

# *TOCC*

## INSTALLATION AND MAINTENANCE MANUAL



**Read all instructions carefully before operation.**

PART # 55047

JANUARY,28,2015

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## System Specifications

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### Taste & Odor Filter (Activated Carbon)

Unpleasant tastes and odors caused by chlorine, chloramines or organic substances, such as decayed vegetation and run off, are absorbed by top quality activated carbon. The filter will automatically backwash to a predetermined schedule. This frees the bed of accumulated impurities and readies it for operation again.

Media Volume – 1 CF

Flow Rate – 4.0 GPM

Flow Rate – Peak – 5.0 GPM

**Caution:** *These water filters are not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.*

- Maximum Water Temperature = 110°F (43°C)
- Maximum Operating Pressure = 100 PSIG (689 kPa)
- Voltage = 110 volts standard
- Pipe Size = 3/4"
- Peak flow rates are intended for intermittent use only and are for residential application only.
- KMnO<sub>4</sub> refers to Potassium Permanganate.
- At the stated service flow rates, the pressure drop through these devices will not exceed 15 psig.
- The manufacturer reserves the right to make product improvements which may deviate from the specifications and descriptions stated herein, without obligation to change previously manufactured products or to note the change.

## How Your System Works

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Raw water enters your home through the main supply line, enters your filter and passes down through the filter media. Chlorine, Chloramines are reduced from the water. The filtered water then flows up and into your household water lines.

Backwashing of the filter takes place during the night while you sleep. First, backwashing cleans the filter bed, then a rapid rinse clears any remaining particulates from the water. All functions are performed automatically.

Your automatic filter can be set to operate according to your needs by programming the appropriate settings. On the days your filter regenerates, the operating cycles will be automatically performed. In the service position, filtered water is supplied for household use.

This valve is controlled with simple, user-friendly electronics displayed on a LCD screen. The main page displays the current time and the remaining gallons in meter mode or the remaining days in calendar clock mode.

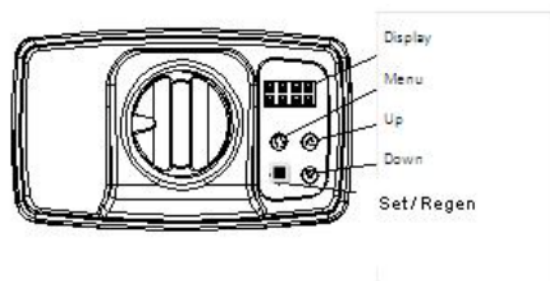



Figure 1. Valve Display

**MENU BUTTON “”:**

The function of this key to enter the level one programming mode where the valve settings can be adjusted.

**SET / REGEN BUTTON “”:**

This button has two functions. The first is to initiate a manual regeneration by the second function is while in programming mode, pressing this key allows the user to change the value of each setting.

**UP / DOWN “ ”:**

These buttons are used to increase or decrease the value of the settings while in the programming mode.

### System Initialization

When power is supplied to the control, the screen will display TIME OF DAY AND DEFAULT GALLON SETTING.

### Control Operation During A Power Failure

In the event of power failure, the valve will keep track of the time and day for 48 hours. The programmed settings are stored in a non-volatile memory and will not be lost during a power failure. If power fails while the unit is in regeneration, the valve will return to the service position once power is restored. If the valve misses a scheduled regeneration due to a power failure, it will queue regeneration at the next regeneration time once power is restored.

# Programming

1. Press 'M' to enter programming. If the system has been inactive, you may have to hold and press 'M' until you hear a beep to unlock the display screen. Press '▲' or '▼' to select which setting to modify.
2. To change setting, press '■'. When the display flashes, the value may be changed. Press '▲' or '▼' to change the value. Press '■' to accept the value.
3. Press 'M' to return to previous menu.

