INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE

AUTOMATIC BACKWASH CARBON FILTERS BLENDED WITH COCONUT SHELL GAC CARBON AND CATALYTIC CARBON

Model #'s:
BW-CAT-1MPT-08
BW-CAT-1MPT-10
BW-CAT-125MPT-12

Dear Customer,
It is our pleasure to bring to you the most advanced filtration technology available. We hope that it exceeds your expectations and meets all of your filtration needs.

Contact:
ATLAS FILTRI North America, LLC
1068 North Farms Road Bldg. #3 - Wallingford, CT 06492, USA
Phone +1(203)284-0080 - Fax +1(203)294-9226
e-mail: atlasfiltrinorthamerica@atlasfiltri.com
A Company of the Atlas Filtri Group.
atlasfiltri.com

Installation & Operations Manual
Installation Information

To be filled out completely by the installer

Installed By:_____

Company Name & Phone #:_____

Installation Date:_____

Serial #:_____

Model #:_____

Water Pressure Tested @ PSI:_____

City Water or Private Well Water:_____

Installed in-line before a water softener (Yes or No):_____

Note: On chlorinated water supplies (city/municipal water supplies), these filters must be installed inline/in front of a water softener, to protect the water softener resins from high levels of chlorine and chloramines in the raw water supply, which will cause damage to the water softener resins.

Tested incoming Chlorine or Chloramine level (PPM):_____

Main Water Line Size and Type:_____

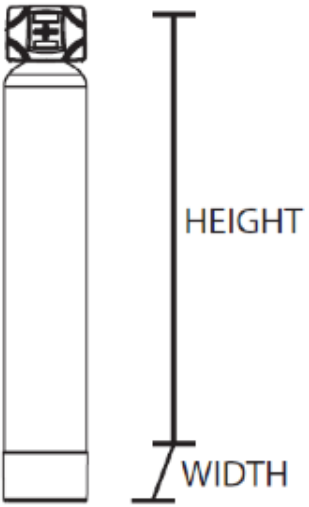
Total Number of People Living in the Home:_____

NOTICE **These filter systems and filter media listed in this manual do NOT remove or kill bacteria. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before and after the system**

Features & Benefits

- Designed with a specific premium blend of coconut shell GAC carbon and Catalytic coconut shell carbon, for whole home filtering, for the reduction of Organics, Chlorine, and Chloramines found in city/municipal water supplies. High levels of chlorine and chloramines in the raw water supply can damage rubber seal components inside of the homes plumbing fixtures, and can also damage certain types of plastic water piping in your home.
- Carbon media will also reduce organics that can cause and unpleasant tastes and smells in your water.
- Chemical Free. No chemicals used in these filters for regeneration.
- Low maintenance and cost effective filter systems to be used as a stand-alone filter in the home, or to be used as pre-filtration to a water softener that is installed on a city/municipal water system that contains chlorine and or chloramines in the raw water supply. These filter systems will prolong the life of your water softener resins. (Filter systems must be maintained properly with carbon media bed replacements on a regular maintenance schedule).
- Advanced Electronic control valve. Metered digital display, with advanced real-time diagnostic screens.
- Fully Automatic Backwash Control Valve, with Bypass Valve included with 1” MPT or 1.25” MPT plumbing adapter kits.
- Simple installation with inlet, outlet, and drain line connections. (System does require a drain line, not provided by manufacture).
- Average carbon media life of 2 to 10 years. (Life expectancy calculated bases on the filter size, raw water chlorine and chloramine levels, organic levels, and the daily gallon water usage of the filter.)
- 10-Year warranty on mineral tank construction. (Against manufacture defects only)
- 5-Year warranty on control valve parts. (Against manufacture defects only)
- Note: These filter systems and filter media listed in this manual do NOT remove or kill bacteria. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before and after the system

Specifications & Model Numbers



Model Number	Bypass Size	Cubic Feet	Footprint	Service/Peak Flow Rates
BW-CAT-1MPT-08	1" MPT	1.5	10" W X 62" H	3 GPM/8 GPM
BW-CAT-1MPT-10	1" MPT	2.0	12.5" W X 60" H	5 GPM/10 GPM
BW-CAT-125MPT-12	1.25" MPT	2.2	13.5" W X 62" H	6 GPM/12 GPM

- Flow rates listed above on Service Flows are conservative & are based off of the Carbon Media Manufactures specifications.
- Peak Flow Rate listed are calculated & based off of a peak flow scenario inside a typical home. Peak flow rates should only be run for very short periods of time and not sustained as the common flows in the home. The rejection percentage of contaminants will be reduced at higher/peak flow rates.
- **Note: These filter systems will out flow the flow rates shown in the table- if the demand from the home is flowing at a higher flow rate than listed in the above table. Flow rates being ran through a home at higher flow rates than the above table can drastically reduce the rejection percentage of the targeted contaminants in the water. It is very important to properly size the filter system for the specific home application and potential sustained flow rates.**
- **Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before and after the system.**

Carbon Media Life

- The carbon filter media in this filter system must be replaced over time.
- It is important to maintain the carbon filter system and keep record of the dates that the carbon filter media has been replaced.
- Average life expectancy of the carbon filter media will range between 2 years to 10 years on average, all depending on the following.
  - Life of the carbon media are all based off of the size of the carbon filter system, the amount of incoming chlorine and or chloramine levels in the raw water supply, and the total gallons of water usage through the carbon filter system throughout the home.
- To determine the life expectancy of the carbon media, you must know the following:
  - The size of your carbon filter system (cubic feet)
  - The amount of chlorine or chloramines (in PPM) that are in the raw water supply.
- The carbon media itself will treat roughly 1 million gallons of treated water, per cubic foot of carbon media @ 1 PPM of chlorine in the raw water/incoming water supply.
  - It is very important to maintain the carbon filter system and replace the carbon media on a set service schedule.
- To help you better understand daily water usages, you can refer to the below example of average estimated water usage per person, per day.
  - The national average of total domestic water used per person- per day- will range between 50 to 100 gallons per person- per day.
  - That is an average of 18,250 to 36,500 gallons of water usage, per person- per year.
  - Use the above averages, along with incoming chlorine/chloramine levels, & the cubic foot size of the carbon filter system to figure out the “Estimated Carbon Media Life”.

  EXAMPLE:
  - 3 people in your home. 300 total gallons of water usage per day (3 people X 100 gallons per person- per day = 300 gallons per day).
  - That is 109,500 total gallons per year (300X365=109,500).
  - 2 PPM of chlorine in your raw incoming water supply.
  - 1 cubic feet of carbon
  - Max available capacity is 500,000 gallons per cubic foot of carbon with 2 PPM chlorine (1 million gallons divided by 2 PPM chlorine = 500,000 gallons of treated water per cubic foot of carbon).
  - If you have a 2 cubic foot carbon filter, then you would have 1 million gallons of filtering capacity.
  - 1 million gallons divided by 300 gallons of usage a day = 3,333 days.
  - 3,333 days divided by 365 days in a year = 9.13 years.
  - You would change your carbon media every 9 years.
  - Never overrun the service life of the carbon media. It is recommended to buffer 25% more on usage to make sure the carbon media is being replaced on time.
  - Note: The diagnostics in the electronics will keep track of daily water usage and also a totalizer. A service alarm can be set on the electronics to display “service needed” based on time or gallons used. This will help you determine when to change the carbon media.

