Preheating a magnetic steel die

Objective
To preheat a magnetic steel die; the end product is tubing and fittings

Material
- Steel die

Temperature
250 °F (121 °C)

Frequency
115 kHz

Equipment
- Ambrell EKOHEAT 15 kW, 50-150 kHz induction heating power supply with a remote workhead
- A single position, three turn helical coil designed and developed for this application

Process
The die was placed under the induction coil, approximately 3.5” (89 mm) away from it to simulate production conditions. With an EKOHEAT 15 kW power supply under simulated production conditions, the die can heat to temperature within ten minutes.

A key benefit over the client’s resistance heater is there will no longer be a need to open the chamber to remove the heater.

Results/Benefits
- Speed: The client’s resistance heater took more than ten minutes to heat the die to temperature
- Footprint: Induction requires a minimal footprint, saving valuable floor space
- Setup: An induction coil (ceramic) can remain in the client’s chamber and expedite the process.
The induction coil with the die positioned under it.

The heat pattern. A very uniform pattern can be achieved with additional heat applied to the outside of the die.