



Heating Aluminum Auto Trim for Adhesive Curing

Objective To heat various sizes of aluminum auto trim to 500 °F (260 °C) at a rate of 30 ft. (9.1m) per minute for curing an adhesive.

Material Magnetic steel and aluminum auto trim parts, coated with adhesive; 1.85" (47mm) ID ceramic tube

Temperature 500 °F (260 °C)

Frequency 157 kHz

Equipment

- Ambrell 20 kW induction heating system equipped with a remote workhead with six 0.75μF capacitors for a total capacitance of 0.5 μF
- An induction heating coil designed and developed specifically for this application.

Process To simulate continuous production, a slide table/stepping motor arrangement and ceramic tube are used to move the parts through the eight turn helical coil at 30 ft. (9.1m) per minute. In continuous production, an infrared sensor can be used to measure the temperature of the aluminum after exiting the coil and adjust output of the power supply to maintain the required 500 °F (260 °C).

Results/Benefits Induction heating provides:

- Consistent, controllable heat
- Hands free operation
- Reliable, repeatable results

