Heating fastener blanks for thread rolling

Objective Heating steel fastener blanks to 1500°F (816°C) for thread rolling

Material H11 tool steel, A286 stainless steel, Titanium and 8740 alloy steel fastener blanks of various sizes. Typical size is 1” (25.4mm) diameter, 1.5” (38.1mm) long

Temperature 1500°F (816°C)

Frequency 214 to 216 kHz depending on part

Equipment • Ambrell 5 kW induction heating system, equipped with a remote workhead containing two 1.25μF capacitors for a total of 0.625 μF
  • An induction heating coil designed and developed specifically for this application.

Process A four turn helical coil is used to heat the shaft of the bolts to 1500°F (816°C). The 1” (25.4mm) diameter H11 fastener blank requires 30 seconds to reach temperature. The heating cycles varies from 20 to 45 seconds depending on the size of the part.

Results/Benefits Induction heating provides:
  • Faster cycle times and extended tool life with preheat step
  • Hands-free heating that involves no operator skill for manufacturing
  • Using same coil for various size blanks
  • Stronger and more fatigue-resistant threads
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