

# SPA FROG® In-Line System Operating Instructions

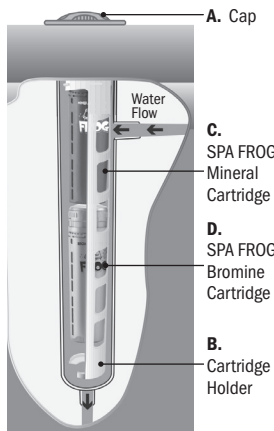


**Cleaner**  
because it kills bacteria two ways  
**Clearer**  
because it helps keep pH balanced  
**Softer**  
because there's up to 50%\* less bromine  
**Easier**  
with pre-filled cartridges for no mess, or measuring



SPA FROG Mineral Cartridge (Blue)  
SPA FROG Bromine Cartridge (Green)

Register your In-Line System at [FrogProducts.com](http://FrogProducts.com)



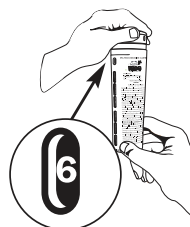
The In-Line System is made up of:

- (A) a cap** that is easily distinguishable among the fittings on the top of the hot tub
- (B) a cartridge holder** that pulls out of the system
- (C) a SPA FROG Mineral Cartridge** that helps control bacteria in the water
- (D) a SPA FROG Bromine Cartridge** that helps support the minerals while oxidizing contaminants like body oils and ammonia compounds responsible for smelly chloramines. The cartridges are adjustable to meet your specific hot tub water care needs.

Cut-away view of cartridges snapped into holder and placed into the In-Line System.

## Step 2: Set the Cartridges

Set the blue 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.



System Setting Chart	
200 Gallons	0
250 Gallons	1
300 Gallons	1
350 Gallons	2
400 Gallons	3
450 Gallons	4
500 Gallons	5
550 Gallons	5
600 Gallons	6

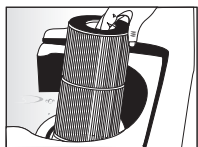
Set the green Bromine Cartridge to the setting that matches your hot tub size in gallons.

## Step 1: Prepare the Hot Tub

- 1. Fill hot tub with fresh water.**  
If using source water that is high in iron or other metals, see your dealer before filling the hot tub. It may require the use of a metal control product.



- 2. Clean or replace filter cartridges.** (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 6 hours before testing again and adding any additional balancing chemicals.

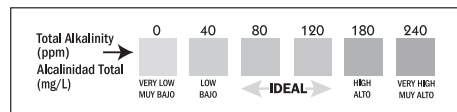
### Water Balance Guidelines

pH:	7.2 – 7.8
Total Alkalinity:	80 - 120 ppm
Calcium Hardness:	150 - 250 ppm
Total Dissolved Solids:	<1500

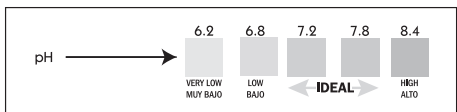
- a.** Take a water sample from the hot tub and dip a FROG® Test Strip into it.



- b.** Look at the **Total Alkalinity** reading first. Adjustments should be made 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.



- c.** After Total Alkalinity is in range, **test for pH**. It should be **between 7.2 and 7.8**. If higher or lower, add a pH adjuster.



- d.** Lastly **test for Calcium Hardness**. It should be **between 150 and 250 ppm**. If higher, partially drain the hot tub (about 6 inches) and fill with water low in calcium. If lower, add Calcium Increaser.

If balancing takes longer than 2 days, shock the water and maintain a chlorine level while continuing balancing.

- 4.** **Very Important!** Before using cartridges, establish an initial residual of 0.5 - 1.0 ppm free chlorine with FROG® Jump Start® (EPA Reg. No.: 53735-12) start-up shock, included in this package, that quickly dissolves with an effervescent fizzing action – one packet per 500 gallons.



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

- 6.** Begin routine hot tub care (see Step 4: Routine Hot Tub Care) as soon as hot tub is prepared.

**Manufactured by: King Technology, Inc.**  
530 11th Ave S, Hopkins, MN 55343 U.S.A.  
952-933-6118 • Customer Service 800-222-0169  
FAX 952-933-2206 [www.FrogProducts.com](http://www.FrogProducts.com)

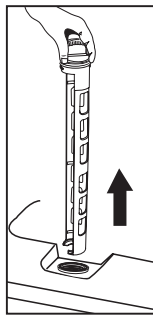
Made in U.S.A. Patents: [www.KingTechnology.com/IP](http://www.KingTechnology.com/IP)  
EPA Est. No.: 071209-AZ-001 E092816553101643R3N 20-48-0169

## Step 3: Put the System to Work

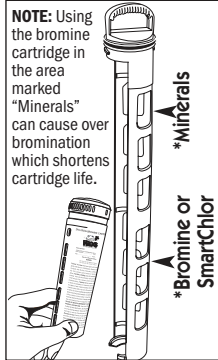
- 1.** Open cap of In-Line System and set aside. **DO NOT OPEN CAP WHILE JETS ARE ON.**



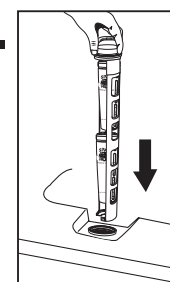
- 2.** Remove holder by pushing down and turning counter clockwise before pulling out.



