AUTOTROL® 363TC AUTOMATIC FILTER VALVE
SERVICE MANUAL

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MANUAL OVERVIEW

How To Use This Manual

This manual is designed to guide the installer through the process of installing and starting the filter.

This manual is a reference and will not include every system installation situation. The person installing this equipment should have:

- Knowledge in water filter installation
- Basic plumbing skills

Icons That Appear In This Manual

⚠ WARNING: Failure to follow this instruction can result in personal injury or damage to the equipment.

NOTE: This will make the process easier if followed.

Inspection

Inspect the unit for damage or missing parts.

SAFETY INFORMATION

Electrical

- There are no user-serviceable parts in the AC adapter, motor, or controller. In the event of a failure, these should be replaced.
- All electrical connections must be completed according to local codes.
- Use only the power AC adapter that is supplied.
- The power outlet must be grounded and always on.
- To disconnect power, unplug the AC adapter from its power source.
- Install an appropriate grounding strap across the inlet and outlet piping of the water system to ensure proper grounding is maintained.

Mechanical

- Do not use petroleum-based lubricants such as petroleum jelly, oils, or hydrocarbon-based lubricants. Use only 100% silicone lubricants.
- All plastic connections should be hand tightened. Plumber tape should be used on connections that do not use an O-ring seal. Do not use pliers or pipe wrenches.
- All plumbing must be completed according to local codes.
- Soldering of the plumbing should be done before connecting to the valve. Excessive heat will cause interior damage to the valve.
- Observe local drain line requirements.
- Do not use lead-based solder for sweat solder connections.
- Do not support the weight of the system on the control valve fittings, plumbing, or the bypass.
- It is not recommended to use sealants on the threads. Use plumber tape (PTFE) on all threads.

General

- Observe all warnings that appear in this manual.
- This system is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.
- Keep the unit in the upright position. Do not turn on side, upside down, or drop. Turning the tank upside down will cause media to enter the valve.
- Operating ambient temperature is between 34°F (1°C) and 120°F (49°C).
- Operating water temperature is between 34°F (1°C) and 100°F (38°C).
- Working water pressure range is 20 to 125 psi (1.38 to 8.61 bar).
- Follow state and local codes for water testing.
- When filling media tank, do not open water valve completely. Fill tank slowly to prevent media from exiting the tank.
- Always make modifications to house plumbing first. Connect to valve last.
- Plastic parts and O-rings may be damaged by heat and solvents. When constructing plumbing connections, allow heated parts to cool and protect parts from solvents.

Location Selection

Location of a water treatment system is important. The following conditions are required:

- Level platform or floor.
- Constant electrical supply to operate the controller.
- Total minimum pipe run to water heater of ten feet (three meters) to prevent backup of hot water into system.
- Local drain or tub for discharge as close as possible.
- Water line connections with shutoff or bypass valves.
- Room to access equipment for maintenance.

Outdoor Locations

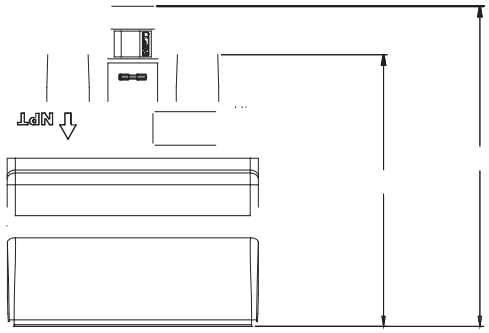
It is recommended that the equipment be installed indoors. When the water conditioning system must be installed outdoors, several items must be considered.

- Moisture — The valve and controller are rated for NEMA 3 locations. Falling water should not affect performance. The system is not designed to withstand extreme humidity or water spray from below. Examples are: constant heavy mist, near corrosive environment, upwards spray from sprinkler.
- Direct Sunlight — The materials used will fade or discolor over time in direct sunlight. The integrity of the materials will not degrade to cause system failures.
- Temperature — Extreme hot or cold temperatures may cause damage to the valve or controller.
  Freezing temperatures will freeze the water in the valve. This will cause physical damage to the internal parts as well as the plumbing.
- Insects — The controller and valve have been designed to keep all but the smallest insects out of the critical areas.

