In-Line Sanitizing System Operating Instructions

FROG® @ease® is the hot tub sanitizing system+ that takes the guesswork out of water care so you always feel at ease while enjoying your hot tub.



FROG @ease Mineral Cartridge (Blue)

FROG @ease SmartChlor® Cartridge (Silver)

- FROG @ease creates Fresh Mineral Water®∞ that's **cleaner, clearer, softer®.**
- FROG @ease employs SmartChlor Technology that knows when and how much free chlorine is needed so it uses up to 75% less.*
- FROG @ease requires far less shocking – only once a month!

Step 1: Prepare the Hot Tub

1. Have your dealer test your water before filling the hot tub. If using source water that is high in calcium hardness, iron or other metals, your dealer may recommend the use of a metal control product.

If previously using bromine and switching to the FROG @ease System, you must drain and refill your hot tub before using this product.

If previously using dichlor you may convert to the FROG @ease System without having to drain the hot tub, as long as the cyanuric acid level is below 80 ppm.

2. **Clean or replace filter cartridges when dirty.** (Follow manufacturer's instructions).

3. **Balance water by following STEPS a - d in order.**

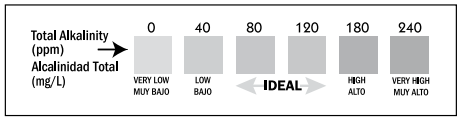
IMPORTANT: Always follow printed instructions on the balancing chemical packages. Add balancing chemicals in small increments one at a time with the jets on and wait 2 hours before testing again and adding any additional balancing chemicals.

Water Balance Guidelines	
pH:	7.2 - 7.6
Total Alkalinity:	80 - 120 ppm
Total Hardness:	150 - 250 ppm
Total Dissolved Solids:	<1500
Cyanuric Acid:	0 - 50 ppm

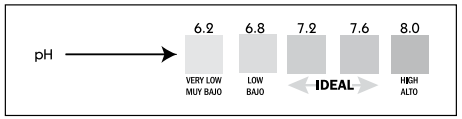
a. Take a water sample from the hot tub and dip a FROG @ease Test Strip into it.



b. Look at the **Total Alkalinity** reading first. Use FROG TArget™ or FROG JumpH™ to bring the Total Alkalinity in the **range of 80 – 120 ppm** prior to making any adjustments to pH even if it throws pH off further. If your pH tends to fall, then maintain Total Alkalinity closer to 120 ppm.



c. After Total Alkalinity is in range, **test for pH**. It should be **between 7.2 and 7.6.** If higher, add FROG DropH™ (a pH down adjuster) or if lower, add FROG JumpH™ (a pH up adjuster).



d. Lastly, **test for Total Hardness** again. If you were able to use fill water low in hardness, you may now have to add FROG SooTHe™ (hardness increaser) to maintain **between 150 and 250 ppm**.

If balancing takes longer than 2 days, shock the water with FROG Jump Start® start-up shock and maintain a chlorine level while continuing balancing.

4. **Very Important!** After balancing and before using cartridges if you haven't already added a shock during balancing, establish an initial residual of 0.5 - 1.0 ppm free chlorine with FROG Jump Start start-up shock, included in this package, that quickly dissolves with an effervescent fizzing action – one packet per 600 gallons.

5. Heat water to the manufacturer's recommended temperature.

Step 2: Set the Cartridges

Remove the shrink wrap from both cartridges before proceeding.

Set the FROG @ease Mineral Cartridge to #6 (hold the bottom and turn the top until 6 appears in the window). No further adjustments are necessary for the life of the cartridge.

Set the FROG @ease SmartChlor Cartridge to the setting that matches your hot tub size in gallons. FROG @ease SmartChlor Cartridge will maintain a low 0.5 - 1.0 ppm chlorine level as long as the pH stays within 7.2 and 7.6 so there is little need to adjust the cartridge setting.