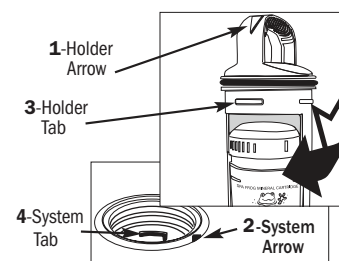
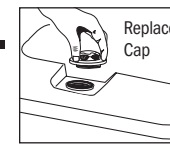
- 3.** Snap the SPA FROG Mineral Cartridge into the area marked "Minerals" (top portion) and the SPA FROG Bromine Cartridge into the area marked "Bromine or SmartChlor" (bottom portion) making sure to line up the indentation at the top of the cartridges with the raised area on the holder.



- 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



### Replacing Cartridges

Replace blue Mineral Cartridge every four months.

- 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 green Bromine Cartridge when empty.

- Life of cartridge varies depending on hot tub size and number of users.
- Drain water from cartridge to ensure it is empty.
- Discard in trash or recycle.

## Step 4: Routine Hot Tub Care

- 1.** Drain and refill hot tub as directed by your hot tub manufacturer or every four months when FROG minerals need to be replaced.



- 2.** Run filtration system as the manufacturer recommends to maintain proper water flow through the In-Line System.



- 3.** Regularly test water with FROG Test Strips and follow directions in Step 1 for maintaining pH, Total Alkalinity and Calcium Hardness.



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

## Troubleshooting

### • Cloudy Water or Low-Bromine Levels

• Check water balance. pH and Total Alkalinity need to be in the proper ranges for the SPA FROG In-Line System to work correctly.

• Check SPA FROG Bromine cartridge and replace if empty—see instructions under "Put the System to Work".

• Check your calendar. The SPA FROG mineral cartridge needs to be replaced every four months.



- 4.** Maintain at least a 1.0 ppm bromine level at all times. **Note:** Bromine levels are reduced up to 50%\* when using FROG minerals.

- 5.** Shock the hot tub once a week or as needed with a non-chlorine shock. Heavily used hot tubs may require more frequent shocking.



- 6.** Replace mineral and bromine cartridges as directed in Step 3: Put the System to Work.



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

### • High Bromine Levels

• Remove the SPA FROG Bromine Cartridge from the In-Line System until the bromine level is down to 2.0 ppm.

• Lower the Bromine Cartridge setting by 1 number and replace cartridge in the In-Line System.

• Test in 24 hours. Repeat process until bromine level stays within 1.0 to 2.0 ppm.



Learn more at [www.FrogProducts.com](http://www.FrogProducts.com) or call 800.222.0169

\* Compared to the minimum ANSI recommended bromine level of 2.0 in a residential hot tub.



Specifically Designed for  
Mineral Treated Spas

## SHOCK TREATMENT

### ACTIVE INGREDIENT:

Potassium Monopersulfate .....	32.18%
Other Ingredients .....	67.82%
TOTAL .....	100.00%

\*Equivalent to 3.26% active oxygen

## DANGER KEEP OUT OF REACH OF CHILDREN

CORROSIVE TO EYES, SKIN AND MUCOUS MEMBRANES. MAY BE HARMFUL IF SWALLOWED. Avoid contact with eyes, skin and clothing. Wash thoroughly with soap and water after handling. Avoid breathing dust. SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

Net Weight: 8 Ounces

**Shock Treatment** is a powerful oxygen-based oxidizer. When used regularly, this product will help eliminate contaminants introduced by bathers and environmental factors like rain and wind. This product will not raise chlorine levels or produce combined chlorine. This product restores sparkle and clarity to spa water. It will not increase calcium hardness or stabilizer levels. This product contains no chlorine or other disinfectants.

### DIRECTIONS FOR USE:

This product is not a sanitizer or algacide. For routine disinfection of spa water or algae control, use an EPA-registered product according to its label instructions. For routine control of microorganisms in spa or hot-tub water, use an EPA-registered Mineral Sanitizer according to its label instructions.

### READ ALL PRECAUTIONS BEFORE USE

Wear goggles and gloves when handling. Use only in residential spas. Add only when no bathers are present.

