

**ION
PERFECTOR
SPA**

Please read the following before operating this equipment.

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

- Read and follow all instructions.
- **Warning:** To reduce risk of an injury, do not permit children to use this equipment.
- **Warning:** Risk of electric shock.
- Connect only to a ground-fault circuit interrupter (gfi) or a dedicated circuit.
- Do not bury cord.
- **Warning:** To reduce risk of electric shock, replace damaged cord immediately.
- **Warning :** To reduce risk of electric shock, do not use an extension cord. Provide a properly located outlet.
- **** If 220 vac, hardwire to existing line.****

ION PERFECTOR

Before installing the **ION PERFECTOR**, check filter and pump to insure they are in good working condition.

If spa has been treated with baquacil, it is recommended that the spa be drained, all pipes flushed and the filter media replaced.

Controller Installation

The **ION PERFECTOR** system is available in 110 vac or 220 vac.

Select the proper unit for your equipment. Local building codes must be followed. Install control unit near the spa equipment.

Your **ION PERFECTOR** unit must be wired to run with the pump.

Installation

Included with the flowcell is a two inch "tee" fitting. Reducer may be used (not included) for smaller pipe. Install the "tee" parallel to the ground in the re-circulating plumbing.

Controller Operations

The **ION PERFECTOR** unit has an on/off switch, a control dial, and polarity lights.

Polarity indicates the electrode producing ions. The control dial adjusts the ion output level.

The on/off switch turns the unit on or off.

Start up

Adjust the ph, total alkalinity, and calcium hardness according to the chart.

It will take a few hours to ionize the water. Insure that there is sufficient chlorine or other sanitizer to care for the sanitizing needs of your spa until the transition is made.

Return to normal filtration cycle and check copper level. Maintain a minimal amount of chlorine until .30 ppms of copper is reached. Once that level is met, lower the ion output dial and make adjustments as necessary.

To make more ions turn the dial to the right.

To make less ions turn the dial to the left.

Water chart

	Minimum	Ideal	Maximum
Ion level	.2 ppm	.3 ppm	.6 ppm
pH	7.2	7.6	8.0
Total Alkalinity	70 ppm	100 ppm	120 ppm
Calcium Hardness	225 ppm	250 ppm	500 ppm
T.D.S.	750 ppm		2000 ppm
Cyanuric Acid			100 ppm

How to adjust

Ion level

To lower, turn control dial left to minimum

To raise, turn control dial right to maximum

pH

Adding muriatic acid or dry acid lowers pH.

Adding soda ash or sodium carbonate raises pH.

Total Alkalinity

Adding muriatic acid or sodium bisulfate lowers T A.

Adding baking soda or sodium bicarbonate raises T A.

Calcium Hardness

Adding calcium chloride raises calcium hardness.

The only practical way to lower calcium hardness is to partially drain the spa.

Total Dissolved Solids

To lower TDS, partially drain the spa. To raise add salt pellets (as used in a water softner).

Cyanuric Acid

To lower cyanuric acid level partially drain spa.

Oxidation

The **ION PERFECTOR** is not a 100% replacement of spa chemicals.

Water balance must be maintained and the spa needs to be oxidized periodically.

Cloudiness may occur from organic matter, body oils, sun tan lotions and particles too small to be removed through filtration.

To remove this, we oxidize the water. This may be done by using Oxidizers containing potassium monopersulfate or sodium persulfate (trademark names safe shock, oxy-pure, oxy shock). See bottle for dosage. To use household bleach to oxidize, add one quart per week when needed.

After a heavy rainfall, check the spa to see if it needs to be oxidized.

Maintenance

Clean and inspect your electrodes periodically through the year. To do so, simply unscrew the electrode housing from the "tee". Then examine the electrodes for wear. If the gap between the electrodes exceeds an inch and a quarter, the electrodes should be replaced. If the electrodes do not need replacing, take the opportunity to clean them. To do so, fill the housing with white vinegar and let stand for several hours. Then empty and wash with a strong spray of water. If a residue still remains on the electrodes, then brush and / or scrape until reasonably clean.