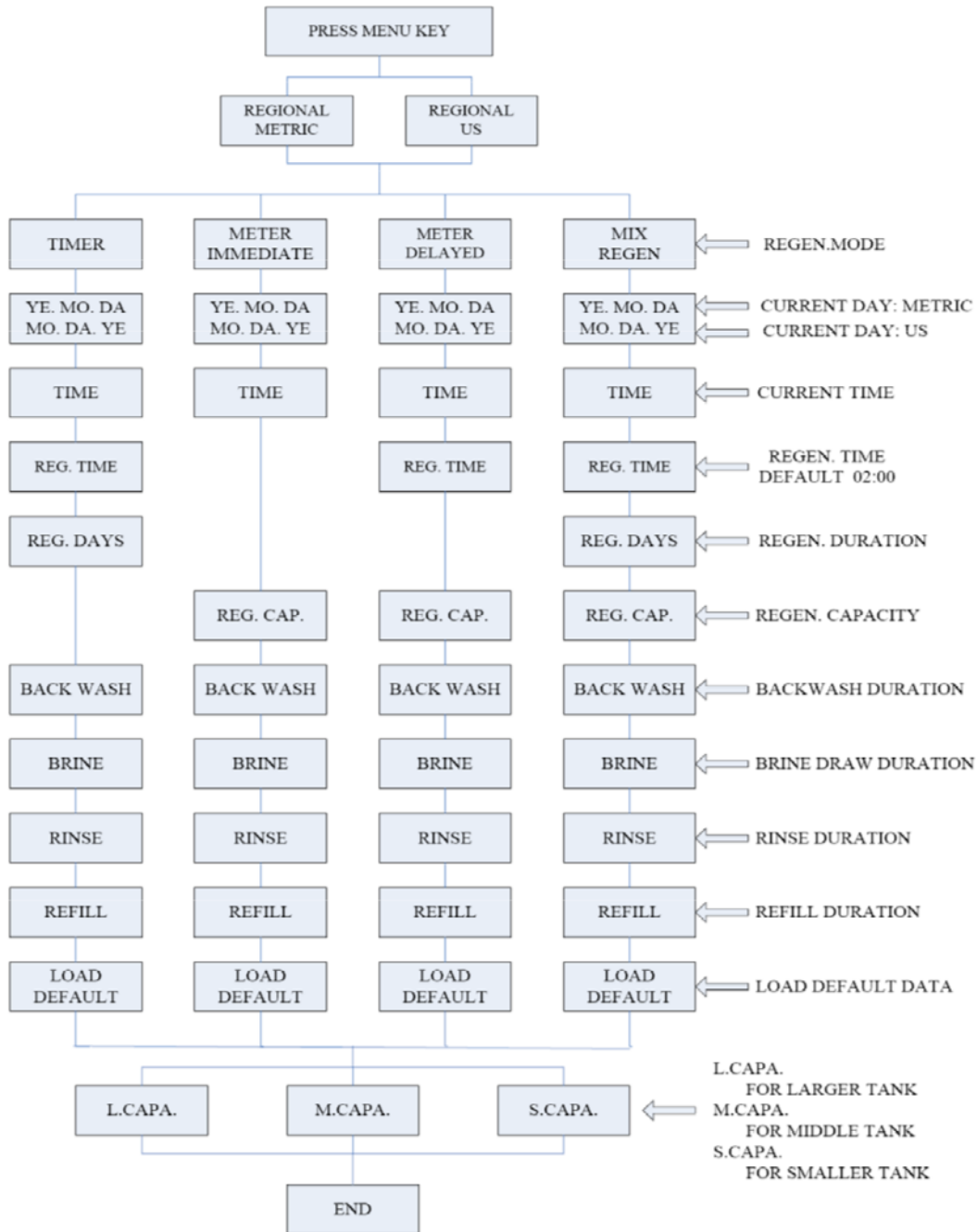



Figure 2. Program Flow Chart

## Program Options

Depending on the current option settings, some parameters cannot be viewed or set.

