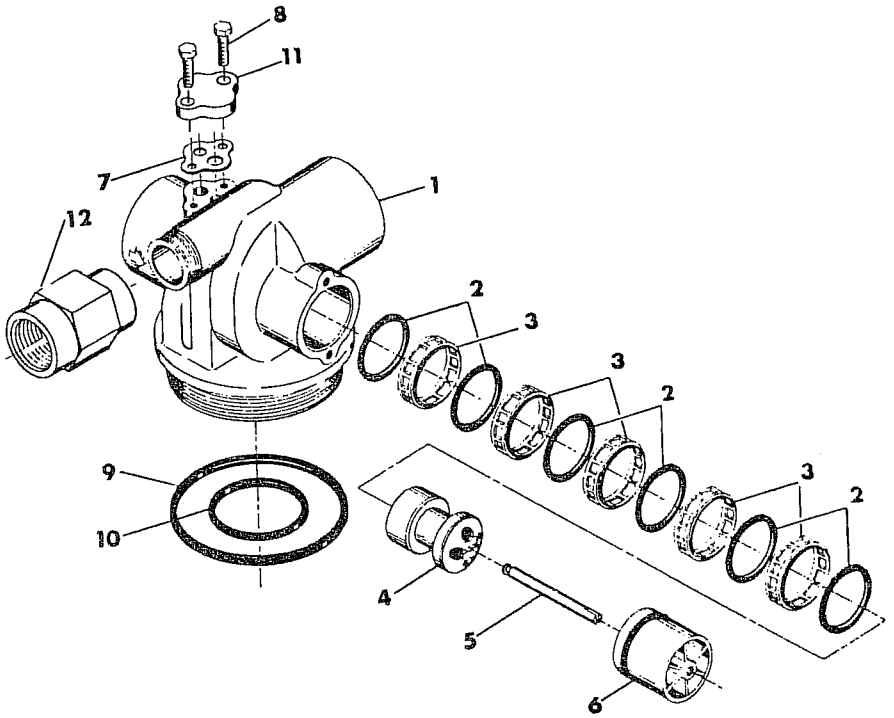
Backwash frequency will vary with the amount of dirt or sediment in the water. Iron or sediment filters should be backwashed at least once a week, more often if pressure drop occurs. If water is clean, a neutralizer requires backwash only to remove fine material that results from the calcite dissolving. Carbon filters require backwash only if pressure drop occurs. All units should be backwashed on installation until dust clears at the drain.

MINERAL CU. FT.	SERVICE FLOW RATES				BACKWASH RATE		BACKWASH TIME	TRANSITION TIME minimum	RAPID RINSE	Mineral Tank dia. x ht. inches	Overall ht. inches
	Continuous[1]		Intermittent (Peak)[2]								
	GPM	PSI Drop	GPM	PSI Drop	GPM	PSI Drop[3]					
4	7.0	0	14.0	3.0	15.0	25.0	16 Min. 8 Pins	6 Min. 3 Holes	16 Min. 8 Pins	16 x 65	78
7	12.0	0	24.0	3.0	25.0	25.0	16 Min. 8 Pins	6 Min. 3 Holes	16 Min. 8 Pins	21 x 62	75
10	16.0	0	31.0	6.0	30.0	25.0	16 Min. 8 Pins	6 Min. 3 Holes	16 Min. 8 Pins	24 x 71	84

1: BASED ON 5 GPM/FT.²
2: BASED ON 10 GPM/FT.²
3: FOR LIGHTER WEIGHT MINERAL BEDS SUCH AS FILTER AG, THE PSI DROP THRU SYS. IS REDUCED BY APPROX. 5 PSI.

