Praxair’s CoJet® Gas Injection System Delivers

Only Praxair’s CoJet System Offers Coherent Solutions

The concept behind Praxair’s CoJet gas injection system is simple: An annular oxy-fuel flame shroud surrounding the main supersonic jet creates a coherent oxygen jet that penetrates deeper into an electric arc furnace’s (EAF) molten metal bath than conventional supersonic jets. But don’t be sidetracked by the promises of imitation systems.

Only Praxair’s patented, time-tested CoJet technology provides all these benefits:

• Higher levels of chemical energy
• Higher yields
• Easier operation
• Improved operator safety
• Lower operating and maintenance costs
• Elimination of lance manipulator and related costs
• Lower FeO levels
• Consistency and automation

The CoJet System Difference

The difference between Praxair’s CoJet technology and similar systems is the distance between the injector and the molten bath.

Only Praxair’s patented CoJet system uses a fixed injector high on the furnace wall to increase the distance and still penetrate deep into the bath, while creating less splash and requiring no manipulator. In fact, companies that have relied on other technologies have replaced them with Praxair’s CoJet system.

Ask About The Praxair CoJet System Difference

For EAF mills, Praxair’s breakthrough CoJet gas injection method can save a typical operation an average of $2 per ton, depending on the specific application. Discover the difference Praxair’s CoJet technology can make in your operation. Contact Praxair today.

www.praxair.com
Typical EAF Cost-Savings With Praxair's CoJet® System

<table>
<thead>
<tr>
<th>Savings Items</th>
<th>$/ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lance, Pipe and Maintenance Savings</td>
<td>$0.25</td>
</tr>
<tr>
<td>Power Savings [30 kwH/t x $0.03/kwH]</td>
<td>$0.90</td>
</tr>
<tr>
<td>Higher Yield [0.5% x $185/t]</td>
<td>$0.93</td>
</tr>
<tr>
<td>Injected Carbon Savings [5lb/t x $0.07/lb]</td>
<td>$0.35</td>
</tr>
<tr>
<td>Improved Productivity (10%) [10% x $30/t]</td>
<td>$3.00</td>
</tr>
<tr>
<td>Electrode Savings [0.2lb/t x $1.00/lb]</td>
<td>$0.20</td>
</tr>
<tr>
<td>Improved Decarburization Efficiency, Gunning, Delta Life</td>
<td>mill-specific</td>
</tr>
<tr>
<td>Improved Safety</td>
<td>mill-specific</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost Items</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen [+300 scf/t x $0.15/100 scf] =</td>
<td>($0.45)</td>
</tr>
<tr>
<td>Natural Gas [+150 scf/t x $0.25/100 scf] =</td>
<td>($0.38)</td>
</tr>
<tr>
<td>Net Savings</td>
<td>$4.80 per ton</td>
</tr>
</tbody>
</table>

Basis: 100 tph, 750,000 tpy melt shop

Praxair's CoJet System For EAFs

Features
- Proven patented process
- Coherent jets longer than 70 nozzle diameters
- Burner, lancing, material injection and post combustion from the furnace wall
- Injector installed high in furnace wall, providing deeper bath penetration than conventional lance; lets you remove lance manipulator and close furnace door without losing bath penetration features
- Speeds decarburization up to 40 percent
- Less splashing and better slag-metal stirring
- Enhances slag foaming, reducing reliance on carbon for foaming
- Decreases refractory erosion, arc flair damage and maintenance gunning
- Dedicated global team of highly experienced melt shop experts
- Precision control system

Benefits
- Technical expertise backed by thousands of development hours by Praxair
- Ability to remove lance manipulator and close furnace door without losing bath penetration benefits
- Easy-to-use system that eliminates headache of coordinating multiple suppliers
- Improves operator safety and eliminates lance manipulator costs
- Increases yield
- Lowers FeO levels
- Reduces operating costs
- Reduces maintenance costs
- Experts who understand your business, provide real solutions and put your mind at ease
- Consistency from heat to heat

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