

## MEASUREMENT OF INDUSTRIAL SEWING NEEDLE TEMPERATURE WITH DIFFERENT EXPERIMENTAL TECHNIQUES

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### ABSTRACT

*This article is about measuring sewing needle temperatures with three different methods (thermal camera, pyrometer, and implanted thermocouple) on an industrial lockstitch machine. The needle temperature test was performed for a cumulative period of 60 seconds at varying system speeds from 1500 rpm to 4500 rpm. The results of the experimental techniques are compared at various speeds of sewing. This article will be functional in respect of verification with experimental results for investigators who use theoretical models in sewing needle temperature measurement. Results represent when using thread, needle temperature is still higher than when no thread is used that contradicts the findings of some investigators who consider the thread as a heat sinker.*

**KEYWORDS:** Needle Temperature, Thermal Camera, Thermocouple, Pyrometer & Sewing Thread

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