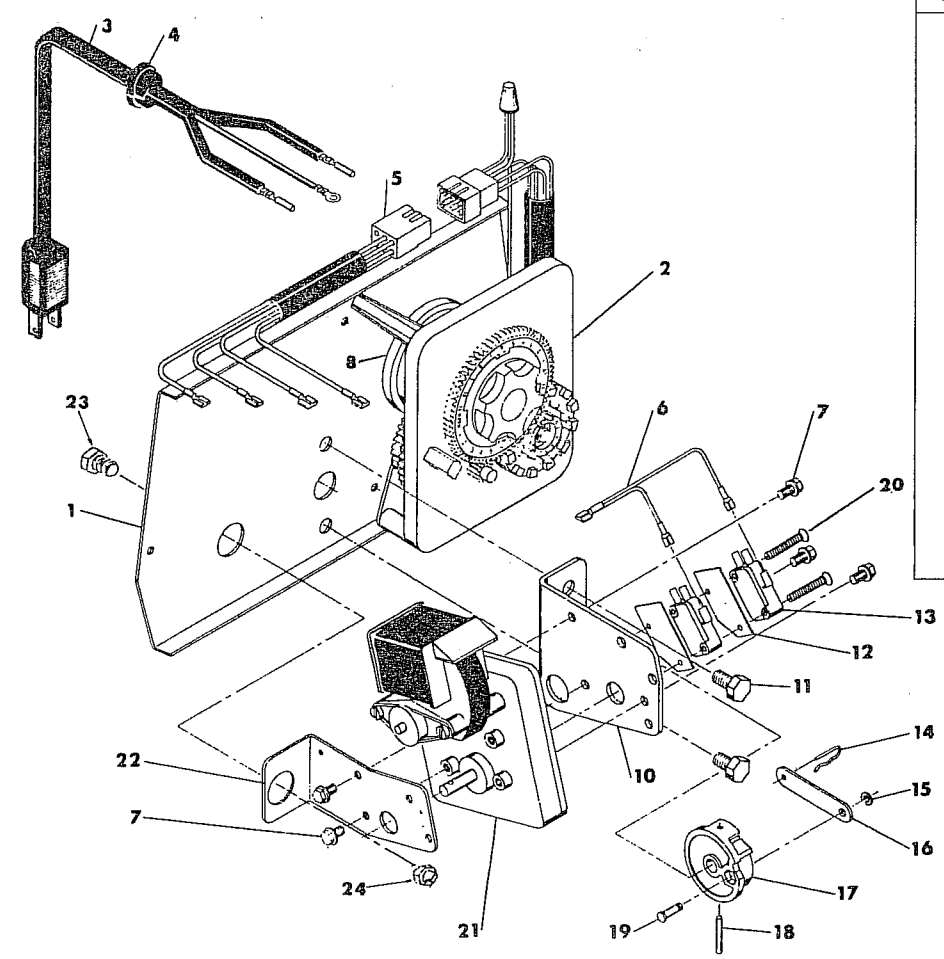
SERVICE INSTRUCTIONS—WATER FILTER SYSTEM

Problem	Cause	Correction
Filter fails to backwash.	A. Electrical service to unit has been interrupted.	A. Assure permanent electrical service (check fuse, plug, pull chain or switch.)
	B. Timer is defective.	B. Repair or replace timer.
	C. Power failure.	C. Reset time of day.
Filter "bleeds" iron.	A. Excessive water usage.	A. Reduce days between, backwashing (see timer instructions.) Make sure that there is not a leaking valve in the toilet/sinks.
	B. Hot water tank rusty.	B. Repeated flushings of the hot water tank is required.
	C. Defective or stripped filter medium bed.	C. Replace bed.
	D. Inadequate backwash flow rate.	D. Make sure filter has correct drain flow control. Be sure flow control is not clogged or drain line restricted. Be sure water pressure has not dropped.
Loss of water pressure.	A. Iron or turbidity buildup in water filter.	A. Reduce days between backwashing so filter backwashes more often. Note: Make sure filter is sized large enough to handle water usage.
	B. Inlet of control plugged due to foreign material broken loose from pipes by recent work done on plumbing system.	B. Remove piston and clean control.
Drain flows continuously.	A. Foreign material in control. control.	A. Remove piston assembly and inspect bore, remove foreign material and check control in various cycle positions.
	B. Internal control leak.	B. Replace seals and/or piston assembly.
	C. Control valve jammed in rinse or backwash.	C. Replace piston and seals and spacers. (and drive motor if necessary).



