CBF1 Backwashable Sediment Filter

Installation & Operation Manual

(Please save for future reference)

Thank you for purchasing one of our ENVIROGARD / Rainfresh products. We are committed to ensuring that you are **totally satisfied**.

If you have any problems, don't go back to the store– **please contact us !**
Most issues can be resolved over the phone.
Help Line : 1-800-667-8072 (Monday to Friday 8:30 AM to 5:00 PM EST)
www.rainfresh.ca

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Certified by IAPMO R&T against CSA B483.1

SYSTEM SPECIFICATIONS

Model No.	FLOW RATE GPM (LPM)		Well Pump Flow Rate Required US GPM (LPM)	Inlet / Outlet	Drain Connection	Electrical Requirement	Pressure Drop	Operating Pressure*	Shipping Weight
	Service	Max							
CBF1	7 (26)	10 (38)	5 (19)	3/4" MNPT	1/2" Hose	110V AC	< 15 psig	25 – 100 psig	65 lbs (29.5 Kg)

* **Note:** Install pressure regulator and water hammer arrestor if pressure exceeds rated pressure at any time.

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.

Feed Water Quality:

- **Water Temp –** 4 - 38°C (39 - 100°F)
- Operating Pressure = 25 (172 kPa) - 100 PSIG (689 kPa)*

HOW YOUR CBF1 FILTER WORKS

Your Rainfresh CBF1 Filter removes sediment, dirt, rust, sand & other particulate matter using a special grade of filter sand which traps the particulates down to 5 micron nominal. Once every 3-4 days, the unit backwashes to remove the trapped sediment and dump it to drain. Once you program the unit at the time of installation, the backwash process happens automatically. After a few years of use (over 5), you may notice a drop in water quality, at which point, the filter media only needs to be replaced. Please call Rainfresh to order replacement filter sand.

SAFETY PRECAUTIONS

- Follow all applicable province/state and local regulations.
- Handle the filter carefully. Do not lie on side, turn upside down, drop or drag.

CAUTIONS BEFORE INSTALLATION

- To operate properly, the well pump flow rate must exceed the backwash flow rate (5 US GPM (19 LPM)). **If your well pump does not deliver this flow rate, do not install the unit as it will not work properly**. You may need to either change the well pump or call Rainfresh for a custom size unit that will operate within your pump specifications.
- Install a pressure regulator and water hammer arrestor if pressure exceeds maximum rating at any time. **Note:** If daytime pressure is over 80 psi, night time pressure may exceed maximum pressure rating.
- Do not install on water that is microbiologically unsafe without adequate disinfection before or after the unit. For effective disinfection install a Rainfresh Drinking Water System or Rainfresh UV disinfection system.
- For use on cold water only.
- **Only use thread seal tape** (such as Teflon® tape) for fitting connections into unit. **DO NOT USE pipe dope or chemical sealants to make connections**
- **Do not use Vaseline or other petroleum-based lubricants on seals**
- **Protect your unit from freezing** - drain the unit if freezing temperatures exist.
- **NOTE: IF SOLDER TYPE FITTINGS ARE USED DO NOT USE torch near inlet/outlet connections.** All solder joints should be made before joining pipe to filter head. Use only lead-free solder and flux.
- **DO NOT over-tighten** metal fittings on to unit connections.
- Place the unit on a flat level surface. Do not place shims under the unit to level it. The weight of the unit full of water and salt can cause the cabinet to crack at the shim.
- The unit should only be moved by 2 or more people due to heavy weight. Failure to do so can result in back or other injury.
- The unit must be installed in an area where there is reasonable access to the chemical tank and service, if required.

INSTALLATION

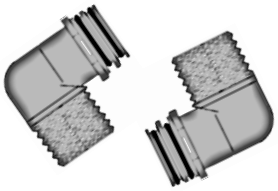
Electrical Requirements:

- The automatic control valve requires a constant power supply - 120V/60 Hz AC. We recommend a GFI (ground fault interrupter) outlet within 5 feet of the CBF1 Filter. Extension cords are not recommended.
- If water pipes are used to ground electrical system, you will need to install a jumper wire across the filter unit.

Unpacking the unit
The unit includes:

1) Main filter tank with control valve and bypass valve





2) Inlet/outlet elbow fittings (2) – ¾" Male NPT



3) Allen key (for ease of opening & closing bypass valve)





5) Drain hose (15 ft) with hose clamp



4) AC power adapter

Unpack the unit and place it at the location where you intend to install it.

- Stand back and look at the filter to make sure it is standing straight up and not tilted to one side. Sometimes during shipment, the bottom of the tank will get knocked out of alignment and you will need to straighten it out before starting installation. If your tank is a bit tilted, simply pick the tank up 2 – 3 inches off the floor and drop it gently but firmly down, favoring the side that needs to be adjusted to make the filter stand straight up again.
- Make sure your chosen location is fairly level, dry, and protected from possible freezing conditions.
- DO NOT set the tanks onto make shift platforms as this may cause the filter to topple.
- The system has 3 connections - an inlet, an outlet, and a drain line connection. If you are looking at the back of the unit (fig 1), the inlet is on the left side. **Warning:** Make sure that you have correctly identified the inlet of the system. **REVERSING THE CONNECTIONS WILL RESULT IN FILTER MEDIA BEING THROWN INTO YOUR HOME'S PLUMBING SYSTEM CAUSING DAMAGE TO IT AS WELL AS THE Filter system.**
- You can use copper, CPVC, PVC or PEX to install your new system