PARAMETER	Program Mode		DESCRIPTION
		OPTIONS	
1	REGIONAL	METRIC	This option controls whether cubic meters or US gallons is used for the volume display and the format of the day, year, and month.
		US	
2	REGENERATION MODE	METER DELAYED	This is the most common setting. When the volume remaining reaches zero gallons, the system will initiate a regeneration at the next pre-set regeneration time.
		METER IMMEDIATE	The unit will initiate a regeneration immediately after the volume remaining reaches zero.
		TIMER	The unit will initiate a regeneration at the next pre-set regeneration time based on the interval of days between regeneration days.
		MIX REGEN	<b>Meter initiated with Day Override.</b> When the volume remaining reaches zero gallons, the system will initiate a regeneration at the next pre-set regeneration time. If the days between regeneration is reached before the remaining volume reaches zero, the system will override the meter setting and initiate a regeneration.
4	DATE		Set date of installation. This value is fixed and does not change.
5	TIME		Set current time.
6	REG TIME		This setting controls the time of day when a regeneration cycle will start.
7	REG. DAYS		The user can manually enter values for regeneration day intervals.
8	REG. CAP.		The user can manually enter values system capacity.
9	BACKWASH		This option controls the length of time in minutes for the unit to clean the bed by reversing the flow of water upwards through the bed and out to the drain.
10	BRINE		This option controls the length if time in minutes for the unit to draw regenerant (brine for softeners) from the second tank and slowly rinse it from the top to bottom of the tank.
11	RINSE		This option controls the length of time to give the tank a final rinse from the top to the bottom in order remove any last traces of the regenerant (brine) from the tank.
12	REFILL		This option controls the length of time the brine valve will open to refill the second tank (brine tank for softeners) with water in order to produce the regenerate solution (brine for softeners) for the next regeneration cycle. The water is accurately measured through the valves brine line flow control to make a precise quantity of regenerant solution.
13	LOAD DEFAULT	L.CAPA.	<b>It is not recommended to use any of these options.</b> The function of this option is to load pre-set values of BACKWASH, BRINE, RINSE, and REFILL for large, medium, and small capacity systems. <b>We recommend to use the settings as specified in the SYSTEM CONFIGURATION section of this manual.</b>
		M.CAPA	
		S.CAPA	

### Manual Regeneration (Delayed or Immediate)

If screen is locked, press “ MENU” for 3 seconds to unlock. To initiate an immediate regeneration, press the SET / REGEN button for 3 seconds, an option for delayed or immediate regeneration will appear. Press the SET / REGEN button again and delayed will begin flashing, press the down arrow button to have immediate flash, press the SET / REGEN button and then press the menu button and the valve will immediately start into manual regeneration.

To initiate a delayed regeneration, press the SET / REGEN button for 3 seconds, then press the menu button and a regeneration will be queued to the next pre-set regeneration time (2:00 a.m.).

## Sizing Requirements

### Water Pressure

The water system must have a pump big enough to deliver the recommended backwash rate with a minimum pressure at the inlet of the filter of 20 psi. If the existing system cannot do this, it must be upgraded to do so. Whenever possible, the water system should be adjusted to deliver at least 30 psi for even more satisfactory results.

### Backwash Flow Rates

The most important criteria in sizing a filter is the capacity of the pump. The water must pass through the filter media at a service flow rate that allows it to operate properly. The filter must also be backwashed at a flow rate sufficient to dislodge and remove

captured particulates. Failure to provide sufficient water will cause a build-up of particulates in the filter media, impairing its filtration ability. In order for your filter to backwash and rinse properly, your pump must be capable of providing the backwash flow rates indicated in the above specification chart.

### Backwash Frequency


The table below can be used to help determine the frequency of regeneration for Multi-Media and Taste & Odor filters. Use this table as a guide since individual circumstances will require more or less frequent regenerations. To set a Neutralizing filter, follow the table under mild conditions.

**NOTE:** Add one person if you have a dishwasher.

Multi-Media Filters	Sediment	Mild					Average					Extreme					
Activated Carbon Filters	Taste Odor	Mild					Average					Extreme					
No. Of Persons		Days Between Back Wash (Regenerations)															
2	12	12	12	12	12	12	6	6	6	6	6	6	4	4	4	4	4
3	12	12	6	6	4	4	4	4	4	4	4	3	3	3	3	3	3
4	12	6	6	6	4	4	4	3	3	3	2	2	2	2	2	2	2
5	6	6	4	4	3	3	3	3	2	2	2	2	1	1	1	1	1
6	6	6	4	4	3	3	3	2	2	2	2	1	1	1	1	1	1
7	6	4	4	3	3	2	2	2	1	1	1	1	1	1	1	1	1
8	6	4	4	3	2	2	2	2	1	1	1	1	1	1	1	1	1
9	4	4	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1
10	4	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1

