

Installation / Operation Manual

Fully Automatic Arsenic Filter

Signature Series Control Valve

For Model Numbers :

- WFA20**
- WFA30**
- WFA40**

CSI Inc.

220 Ohio Street
Ashland, OH 44805
(419) 281-5767

| General Specifications | WFA20 | WFA30 | WFA40 |
|---|-------------------------------------|--------------|--------------|
| Filter Media | Adedge™ Granular Ferric Oxide Media | | |
| Filter Media Capacity (cu. ft.) | 2.00 | 2.75 | 4.00 |
| Underbed "D" Gravel Required (pounds) | 50 | 50 | 50 |
| Mineral Tank (polyglass) | 13 x 48 | 13 x 54 | 14 x 65 |
| Removal Capacities (Arsenic) | 100 mg/L | 100 mg/L | 100 mg/L |
| Service Flow Rate - Continuous ² (gpm) | 5 | 7 | 9 |
| Service Flow Rate - Intermittent ² (gpm) | 6 | 8 | 10 |
| Backwash Flow Rate (gpm) | 5.0 | 5.0 | 6.0 |
| Gallons Used / Backwash | 50 | 50 | 60 |
| Space Required (D x W x H inches) | 13 x 13 x 56 | 13 x 13 x 63 | 14 x 14 x 74 |
| Approximate Shipping Weight (pounds) | 80 | 95 | 105 |

Note 1 : Project water analysis profile form must be completed and included with water sample and sent to CSI prior to purchasing equipment. Arsenic analysis data used for equipment selection must be performed by a certified water testing laboratory. A copy of the analysis report must be included with the project water analysis profile form and water sample. Arsenic analysis of the treated water must be performed a minimum of every six (6) months after the date of installation. CSI must be provided with a copy of the analysis results with system serial number and project name / address. Failure to comply with these requirements will exonerate CSI from all liability and void the system warranty.

Note 2 : Caution should always be used in sizing filters! Always choose a unit by first satisfying the *backwash requirement*. Use of the included flow control in the service line is highly recommended. Consult the factory or your field sales person with questions.

Point-of-Use Application / Site Profile

Contact Information

Customer : _____ Date : _____

Address : _____ Dealer Contact : _____

City / State : _____ Phone : _____

Phone : _____ Fax : _____

Distributor : _____ Email : _____

Other pertinent notes : _____

System Parameters

Application : _____ (Residential, other POE, commercial, other)

Size / Type : _____ (Single family, multiple family, multiple dwelling)

Design Flow (GPM) : _____ (Max design flow rate)

Average Flow (GPM) : _____ (Typical demand)

Gallons per day usage : _____ (Average throughput per day)

Est. Gallons per year : _____ (Best estimate)

Sulfide Odor : Yes / No If yes, describe treatment: _____

Existing treatment at location : _____

Water Analysis (enter all available)

| | | | | |
|-----------------|---------------------------|------------|-------|------|
| pH | _____ | Silica | _____ | mg/L |
| Total Arsenic * | _____ | Sulfides** | _____ | mg/L |
| Hardness | _____ | Iron | _____ | mg/L |
| | mg/L as CaCO ₃ | Manganese | _____ | mg/L |

** must be tested by certified laboratory (copy of analysis report must be included)*

*** must be field tested if H₂S odor present*

Complete and send with water sample to :

CSI Water Treatment
220 Ohio Street
Ashland, Ohio 44805
(800) 363-5842
(419) 281-5767
csi@zoominternet.net

CSI Equipment Recommendation ***

CSI Distributor : _____

Pretreatment equipment recommendation : _____

Recommended system size : _____

Estimated life of media (gallons) : _____

Expected range of performance : _____

Estimated changeout at usage rate (days) : _____

Estimated time based on above (months) : _____

Backwash frequency, time : _____

Installation Requirements

A level floor position ahead of piping into water heater

Unit must be installed at least 10 feet ahead of the inlet to a water heater to prevent damage due to back-up hot water.

DO NOT install the unit in an area of direct sunlight or where freezing temperatures may occur!

Locate the unit near an unswitched, 120 volt / 60 Hz grounded electrical outlet.

Check for distance and proper drain installation (e.g. floor drain, washing machine standpipe).

Determine type and size of piping required for filter connection (e.g. copper, galvanized, PVC plastic).

Note : If household plumbing is galvanized and you intend to make the installation with copper (or vice versa), obtain di-electric unions to prevent dissimilar metal corrosion.

Note : Where the drain line is elevated above the control valve or exceeds 20 feet in length to reach the drain, use 3/4" I.D. drain line tubing instead of 1/2" I.D. Drain line tubing is not included.

Caution : If sweat soldering copper pipe (remember to always use lead free solder and flux), cover yoke and bypass valve with wet rags to prevent heat damage to connections and control valve. If using PVC or plastic pipe, primers and solvent cements specifically recommended for use with potable water are required.

Note : All plumbing lines not requiring "soft" water should be connected "upstream" of the softener, if installed.

Installation Procedure

- Water Supply Connection and Bypass Valve -

To allow for filter servicing, swimming pool filling or lawn sprinkling, a manual Bypass Valve has been installed at the factory. The Bypass allows raw water to be manually routed around the filter.

1. Position filter at desired location for installation. If a water softener is to be installed, the filter should be positioned after the softener.
2. The filter material is shipped separately from the mineral tank. The tank must be loaded with material after tank has been placed at the desired location.
 - A. Remove the control valve by unscrewing from the tank.
 - B. Remove and inspect distributor tube and bottom basket.
 - C. Replace distributor tube and use a cork or tape to place over top of distributor tube to prevent material from entering tube while filling.
 - D. Place media funnel in hole on top of tank.
 - E. Pour several gallons of water in the tank. (Fill tank about 1/3 full.)

