

Induction Shrink Fitting Cam Shaft Gears

United Induction Heating Machine Limited

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Shrink Fitting Cam Shaft Gears Objective To heat aluminum and steel camshaft gears to over 500°F within 4 minutes for a shrink fitting application.

Material 6" diameter, 2" thick steel and aluminum camshaft gears, "K" type thermocouple, digital thermometer

Temperature 518° for the steel gear; 320°F for the aluminum gear

Frequency 151 kHz for the steel gear; 158 kHz for the aluminum gear

Equipment Power of 10 kW power supplies, remote heat station with one 0.66 μF capacitor and a specially designed induction coil.

Process Best results were achieved with the 10kW power supply. Heating times of 3 minutes for the steel gear and 4 minutes for the aluminum gear resulted in uniform expansion of the gears for effective shrink fitting. The shafts dropped easily into the gears after the heat cycle. The shafts were gripped tightly after 30 seconds, resulting in total heat cycle times of 3.5 minutes for steel and 4.5 minutes for aluminum.

Results A synopsis of the results of the application; include benefits enjoyed by the customer, process, times, etc



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