

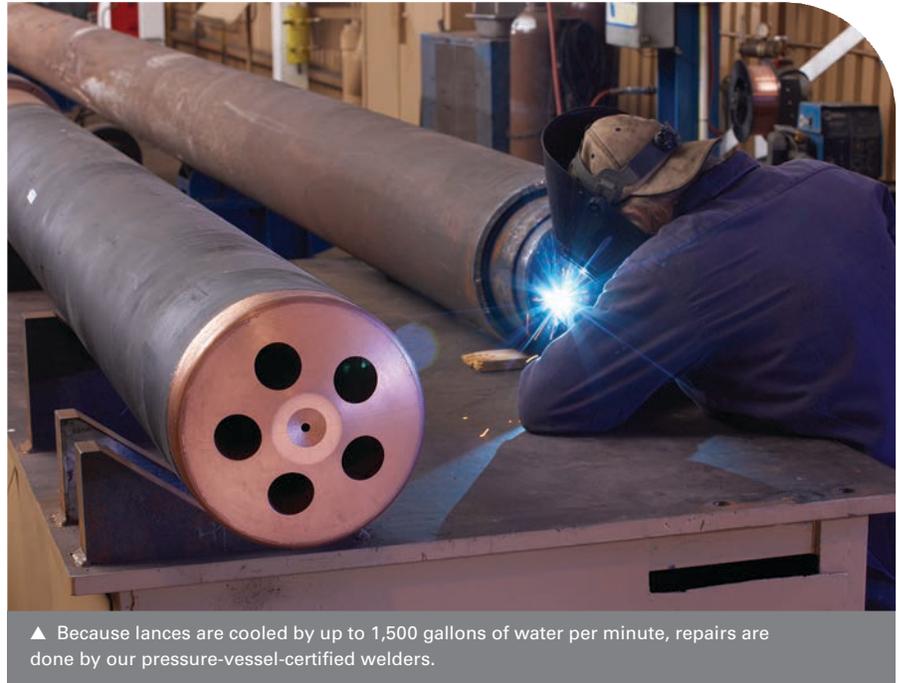
LANCE REPAIR AND UPGRADE Services for BOFs and EAFs

SMS group is one of the largest off-line maintenance suppliers for US metals producers. We have the experience, equipment, know-how and leading-edge technologies to restore or upgrade all your mill equipment to like-new or better-than-new condition.

Water-cooled oxygen lances in basic oxygen furnaces (BOF) and electric arc furnaces (EAF) deliver pure oxygen at speeds exceeding Mach 2 and operate at temperatures over 3000°F. Operating a lance with as little as 1/4-inch tip wear or only one to two inches of tip misalignment can result in poor refining performance and accelerated furnace refractory wear. Knowledgeable and experienced lance repairs, rebuilds and upgrades can minimize or eliminate these pitfalls, improving operational safety and extending the lance's service life.

Powerful partnership

In order to provide the highest quality lance repair, upgrade and technology services, SMS group has partnered with the Tallman Bronze Company. Tallman is the oldest lance component manufacturer in North America and one of the largest in the world providing lance tips, post-combustion distributors and other lance components.



▲ Because lances are cooled by up to 1,500 gallons of water per minute, repairs are done by our pressure-vessel-certified welders.

Together we can expertly restore water-cooled oxygen, post-combustion and deskulling lances for BOFs and EAFs from all manufacturers to original OEM specifications. We can also provide upgrades and improvements to reduce maintenance costs and improve product quality.

Expert repair

Using components from Tallman Bronze, SMS group expertly repairs lances in our centrally located, high-capacity facility in Gary, Indiana. Lances are carefully disassembled and thoroughly inspected. Tips are replaced; any damage to the pipe,



▲ Lances are restored to their original specifications.

O-ring or any other component is repaired or replaced; and debris inside the lance is removed. The lance is then carefully reassembled and receives a static water test for verification. Lances repaired by SMS group meet or exceed their original specifications and operate efficiently. We also provide fast turnaround times and our own transportation for convenient door-to-door lance repair service.

Exclusive Internal Lance Support System

Lances often get bent in the distributor area effecting alignment. Bent and misaligned lances can do costly damage to vessel refractory materials. Working together, SMS group and Tallman Bronze have developed a patented Internal Lance Support System (ILSS) that helps lances resist bending. This system strengthens lances without impeding the flow of critical cooling water or impacting lance performance. Lances equipped with our exclusive ILSS are less likely to get bent and damage vessel refractory and do not need cumbersome protective sleeves for handling.

Tips and technical support from Tallman Bronze

Using its in-depth process knowledge and experience, Tallman Bronze provides superior tips and can develop custom refining solutions optimized for a customer's process. With state-of-the-art



▲ We have the equipment and state-of-the-art facilities to expertly repair lances to their original specifications on schedule .

supersonic jet design, computational fluid dynamic (CFD) modeling, 3-D CAD and multi-axis CNC machining, lance tips and post-combustion distributors from Tallman Bronze provide outstanding refining performance, longevity and price-performance ratio. Plus the Tallman Bronze product development team provides the technical support needed to optimize lance performance.

SMS group has the quality components, equipment and skills to expertly repair, maintain and improve lances so they achieve peak performance, produce high quality steel and have extended service lives. To learn more about how SMS group's lance repair services can help you optimize your equipment's operation, reduce downtime and



▲ Several lances can be repaired simultaneously in our large facility.

improve your products, call us at +1-412-231-1200.

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