



## Shrink fitting a carbide ring into a valve seat

**Objective** Shrink fitting a carbide ring into a steel valve seat

**Material** Steel valve seat 6" (152.4mm) OD with 3" (76.2mm) ID hole & .75" (19mm) thick, carbide ring

**Temperature** 500 °F ( 260 °C)

**Frequency** 185 kHz

**Equipment**

- Ambrell 10 kW induction heating system, equipped with a remote workhead containing two 0.50  $\mu$ F capacitors for a total of 0.25  $\mu$ F
- An induction heating coil designed and developed specifically for this application.

**Process** A three turn helical coil is used to heat the steel valve seat. The steel valve seat is placed in the coil and heated for 50 seconds to enlarge the center hole & drop the carbide ring in for the shrink fitting process.

**Results/Benefits** Induction heating provides:

- Accurate and repeatable results
- Ease of integration into existing production lines
- Energy efficient, only heats the part, not the atmosphere around it
- Hands-free heating that involves no operator skill for manufacturing
- Even distribution of heating



Steel valve seat with carbide ring inserted