CoJet® Gas Injection Technology for EAFs

CoJet® System Benefits for EAFs

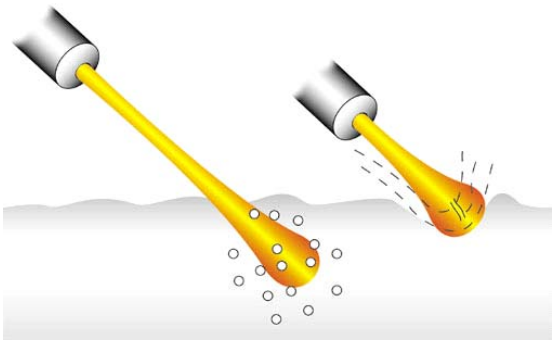
- Improves productivity and lowers costs of operating Electric Arc Furnaces (EAFs)
- Provides lancing decarburization and burner operation in an integrated, wall-mounted system
- Eliminates the need for lance manipulators
- Decreases costs through lower power consumption, extended furnace life, and decreased maintenance
- Decreases refractory erosion, arc flare damage, and maintenance gunning
- Decreases splashing and improves slag-metal stirring
- Speeds decarburization and enhances slag foaming

State-of-the-Art Technology

Praxair's *CoJet*® Gas Injection System technology is a state-of-the-art oxygen injection system that is designed to lower costs and improve productivity of EAF operations. The technology provides a method for lancing/ decarburization, post-combustion, and burner operation in a single, integrated system using oxygen.

The Process

A process and injector nozzle deliver a 3- to 5-foot (0.9-1.5 meters) laser-like coherent jet of oxygen at supersonic speeds into the molten bath. The fixed, wall-mounted injector nozzle retains the original diameter and velocity of the oxygen jet, delivering precise amounts of oxygen to the steel bath with less cavity formation and splash than traditional manipulators.



Oxygen Lancing
Coherent Jet (left) vs Supersonic Jet (right)

Once the oxygen jet impinges on the steel bath, the concentrated momentum of the oxygen beam dissipates in the steel as fine bubbles, providing deep penetration and effective slag-metal mixing. The nozzle also operates as a conventional sidewall burner to melt scrap and as a supplemental oxygen source for post-combustion, thereby improving furnace productivity and decreasing power consumption.

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