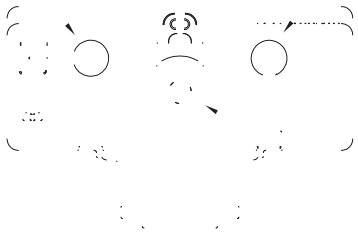
TYPICAL TOOLS AND FITTINGS REQUIRED

- Pipe Cutter
- Tubing Cutter
- File
- Pliers
- Tape Measure
- Soldering Tools
- Lead Free Solder
- Bucket
- Towel
- Plumber Tape
- Adjustable Wrench
- Tube 100% Silicone Grease

VALVE DIMENSIONS

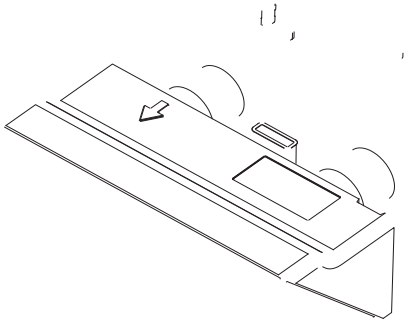


VALVE LAYOUT



Drain Line Flow Control

The drain line flow control (DLFC) requires assembly (Figures 4 and 5).



SYSTEM STARTUP

The system will now need to be placed into operation. Please review MANUALLY INITIATING A CLEANING CYCLE before attempting startup.

1. With the supply water for the system still turned off, position the bypass valve to the "not in bypass" (normal operation) position.
2. Press and hold the ⊛ button on the controller for three seconds. This will initiate a manual cleaning cycle, and cycle the valve to the backwash position.
3. Filling the media tank with water:
   A. With the system in backwash, open the water supply valve very slowly to approximately the 1/4 open position. Water will begin to enter the media tank. Air will begin to be purged to drain as the media tank fills with water.

⚠ WARNING: If opened too rapidly or too far, media may be lost out of the tank into the valve or the plumbing. In the 1/4 open position, you should hear air slowly escaping from the valve drain line.

   B. When all of the air has been purged from the media tank (water begins to flow steadily from the drain line), open the main supply valve all of the way. This will purge any remaining air from the tank.
   C. Allow water to run to drain until the water runs clear from the drain line. This purges any debris from the media bed.
   D. Turn off the water supply and let the system stand for about five minutes to allow any trapped air to escape from the media tank. Turn on the water supply after five minutes. Check for leaks.

The system is now fully operational.

INSTALLATION CHECKLIST

___ Read the owner's/installation manual?
___ Follow all safety guidelines in the manual?
___ If metal pipe was used, did you restore the electrical ground?
___ Securely install drain hose to an approved drain?
___ Perform a leak test?
___ Move the bypass valve to service?
___ Start a cleaning cycle?

CONTROL OPERATION AND LAYOUT

Large LED Display

A large two digit LED readout is highly visible in most installation settings.

Simplified Three-Step Programming

Only three buttons are required to fully program the control.

Recycle Button

Initiates either a delayed or immediate cleaning cycle.

Time Button

Displays or programs the time of day.

Cleaning Cycle Interval Button

Displays or programs the amount of time to elapse between cleaning cycles.

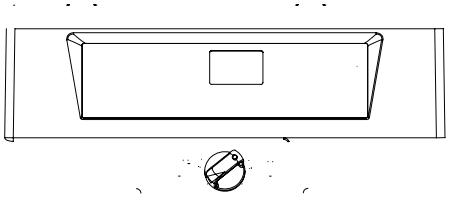
Backwash Duration Button

Displays or programs the amount of time to elapse during the backwash cycle step.

Power Loss Memory Retention

The control features battery-free time of day retention during loss of power. The time will remain in memory.

NOTE: All other programmed parameters are stored in the flash memory and are retained during power outages.



PROGRAMMING THE 604F TIME CLOCK CONTROL

Time of Day: Press to display the current time value in hours. The time value is displayed as a number from 0 to 23, with 0 representing midnight and 23 representing 11:00 PM. While the value is being displayed, press the button to increase the value. Press and hold the button to rapidly advance the value. Release the button when the desired value is displayed. The value will be stored in memory after five seconds.

Range: 0 - 23 hours

NOTE: The elapsed minutes will reset to zero when the hours are changed.

Backwash Duration: Press to display the current backwash cycle step duration setting. The value in minutes will be displayed for five seconds. While the value is being displayed, press the button to increase the value. Press and hold the button to rapidly advance the value. Press and hold the button to rapidly advance the value. Release the button when the desired value is displayed. The value will be stored in memory after five seconds.