Carbon Media Replacement Records

- Date of Original Installation:_____

- Date of Replacement: _____
- Name of Service Company: _____

- Date of Replacement: _____
- Name of Service Company: _____

- Date of Replacement: _____
- Name of Service Company: _____

- Date of Replacement: _____
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- Date of Replacement: _____
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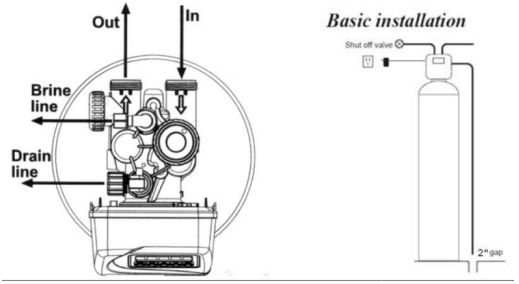
Installation Instructions

Basic Installation



General Installation & Guide

The control valve, fittings and/or bypass are designed to accommodate minor plumbing misalignments but are not designed to support the weight of a system or the plumbing.

Do not use Vaseline, oils, other hydrocarbon lubricants or spray silicone anywhere. A silicone lubricant may be used on black o-rings but is not necessary. Avoid any type of lubricants, including silicone on red or clear lip seals.

Do not use pipe dope or other sealants on threads. Teflon tape must be used on the plumbing threads of the 1" connection and on the threads for the drain line connection only - that are having plumbing fittings threaded on to them. Teflon tape is not necessary on the nut connections or cap because o-ring seals are used. The nuts and caps are designed to be tightened by hand or with the special plastic service wrench, #V3193-XXX. If necessary, pliers can be used to unscrew the nut or cap. Do not use a pipe wrench. Do not place screwdriver in slots on caps and/or tap with a hammer.

1. The distance between the drain and the water FILTER should be as short as possible. Drain tube/pipe should be a minimum of 5/8" size. Under 20' total of drain tube with no more than a 5' rise.

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

3. Do not install any Water Filter with less than 15 feet of piping between its outlet and the inlet of a water heater - because of hot water back feed. Hot water back feed will ruin water filter & voice warranty. Install expansion tank on water heater.

4. Do not locate unit where filter or its connections (including the drain lines) will ever be subjected to room temperatures under 34°F or over 100°F. Do not install in direct UV sunlight. Protect from freezing, and weather elements.

5. Inlet/outlet plumbing: connect to a supply line and install an inlet shut-off valve.

6. Drain line: Be sure that the drain can handle the backwash rate of the system and install a flexible plastic tube to the Drain Line Assembly, or remove barbed fitting and pipe a 3/4" drain line to drain.

7. **Check your water pressure! Water pressure over 90 psi will VOID warranty. Install pressure regulator on high pressure.

8. NOTE: Brine line fitting above has been capped off - as it is not used on backwash only filter systems.

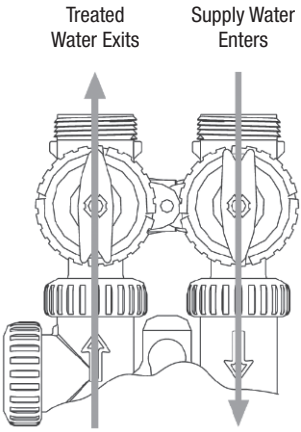
Installation Notes

- This Carbon Filter system consists of 1 total media tank, with electronic control valve and bypass valve. (No chemical or regenerate tank used).
- Install this system in accordance with all local and state plumbing codes.
- Check your water pressure! Install a new PRV valve if your pressure is 80 PSI or higher. High pressure will ruin your carbon filter system and VOID the warranty. 90 PSI is the MAX pressure rating.
- Install a rigid or semi-rigid (non-collapsible, such as PEX or PVC) 5/8" or ¾" drain line off of the carbon filter system. Make sure to properly air-gap the drain line into a P-trap or a floor drain. Never direct connect drain line. Always use a legal air-gap device.
- Follow Inlet and Outlet arrows on control valve head and bypass valve to make sure you do not install the system backwards.
- Do not locate or install carbon filter systems where they can freeze, or in outdoor elements where they will see Rain, wind, moisture, or direct UV sunlight. Failure to protect the carbon filter system from these elements will damage the system and VOID the warranty.
- Only install on a cold water feed line. Never install the carbon filter system with a hot water feed line. Never run hot water through the carbon filter system. Hot water will ruin the carbon filter system and VOID the warranty.
- Install the carbon filter system on the homes incoming water line into the home. If a water softener system is also being installed, install this carbon filter system inline before the water softener, to protect the water softener from high levels of chlorine and chloramines that can be found in some city/municipal water supplies.
- If installing this carbon filter system on a private well water supply, have the water chemistry tested from a certified lab, to ensure that this is the proper system to be installed, and also add other water treatment devices suitable to treat the particular waters chemistry. Always protect the carbon filter system from iron, sand, silt, sediment, and turbidity that can be found in some private well water supplies.
- Install a vacuum breaker on the inlet piping to the carbon filter system if the installation is prone to seeing vacuum or negative pressure or reverse flow. Vacuum, negative pressure and reverse flow will damage the carbon filter system and VOID the warranty. Refer to all local and state plumbing codes.
- Protect the carbon filter system from hot water back-feed from the water heater. Make sure to install a working expansion tank on the inlet line of the water heater (traditional tank style water heater and not on an on-demand water heater). Expansion tank must be located between the outlet of the carbon filter and the inlet of the water heater.

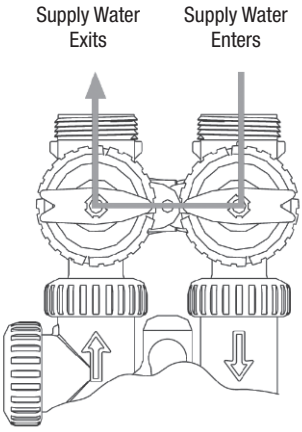
Bypass Valve

To shut-off water to the system, please position arrow handles as shown in the bypass operation diagram below. If your valve doesn't look like the diagram below, contact your service technician for instructions on how to shut-off water.

NORMAL OPERATION



BYPASS OPERATION

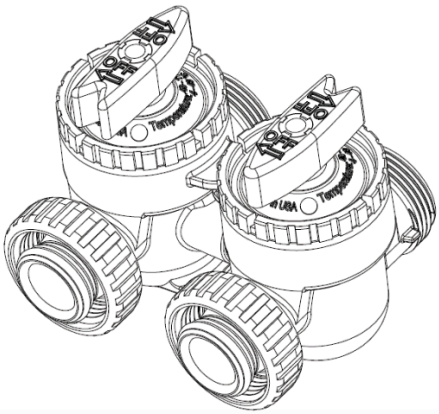


The bypass valve is used to isolate the control valve from the plumbing system in order to perform valve repairs or maintenance.

1. **Normal Operation Position:** The RED inlet and outlet handles point in the direction of flow indicated by the engraved arrows on the control valve.

2. **Bypass Position:** The RED inlet and outlet handles point to the center of the bypass. Untreated water is supplied to the plumbing system.