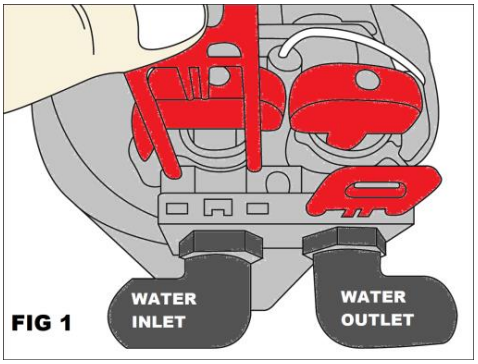


FIG 1

Installation Location

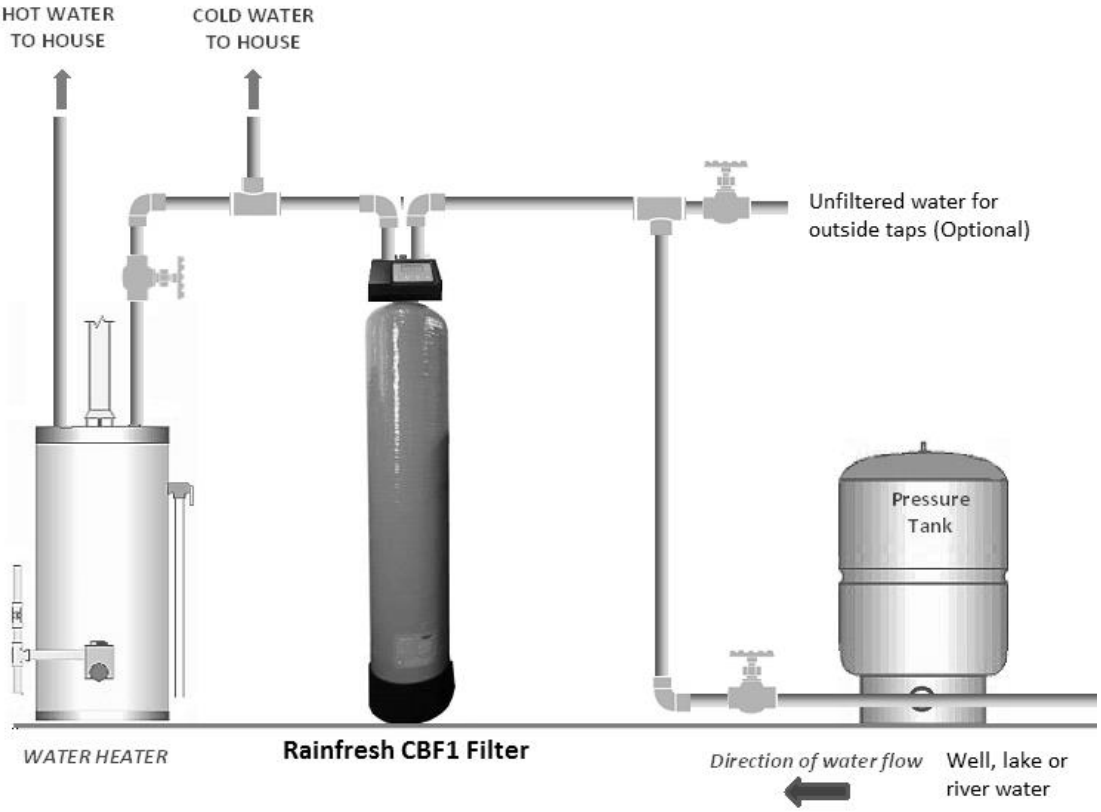


Fig 2

You may choose not to treat the water spigots that go outside used for irrigation or sprinkler systems. You will have to plan the job so that you cut in to feed the CBF1 filter AFTER these spigots. Installing the CBF1 filter after the pressure tank on a well water system is the preferred location. If you intend to install a water softener for soft water or a UV system for disinfecting the water, these should be installed **after** the CBF1 filter (see Fig 2).

BEFORE YOU BEGIN INSTALLATION, CONFIRM THE INLET AND OUTLET OF THE UNIT AND IDENTIFY THE SERVICE AND BYPASS POSITIONS OF THE VALVE. The bypass valve is used to isolate the unit from the plumbing system in order to perform maitenance or repairs on the unit. During normal use the bypass valve should be in "SERVICE" position and to isolate it, the valve should be turned to "BYPASS" position.