Range: 2 - 50 minutes

NOTE: The Rapid Rinse cycle step adjusts automatically based on the Backwash Duration value. See table below.

Backwash Time	Rinse Time
2 - 5 minutes	1 minute
6 - 9 minutes	2 minutes
10 - 13 minutes	3 minutes
14 - 17 minutes	4 minutes
18 - 21 minutes	5 minutes
22 - 25 minutes	6 minutes
26 - 29 minutes	7 minutes
30 - 35 minutes	8 minutes
36 - 40 minutes	9 minutes
41 - 50 minutes	10 minutes

Cleaning Cycle Interval: Press to display the current cleaning cycle interval setting. The value in number of days between cleaning cycles will be displayed for five seconds. While the value is being displayed, press the button to increase the value. Press and hold the button to rapidly advance the value. Press and hold the button to rapidly advance the value. Release the button when the desired value is displayed. The value will be stored in memory after five seconds.

Range: 8 hours (.3 days) - 30 days

ACCESSING HISTORY VALUES

The control features a review level that displays the operation history of the system. This is a great troubleshooting tool for the control valve.

To access history values, press and and simultaneously and hold for three seconds to view the diagnostic codes.

NOTE: If a button is not pushed for 30 seconds the controller will exit the history values table.

Press to advance through the table. When the desired diagnostic code is reached, Press to display the value.

Some history values may have up to four digits. Press to display the first two digits of the value. Press to display the last two digits.

Code	Description
H1	Days since last regeneration
H2	Current day of week

MANUALLY INITIATING A CLEANING CYCLE

Delayed Cleaning Cycle

Press and release to program a delayed cleaning cycle. The system will regenerate at the next cleaning cycle time (1:00 AM). Repeat procedure to disable the scheduled cleaning cycle. The display indicator dot blinks when a delayed cleaning cycle is scheduled.

Immediate Cleaning Cycle

Press and hold the for three seconds to initiate an immediate cleaning cycle. The control cycles to the backwash cycle step. The control will proceed through a complete cleaning cycle. A cascading symbol (- -) will be displayed until the cycle is complete.

QUICK CYCLING THE CONTROL

Quick Cycling

Press and hold for three seconds to initiate an immediate cleaning cycle. The control will cycle to the backwash cycle step.

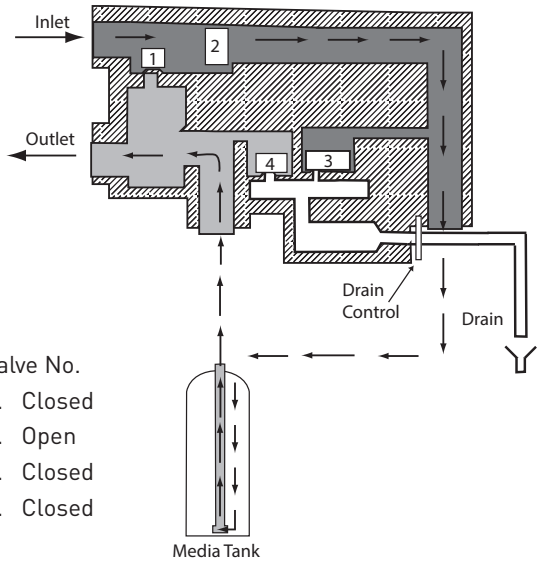
1. Press and release to display "C1" (backwash).