BP-C-V3006 Bypass Valve

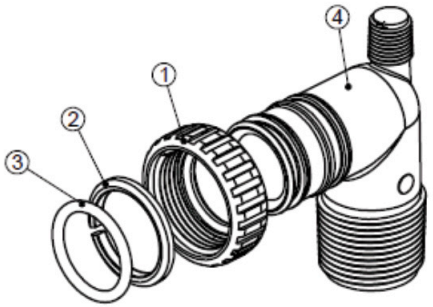


Installation Fitting Assemblies

Order No: **BP-C-V3007**

Description: **Fitting 1” PVC Male NPT Elbow Assembly**

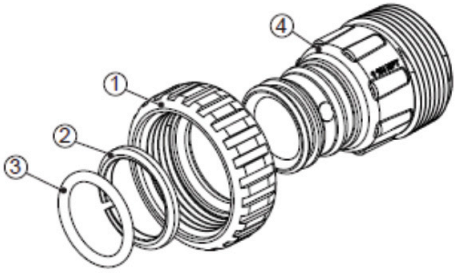
Drawing No.	Order No.	Description	Quantity
1	CV-P-V3151	Nut 1” Quick Connect	2
2	CV-P-V3150	Split Ring	2
3	CF-P-V3105	O-Ring 215	2
4	CV-P-V3149	Fitting 1 PVC Male NPT Elbow	2



Order No: **BP-C-V3007-05**

Description: **Fitting 1-1/4” PVC Male NPT Elbow Assembly**

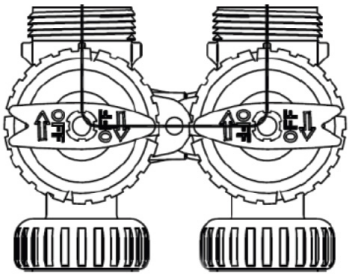
Drawing No.	Order No.	Description	Quantity
1	CV-P-V3151	Nut 1” Quick Connect	2
2	CV-P-V3150	Split Ring	2
3	CF-P-V3105	O-Ring 215	2
4	CV-P-V3149	Fitting 1 PVC Male NPT Elbow	2



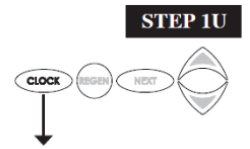
Start Up

1. After installation is complete and the main water line in the home is still turned off, rotate the BYPASS knobs to the OFF positions. See below.

Bypassed Position (closed)

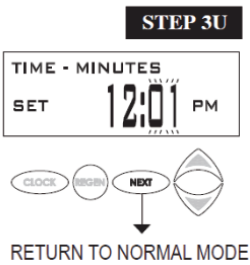


2. Plug system into power and Set the Time of day. (See below)



STEP 1U - Press CLOCK.

STEP 2U - Current Time (hour): Set the hour of the day using ▼ or ▲ buttons. AM/PM toggles after 12. Press NEXT to go to STEP 3U.



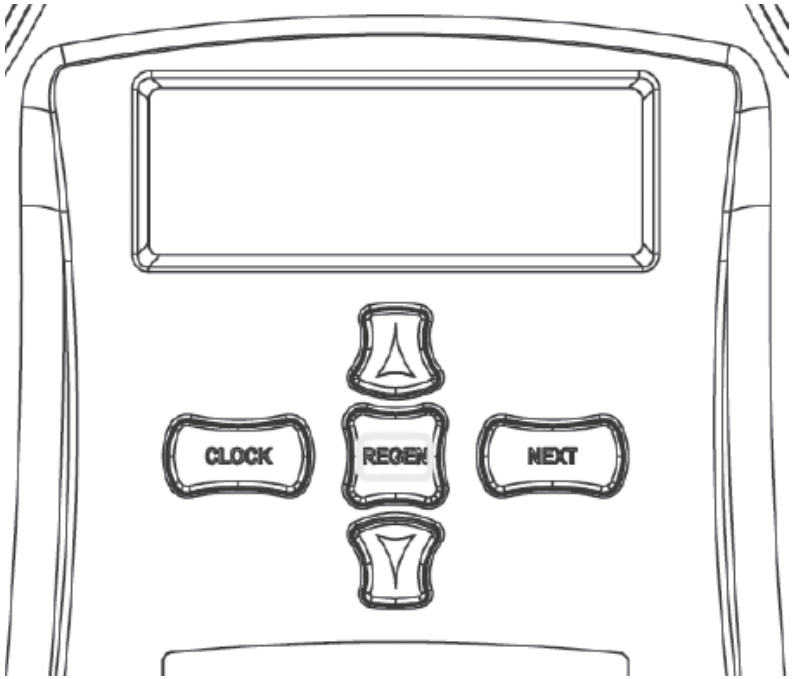
STEP 3U - Current Time (minutes): Set the minutes of the day using ▼ or ▲ buttons. Press NEXT to exit Set Clock. Press REGEN to return to previous step.

Note: The Regeneration time has been set to 12:00AM at the factory, along with a calendar day override setting of 14 days. The system is a metered demand system and will regenerate based off usage, but also has a calendar day override as a backup.

3. Now that installation is complete, the time-of-day set, and the system still in the bypass mode position, follow the next steps to start-up the carbon filter system.

4. Turn main water line supply back on in the home and open some cold water faucets to flush water lines from any debris from installation and also to expel the air out of the water lines. Once air has been relieved from all faucets in the home, proceed to next step.

5. Press and Hold the Regen button for 5 seconds until you hear the control valve motor start, then release your finger from the button. See below.



6. When the motor stops running, the display will read BACKWASH and start counting down from 10 minutes. See below.

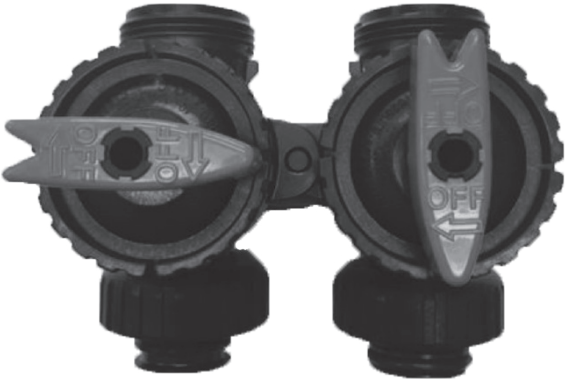
7. Slightly and slowly open the Inlet bypass knob ½ of the way open (pointing to roughly the 8 o'clock position) until you can hear water starting to flow into the carbon filter tank. You will also start to hear air expelling out of the carbon filter system and running to drain. Leave the outlet bypass knob in the closed position.

CAUTION: If water flow is introduced too rapidly into the carbon filter system it could cause the carbon media to lift too quickly and clog off the upper basket on the control valve, causing no water top backwash out of the tank. It is very important to only open the inlet bypass knob halfway open to slowly fill the tank. Do not fully open the inlet bypass knob. See below.

8. After opening the inlet bypass knob ½ way open, unplug the power to the carbon filter system. The display will now be blank on the carbon filter system.

9. When water starts flowing freely to drain from the carbon filter system without the presence of air in the drain line, let the system flow to drain like this for 10 minutes.

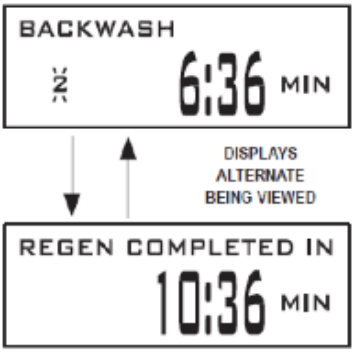
10. After initial 10 minutes of water flowing to drain, slowly open the inlet bypass knob to the fully open position (6 o'clock position). Leave the outlet bypass knob in the closed position. See below.



11. With the inlet bypass knob in the fully open position, allow water to flow to drain for another 5 minutes.

12. After 5 minutes of flowing water to drain, plug the carbon filter system back into power. The display will still be reading BACKWASH. See below.

Note: During Regeneration, the display screen will alternate between the cycle and how much time is left before the regeneration is complete. See below.