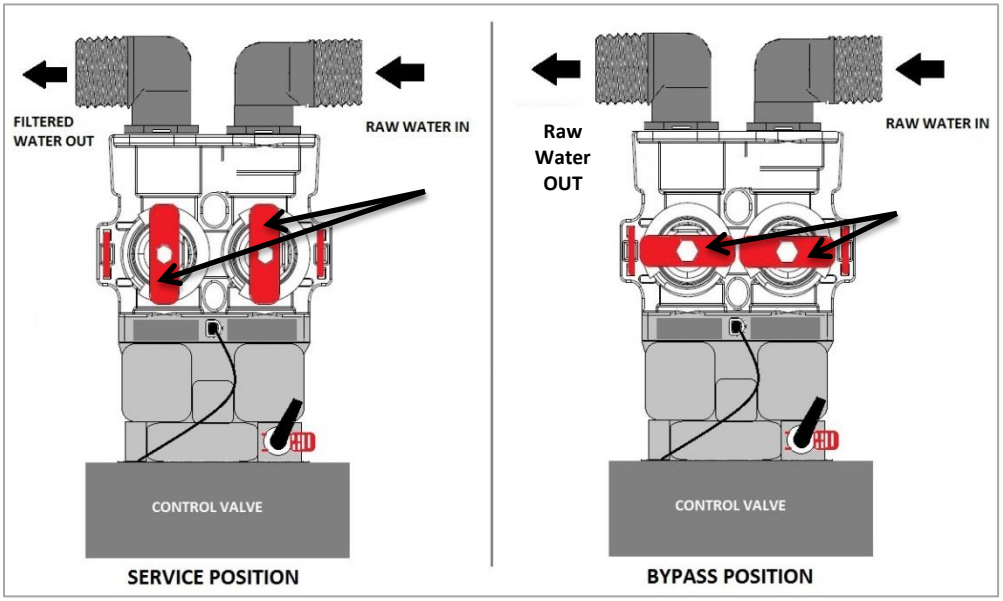


Fig 2A

Plumbing in your CBF1 Filter

- Turn the power off to the well pump then shut off the main water shut off valve which should be located after the pressure tank. If your hot water tank is electric, turn off the power to it to avoid damage to the element in the tank. Open a faucet closest to the pressure tank, but after the main shut-off valve to de-pressurize the lines.
- The bypass valve generally comes pre-assembled. If not, attach the bypass valve to the control valve by pushing it in and secure it with the metal clips and screws (**Fig 3**)



Fig 3

- Insert Allen key into the bypass handles and make sure that the valve is in BYPASS position (fig 2A)
- Fully push the inlet/outlet elbow fittings into the open end of the bypass valve and lock them in by inserting the red locking clips into the slots (**Fig 4**)
- For ease of installation, orient the inlet/outlet fittings in the direction of the inlet & outlet pipes by simply rotating them (**Fig 5)**
- Plumb in the inlet and outlet of the CBF1 filter.
- Plumb in a ½" flexible plastic drain line running from the filter (elbow hose fitting) (**Fig 6).**

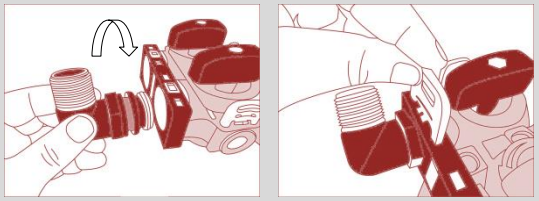


Fig 4

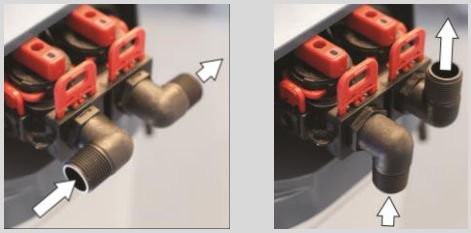


Fig 5

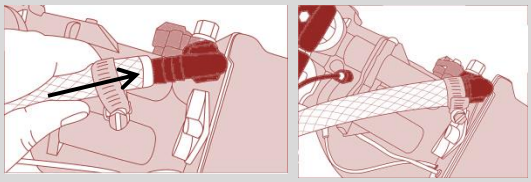


Fig 6

    - You can run the drain hose from the unit to the ceiling joists (max 8 ft ceiling) and run it to the nearest laundry tub or drain pipe. This can be ran up overhead or down along the floor. If running drain line more than 30 feet overhead, increasing the line size to 3/4" will be required. Please follow your local health dept. Codes for where to run filter discharge water. NEVER MAKE A DIRECT CONNECTION INTO A WASTE WATER DRAIN. A PHYSICAL AIR GAP OF AT LEAST 3" SHOULD BE USED TO AVOID BACTERIA AND WASTEWATER TRAVELLING BACK THROUGH THE DRAIN LINE INTO THE CBF1 FILTER (**Fig 7)**.
    - There will be a fair amount of pressure on this flexible plastic drain line when the filter is in the backwash mode, so secure it to the drain fitting by a hose clamp. Also secure the drain tube to the wall or ceiling.

You can also use code-approved air-gap attachments available at most plumbing stores.

