



Shrink fitting aluminum pulley to insert inner bearing

Objective Heat aluminum pulley for insertion of an inner bearing for the automotive industry

Material Aluminum pulley 2.3" (60mm) OD x 1.6" (40mm) ID x 1" (27mm) high and inner bearing 0.7" (17.8mm) high x 1.6" (40mm) dia

Temperature 464 °F (240 °C)

Frequency 283 kHz

Equipment

- Ambrell 2 kW induction heating system, equipped with a remote workhead containing two 0.33μF capacitors for a total of 0.66μF
- An induction heating coil designed and developed specifically for this application.

Process A three turn helical coil is used to heat the aluminum pulley. The pulley is heated to 464 °F (240 °C) in 20 seconds to expand the inner diameter and then the inner bearing is inserted to form the completed part.

Results/Benefits Induction heating provides:

- Defined and controlled heat pattern
- Process easily integrated into automated system
- Even distribution of heating



**Aluminum
Pulley**



Inner Bearing



Pulley in coil prior to heating