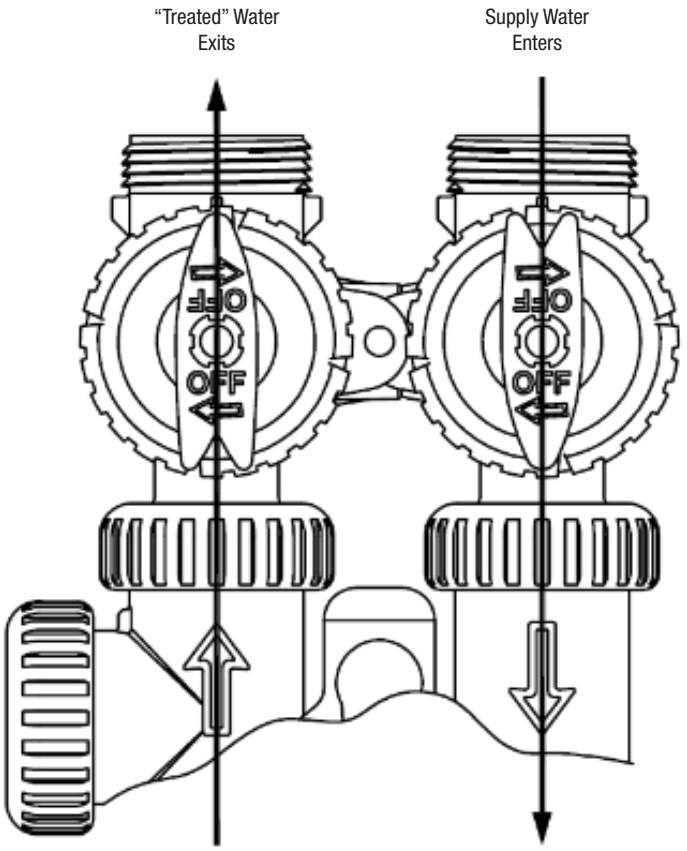
Note: During regeneration, visually observe the water flowing to drain. Towards the end of the regeneration, the water flowing to drain should be clean and clear, without the presence of dark color in the drain water.

13. Allow the system to finish its regeneration on its own. The control valve will continue to count down BACKWASH minutes and then automatically cycle to the next position which is Rinse. After Rinse, the control valve will cycle to the next position which is the home/service position. The time of day will be displayed when the system is done regenerating and back in the home/service position. See below.

Note: If the drain water is not clean and clear towards the end of the regeneration cycle, you will need to repeat steps 11 through 13 by starting another regeneration by pressing and holding the Regen button.

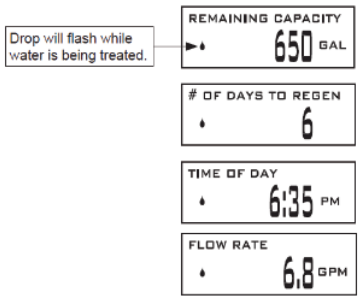
Start Up is now complete. Rotate the outlet bypass knob to the fully open position of Normal Operation (pointing to the 12 o'clock position). See below.

NORMAL OPERATION



With the carbon filter system now in operation, fully open all cold-water faucets in the home to flush lines. Note: It is normal to experience some air in line lines. Run cold water faucets until all air is cleared out of the lines and no discolored water is present. After cold water lines are cleared, open the hot water lines and flush completely the same way. Note: A traditional tank style water heater will be full of unfiltered water. It can take several days to fully mix out all of the unfiltered water with new filtered water.

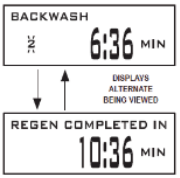
General Operation



When the system is operating, one of several displays may be shown. Pressing NEXT will alternate between the displays. One of the displays is always the current time of day. # OF DAYS TO REGEN is the number of days left before the system goes through a regeneration cycle. REMAINING CAPACITY is the gallons that will be treated before the system goes through a regeneration cycle. Pressing ▼ while in the Capacity Remaining or Days Remaining displays will decrease the capacity remaining in 10 gallon increments or the Days Remaining in 1 day increments, and will also increase the volume use d impacting the recorded values in Diagnostics Steps. FLOW RATE shows the current treated water flow rate through the system.

If the system has called for a regeneration that will occur at the preset time of regeneration, REGEN TODAY will alternate with the header on the display. If a water meter is installed, the water drop flashes on the display when water is being treated (i.e. water is flowing through the system).

Regeneration Mode



Typically a system is set to regenerate at a time of low water usage. An example of a time with low water usage is when a household is asleep. If there is a demand for water when the system is regenerating, untreated water will be used.

When the system begins to regenerate, the display will change to include information about the step of the regeneration process and the time remaining for that step to be completed. The system runs through the steps automatically and will reset itself to provide treated water when the regeneration has been completed.

Manual Regeneration

Sometimes there is a need to regenerate the system sooner than when the system calls for it, usually referred to as manual regeneration. There may be a period of heavy water usage because of guests or a heavy laundry day.

To initiate a manual regeneration at the preset delayed regeneration time, press and release “REGEN”. The words “REGEN TODAY” will flash on the display to indicate that the system will regenerate at the preset delayed regeneration time. If you pressed the “REGEN” button in error, pressing the button again will cancel the request.

To initiate a manual regeneration immediately, press and hold the “REGEN” button for three seconds. The system will begin to regenerate immediately. The request cannot be canceled.

Bypass Valve Operation

Figure 1

NORMAL OPERATION

"Treated" Water Exits

Supply Water Enters

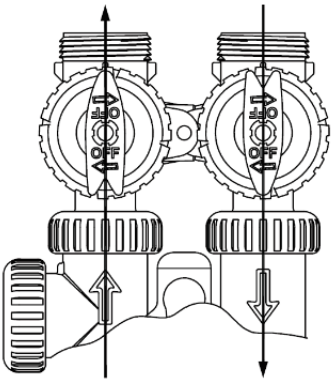


Figure 2

BYPASS OPERATION

Supply Water Exits

Supply Water Enters

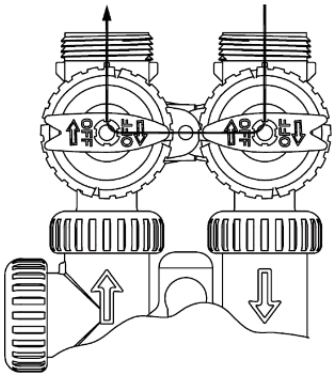


Figure 3

DIAGNOSTIC MODE

Supply Water Exits

Supply Water Enters

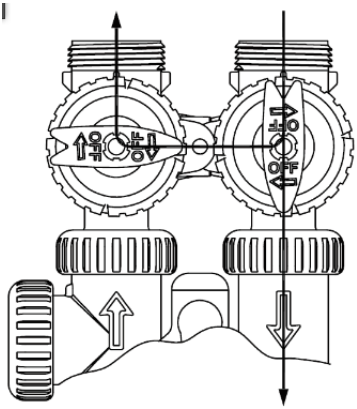
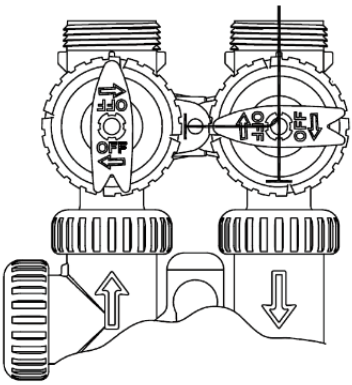