### DIRECTIONS FOR SPAS AND HOT TUBS:

This product contains no sanitizer and should be used for oxidizer treatment only. Regular use of this product will remove most of the contaminants that accumulate in spa water.

### WHEN TO ADD MINERAL BUDDIES SHOCK TREATMENT TO YOUR SPA:

Add this product to spa water after every use, or according to the instructions on your Mineral Sanitizing System.

### HOW TO USE MINERAL BUDDIES SHOCK TREATMENT TO KEEP SPA WATER SPARKLING CLEAR:

1. Add 2 ounces (4 tablespoons) of this product per 300 gallons of water as directed on your Mineral Sanitizing system. **NOTE:** Apply the required amount of this product evenly throughout the spa with the pump running. Add the full amount at one time using a clean and dry plastic scoop.
2. Run the pump for at least 30 minutes.
3. Turn the jets on and off once or twice after adding this product to improve the treatment.

### FIRST AID

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

**IF SWALLOWED:** Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage.

### PHYSICAL OR CHEMICAL HAZARDS: STRONG OXIDIZING AGENT.

Never add water to product. Always add product to large quantities of water. Do not mix with other chemicals. Do not add this product to any chemical feeder. Contamination with moisture, organic matter or other chemicals may cause a violent reaction leading to fire or liberation of hazardous gases. In case of contamination or decomposition, do not reseal container. If possible, isolate container in well-ventilated area. Flood with large amounts of water.

### STORAGE AND HANDLING:

Keep dry and in original container. Store in a cool, dry, well-ventilated place. Do not store with chlorine, bromine, or liquid acids. Keep container tightly closed when not in use.

**DISPOSAL:** Use entire contents, then triple rinse and offer for recycling or dispose in accordance with state and local regulations. To dispose product in partly filled containers or for large quantities call your local solid waste agency for disposal instructions. Do not reuse empty container.

**NOTE:** Buyer assumes all responsibility for safety and use not in accordance with directions.



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CareFreeStuff.com  
Irwindale, CA 91706 USA



mineral  
buddies

Specifically Designed for  
Mineral Treated Spas

**PH & ALK UP**

Increases the pH and  
Alkalinity of Spa Water

ACTIVE INGREDIENT:  
Sodium Carbonate.....100%

**CAUTION**  
**KEEP OUT OF REACH OF CHILDREN**

SEE SIDE PANEL FOR FIRST AID AND  
ADDITIONAL PRECAUTIONARY STATEMENTS.

Net Weight: 8 Ounces

**Mineral Buddies pH & Alk Up** will increase the pH and alkalinity of spa water if needed. The total alkalinity of spa water should be maintained between 80 and 150 ppm. The pH should be within 7.2 to 7.8 ppm.

**DIRECTIONS FOR USE:**

**Mineral Buddies pH & Alk Up** should be used as necessary when pH is below 7.2.

**NOTE:** For best results, dissolve granular products first by adding to a small, plastic pail filled with water. Then, apply the solution to the spa water.

pH	Amount of pH Up to use per 500 gallons
6.8 – 7.2	1 oz. (2 Tablespoons)
below 6.8	2 oz. (4 Tablespoons)

1. Determine the amount of product to use.
2. Make sure equipment is OFF.
3. Add applicable amount of product to the spa water.
4. Turn on circulation system for 1 – 3 hours.
5. Retest water after 3 hours.
6. If pH is still below 7.2, repeat steps 1 – 5.

**CAUTION:** Avoid contact with skin or eyes. Wash thoroughly after handling. This product may be irritating or harmful if taken internally. Do not store this product in close contact with chlorine products. Do not mix with any other chemical – mix only with water. **NOTE:** Draining and cleaning of the spa or hot tub is recommended every 3 months. Never mix this product with any dry or liquid chlorine product as a dangerous reaction may occur.

**FIRST AID:**

**EYE CONTACT:** Hold eye open and rinse gently with cool water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. **IF INHALED:** Move person to fresh air. If irritation occurs, get medical attention. **SKIN CONTACT:** Wash all affected areas with soap and water. Get medical attention if irritation occurs and persists. Wash clothing with warm soapy water before reuse. **IF SWALLOWED:** Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. If symptoms persist contact a doctor or a poison control center.

**STORAGE AND DISPOSAL:**

**STORAGE:** Store in a cool, dry place. Keep product in tightly closed container when not in use. Store out of reach of children and away from heat. **DISPOSAL:** Place empty container in trash or offer for recycling if available. To dispose product in partly filled containers or for large quantities call your local solid waste agency for disposal instructions. Do not reuse empty container.

**NOTE:** Buyer assumes all responsibility for safety and use not in accordance with directions.

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Specifically Designed for  
Mineral Treated Spas

## PH & ALK DOWN

Decreases the pH and  
Alkalinity of Spa Water

### ACTIVE INGREDIENTS:

Sodium Bisulfate .....	95.0%
Inert Ingredients .....	5.0%
TOTAL .....	100.0%

**DANGER • POISON**  
**KEEP OUT OF REACH OF CHILDREN**

SEE SIDE PANEL FOR ADDITIONAL  
PRECAUTIONARY STATEMENTS.

