

SINTERITE

GASBARRE FURNACE GROUP

HYPER COOLER **SINTER-HARDENING SYSTEM**



ENSURES COOLING RATE UNIFORMITY

IMPROVES ATMOSPHERE STABILITY

SUPERIOR LEVELS OF PROCESS CAPABILITY

IMPINGING JET ARRAY TECHNOLOGY

Prior to the introduction of Sinterite's HyperCooler, all commercially available accelerated cooling units exhibited the same operational deficiencies:

- Inherent atmosphere instability requiring an excessive waiting period for steady state conditions to be reached for production when adjustments are made.
- Cross belt and furnace direction cooling rate non-uniformity, resulting in high variability in cooling rate dependent part parameters.
- Process settings difficult to repeat from previous production runs.

Employing proprietary Impinging Jet Array Technology, Sinterite's HyperCooler solves these problems by engineering the accelerated cooling atmosphere flow to exactly balance supply and exhaust flows. This allows atmosphere flow to be vertical to the belt, inducing no lateral atmosphere flow to destabilize the process gases.

This results in the horizontal atmosphere flow being decoupled from the blower speed so that changes in cooling rate will have no influence.

Additionally, due to the jet effect, cooling rates are higher than previously possible and demonstrated to be proportional to the blower speed. Thus, making it straight forward to return to a previously set up process and reducing the setup time. Due to the jet array design, uniformity of cooling across the belt and in the belt direction is assured. Thus, reducing the variability in part parameters and enabling tighter tolerance production.

Available on new furnaces, Sinterite's HyperCooler has also been designed so that it can be easily installed as an engineered retrofit on an existing belt furnace with no additional floor space required (minimum height restrictions apply).

The HyperCooler Sinter-Hardening System improves variable cooling adjustment and atmosphere stability:

- Cooling rate linearly varies with blower speed.
- Cooling rate setup is repeatable for quick process changeover.
- Superior cooling rate uniformity across the belt.
- Instantaneous cooling rate up to 8°F (4.4°C) per second*
- Length of HyperCooler is less than 5 feet (1.5 m).

*Part dimensions: 1" (2.54 cm) thick, 2" (5.08 cm) diameter and weight of 0.783 lbs (355 g) with hole drilled exactly in center of part for precise thermocouple placement.



The HyperCooler ensures THE MOST CONSISTENT COOLING METHOD available on the market.