Figure 4

SHUT OFF MODE

No Water Exits

Supply Water is Shut Off from the House and the Valve



Troubleshooting

Problem	Possible Cause	Solution
1. No Display on PC Board	a. No power at electric outlet	a. Repair outlet or use working outlet
	b. Control valve Power Adapter not plugged into outlet or power cord end not connected to PC board connection	b. Plug Power Adapter into outlet or connect power cord end to PC Board connection
	c. Improper power supply	c. Verity proper voltage is being delivered to PC Board
	d. Defective Power Adapter	d. Replace Power Adapter
	e. Defective PC Board	e. Replace PC Board
2. PC Board does not display correct time of day	a. Power Adapter plugged into electric outlet controlled by light switch	a. Use uninterrupted outlet
	b. Tripped breaker switch and/or tripped GFI	b. Reset breaker switch and/or GFI switch
	c. Power outage	c. Reset time of day. If PC Board has battery back up present, the battery may be depleted. See Front Cover and Drive Assembly drawing for instructions
	d. Defective PC Board	d. Replace PC Board
3. Display does not indicate that water is flowing. Refer to user instructions for how the display indicates water is flowing	a. Bypass valve in bypass position	a. Turn bypass handles to place bypass in service position
	b. Meter is not connected to meter connection on PC Board	b. Connect meter to three pin connection labeled METER on PC Board
	c. Restricted/stalled meter turbine	c. Remove meter and check for rotation or foreign material
	d. Meter wire not installed securely into three pin connector	d. Verify meter cable wires are installed securely into three pin connector labeled METER
	e. Defective meter	e. Replace meter
	f. Defective PC Board	f. Replace PC Board
4. Control valve regenerates at wrong time of day	a. Power outage	a. Reset time of day. If PC Board has battery back up present, the batter may be depleted. See Front Cover and Drive Assembly drawing for instructions
	b. Time of day not set correctly.	b. Reset to correct time of day
	c. Time of regeneration set incorrectly	c. Reset regeneration time
	d. Control valve set at “on 0” (immediate regeneration	d. Check programming setting and reset to NORMAL (for a delayed regen time)
	e. Control valve set at “NORMAL + 0” (delayed and/or immediate)	e. Check programming setting and reset to NORMAL (for a delayed regen time)
5. Time of day flashes on and off	a. Power outage	a. Reset time of day. If PC Board has battery back up present, the batter may be depleted. See Front Cover and Drive Assembly drawing for instructions

Troubleshooting continued

6. Control valve does not regenerate automatically when the REGEN button is depressed and held.	a. Broken drive gear or drive cap assembly	a. Replace drive gear or drive cap assembly
	b. Broken piston rod	b. Replace piston rod
	c. Defective PC Board	c. Defective PC Board
7. Control valve does not regenerate automatically but does when the REGEN button is depressed and held.	a. Bypass valve in bypass position	a. Turn bypass handles to place bypass in service position
	b. Meter is not connected to meter connection on PC Board	b. Connect meter to three pin connection labeled METER on PC Board
	c. Restricted/stalled meter turbine	c. Remove meter and check for rotation or foreign material
	d. Incorrect programming	d. Check for programming error
	e. Meter wire not installed securely into three pin connector	e. Verify meter cable wires are installed securely into three pin connector labeled METER
	f. Defective meter	f. Replace meter
	g. Defective PC Board	g. Replace PC Board
8. Water running to drain	a. Power outage during regeneration	a. Upon power being restored control will finish the remaining regeneration time. Reset time of day.
	b. Damaged seal/stack assembly	b. Replace seal/stack assembly
	c. Piston assembly failure	c. Replace piston assembly
	d. Drive cap assembly not tightened in properly	d. Re-tighten the drive cap assembly
9. E1, Err -1001, Err-101 = Control unable to sense motor movement	a. Motor not inserted full to engage pinion, motor wires broken or disconnected	a. Disconnect power, make sure motor is fully engaged, check for broken wires, make sure two pin connector on motor is connected to the two pin connection on the PC Board labeled MOTOR. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect.
	b. PC Board not properly snapped into drive bracket	b. Properly snap PC Board into drive bracket and then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect.
	c. Missing reduction gears	c. Replace missing gears

Troubleshooting continued

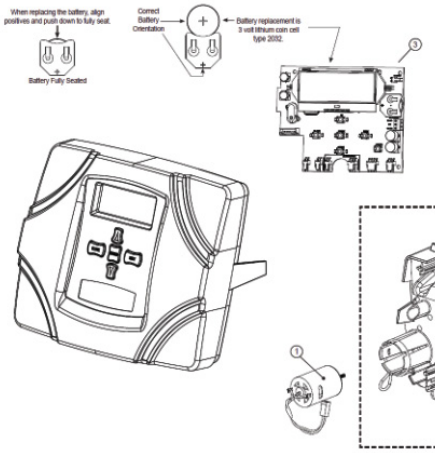
10. E2, Err-1002, Err-102 = Control valve motor ran too short and was unable to find the next cycle position and stalled	a. Foreign material is lodged in control valve	a. Open up control valve and pull out piston assembly and seal/stack assembly for inspection. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect.
	b. Mechanical binding	b. Check piston and seal/stack assembly, check reduction gears, check drive bracket and main drive gear interface. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect.
	c. Main drive gear too tight	c. Loosen main drive gear. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect.
	d. Improper voltage being delivered to PC Board	d. Verify that proper voltage is being supplied. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect.
11. E3, Err-1003, Err-103 = Control valve motor ran too long and was unable to find the next cycle position	a. Motor failure during a regeneration	a. Check motor connections then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect.
	b. Foreign matter built up on piston and stack assemblies creating friction and drag enough to time out motor	b. Replace piston and stack assemblies. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect.
	c. Drive bracket not snapped in properly and out enough that reduction gears and drive gear do not interface	c. Snap drive bracket in properly then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect.
12. Err-1004, Err-104 = Control valve motor ran too long and timed out trying to reach home position	a. Drive bracket not snapped in properly and out enough that reduction gears and drive gear do not interface	a. Snap drive bracket in properly then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect.

Replacement Carbon Filter Tanks

Carbon Filter Model #	Replacement Tank Model #	Cubic Feet
BW-CAT-1MPT-08	RT-BW-CAT-1MPT-08	1.5
BW-CAT-1MPT-10	RT-BW-CAT-1MPT-10	2.0
BW-CAT-125MPT-12	RT-BW-CAT-125MPT-12	2.2

- All replacement carbon filter tanks come fully assembled and ready for installation.
- All replacement carbon tanks come with a new distributor tube and screen assembly.
- All replacement carbon tanks come with new Arsenic media installed in the tank.
- Order the correct replacement tank for the model # of carbon filter system installed.

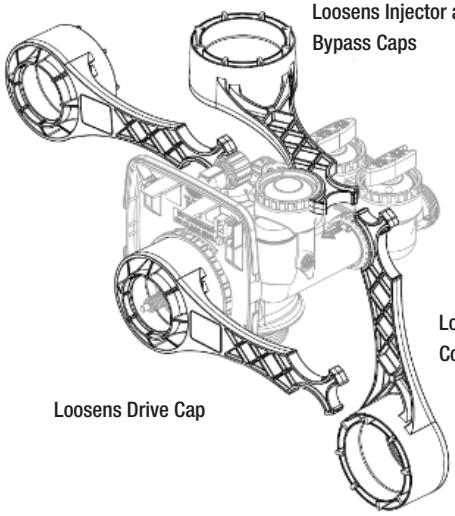
Drawing No.	Order No.	Description	Quantity
1	CV-P-V3107-01	Motor	1
2	CV-P-V3106-02	Drive Bracket Assy	1
3	CV-P-V3757PR-03	Vision PC Board	1
NOT SHOWN	CV-P-V3186	WS1 AC Adapter 120V-12V	1



AC Adapter	U.S.
Supply Voltage	120 VAC
Supply Frequency	60Hz
Output Voltage	12 VAC
Output Current	500mA

Service Wrench - CV-P-V3193-02

Not provided with system. Separate purchase required. Bypass and depressurize system before using wrench.



