## Maintaining Your ThruMometer™

Proper maintenance of your new ThruMometer<sup>™</sup> in-line thermometer will yield you years of trouble-free use and accurate readings.

Sanitize your ThruMometer<sup>™</sup> before use with a non-caustic cleanser such as lodophor. Do not immerse for longer than necessary to extend the life of the films. Do not use bleach. Aggressive cleansers, especially bleach, will not only erode the aluminium over time but also cause delamination of the clear protective film covering the liquid crystal thermometer. Delamination of the film from use of improper cleansing agents is not covered under warranty.

Clean with mild detergent only, using water that is warm but not hot, not to exceed 140°F, as this will permanently damage the liquid crystal temperature elements and cause the Thrumometer<sup>™</sup> to lose accuracy. Do not soak in the same bucket with other metals to prevent galvanic corrosion to the aluminum.

After use, dry thoroughly and store in the protective plastic tube.

## Using Your ThruMometer™

Connect the ThruMometer<sup>™</sup> to the "wort out" side of your heat exchanger using a 1/2" ID hose and connect another1/2" ID hose to your fermenter. The non-serrated fittings on the thermometer are designed for a snug "press-fit" on the hose. As such, hose clamps are not necessary if you drain the outlet hose of the thermometer directly into the fermenter. If you have downstream restriction, you should use clamps on the end fittings to prevent leaks or a hose blow-off.

Before pumping hot wort through your heat exchanger, turn the cooling water on to the maximum flow rate. This will prevent "overheating" the liquid crystal thermometer elements. In all cases, do not exceed 140°F. Slowly increase the hot wort flow rate until you reach the desired temperature. If you never see a change in color on the thermometer, carefully touch the side of the ThruMometer<sup>™</sup> and determine if the temperature is above 88°F or below 58°F. If it's above 88°F, slow down the wort flow rate. If it's below 58°F, increase the wort flow rate. If it is still too cold, slow down the water flow rate.

**Note:** Most heat exchangers do not work well at low flow rates. At low rates, the flow is non-turbulent and does not give up or take on heat readily. If you are at a very slow wort flow rate and at maximum water flow, you may be experiencing this "laminar flow" phenomenon in your exchanger. Increasing the wort flow rate will generate turbulence and greatly increase the performance of the heat exchanger. Heat exchangers such as the Therminator™ have a chevron pattern stamped into the plates and therefore create turbulence even at very low flow rates. Chillers made from smooth-walled, coiled copper tubing do not generate turbulence as easily.