Setting Chart		
Gallons	**FROG @ease In-Line Setting #**	**FROG @ease Filter Basket Setting #**
200-250	1	3
251-300	2	4
301-450	3	5
451-600	4	6

Step 3: Put the System to Work

In-line System

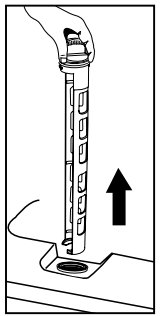
1.



Open cap of In-Line System and set aside.

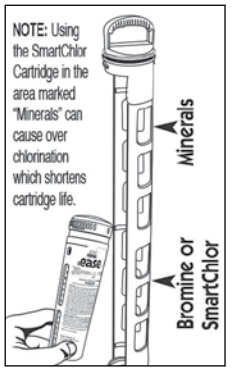
DO NOT OPEN CAP WHILE JETS ARE ON.

2.



Remove holder by pushing down and turning counter clockwise 1/8th turn before pulling out.

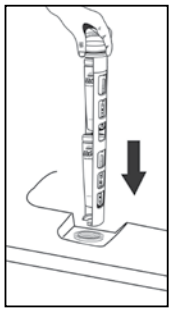
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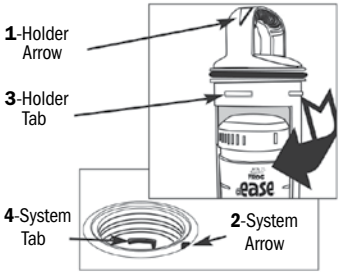


Snap the FROG @ease Mineral Cartridge into the area marked "Minerals" (top portion) and the FROG @ease SmartChlor Cartridge into the area marked "Bromine or SmartChlor" (bottom portion) making sure to line up the indentation at the top of the cartridges with the raised area on the holder.



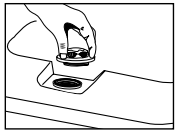
4.





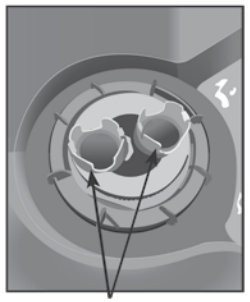
Slowly insert holder into system (see diagrams). Line up **holder arrow (1)** with **system arrow (2)**. Push down until **holder tabs (3)** go past **system tabs (4)** and turn holder to the right (clockwise) until it stops. To ensure a locked position, attempt to pull holder up. If it stays in place, the lock is secure.

5.



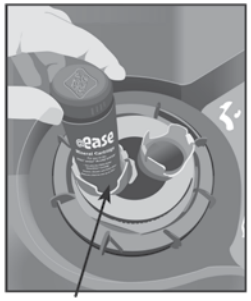
Replace Cap

Filter Basket System



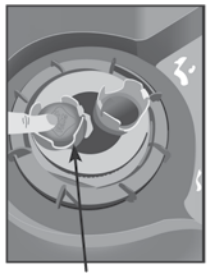
Openings for FROG @ease Cartridges

1.



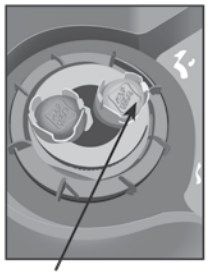
Insert FROG @ease Mineral Cartridge into one opening of the basket.

2.



Push down firmly until it locks in place securely.

3.



Insert FROG @ease SmartChlor Cartridge into the other opening in the same way.

Replacing Cartridges

Replace FROG @ease Mineral Cartridge every four months or when draining and refilling hot tub.

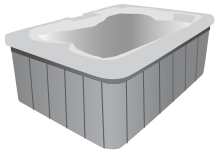
- Discard it in the trash even if it appears to have media left inside.
- Don't attempt to reuse: the minerals are spent after 4 months.

Replace FROG @ease SmartChlor Cartridge when empty *based on the FROG @ease Test Strip showing a lighter color than the out indicator on the bottle.*

- The life of the cartridge varies depending on hot tub size and number of users. The FROG @ease SmartChlor Cartridge will last about 3 - 4 weeks for an average 400 gallon hot tub.
- Drain water from cartridge to ensure it is empty.
- Discard in trash or offer for recycling if available.