Loosens Drain Nut in Polytube Applications

Loosens Injector and Bypass Caps

Although no tools are necessary to assemble or disassemble the valve, the Service Wrench (Shown in various positions on the valve), is available to aid in assembly or disassembly.

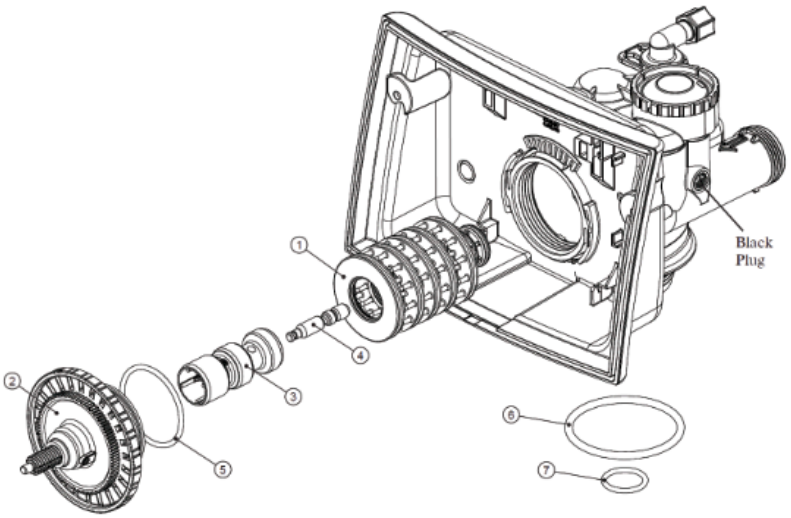
Loosens Quick Connect Nuts

Loosens Drive Cap

Internal Valve Parts for 1” Model #’s

Model # BW-CAT-1MPT-08
Model # BW-CAT-1MPT-10

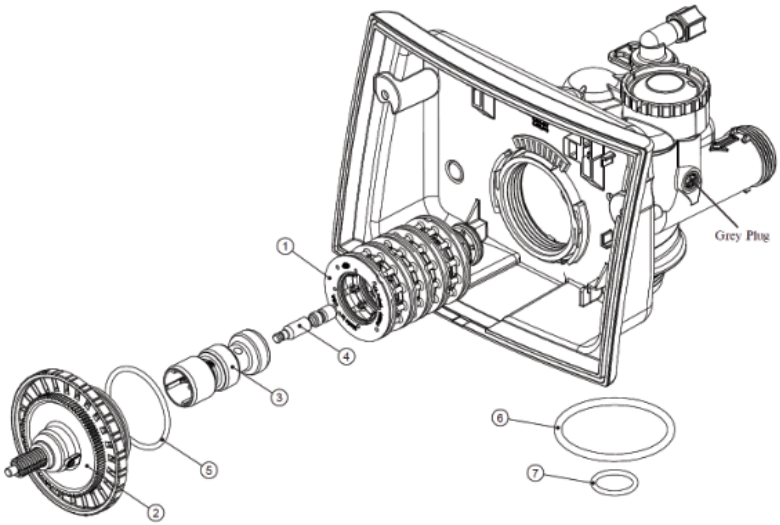
Drawing No.	Order No.	Description	Quantity
1	CV-P-V3005	Motor	1
2	CV-P-V3004	Drive Bracket Assembly	1
3	CV-P-V3011	Vision PC Board	1
4	CV-P-V3174	WS1 AC Adapter 120V-12V	1
5	CV-P-V3135	O-ring 228	1
6	CV-P-V3180	O-ring 337	1
7	CV-P-V3105	O-ring 215 (Distributor Tube)	1



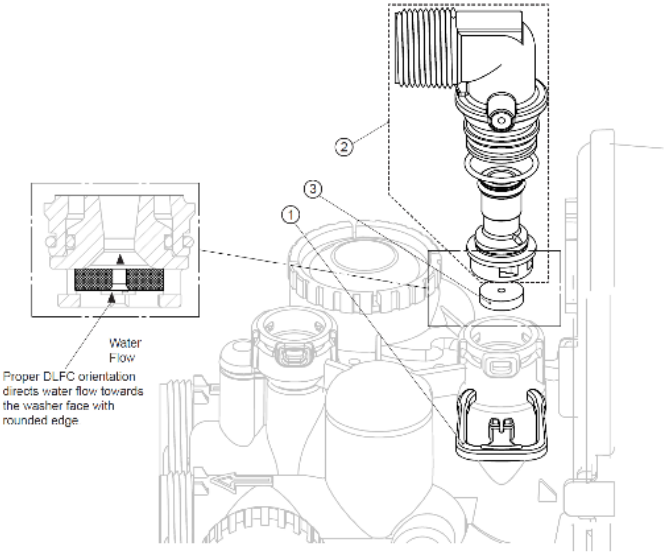
Internal Valve Parts for 1.25” Model #’s

Model # BW-CAT-125MPT-12

Drawing No.	Order No.	Description	Quantity
1	CV-P-V3430	1.25 Spacer Stack Assembly	1
2	CV-P-V3004	Drive Cap Assembly	1
3	CV-P-V3407	1.25 Piston Downflow Assembly	1
4	CV-P-V3174	Regenerant Piston	1
5	CV-P-V3135	O-ring 228	1
6	CV-P-V3180	O-ring 337	1
7	CV-P-V3358	O-ring 219 (Distributor Tube)	1

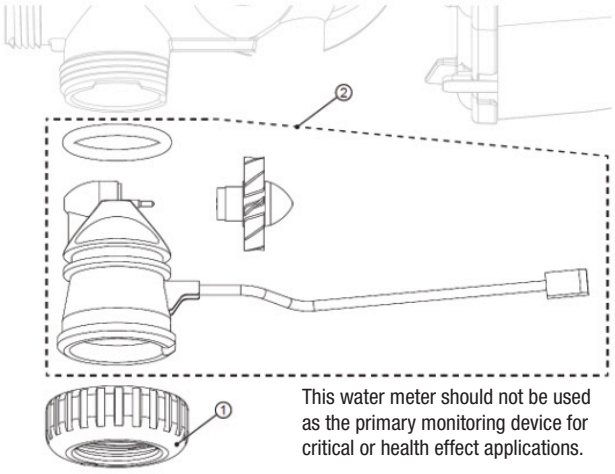


Drawing No.	Order No.	Description	Quantity
1	CV-P-H4615	Elbow Locking Clip	1
2	CV-P-V3331	Drain Elbow & Retainer Assembly	1



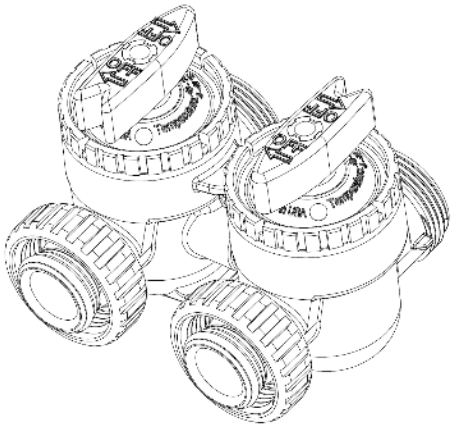
Water Meter

Drawing No.	Order No.	Description	Quantity
1	CV-P-V3151	Nut 1" Quick Connect	1
2	CV-P-V3003	Meter Assembly	1



This water meter should not be used as the primary monitoring device for critical or health effect applications.