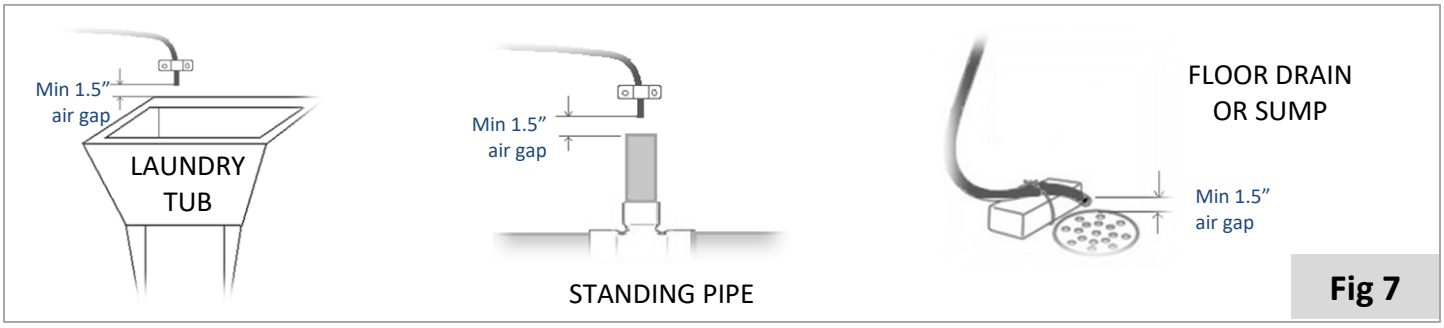


Fig 7

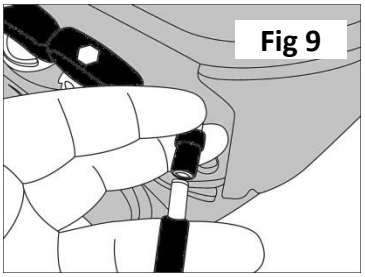
- Turn on the switch for the well pump. If you had emptied the pressure tank, allow it to fill up until the well pump shuts off. Slightly open the main shut-off valve.
- Insert the Allen key into the inlet side of the bypass valve (**Fig 8**) and turn it on only slightly and watch for leaks. Now insert Allen key to outlet side of the bypass valve and turn it on slightly. Make sure a faucet is on somewhere and that any aerator is removed to avoid



Fig 8

clogging from loosened scale in the pipes. Leave the bypass valve in the same position and slowly turn the main shutoff valve on all the way. If you have no leaks, proceed to the next steps.

- Connect the control valve to the AC power source (fig 9).



- Turn the bypass valve (both knobs) slightly more into the service position to allow water to run into the unit. ***You want water to initially fill the tank slowly. Once the tank is full of water, you can open bypass valve fully. This prevents filter media from being pushed up into the control head by the initial surge of water going in.*** *Water* may look somewhat discoloured at first. This is normal. Once the water runs clear and free from air pockets, turn the bypass valve fully into the "service position".
- Your water may be discoloured for a day to two after initial installation or may have small air bubbles. This is normal. Also, it will take a few days to get all the untreated water out of your hot water tank and you may choose to empty your hot water tank at the time of installation and clean it before letting water in from the filter.

NOTE: Your unit is not yet ready for service until you complete manual backwash

START UP & PROGRAMMING

The control valve is controlled with simple, user-friendly electronics displayed on an LCD screen.

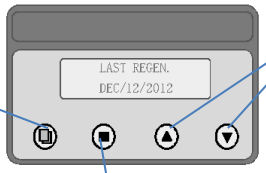
When power is first supplied, the valve electronics may take up to two minutes to initialize. During this time the screen will show "INTIALIZING WAIT PLEASE". Do not touch any buttons at this time. When the valve reaches the service position, it will display the following information in sequence:

FOR VIDEO INSTRUCTIONS ON PROGRAMMING
Visit our website
http://rainfresh.ca/how_to_videos.php

1. Date & Time
2. Regeneration Days (*Time interval between backwashes*)
3. Remaining Days (*days left before backwash begins*)
4. Backwash Time (*Time of day when backwash starts*)
5. Last Regeneration Date (*Last date when system backwashed)*
6. Current Flow Rate (GPM) (*flow rate of water being currently used)*
7. Peak Flow Rate (GPM) (*Max recorded flow rate of the water)*

The control valve has a display screen and 4 buttons

MENU BUTTON "⧉"
The function of this key is to enter the level one programming mode where the valve settings can be adjusted.



UP / DOWN "▲▼"
These buttons are used to increase or decrease the value of the settings while in the programming mode.

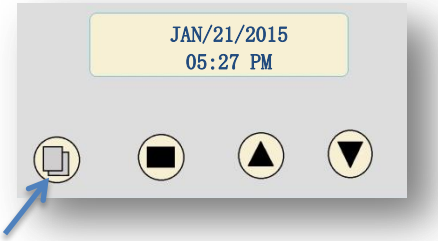
SET / REGEN BUTTON "■"
This button has two functions. The first is to initiate a manual backwash by holding the button for 3 or more seconds. The second function is while in programming mode, pressing this key allows the user to change the value of each setting.

PROGRAMMING YOUR CBF1 FILTER

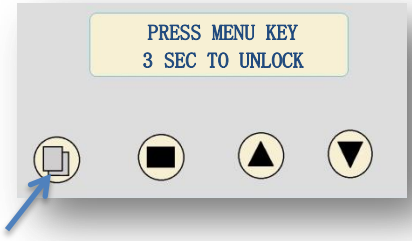
The valve has 2 levels of programming – Level 1 and Level 2. **The unit is factory set for your use and you do not need to change any settings other than time and date. Please call Rainfresh before attempting to change any values as that can affect the performance of your unit.**

Level 1 PROGRAMMING

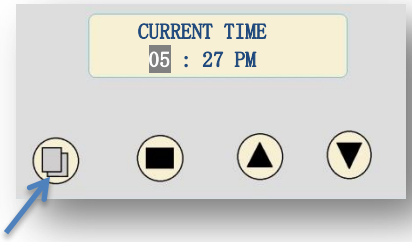
STEP 1 : Set Current Time



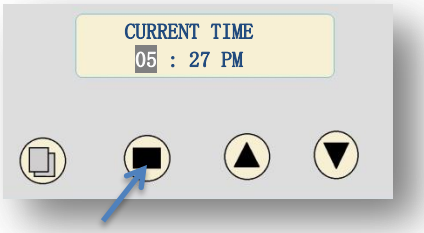
1. Press "⧉" (MENU) for 3 seconds to unlock screen.



