

Shrink fit a motor shaft and roller

Objective Heat a roller assembly to shrink fit it with a motor shaft.

Material Aluminum

Temperature 450 °F (232 °C)

Frequency 222 kHz

Equipment Ameritherm 2.4 kW, induction heating system, equipped with a remote heat station containing two 0.33 μ F capacitors for a total of 0.66 μ F and an induction heating coil designed and developed specifically for this application.

Process A three-turn helical coil is used to heat the roller assembly through to the ID bore without overheating the outside of the tube. The roller is heated for 5 minutes. Then the motor shaft is lowered into the roller and slipped into the hole without resistance. The roller can then be turned back over with a slight tap and the shaft comes back out before the part has sufficient time to cool resulting in the shrink fit.

Results/Benefits Processing with induction heat saves power and time. The complete tube does not have to reach the desired temperature as it does when heating with an oven. Being able to selectively heat a zone allows for a much quicker transfer of heat.

Download and print our Applications Lab Process Sheet (<http://www.ameritherm.com/PDFs/4110038b.pdf>). Answer the questions on the form to help us understand your process and performance requirements. Call with the info on the form to see if you should send us your parts for a free evaluation. If you have questions, call or e-mail us (info@ameritherm.com). We'll be in touch!



Roller placed into induction heating coil

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Motor with shaft up

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Motor shaft in roller

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