

MICROWAVE ANNEALING AND STRESS RELIEF OF METALS

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At the Oak Ridge Y-12 National Security Complex, we have developed several novel techniques for the stress relief, annealing, tempering and thermal processing of machined, wrought and cast metal parts. These include both novel and traditional approaches using microwave-heating systems instead of more conventional heat sources. This paper will discuss at least two different approaches and equipment setups. Data will be presented which documents that these approaches are sound, and that the results and mechanical properties of the metals are comparable to traditional thermal processes.