MODEL 2850F
CONTROL VALVE DRIVE ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION
1	16250	Valve Body
2	16101	Seals
3	16102	Spacers
4	16092	Piston
5	16436	Piston Rod
6	16395	End Plug Assembly
7	14805	Gasket
8	12112	Screws
9	16455	O-Ring
10	13577	O-Ring
11	11893	Cover
12	60366-15	Drain Flow Control 15.0 GPM for 4 cu. ft. Filter
	60366-25	Drain Flow Control 25.0 GPM for 7 cu. ft. Filter
	13640	Drain Flow Control 30.0 GPM for 10 cu. ft. Filter
	60129	Seal Kit
	60105	Piston Assembly



MODEL 2850F
CONTROL VALVE DRIVE ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION
1	14884	Back Plate
2	60304-03	Timer (12 day)
3	11838	Power Cord
4	13547	Strain Relief
5	11667	Wire Harness
6	11752	Motor Lead Wires
7	10872	Motor Mount Screws
8	10844	Timer Motor
10	10774	Motor Bracket
11	10231	Drive Mount Screws
12	10302	Insulators
13	10218	Micro-Switch
14	10909	Connecting Rod Pin
15	10250	Retaining Ring
16	10621	Connecting Link
17	12102	Drive Cam Assembly
18	10338	Drive Roll Pin
19	13366	Drive Bearing
20	14923	Micro-Switch Screws
21	10769	Drive Motor
22	11826	Motor Bracket
23	10712	Plug Bolt
24	10269	Plug Bolt Nut
	60232	Cover (not shown)
		Screw-Timer Mounting (not shown)

60304-03 TIMER SETTING INSTRUCTIONS

HOW TO SET FILTER TIME CONTROL

HOW TO SET DAYS ON WHICH FILTER IS TO BACKWASH:

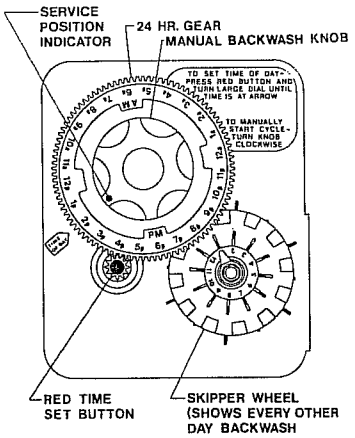
Rotate the skipper wheel until the number "1" is at the red pointer. Set the days that the backwash to occur by sliding tabs on the skipper wheel outward to expose trip fingers. Each tab is one day. Finger at red pointer is tonight. Moving clockwise from the red pointer, extend or retract fingers to obtain the desired backwash schedule.

HOW TO SET THE TIME OF DAY:

Press and hold the red button in to disengage the 24 hour gear.

Turn the 24 hour gear until the actual time of day is at the time of day pointer.

Release the red button to again engage the 24 hour gear.



HOW TO MANUALLY BACKWASH YOUR FILTER

Turn the manual backwash knob clockwise one "click."

This slight movement of the manual backwash knob engages the program wheel and starts the backwash program.

The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.

Even though it takes three hours for this center knob to complete one revolution, the backwash cycle of your unit is only a small portion of this time.

In any event, filtered water may be drawn after rinse water stops flowing from the water filter drain line.

HOW TO SET FILTER CYCLE PROGRAM

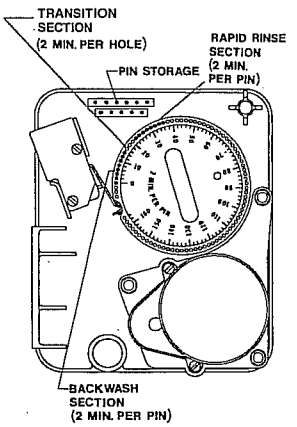
HOW TO SET THE FILTER CYCLE PROGRAM:

The backwash cycle program on your water filter has been factory preset, however, portions of the cycle or program may be lengthened or shortened in time to suit local conditions.

To expose cycle program wheel, grasp timer in upper left-hand corner and pull, releasing snap retainer and swinging timer to the right.

To change the backwash cycle program, the program wheel must be removed. Grasp program wheel and squeeze protruding lugs towards center, lift program wheel off timer. (Switch arms may require movement to facilitate removal.)

Return timer to closed position engaging snap retainer in back plate. Make certain all electrical wires locate above snap retainer post.



HOW TO CHANGE THE LENGTH OF THE BACKWASH TIME:

The program wheel as shown in the drawing is in the service position. As you look at the numbered side of the program wheel, the group of pins starting at zero determines the length of time your unit will backwash.

FOR EXAMPLE: there are eight pins in this section, the time of backwash will be 16 minutes. (2 min. per pin). To change the length of backwash time, add or remove pins as required. The number of pins times 2 equals the backwash time in minutes.

IMPORTANT:

At least three holes must be between the last pin in the backwash section and the second group of pins. This is a transition section where no water flows to drain.