## General Installation

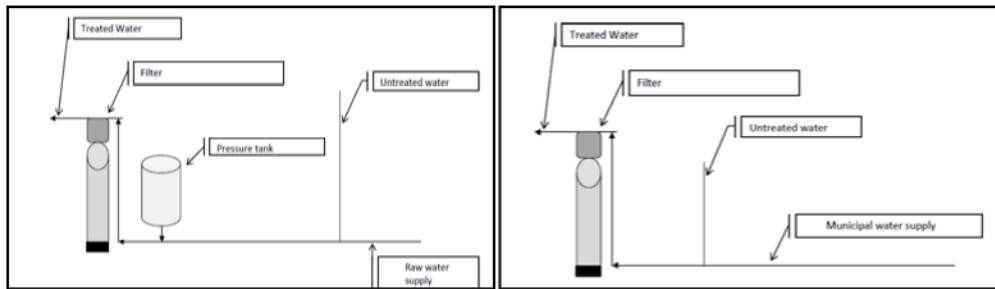
Water Pressure	Minimum 25 PSI
Electrical Supply	Uninterrupted AC
Existing Plumbing	Free of any deposits or build-ups inside pipes.
Unit Location	Locate close to drain and connect according to plumbing codes
Bypass Valves	Always provide for bypass valve if unit is not equipped with one.
Plumbing	Softener and or other water treatment equipment should be installed to local plumbing codes

	<p><b>CAUTION</b></p> <ul style="list-style-type: none"> <li>▪ Do not exceed 120 psi water pressure</li> <li>▪ Do not exceed 110°F water temperature</li> <li>▪ Do not subject unit to freezing conditions</li> </ul>
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1. Locate the unit close to a drain where the system will be installed. The surface should be clean and level.
2. Perform all plumbing according to local plumbing codes.
  - Use a 1/2" minimum pipe or tubing size for the drain line
  - Use a 3/4" pipe or tubing for backwash flow rates that exceed 7 gpm or length that exceeds 20ft (6 m)
3. Any solder joints near the valve must be done before connecting any piping to the valve. Always leave at least 6" (152 mm) between the valve and joints when soldering pipes that are connected to the valve. Failure to do this could cause damage to the valve.
4. If the valve is not installed on the tank, cut the 1" central pipe flush with top of each tank. Lubricate the large o-ring on the valve that seals against the tank. Screw the valve on to the tank. Be careful to not cross thread the valve into the tank. Only use silicone lubricant.
5. Connect the drain line to the valve. Only use Teflon tape on the drain fitting.
6. **\*\*Connect the brine line from the brine tank to the valve.**
7. **\*\*Add water until there is approximately 1" (25 mm) of water above the grid plate. If the tank does not have a grid, add water until it is above the air check in the brine tank. Do not add salt to the brine tank at this time.**
8. Place the unit in the bypass position.
9. Slowly turn on the main water supply.
10. Put the unit back into the bypass position and refer to start up instructions.

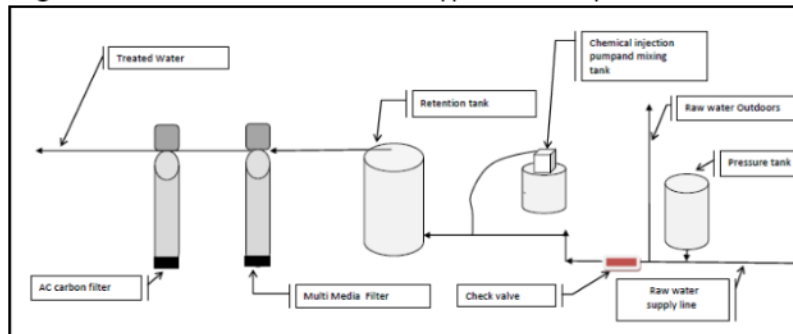
## Start-Up Instructions

1. Plug the valve into an approved power source.
2. When power is supplied to the control, the screen may display "INITIALIZING WAIT PLEASE" while it finds the service position.
3. If the system has been inactive, you may have to hold and press '⏏' until you hear a beep to unlock the display screen. Press "⏏" and hold for 3 seconds to initiate a manual regeneration and advance the valve to the Backwash position. Open the inlet on the bypass valve slowly and allow water to enter the unit. Allow all air to escape from the unit before turning the water on fully then allow water to run to drain for 3-4 minutes or until all media fines are washed out of the unit.
5. Press any button to advance to the RINSE position. Check the drain line flow. Allow the water to run for 3-4 minutes or until the water is clear.
6. Press any button to advance to the SERVICE position. Open the outlet valve to the bypass, then open the nearest treated water faucet and allow the water to run until clear, close the tap and replace the faucet screen.



