Ambrell
INDUCTION HEATING SOLUTIONS
an inTEST Company

Application Note

Shrink Fitting a Motor Shaft and Roller

Objective: To heat a roller assembly to shrink fit it with a motor shaft.

Equipment: Ambrell EASYHEAT™ 2.4 kW, 150-400 kHz solid state induction power supply with a workhead and coil specifically designed for this application.

Frequency: 222 kHz

Material: Aluminum

Temperature: 450 ºF (232 ºC)

Testing: A three-turn helical coil was used to heat the roller assembly through to the ID bore without overheating the outside of the tube. The roller was heated for five minutes. Then the motor shaft was lowered into the roller and slipped into the hole without resistance. The roller was then turned back over with a slight tap and the shaft came back out before the part had sufficient time to cool which resulted in the shrink fit.

Benefits: Induction heating offers this application:

- Rapid part heating that saves power and time
- A clean source of heat
- The complete tube does not have to reach the desired temperature as it does when heating with an oven
- Selectively heating a zone allows for a much quicker transfer of heat

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Roller placed into the induction heating coil.