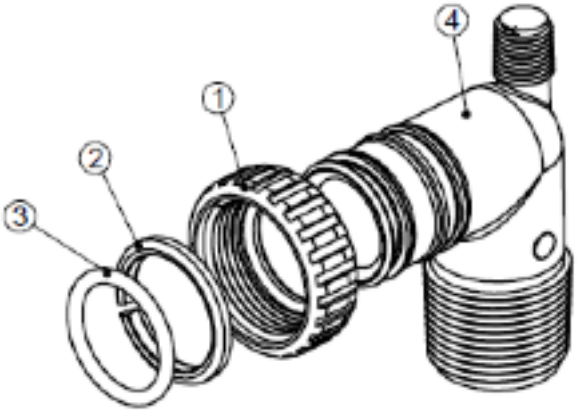
BP-C-V3006 Bypass Plug



Installation Fitting Assemblies

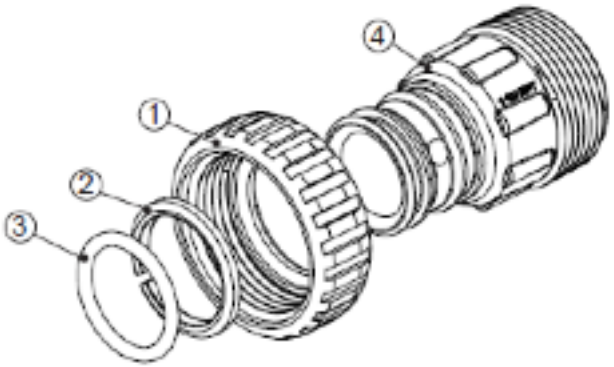
Order No: BP-C-V3007
Description: Fitting 1" PVC Male NPT Elbow Assembly

Drawing No.	Order No.	Description	Quantity
1	CV-P-V3151	Nut 1" Quick Connect	1
2	CV-P-V3003	Meter Assembly	1
3	CV-P-V3105	O-ring 215	1
4	CV-P-V3149	Fitting 1 PVC Male NPT Elbow	1



Order No: BP-C-V3007-05
Description: Fitting 1-1/4" Plastic Male NPT Assembly

Drawing No.	Order No.	Description	Quantity
1	CV-P-V3151	Nut 1" Quick Connect	1
2	CV-P-V3150	Split Ring	1
3	CV-P-V3105	O-ring 215	1
4	CV-P-V3317	Fitting 1-1/4" PVC Male NPT Elbow	1



Coconut Shell - High Activated Carbon (CS-HAC)

Coconut Shell-High Activated Carbon (CS-HAC) may be used for a variety of water treatment applications requiring the reduction of chlorine taste & odor.

Clack granular activated carbon is designed for the reduction of chlorine taste and odor and dissolved organic chemicals from municipal and industrial water supplies. Manufactured from select grades of coconut shell coal to produce a high density, durable granular product capable of withstanding the abrasion and dynamics associated with repeated hydraulic transport, backwashing and mechanical handling. Activation is carefully controlled to produce exceptionally high internal surface area with optimum pore size for the adsorption of a broad range of low molecular weight organic contaminants and oxidizing agents like chlorine and ozone.

One of the most common applications for Clack Coconut Shell-High Activated Carbon (CS-HAC) is the reduction of the undesirable tastes and odors present in may chlorinated water supplies. CS-HAC has been successful for many years in the reduction of free chlorine from water supplies. The end product is clean, fresh water with no objectionable taste or odor characteristics.

To obtain maximum efficiency of the activated carbon in the adsorption process, it is desirable to have the greatest possible surface area in the smallest practical volume. This is necessary because the rate of adsorption is proportional to the amount of surface area of the adsorbing media. CS-HAC has a surface area of 1,050 square meters per gram. This results in high efficiency and greater system economy. Clack has for many years provided activated carbon to the OEM and replacement market as a pre-treatment for other water purification systems as well as for use in individual treatment equipment for the removal of specific impurities.

CS-HAC requires periodic backwashing to eliminate accumulated suspended matter and to re-grade the filter bed. CS-HAC has an extremely high capacity but must be replaced when the filter bed loses the capacity for reduction of chlorine taste and odor. CS-HAC may be used in either domestic or industrial applications using gravity flow or pressurized filter vessels.

ADVANTAGES

- CS-HAC is an outstanding material for applications requiring chlorine taste and odor and dissolved organic chemical removal from water with suspended matter present. This product can be used for filtering waters having a wide range of pH levels.
- Large surface area results in an exceptionally high capacity and efficiency.
- Balanced pore structure gives a more efficient adsorption range.
- CS-HAC is very durable so losses due to attrition are kept to a minimum
- CS-HAC has a very high carbon-low ash content
- Service rates of 5 gpm/sq. ft are practical for ordinary chlorine taste & odor loads.
- CS-HAC will impart a high “polish” to the filtered water.

PHYSICAL PROPERTIES

- Color: Black
- Mesh Size: 12 x 40
- Bulk Density: 28 lbs./cu. ft.
- Effective Size: 0.55 - 0.75 mm
- Ash Content: 2.5%
- Iodine Number: 1,000 mg/g
- Moisture as packed: 3%
- pH: 10

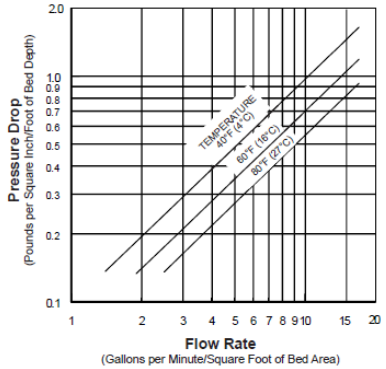
CERTIFICATIONS AND APPROVALS

- NSF/ANSI Standard 61

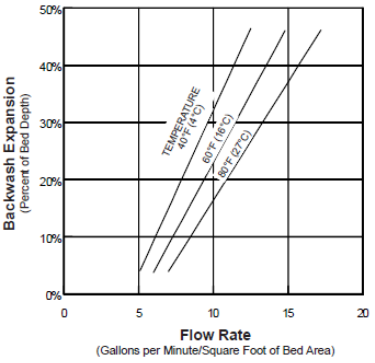
CONDITIONS FOR OPERATION

- Water to be filtered should preferable be free of oil and suspended matter
- The water to be filtered should be relatively free of iron and turbidity for maximum service life
- Water pH range: wide range
- Bed depth: 26-30 in.
- Freeboard: 50% of bed depth (min.)
- Service flow rate: 5 gpm/sq. ft.
- Backwash flow rate: 10-12 gpm/sq. ft.
- Backwash bed expansion: 30-40% of bed depth
- Upon installation, backwash to remove carbon fines before placing unit into service

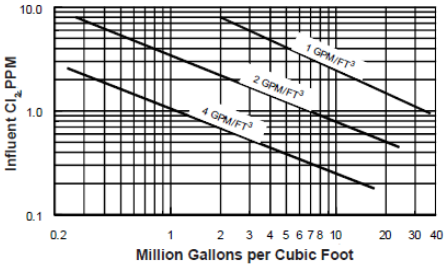
Service Flow Pressure Drop



Backwash Bed Expansion



Dechlorination of Water (pH 7, 21°C)



Certified to NSF/ANSI Standard 61

Coconut Shell-High Activated Carbon (CS-HAC) is manufactured by Jacobi Carbons, Inc.

Catalytic-High Activated Carbon (CAT-HAC)

Catalytic - High Activated Carbon (CAT-HAC) may be used for a variety of water treatment applications including the reduction of chloramines and hydrogen sulfide from potable water.

