

# Holland<sup>®</sup> HAMR<sup>™</sup>

## Holland Automated Manganese Refurbishment



### **Railroads report that traditional repairs to frogs and diamond inserts often only last weeks to a few months before requiring additional maintenance.**

These specialty track components are manufactured out of cast austenitic high manganese steel known for its excellent work hardening characteristics and high toughness. However, this material creates a unique challenge to repair or refurbish in the field as it cannot exceed 500 degrees Fahrenheit.

### **Holland's Automated Manganese Refurbishment (HAMR) service includes pre-weld material removal using plasma cutting, rail grinding, and robotically controlled welding procedures to build back the damaged area.**

This process provides improved welding results through lower heat input into the parent material, maintaining temperatures below 500 degrees. This refurbishment is higher quality, longer lasting and can be completed two to three times faster than the traditional repair welding process. This helps reduce costs and track maintenance time by eliminating the need for repetitive repairs.

## HAMR<sup>™</sup> BENEFITS

### **SAFETY**

- Operator not required to work over fumes for prolonged periods of time
- Robot can continue welding while the operator moves away for a passing train on adjacent track
- Back strain from long hours working over a frog eliminated

### **PRODUCTIVITY**

- Material laid down 2-3x faster than the manual process
- Ability to completely refurbish, in-track or trackside, versus patch repairs
- Money and time saved by refurbishing components that may otherwise be scrapped

### **QUALITY**

- Improved welding process for more precise beads and consistent layers
- Lower porosity than traditional methods
- Low heat input monitored to keep base material below 500\*
- No flux required, so no peening or slag removal needed
- Full refurbishment proven to last significantly longer than traditional repair