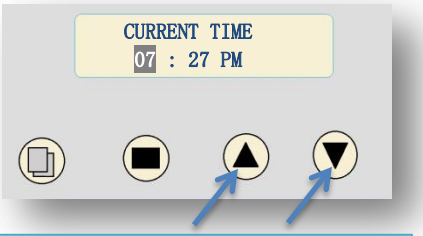
2. The display will read "**Press MENU Key for 3 sec to unlock"**.
3. After 3 seconds, the display will beep confirming unlock



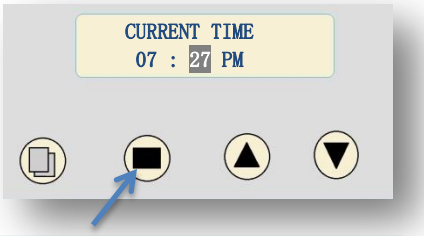
4. Press "⧉" (MENU) again and the hour value becomes highlighted



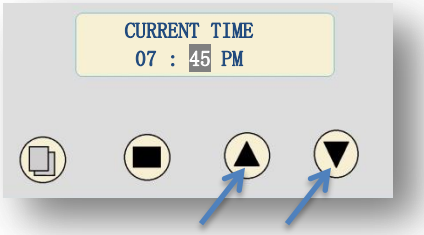
5. Press "■" (SET/REGEN) once and the highlighted value flashes.



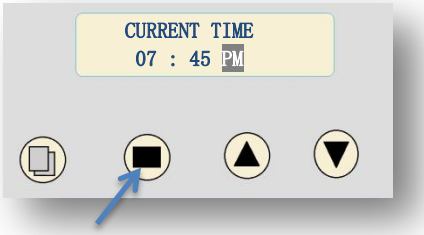
6. Now press "▲" (UP) or "▼" (DOWN) key to change the hour values to current time.



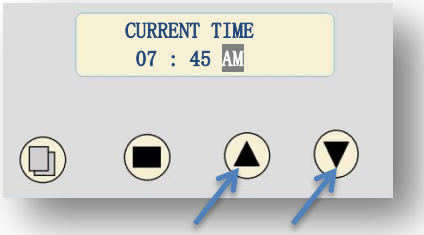
7. Press "■" (SET/REGEN) again. Hour value will be accepted and minute value will start flashing.



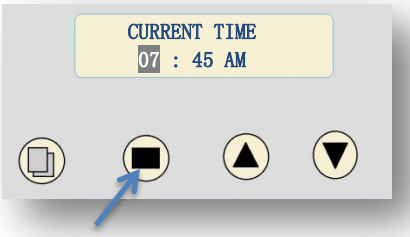
8. Now press "▲" (UP) or "▼" (DOWN) key to change the minute value to current time



9. Press "■" (SET/REGEN) again. Minute value will be accepted and AM/PM value will start flashing.

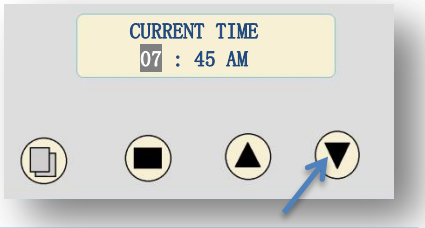


10. Now press "▲" (UP) or "▼" (DOWN) key to change the value to AM or PM

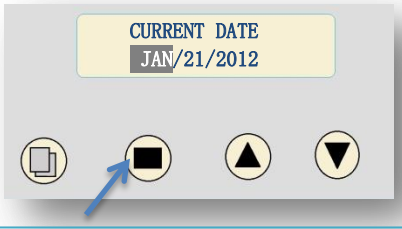


11. Press "■" (SET/REGEN) again to accept. Flashing stops & hour value is highlighted again. ***PROCEED TO STEP 2***

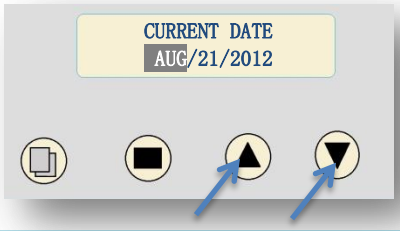
STEP 2 : Set Current Date



12. Press "▼" to advance to CURRENT DATE. The month value is highlighted



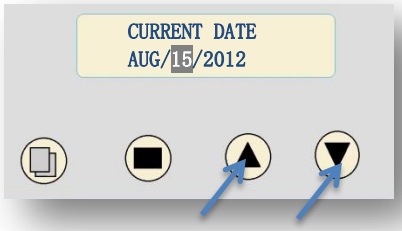
13. Press "■" again and the MONTH value flashes



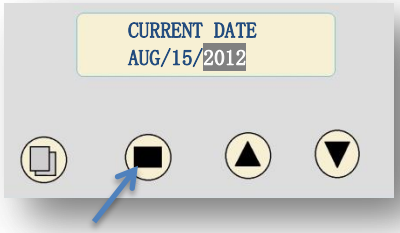
14. Now press "▲"or "▼"key to change the value to current month



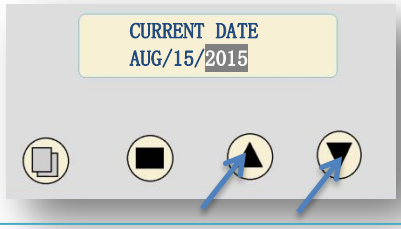
15. Press "■" again. Month value is accepted and the DAY starts flashing



