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**HL-INS10**

## **High Limit Control Setting Procedure**

### Maximum High Limit Settings:

<b>Heater Sheath</b>	<b>Maximum Sheath Temp.</b>
steel	750°F (400°C)
copper	360°F (180°C)
Incoloy 800®	1500°F (815°C)
Incoloy 840®	1400°F (760°C)
Inconel 600®	1600°F (870°C)
stainless steel	1200°F (650°C)

### **Set Up Instructions**

1. Before energizing the system ensure that:
  - a. liquid immersion heaters are fully immersed
  - b. gas heaters have a positive flow at the rate called for in the specifications
2. Set the limit controller to the maximum settings shown above.
3. Turn the power to the heater on, bring the system up to the desired operating temperature and let it stabilize.
4. Increase the operating temperature about 50-60°F (10 to 15°C).
5. After about 3-5 minutes the heating elements will be up to their normal operating temperature.
6. Slowly reduce the high limit setting until the system trips out on the high limit.
  - a. This will give you the normal element skin temperature for your system.
7. Set your limit control about 150°F (65°C) higher than temperature you recorded as your normal sheath operating temperature.
  - a. Never set the high limit higher than the maximum settings shown above.
8. In a liquid system these setup methods can give you two warnings:
  - a. The liquid level is low
  - b. In the event that you have determined the heater is fully immersed, the trip on the high limit setting indicates there is scale or sludge built up on the heating elements
  - c. Clean as required