Typical single filter installation

Typical municipal installation



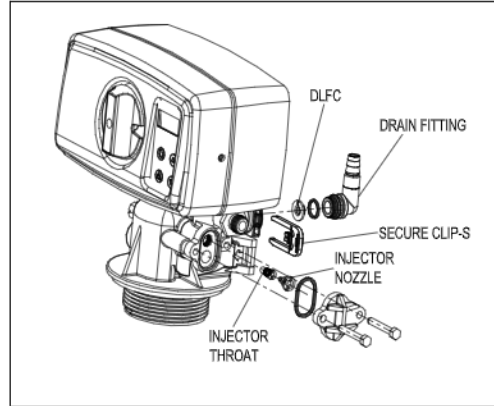
Typical Chemical injection installation

**Note:** A neutralizing filter is the first unit installed in a water system after the outdoor raw water lines when pH correction is required.

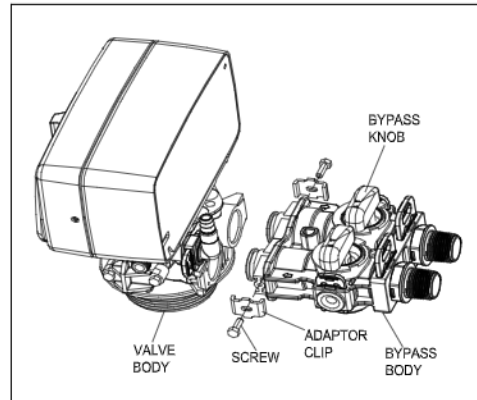


## Drain Line Flow Control

Suggested Filter Valve Configuration	
Tank Size (Diameter)	Drain Line Flow Control (DLFC)
8"	#4 (3.5 GPM)
9"	#6 (4.0 GPM)
10"	#7 (5.0 GPM)
12"	none



## Installation Of Bypass



## Automatic Bypass

The regeneration cycle lasts approximately 1/2 hour, after which filtered water service will be restored. During regeneration, untreated water is automatically bypassed for use in the household. Hot water should be used as little as possible during this time to prevent untreated water from filling the water heater. This is why automatic regeneration is set for sometime during the night and manual regenerations should be performed when little or no water will be used in the household.

## New Sounds

You may notice new sounds as your water filter operates. The regeneration cycle lasts approximately 1/2 hour. During this time, you may hear water running intermittently to the drain.

## Manual Bypass

In the case of emergency, you can isolate your water filter from the water supply using the bypass valve located at the back of the control. In normal operation the bypass is open with the on/off knobs in line with the inlet and outlet pipes. To isolate the filter, simply rotate the knobs clockwise (as indicated by the word BYPASS and arrow) until they lock. You can use your water related fixtures and appliances as the water supply is bypassing the filter. However, the water you use will not be treated. To resume treated water service, open bypass valve by rotating the knobs counterclockwise.

## Maintenance

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Maintenance of your new water filter requires very little time or effort but it is essential. Regular maintenance will ensure many years of efficient and trouble-free operation.

1. Periodically make sure your pump is performing satisfactorily to ensure sufficient water is available for backwashing the filter.
2. Periodically test your raw and filtered water to ensure conditions are still the same for your original settings and that the unit is working the way it is intended to.
  - i. Water testing is often the best way to determine when the filter media will require replacement.
3. Periodically check that the drainline is clear and free from any obstructions.

### Care of All Water Filters

To retain the attractive appearance of your new water filter, clean occasionally with a mild soap solution. Do not use abrasive cleaners, ammonia or solvents. Never subject your filter to freezing or to water temperatures above 120°F.

### Replacing the Media Bed

**NE - Neutralizing Filter** - the media bed in a neutralizing filter is slowly dissolved and has to be replaced. The frequency of replacement varies, depending on water quality - consult your dealer to determine the expected life of your media bed.

**AC - Taste and Odor Filter** - under normal operating conditions the effective life of the filter media is approximately one to three years, depending on the water quality, after which, taste and odor problems may return. When this happens, contact your dealer for a replacement media bed.

**MM - Sediment and Turbidity Filter** - under normal operating conditions, the media should never need to be replaced. However, if you experience pressure loss and cannot correct it with a manual regeneration, your media bed may need replacing - contact your dealer.

### Installation & Replacement Filter Media Pak

Check to ensure all media parts are received.

