

# ThruMometer Care & Use

## Using and Caring For Your ThruMometer™

### Maintaining your ThruMometer™

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

Sanitize your ThruMometer™ before use using a non-caustic cleanser such as IO Star. Do not immerse for longer than necessary to extend the life of the films. Do not use bleach.

Clean with mild detergent only, using warm, but not hot water. In no case exceed 140° F as this will permanently damage the liquid crystal temperature elements and cause the thermometer to lose accuracy. Do not soak in same bucket with other metals to prevent galvanic corrosion to the aluminum.

Aggressive cleansers, especially bleach, will not only erode the aluminum over time, it will cause delamination of the clear protective film covering the liquid crystal thermometer. Delamination of the films from use of improper cleansing agents are not covered under warranty. After use, dry thoroughly and store in the protective plastic tube.

### Using your ThruMometer™

The highly conductive aluminum body and liquid crystal thermometer are VERY fast responding (up to 1° F/sec), very accurate (0.5° F) and allow you to dial in your desired temperature easily to within 1° F.

Connect the ThruMometer™ to the "wort out" side of your heat exchanger using 3/8" ID hose and another hose directly into 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.

Use: 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™ and determine if the temperature is above 88° F or below 58° F. If above 88° F, slow down the beer flow

rate. If 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 very slow flow rates. At low flow 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 tube do not generate turbulence as easily.

Recommended Fermentation Start Temperatures:

Chris White of White Yeast Labs recommends:

Ales

Ales should be started at 68-70° F and fermented at the recommended temperature for the yeast being used.

Lagering Options:

Option 1 - start at ale temp (recommended method)

Start fermentation at ale temperatures (about 68°F), and maintain wort at this temperature until signs of fermentation are evident (i.e. CO<sub>2</sub> evolution), usually about 12 hours. Begin to lower temperatures to desired fermentation temperature. Lower the temperature an average of 1°F an hour. If using a refrigerator for controlling temperature, drop the temp controller to the desired setting...the large thermal mass of the wort will keep cooling rate within the 1°F per hour range. Flavor effects of this method vary with yeast strain, recipe, and palette. Most of our customers report little or no flavor effects of starting fermentation at higher temperatures. Brewers do not experience a higher level of esters or fusel alcohols with this method because the substrates required for their production are not made yet. Most of the flavor compounds are produced in the 12-72 hour time period of fermentation.

Option 2 - start at lager temp (alternate method)

Use three-four times the amount of yeast that you would use in an ale, start fermentation at your desired fermentation temperature. However, lag times will be longer.