FLOW DIAGRAMS

SERVICE

Untreated Water

Treated Water

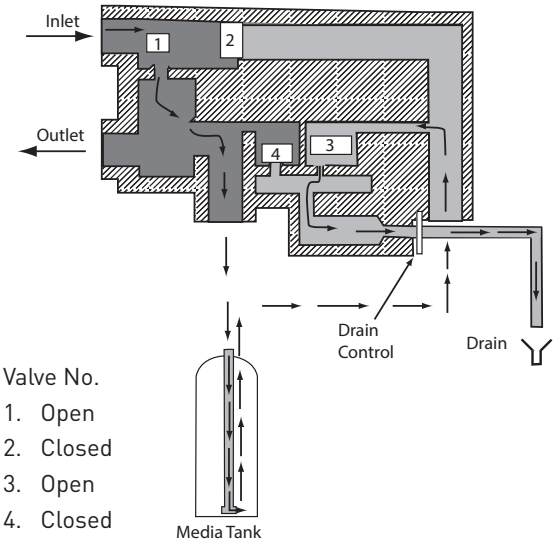


Valve No.
1. Closed
2. Open
3. Closed
4. Closed

BACKWASH

Untreated Water

Backwash

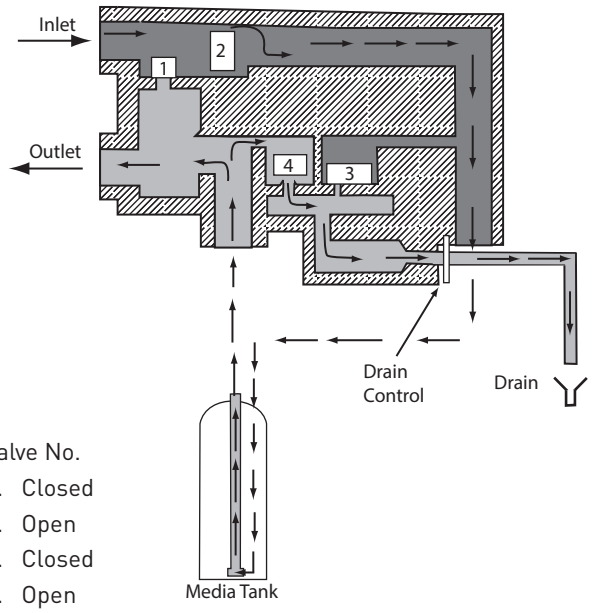


Valve No.
1. Open
2. Closed
3. Open
4. Closed

FAST RINSE

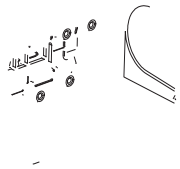
Untreated Water

Rinse



Valve No.
1. Closed
2. Open
3. Closed
4. Open

VALVE ASSEMBLY



TROUBLESHOOTING

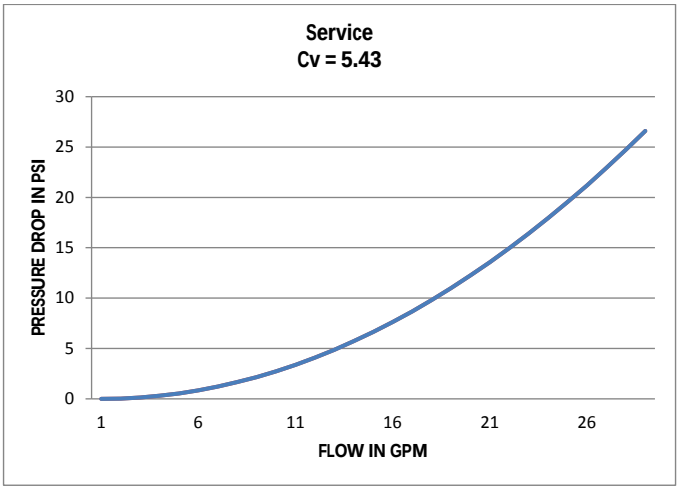
Control Error Codes

Problem	Possible Cause	Solution
E1 is displayed.	Program settings have been corrupted.	Press any key. If E1 does not clear, replace control.
E3 is displayed.	Control does not detect the camshaft position and is returning to the service position.	Wait until the control returns to the service position.
	Camshaft is not turning during E3 display.	Check that motor is connected. Verify that the motor wire harness is connected to motor and controller module. Verify that optical sensor is connected and in place. Verify that motor gear has engaged the camshaft. If everything is connected, replace components in this order: 1. Motor Assembly, Optical Sensor 2. Control
	Camshaft is turning more than five minutes to find Home position:	Verify that optical sensor is in place and connected to wire. Inspect for debris in the camshaft slots. If motor continues to rotate indefinitely, replace the following components in this order: 1. Motor Assembly, Optical Sensor 2. Control

System

Problem	Possible Cause	Solution
Flowing or dripping water at drain after cleaning cycle.	Debris is preventing #3 or #4 valve disc from closing.	Remove debris.
	Worn #3 or #4 valve disc.	Replace valve discs.
Control will not complete a cleaning cycle automatically.	AC adapter or motor not connected.	Connect power.
	Debris is preventing camshaft from rotating.	Remove debris.
	Defective motor.	Replace motor.
Backwashes or purges at excessively low or high rate.	No drain line flow control.	Install drain line flow control.
	Restricted drain line.	Remove restriction.

FLOW PERFORMANCE DATA CHARTS



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