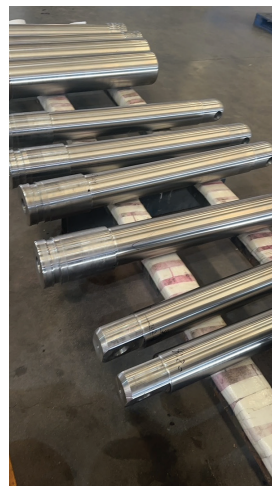
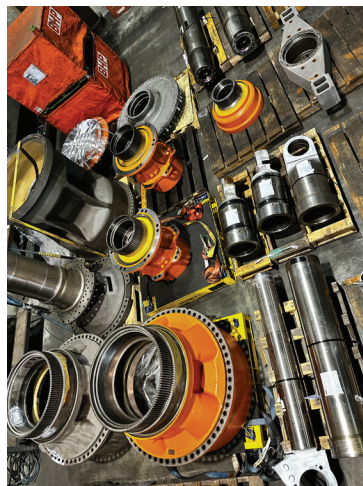


PRECISION, PROTECTION & PERFORMANCE

THE ARC SPRAY ENGINEERING EDGE



In mining and mineral processing applications, machinery and their components are subject to the harshest conditions day in, and day out. And the longevity and reliability of these components are critical to equipment performance, worker safety, and site productivity.

Over the past 15 years, Perth-based Arc Spray Engineering (ASE) has positioned itself as a leader in the restoration of industrial equipment. Adopting an innovative and sustainable suite of repair services and specialist techniques, the company continues to give critical components a second life, extending machine life, reducing operational costs, and minimising environmental impact.

ASE Director Shane Kelly said the company offers a range of specialised surface modification processes that are designed to combat specific wear and corrosion challenges commonly faced by mining operations.

"Arc spraying is an efficient technique

that utilises an electric arc to melt consumable feedstock wires, projecting molten material onto substrates to form a mechanically bonded coating," he said.

"It allows us to provide wear and corrosion-resistant coatings with minimal substrate heating, ensuring the integrity of the original component."

ASE also offer High-Velocity Oxygen Fuel (HVOF) Spraying. "By propelling powder particles at supersonic speeds, HVOF produces coatings with high density and bond strength," explained Kelly.

"It enables us to create coatings that significantly reduce porosity and oxidation, enhancing the durability of components in extreme conditions."

Other services offered by ASE are plasma spraying and laser cladding.

Plasma spraying is a versatile method that uses a high-temperature plasma jet to apply a wide range of materials, including metals, ceramics, and alloys. It is ideal for

components operating in high-wear or corrosive environments, such as turbine parts and pump components.

Laser cladding utilises a focused laser beam to fuse coating materials onto substrates, achieving metallurgical bonding with minimal dilution and heat-affected zones. "Laser cladding allows us to produce high-purity, wear-resistant surfaces while preserving the integrity of the base material," highlighted Kelly.

Beyond surface treatments, ASE provides precision machining services, including CNC vertical and horizontal boring, milling, and cylindrical grinding. These enable the restoration of large-scale industrial components to their original specifications.

Kelly emphasised, "Our advanced machining services ensure that restored components perform optimally, meeting or exceeding the original specifications. The integration of robotic welding further enhances our ability to deliver consistent, high-quality welds, which are essential

for the structural integrity of repaired components."

As part of its commitment to continuous improvement and innovation, ASE operates an in-house R&D laboratory that is equipped with instruments for microhardness testing, accelerated aging (salt spray), and wear and corrosion assessments.

"This facility allows the team to conduct thorough failure analyses, optimise material compositions, and tailor processes to meet the unique demands of each application," said Kelly.

By restoring and enhancing existing components, ASE reduces the need for new manufacturing, which reduces carbon emissions associated with steel production. "Our practices not only offer economic benefits by cutting replacement costs and mitigating shipping delays, but also contribute to environmental conservation by diverting machinery from landfills." **AMR**



THE GREEN AND SUSTAINABLE CHOICE



Since 2011, Arc Spray Engineering has provided turnkey solutions for restoring mining and mineral processing components. We leverage a suite of in-house repair techniques and specialist methods to restore components and equipment to their original condition.

- » Arc Spraying » HVOF » Plasma Spraying
- » Laser Cladding » Robotic Welding » Machining
- » Research & Development Laboratory



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