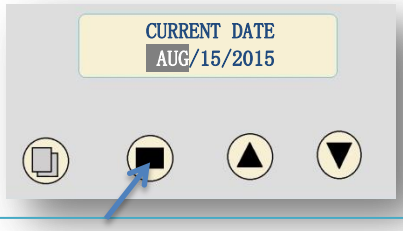
16. Now press "▲"or "▼"key to change the value to current day of the month



17. Press "■" again. Date value is accepted and the YEAR starts flashing



18. Now press "▲"or "▼"key to change the value to current day of the month



19. Press "■" again to accept. Flashing stops & MONTH value is highlighted again. ***PROCEED TO STEP 3***

STEP 3: <u>Setting Vacation Mode</u>
Make sure that this is set to OFF.

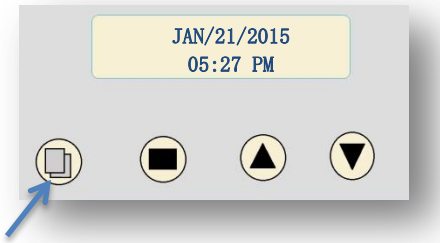


20. Now press "▼" key to advance to VACATION MODE. **Press "▼" again to exit. DO NOT CHANGE**

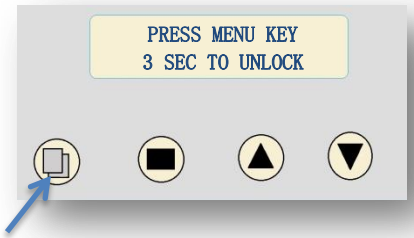
Level 2 PROGRAMMING (OPTIONAL SETTINGS)

NOTE : Under normal use there is no need to change the settings under level 2 programming. You can, however, change the default settings if required. **CAUTION: DO NOT CHANGE LEVEL 2 SETTINGS WITHOUT CONSULTING RAINFRESH TECHNICIAN (1-800-667 8072). Wrongly changing the settings can result in malfunction of the unit.**

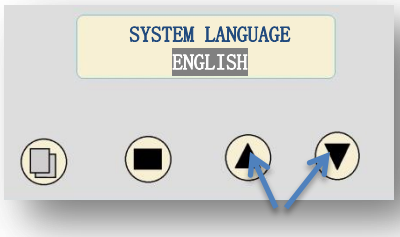
When the Level 2 Master Programming Mode is entered, all available option setting displays may be viewed and set as needed. Depending on current option settings, some parameters cannot be viewed or set.



2. Press "▯" (MENU) for 3 seconds to unlock screen.



4. The display will read "**Press MENU Key for 3 sec to unlock"**.
5. After 3 seconds, the display will beep confirming unlock



4. Press and hold "▲▼" ***together*** for three seconds to enter Level Two Master Programming.

To change any setting under level 2 programming

- **press the "■" key and the value flashes**
- **press the "▲ or ▼" keys to change the value**
- **press the "■" key again to accept value**
- **press the "▼" key to advance to the next value**

The following chart indicates choices and default settings. **Note:** Default settings are indicated in **bold letters**
Use same programming method as you used in level 1 to advance and/or change values.

Bold letters indicate default settings

Parameter	DEFAULT	Option 1	Option 2	Option 3	Comments
System Language	**English**	Spanish	French		Set to French if desired. Spanish not enabled
Valve Operation	**Filter**	Softener	Iron Filter		Leave at default setting
Backwash Mode	**Calendar Clock**	Meter Delayed	Meter Override	Meter Immediate	CBF1 filter should backwash at least once every week to ensure proper operation
Backwash Time	**2:00 AM**				The unit is factory set to regenerate at 2:00 AM on the day of backwash. You can change to another time if desired.
Backwash Days	Set for – 03 days				
Backwash	**10**				
Rapid Rinse	**10**				
Restore Default	**NO**				Leave at default. Change only if you would like to re-start programming from the beginning

Manual Backwash

If screen is locked, press "⧉ MENU" for 3 seconds to unlock. To start an immediate backwash,

- Press the ■**SET/REGEN** button for 3 seconds, an option for "*Delayed*" or "*Immediate*" backwash will appear.
- Press the ■ **SET/REGEN** button again and "*Delayed*" will begin flashing.
- Now press the ▲or ▼ buttons and "*Immediate*" will flash.
- Press the ■ **SET/REGEN** button once and then press the "⧉ MENU" button once. Valve will immediately start manual backwash.

YOUR UNIT IS NOW READY FOR SERVICE

OTHER FEATURES

Control Operation During a Power Failure

In the event of a 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 backwash, the valve will finish backwash after power is restored. If the valve misses a scheduled backwash due to a power failure, it will queue backwash at the next backwash time once power is restored.

New Sounds

You may notice new sounds as your filter operates. The backwash cycle lasts approximately 20 minutes. During this time, you may hear water running intermittently to the drain.

Manual Bypass

In the case of emergency, such as a leak, you can isolate your filter system from the water supply using the bypass valve located at the back of the control (see page 4). To resume filtered water service, open bypass valve by rotating the knobs counterclockwise.

MAINTENANCE

The CBF1 filter does not require any routine maintenance except ensuring that it backwashes regularly. There are no filters or parts to be replaced. Typically, after a few years of service (5-7), you may notice that some sediment is present in filtered water. At this time you will need to replace the filter sand in the unit, which can be purchased from Rainfresh. Please call customer service at 1800-667-8072.