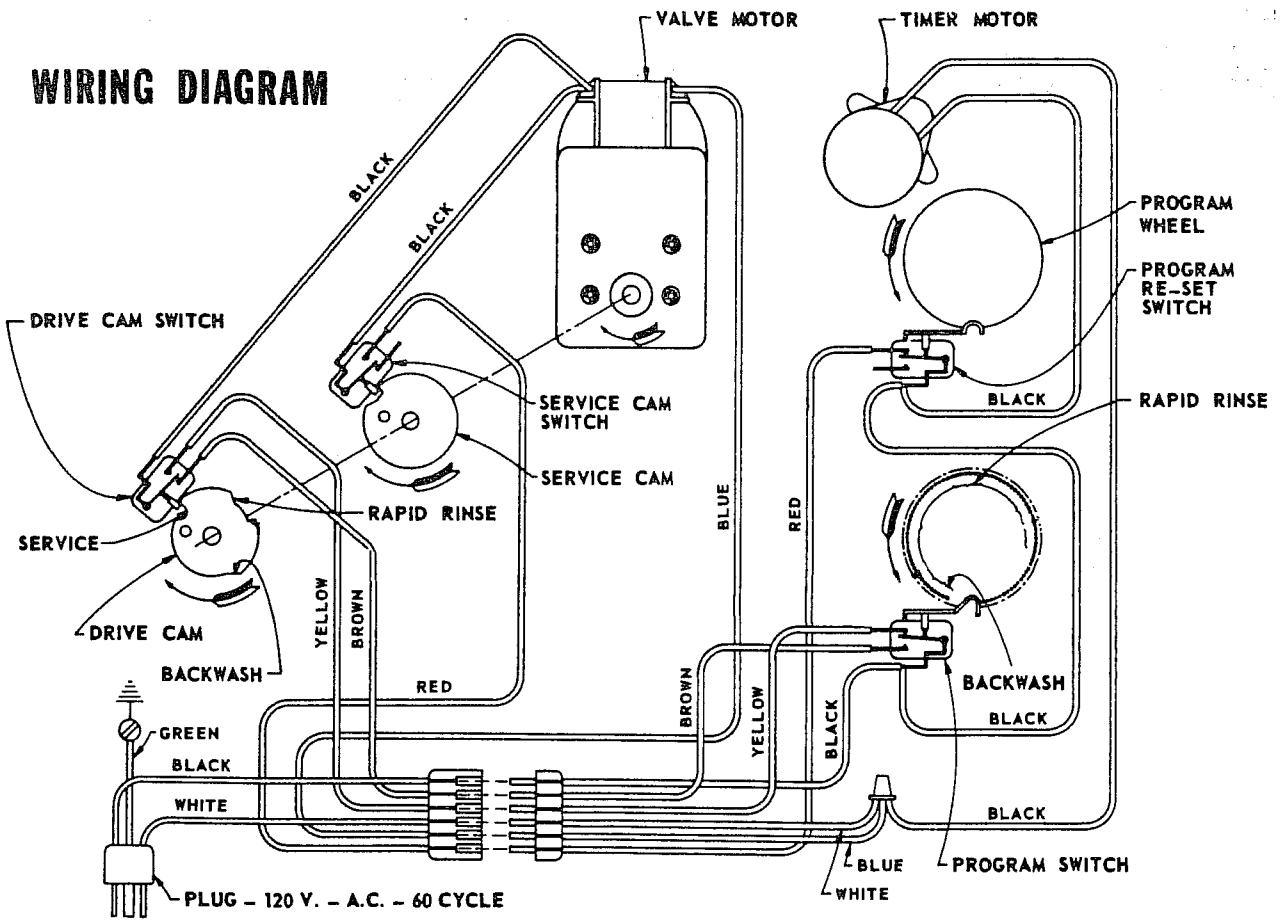
HOW TO CHANGE THE LENGTH OF RAPID RINSE:

The second group of eight pins on the program wheel determines the length of time that your filter will rapid rinse. (2 Min. Per pin)

To change the length of rapid rinse, add or remove pins at the higher numbered end of this section as required. The number of pins times 2 equals the rapid rinse time in minutes.

The filtering cycle is complete when the outer micro-switch drops off the last pin in the rapid rinse group of pins. The program wheel, however, will continue to rotate until the inner micro-switch drops into the notch on the program wheel.

WIRING DIAGRAM



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