Clack Catalytic Activated Carbon is a high activity coconut shell based granular carbon that is specifically designed for the reduction of chloramines and hydrogen sulfide from potable water.

Manufactured from select grades of coconut shell coal to produce a high density, durable granular product capable of withstanding the abrasion and dynamics associated with repeated hydraulic transport, backwashing and mechanical handling. Activation is carefully controlled to produce exceptionally high internal surface area with optimum pore size for the adsorption of a broad range of low molecular weight organic contaminants and oxidizing agents like chlorine and ozone.

The catalytic activity of CAT-HAC makes it highly effective for the reduction of chloramines and hydrogen sulfide from potable water. Its large micropore volume also makes it particularly well suited for the removal of low molecular weight organic compounds and their chlorinated by-products such as chloroform and other trihalomethanes (THMs).

To obtain maximum efficiency of the activated carbon in the adsorption process, it is desirable to have the greatest possible surface area in the smallest practical volume. This is necessary because the rate of adsorption is proportional to the amount of surface area of the adsorbing media. CAT-HAC has a surface area of 1,060 square meters per gram. This results in high efficiency and greater system economy. Clack has for many years provided activated carbon to the OEM and replacement market as a pre-treatment for other water purification systems as well as for use in individual treatment equipment for the removal of specific impurities.

CAT-HAC requires dissolved oxygen concentration of 4 ppm (mg/L) to ensure effective removal of iron and hydrogen sulfide.

CAT-HAC requires periodic backwashing to eliminate accumulated suspended matter and to re-grade the filter bed. CAT-HAC has an extremely high capacity but must be replaced when the filter bed loses the capacity for reduction of chloramines and hydrogen sulfide. CAT-HAC may be used in either domestic or industrial applications using gravity flow or pressurized filter vessels.

ADVANTAGES

- CS-HAC is an outstanding coconut shell based material for applications requiring chloramines, hydrogen sulfide and dissolved organic compound reduction. This product can be used for filtering waters having a wide range of pH levels.
- Large surface area results in an exceptionally high capacity and efficiency.
- Balanced pore structure gives a more efficient adsorption range.
- CAT-HAC is very durable so losses due to attrition are kept to a minimum
- CAT-HAC has a very high carbon-low ash content
- CAT-HAC will impart a high “polish” to the filtered water.

PHYSICAL PROPERTIES

- Color: Black
- Mesh Size: 12 x 40
- Bulk Density: 28 lbs./cu. ft.
- Effective Size: 0.55 - 0.75 mm
- Ash Content: Max 4%
- Iodine Number: 1,000 mg/g
- Moisture as packed: Max 5%
- pH: 10

CERTIFICATIONS AND APPROVALS

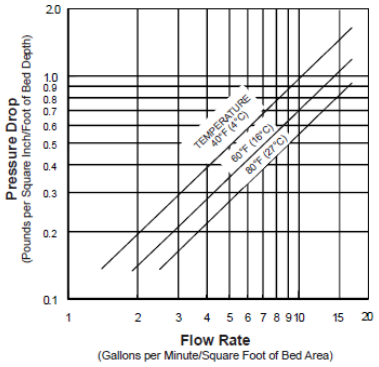
- NSF/ANSI Standard 61
- AWWA B604-96
- EN12915

$$\text{Empty Bed Contact Time in Minutes} = \frac{\text{Bed Volume (ft}^3\text{)} \times 7.481 \text{ gal/ft}^3}{\text{Flow Rate (gpm)}}$$

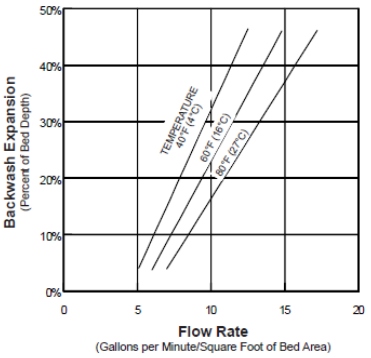
CONDITIONS FOR OPERATION

- Water to be filtered should preferable be free of oil and suspended matter
- The water to be filtered should be relatively free of iron and turbidity for maximum service life
- Water pH range: wide range
- Bed depth: 26-30 in.
- Freeboard: 50% of bed depth (min.)
- Service flow rate: 5 gpm/sq. ft.
- Backwash flow rate: 10-12 gpm/sq. ft.
- Backwash bed expansion: 30-40% of bed depth
- Upon installation, backwash to remove carbon fines before placing unit into service

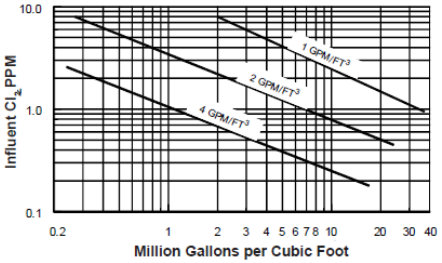
Service Flow Pressure Drop



Backwash Bed Expansion



Dechlorination of Water (pH 7, 21°C)



$$\text{Empty Bed Contact Time in Minutes} = \frac{\text{BedVolume (ft}^3\text{) x 7.481 gal/ft}^3}{\text{Flowrate (gpm)}}$$

Certified to NSF/ANSI Standard 61

Catalytic - High Activated Carbon (CAT-HAC) is manufactured by Jacobi Carbons, Inc.

Product Limited Warranty

Congratulations on purchasing one of the finest water filtering products on the market today. To the original purchaser: Your new water filtering system carriers a comprehensive Product Warranty.

Warranty applies to Manufacturing defects only, to the original owner at original installation site

10-year Warranty Items:

- Mineral tank carries a 10-year warranty against manufacture defects only.

* Service, Labor and Freight Charges Not Included*

5-Year Warranty Items:

- All Digital and Mechanical parts carry a 5-Year warranty, against manufacture defects only.

* Service, Labor and Freight Charges Not Included*

Atlas Filtri North America will repair or replace defective part at their own option, provided that the part is returned to Atlas Filtri North America, freight prepaid. All service must be performed by an authorized technician. *Service, Labor & Freight Charges are Not Included by Atlas Filtri North America or Manufacture*

Warranty Exclusions:

- Defective warranty part or parts will be repaired or replaced at the option of Atlas Filtri North America, F.O.B. Atlas Filtri North America. 1068 North Farms Rd. Bldg #3. Wallingford, CT. 06492.
- All systems must be installed correctly by a licensed installer and meet all state and local plumbing codes.
- All service work must be performed by an Authorized Technician.
- This Warranty does NOT apply to and is VOID on all systems that have been neglected, installed incorrectly, wrongfully applied, or if they have had hot water introduced through them from back-feed or incorrect installation, or have had any sand, silt, turbidity, organic loading or high Iron fouling, direct UV sunlight, rain, weather elements, freezing, fire, flood, power surges, brown outs, earthquakes, or any other natural disaster. This warranty does not apply and is VOID if systems have had vacuum, negative pressure, or reverse flow. Protect systems from vacuum, negative pressure, and reverse flow.
- This Warranty does not apply on systems installed on waters of unknown quality. Do not install systems on waters that are microbiologically unsafe or of unknown water quality.

This Warranty gives you specific legal rights. You may also have other additional legal rights which may vary from state to state by statutory provisions. Atlas Filtri North America will not be liable for any freight, labor charges, loss or damages caused by defective part.

ATLAS FILTRI®
improving water

Atlas Filtri North America
1068 North Farms Rd. Bldg. #3
Wallingford, CT. 06492
Phone: (203)-284-0080
atlasfiltri.com

AB1BACKCARB - R02 06/24. Subject to change without notice