WATT DENSITY

WHAT DOES IT MEAN TO DE-RATE A HEATER

DE-RATING AN IMMERSION HEATER WILL REDUCE SCALING OR BUILD-UP ON THE IMMERSION HEATER'S SURFACE

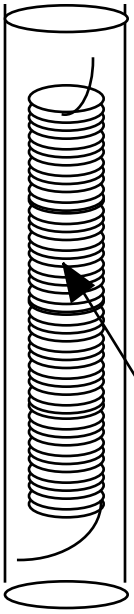
THE ELEMENT IS DE-RATED BY STRETCHING IT. THUS PROVIDING A COOLER HEATER SHELL SURFACE. 10-20 WATTS/ SQ. INCH

HEATER FAILURE

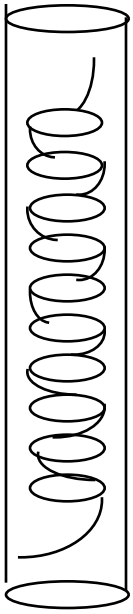
SCALING & BUILD-UP EXAMPLE

STANDARD WATT DENSITY 35-40 WATTS / SQ. INCH

HOTTER SURFACE



COOLER SURFACE



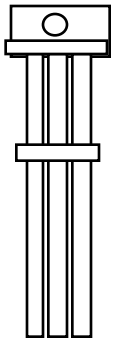
NI-CHROME ELEMENT IS STRETCHED

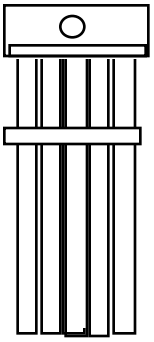
AS A RESULT OF THE HEATING ELEMENT STRETCH, THE ENTIRE HEATER IS STRETCHED AND REQUIRES MORE MATERIAL-THUS LONGER HEATER AND OR MORE ELEMENTS.

HIGH WATT DENSITY

THE TYPICAL NI-CHROME HEATER ELEMENT LOOKS LIKE THE LONG SPRING ON A SCREEN DOOR.

LOW WATT DENSITY





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IMMERSION HEATER ELEMENT TUBE COMPARISON

SAME WATTAGE BUT NOT DE-RATED

STD. WATT DENSITY HEATER ELEMENT

HOTTER SURFACE

SAME WATTAGE BUT DE-RATED REQUIRING MORE ELEMENTS

DE-RATED HEATER ELEMENT IS SAME WATTAGE

COOLER SURFACE

* *STRETCHED INTERNAL NI-CHROME ELEMENT*