The first step in replacing the media bed is to shut off the water supply to the filter. Then place the unit into the backwash position to release any pressure in the lines. At this point, you must disconnect the plumbing from the inlet and outlet. Then unscrew the control valve from the fiberglass tank. Once this has been done, remove the distributor tube. Then you can remove the filter media and two types of gravel from the tank. The quickest way to do this is by simply tipping the tank upside down into a large drum or pail. The tank must be rinsed out completely and have no media or gravel left in it at all.

### **Replacing the Media Pak (Media comes loaded in the tank)**

Place the distributor tube back down the center of the tank. **NOTE:** the top of this tube should be plugged with a rag or cork to prevent media from entering. Pour the bag of coarse gravel into the tank, then pour the bag of fine gravel into the tank.

***It is important that the distributor tube is not moved or pulled out as it is not possible to put it down to the bottom of the tank once gravel or media are in the tank.***

Finally pour the larger bag(s) of media into the tank in the following order:

1. Gravel
2. Carbon

Once this is done, the rag or cork should be removed from the distributor tube. Clean off the top of the tank. Finally place the control valve on the tank and on to the distributor tube. Tighten the control valve on to the tank. Connect or reconnect the inlet and outlet and drain. The control valve should be in the backwash position. Slowly open the inlet valve water supply and slowly fill the filter tank until water appears at the open drain line. Return the control to the service position and shut the inlet off for approximately one hour to allow the media to soak in the water.

After one hour, turn inlet water on slowly and place the control into the backwash position and plug the unit's electrical cord into a constant power source. Let the unit continue through its regeneration cycle automatically.

The regeneration is necessary so all media fines are backwashed down the drain to ensure clean filtered water. After this media has been replaced, it may be necessary to reset the present time of day on the control valve timer as it will have been unplugged for some time.

## Trouble Shooting

Issue	Possible Cause	Possible Solution
A. Unit fails to initiate a regeneration cycle.	1. No power supply.	Check electrical service, fuse, etc.
	2. Defective circuit board.	Replace faulty parts.
	3. Power failure.	Reset time of day.
B. FILTER BLEEDS TASTE AND ODOR OR SEDIMENT	1. By-pass valve open.	Close by-pass valve.
	2. Electrical service to unit has been interrupted	Assure permanent electrical service (check fuse, plug or switch)
	3. Defective or stripped media bed	Replace media
	4. Quality of water has worsened	Have water sample analyzed to determine any change
	5. Filter capacity too small	Replace with larger unit or add another filter
	6. Filter not backwashing enough	Be sure control is not clogged or drain line restricted. Be sure water pressure has not dropped and that pump has sufficient capacity.
	7. Leak between valve and central tube.	Check if central tube is cracked or o-ring is damaged. Replace faulty parts.
	8. Internal valve leak.	Replace valve seals, spacer, and piston assembly.
C. Low water pressure.	1. Iron or scale build up in line feeding unit.	Clean pipes.
	2. Iron build up inside valve or tank.	Clean control and add resin cleaner to clean bed. Increase regeneration frequency.
	3. Inlet of control plugged due to foreign material.	Remove piston and clean control valve.
D. Filter media in drain line.	1. Air in water system.	Check well system for proper air eliminator control.
	2. Incorrect drain line flow control (DLFC) button.	Check for proper flow rate.
E. Valve continuously cycles.	1. Defective position sensor PCB.	Replace faulty parts.
F. Flow to drain continuously.	1. Valve settings incorrect.	Check valve settings.
	2. Foreign material in control valve.	Clean control.
	3. Internal leak.	Replace seals, spacers, and piston assembly.

# Manufacturers Warranty

We guarantee that your new filter is built of quality material and workmanship. When properly installed and maintained, it will give years of trouble-free service.

## **Five Year Complete Parts Guarantee**

We will replace any part which fails within 60 months from date of manufacture, as indicated by the serial number, provided the failure is due to a defect in material or workmanship. The only exception shall be when proof of purchase or installation is provided and then the warranty period shall be from the date thereof.

## **Ten Year Guarantee on Mineral Tanks and Brine Tanks**

We will provide a replacement mineral tank or brine tank to any original equipment purchaser in possession of a tank that fails within 120 months, provided that the water conditioner is at all times operated in accordance with specifications and not subject to freezing.

## **Exceptions**

We will not provide warranty for filtration media beds as varied water quality and regular maintenance are required for proper performance.

## **General Provisions**

We assume no responsibility for consequential damage, labour or expense incurred as a result of a defect or for failure to meet the terms of these guarantees because of circumstances beyond its control.