Step 4: Routine Hot Tub Care

1.



Drain and refill hot tub as directed by your hot tub manufacturer. Whenever you drain and refill, make sure to replace your FROG @ease Minerals.

2.



Run filtration system as recommended by your hot tub manufacturer to maintain proper water flow through the system.

3.



Regularly test water with FROG @ease Test Strips and follow directions in Step 1 for maintaining pH, Total Alkalinity and Total Hardness.

NOTE: pH is affected by bather load, chemicals used, evaporation and the makeup of your source water, so maintaining water balance regularly is important.

4. FROG @ease SmartChlor Cartridge will maintain a 0.5-1.0 ppm free chlorine level as long as the water is balanced. **NOTE: Free Chlorine levels are reduced up to 75%* when using FROG Minerals.**

NOTE: Why FROG @ease Test Strips? The FROG @ease SmartChlor Cartridge forms a chlorine reserve that will be inaccurately measured as total chlorine on other test strips. Unlike conventional chlorine, the SmartChlor reserve readily shifts to free chlorine as needed, maintaining hot tub health with a low level of chlorine.

5.



Shock the hot tub with FROG Maintain®, a non-chlorine shock for easy single-dose shocking when you replace the FROG @ease SmartChlor Cartridge or once a month. Do not use a dichlor shock due to the build -up of cyanuric acid that will negatively affect SmartChlor's effectiveness.

6.



Replace your FROG @ease SmartChlor Cartridges and the complete FROG @ease In-Line System (that comes with a FROG @ease Mineral Cartridge) as directed under Step 3: Put the System to Work.

7. Lubricate in-line holder o-ring twice a year with a silicone lubricant.

Troubleshooting

Cloudy Water or Low Chlorine Levels

- Shock the hot tub with FROG Maintain, a non-chlorine shock. Do not use a dichlor shock due to the build-up of cyanuric acid that will negatively affect SmartChlor's effectiveness.
- Check water balance. pH and Total Alkalinity need to be in the proper ranges for the FROG @ease System to work correctly.
- Check FROG @ease SmartChlor Cartridge and replace if empty—see instructions under Step 3: Put the System to Work.
- If the FROG @ease SmartChlor Cartridge is not empty, turn dial setting up one number while maintaining water balance. If needed, turn dial up again.
- Check your calendar. The entire FROG @ease System including a FROG @ease Mineral Cartridge needs to be replaced every four months. Without the minerals, SmartChlor will not be enough to sanitize the hot tub.

FROG @ease SmartChlor Cartridge Life

- If hot tub is larger than 400 gallons with significant bather load, you may require a higher dial setting, which will shorten the cartridge life.
- If you think the cartridge setting is too high, you can turn the dial setting down one number while maintaining water balance. If needed, turn dial down again.

High Chlorine Levels

- This is highly unlikely with the FROG @ease System because SmartChlor is self-regulating. However, if you use standard test strips, it may appear that total chlorine is higher than the free chlorine.
- No worries—the strip is measuring the SmartChlor reserve, which will shift to free chlorine as needed. Please always use the FROG @ease Test Strips that were included with your System.

+ FROG @ease System consists of the FROG minerals silver chloride and carbonate used with 0.5 ppm of FROG @ease SmartChlor Cartridge. The FROG @ease Mineral Cartridge must be used in conjunction with the FROG @ease SmartChlor Cartridge.

* Compared to the minimum ANSI recommended chlorine level of 2.0 ppm for a hot tub.

∞ Cleaner, Clearer and Softer water for pools, hot tubs and swim spas.

Learn more at frogproducts.com or call 800.222.0169
Register your FROG @ease Sanitizing System at frogproducts.com

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EPA Est. No.: 080202-MO-001
E03250126R7 20-48-0193