Care of your CBF1 filter

To retain the attractive appearance of your new filter, clean occasionally with mild soap solution. Do not use abrasive cleaners, ammonia or solvents. Ensure that there is no dust or debris on the bypass valve.

Winterizing the system

If the unit is to be winterized, the best way is to close the by-pass valve and unscrew the 2 screws adjacent to the by-pass valves that hold the unit and the by-pass valve together, and carry the unit to a place where it will not be subject to freezing temperatures.

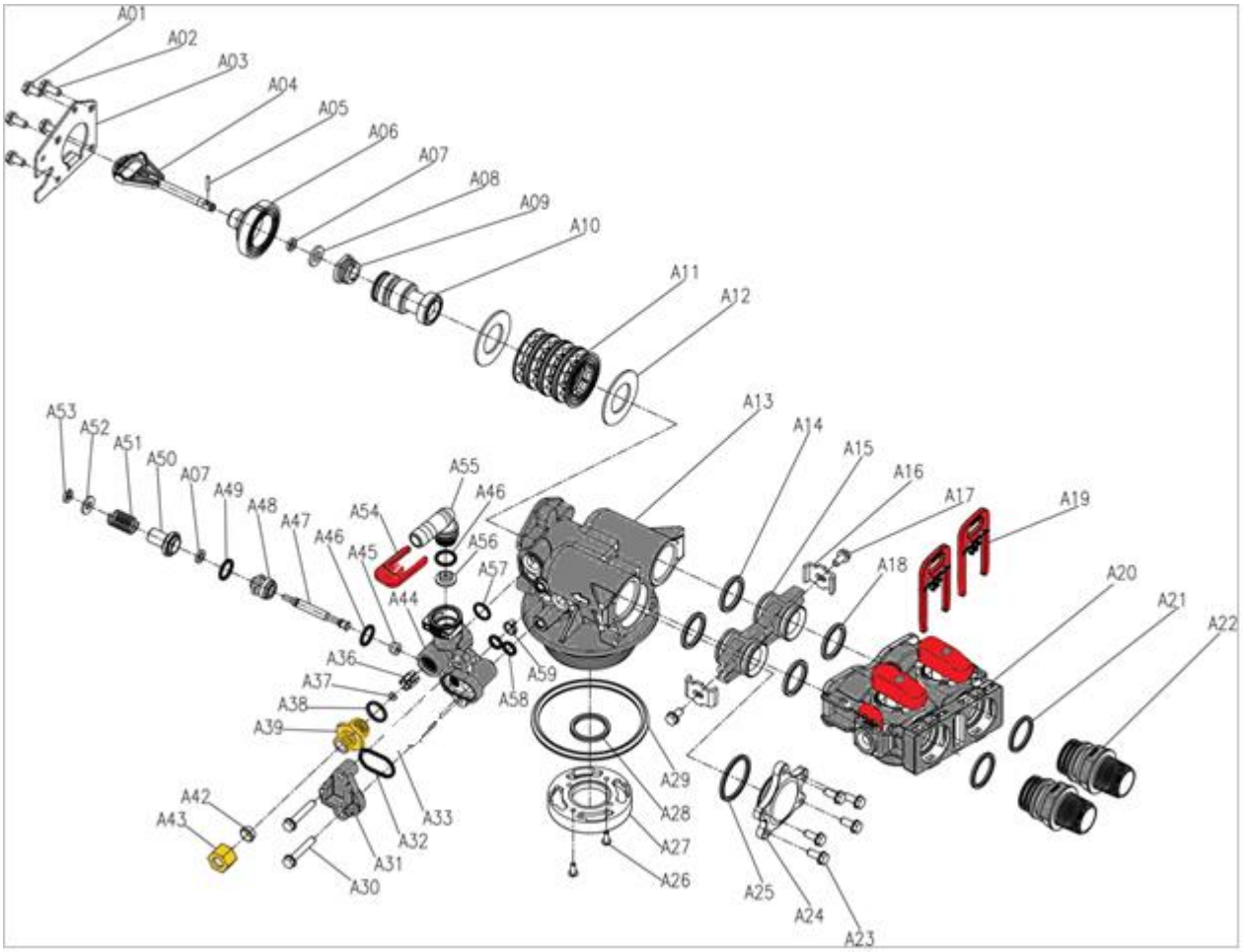
TROUBLESHOOTING

Please review the following troubleshooting guide before calling customer service.

- If you are unable to resolve the problem using the guide below, please call customer service at 1800 667 8072 (Mon to Fri 8:30 AM to 5 PM EST)
- **Please have your receipt & model number ready before you call. Customer service may request digital pictures of your installation in order to help troubleshoot the unit.**