Caution : *Not following this procedure can cause damage to distributor tube or basket when loading material!*
 - F. First pour in the "D" gravel underbedding and then the filter media.

Note : The required quantity of gravel and media is listed in the filter specifications.
 - G. After filling the tank with material, use a garden hose or several buckets to fill the tank with water.

Note : This will permit the filtering media to become soaked while preparing the installation and will prevent the control valve from being plugged with floating material on initial backwash.
 - H. Remove funnel and clean filter media from tank threads.
 - I. Remove cork or tape from distributor tube.
 - J. Replace control valve on mineral tank.

Caution : *Be extremely careful to position distributor tube into control valve distributor tube pilot hole.*
3. Turn **OFF** main water supply and **OPEN** nearest faucet to relieve pressure.
4. Cut main line and install appropriate elbows and extensions. Inlet and outlet connections on the control valve are 3/4" FNPT. (1" FNPT for WFA40.)

Note : An optional 1" FNPT yoke is available.

Caution : *Raised arrows located on the sides of control valve body and bypass valve indicate proper direction of water flow. Install inlet and outlet piping in direction of arrows.*

- Drain Line Connection -

1. Pull out clip and remove drain line assembly located on the left side of control valve. Remove drain line hose barb and wrap threads with Teflon tape. Reinstall drain line hose barb. Replace drain line assembly and reinstall clip.

Caution : *Hand tighten only!*

2. Install 1/2" I.D. drain line tubing (not included) from hose barb to an open drain. A 4" gap between end of the drain line and the open drain is required to prevent waste water backflow. Keep the drain line as short as possible. An overhead drain line can be used if necessary, but should discharge below the control valve. A syphon trap (taped loop) at the outlet of the drain line is advisable to keep the drain line full and assure correct flow during backwash. Elbows or other fittings must be kept at a bare minimum.

Note : Where the drain line is elevated above the control valve or exceeds 20 feet in length, 3/4" I.D. drain line tubing should be used.

- Electrical Connection -

1. Connect the power supply to the control valve and plug into a 115 volt / 60 Hz receptacle.

Note : Do not plug into an outlet controlled by a wall switch or pull chain that could inadvertently be turned off.

- Installing Battery Back-Up -

1. Remove the rear cover.
2. Install a 9 volt battery. Refer to page 2, item 3 of the Signature Series Service Manual.
3. Reinstall rear cover.

- Pressurizing The System -

1. Slowly rotate inlet knob of the bypass valve to the **SERVICE** position. Slowly rotate outlet knob to the **SERVICE** position. (Position of bypass knobs are parallel to inlet / outlet piping.)
2. Open the nearest faucet to evacuate air from plumbing lines.
3. Check for leaks!

- Programming The Control Valve -

Refer to page 2 of the Signature Series Service Manual for main menu programming and instruction.

1. Set time of day.
2. Set a.m. or p.m.
3. Set number of days between backwash. (This generally will be every 14 days.)

Refer to page 7 of the Signature Series Service Manual for master programming and instruction.

1. Set regeneration time if other than 12:00 a.m. is desired.

- Pressurizing The System and Control Valve Operation -

Refer to page 4, item 2 of the Signature Series Service Manual Instructions.

1. Manually index control valve to **BACKWASH** (cycle 1) position and allow water to run to drain for 3 to 4 minutes.
Warning : Close inlet valve on bypass prior to selecting the backwash position. After backwash position has been established, slightly open inlet valve on bypass to evacuate air from the media tank. Fully open inlet valve when all air is depleted. This procedure will prevent media from being uplifted into control valve.
2. Manually index control valve to **RAPID RINSE** (cycle 3) position and allow water to run to drain for 3 to 4 minutes.
3. Manually index control valve to **SERVICE** (cycle 0) position.

Operation, Care and Cleaning

When the inlet / outlet knobs of the bypass valve are in **SERVICE** position (position of bypass knobs are parallel to the inlet / outlet piping), water is directed through the water filter. Water may be bypassed by turning the inlet / outlet knobs to the **BYPASS** position (position of bypass knobs are at right angles to inlet / outlet piping). Water to the home will bypass the filter and be **untreated**.

You should manually bypass the filter if :

1. The outside lines do not bypass the water filter and water is to be used for lawn sprinkling or other similar uses.
2. Servicing the water filter.
3. A water leak from the water filter is evident.
4. "Shock treating" water well and piping with chlorine or other disinfectant.

- Extra Backwash -

If water demands are unusually heavy, an extra backwash can be initiated manually. Refer to page 4, item 2 of the Signature Service Manual.

- To Skip A Backwash -

1. For vacations or extended periods of absence, the power supply can be pulled from the receptacle.
2. Upon return, plug in the cord and reset the time of day, if 9 volt battery was not installed. If battery was installed, replace battery.

- General Care and Cleaning -

1. Do not place heavy or sharp objects on water filter.
2. Use only mild soap and warm water to clean exterior of the unit. Never use harsh, abrasive cleaners.
3. Protect the water filter and drain line from freezing.
4. Reset time for daylight savings time periods.
5. Replace 9 volt battery once a year.

Other Requirements

Arsenic analysis of the treated water must be performed a minimum of every six (6) months after the date of installation. CSI must be provided with a copy of the analysis results with system serial number and project name / address. An arsenic test kit is provided with the filter and can be used to satisfy this requirement. A private water laboratory analysis report will also be accepted. **Failure to comply with these requirements will exonerate CSI from all liability and void the system warranty.**

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