Net Weight: 9 Ounces

**Mineral Buddies pH & Alk Down** will decrease the pH and alkalinity of spa water.

The total alkalinity of spa water should be between 80 and 150 ppm. The pH should be between 7.2 to 7.8. High pH can cause scaling and/or cloudy water.

### DIRECTIONS FOR USE:

**Mineral Buddies pH & Alk Down** should be used as necessary when pH levels are above 7.8.

**NOTE:** For best results, dissolve granular products first by adding to a small container of water. Then, apply the solution to the spa water.

1. Make sure all equipment is OFF.
2. Add ¼ oz. (1-1/2 tsp.) of this product for every 500 gallons of spa water.
3. Turn ON circulation system for 30 minutes.
4. Retest water. If pH is still above 7.8, repeat steps 1-3.

### DANGER - CAUSES SEVERE BURNS

This product contains sodium bisulfate. Avoid contact with skin, eyes, or clothing. Do not mix with household chemicals. Do not mix directly with other spa chemicals. Harmful if swallowed.

### FIRST AID:

**IF SWALLOWED:** Call a poison control center or doctor immediately. If conscious, immediately give 2 to 4 glasses of water, and do not induce vomiting unless told to do by poison control.

**EYE CONTACT:** Hold eye open and rinse gently with cool water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. **SKIN CONTACT:** Immediately flush with water for 15 minutes. If burns occur obtain medical attention.

### STORAGE AND DISPOSAL:

**STORAGE:** Keep dry and in original container in a cool, dry, well-ventilated place. Do not store with chlorine, bromine, or oxidizing agents. Keep container tightly closed when not in use.

**DISPOSAL:** Use entire contents, then triple rinse and offer for recycling or dispose in accordance with state and local regulations. To dispose product in partly filled containers or for large quantities call your local solid waste agency for disposal instructions. Do not reuse empty container.

**NOTE:** Buyer assumes all responsibility for safety and use not in accordance with directions.

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Specifically Designed for  
Mineral Treated Spas

## CALCIUM UP

Establishes the Proper  
Water Hardness to Avoid  
Corrosion of Equipment  
and Spa Surfaces

ACTIVE INGREDIENT:

Calcium Chloride .....100%

### CAUTION

**KEEP OUT OF REACH OF CHILDREN**

SEE SIDE PANEL FOR ADDITIONAL  
PRECAUTIONARY STATEMENTS.

Net Weight: 8 Ounces

Water hardness describes the total amount of calcium in spa water. **Mineral Buddies Calcium Up** brings water hardness into the proper range. Low hardness can result in corrosion of equipment and spa surfaces. The ideal hardness level is 150 - 400 parts per million (ppm).

#### DIRECTIONS FOR USE:

Read entire label and use strictly in accordance with hazard statements and directions.

Establish the current level of calcium hardness in the spa by the use of a suitable test kit. The acceptable range for the level of calcium hardness in a spa is 150- 250 ppm. Any required amount of Mineral Buddies Calcium Up should be applied pre-dissolved in at least a gallon of water with the spa pump operating in high speed mode for a minimum of 30 minutes. The maximum dosage should not exceed 3 tablespoons per 100 gallons of spa water. If more Mineral Buddies Calcium Up is required allow a minimum of two (2) hours between doses to allow the product to get completely into solution.

TO INCREASE CALCIUM HARDNESS		
100 Gal.	1 Tablespoon	25 ppm
250 Gal.	2½ Tablespoons	25 ppm
400 Gal.	4 Tablespoons	25 ppm

**STORAGE AND DISPOSAL:** Keep this product in original tightly closed container away from children and pets when not in use. Do not reuse container, but place in trash collection.

**HAZARD STATEMENTS:** Contains calcium chloride. **CAUTION:** may cause skin and eye irritation. May be harmful if swallowed. Prolonged exposure may cause skin and eye burns. May be irritating to nose and throat. Do not get in eyes, on skin, or on clothing. Wear safety glasses and rubber gloves when handling this product. Avoid breathing dust. Do not taste or swallow. Wash hands thoroughly after use. If product gets on clothing remove and wash before reuse. Do not mix with other chemicals.

#### FIRST AID

Have the product container or label with you when calling poison control center or doctor, or going for treatment. **IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor immediately for treatment advice. **IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. **IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice. **IF SWALLOWED:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do NOT induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person. **Note to Physician:** Probable mucosal damage may contraindicate the use of gastric lavage. **NOTE:** Buyer assumes all responsibility for safety and use not in accordance with directions.

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