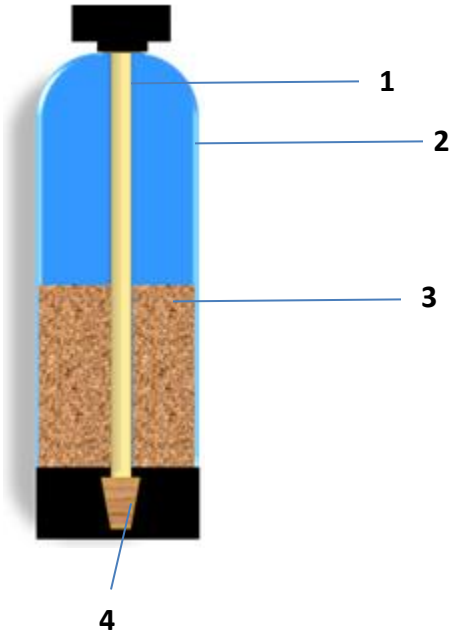
ISSUE	POSSIBLE CAUSE	SOLUTION
A. Unit fails to start a backwash cycle	1. No power supply 2. Defective circuit board	1. Check electrical service & re-set time of day 2. Replace faulty parts
B. Filter does not seem to be working as there is sediment in filtered water	1. Control valve unplugged 2. Bypass valve is closed 3. Leak between valve and riser tube 4. Internal valve leak	1. Plug in control valve to power supply 2. Open bypass valve 3. Check if riser is cracked or O-ring is damaged. Replace faulty parts 4. Replace valve seals, spacer and piston assembly
C. Low water pressure	1. Not enough water flow to backwash unit properly 2. Inlet of control valve plugged due to dirt	1. Replace pump to correct size. May need to replace filter sand as well 2. Clean control valve inlet
D. Filter media in drain line	1. Incorrect or missing drain line flow control (DLFC)	1. Check and replace DLFC
E. Filter media in plumbing lines	1. You have reversed the inlet/outlet of the unit	1. See fig 1 for correct inlet/outlet and plumb correctly. You will need to flush all your plumbing lines and may need to top up the sand as well
F. Unit cycles continuously	1. Defective circuit board	1. Replace faulty parts
G. Water flows to drain continuously	1. Valve settings incorrect 2. Internal leak	1. Check valve settings 2. Replace seals, spacer & piston assembly
H. Filter is leaking between the bypass valve and control valve	1. Possible O-ring leak	Check the metal adapter clips holding the 2 components together and tighten if necessary. Replace O-rings as required
I. Filter is always flashing through different pieces of information	This is normal	No action required
J. I am having difficulty accessing level 2 programming?		Unlock the screen by pressing and holding the menu button for 3 seconds. Press and hold both up and down arrows until the system language appears. See video at **http://rainfresh.ca/how_to_videos.php**
K. My display screen is blank	1. Power cord may be unplugged from either adapter or receptacle 2. Defective circuit board	1. Re-connect power cord 2. Call Rainfresh to receive new circuit board with replacement instructions

PARTS LIST



Item No.	Part No.	Description	Quantity
A01	05056087	Screw - M5x12 (Hexagon)	3
A02	05056088	Screw - M5x16 (Hexagon with washer)	2
A03	05056047	End plug retainer	1
A04	05030002	Piston rod	1
A05	05056097	Piston pin	1
A06	05056023	End plug	1
A07	05056070	Quad ring	2
A08	05056024	End plug washer	1
A09	05056022	Piston retainer	1
A10	05056181	Piston (electrical)	1
A11	05056104	Muffler	1
A12	05056021	Spacer	4
A13	05056073	Seal	5
A14	05030001	Valve body	1
A15	05056129	O-ring ϕ 23x3	4
A16	05056025	Adaper coupling	2
A17	05056044	Adaptor clip	2
A18	05056090	Screw-ST4. 2x13 (Hexagon with washer)	2
A19	21709003	Secure clip	2

A20	05056140	Valve connector	1
A21	05056065	O-ring ϕ 23.6x2.65	2
A22	21319006	Screw adaptor	2
A23	05056508	Screw M5x12 (Hexagon with washer)	5
A24	05030004	End cover	1
A25	05030013	O-ring ϕ 30x2.65	1
A26	13000426	Screw-ST2. 9x13 (Large)	2
A27	07060007	Valve bottom connector	1
A28	26010103	O-ring ϕ 25x3.55	1
A29	05056063	O-ring ϕ 78.74x5.33	1
A30	05056086	Screw - M5x30 (Hexagon with washer)	2
A31	05056029	Injector cover	1
A32	05056072	O-ring ϕ 24x2	1
A38	05056138	O-ring ϕ 14x1.8	1





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	DESCRIPTION
1	Riser
2	Media Tank – 9”x 48”
3	Filter media (1 cu ft)
4	Bottom Distributor
5	Power adapter (110V)

To order replacement parts, call 1800 667 8072

Monday to Friday 8:30 AM to 5 PM EST.

Limited Warranty:

This CBF1 System is warranted to the original Consumer purchaser for a period of one (1) year, from the date of purchase, against defects in materials or workmanship. The electronic controls and mineral tank are warranted for 5 and 10 years respectively against defects in materials or workmanship. The company's obligation under this warranty shall consist of repair or replacement, at its option, of any part found by company inspection to be defective, provided that the product has not been misused, abuse, altered or damaged by Consumer with respect to the original installation, as determined by the company. This warranty will not apply if feed water does not meet specifications of this system. This limited Warranty applies only to a unit when returned to the Warrantor at the owner's expense and in accordance with shipping instructions received from the Warrantor. This warranty does NOT cover, and is intended to exclude, any liability on the part of Envirogard for any incidental damages, consequential damages, labour charges or any other costs incurred in connection with the purchase, installation, use, maintenance or repair of the system whether under this warranty or any other warranty implied by law. Some provinces/states do not allow the exclusion of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary from province/state to province/state. This warranty applies only to water filter/systems purchased in Canada.

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Web: www.rainfresh.ca