



Restore Rail Reduce Disruption Extend Asset Life

For over 90 years, Holland has been a leader in the global rail industry.

Our unique perspective as both an OEM and an operator has fueled the success of the world's largest fleet of mobile flash-butt welding systems. That same expertise led to the creation of Intelliweld[®] - a system that blends automation, real-time control, and digital verification to deliver a consistent, high-quality weld every time.

Today, we're expanding the Intelliweld[®] philosophy beyond our original control system to solve challenges that traditional welding approaches alone cannot address, particularly in constrained and high-wear locations like modern tramway environments. From profile restoration to grooved rail welding, these solutions help operators increase safety, extend asset life, and strengthen the resilience of urban rail networks.

Gauge Corner Restoration (GCR)

Holland's Intelliweld® Gauge Corner Restoration (GCR) system offers a proven in-situ alternative to the full replacement of embedded tram rail.

The GCR is an automated submerged arc welding system with patented lowpreheat technology. Its optimized welding parameters and temperature control units (TCU) precisely manage heat transfer and cooling for optimal weld integrity. Combined with automated seam tracking, flux recovery, and data logging, the GCR delivers consistent, verifiable results.

The GCR delivers high-productivity restoration, completing ~7 m of gauge corner repair in under four hours. Restoration is performed entirely in place, requiring less equipment, fewer consumables, and smaller work zones than replacement.

GCR also provides a safer and more sustainable maintenance approach. The process eliminates exposed sparks, reduces operator fatigue, and minimizes interaction with live traffic. Restoration also reduces materials, waste, service disruption and costs while delivering a more sustainable approach to urban rail maintenance.



GCR vs. Other Approaches

Manual Repair	Full Replacement	Intelliweld® GCR
✓ Fast, flexible ✗ Variable, short-lived, operator-dependent	✓ Restores asset fully ✗ High cost, disruption, and risk	✓ Controlled, repeatable ✓ Extends asset life and defers replacement ✓ Reduces disruption and environmental impact

KEY FEATURES

Patented Low Preheat with TCUs
Automated weld seam tracking
Automated flux recovery
Controlled weld parameters
Automated data logging and quality control
Easily transported

Discrete Defect Remediation (DDR)

Automated Defect Remediation for Precise Outcomes

Surface-initiated defects in high-traffic light rail corridors can escalate quickly. Holland's fully automated DDR solution removes discrete defects with controlled precision, eliminating variability and reducing reliance on manual processes.

The DDR system was engineered specifically to overcome the limitations of current repair methods. It eliminates the introduction of new welds and avoids re-stressing of track, simplifies skill requirements associated with defect remediation, and improves the quality of the repair weld made.



The World's First Fully Automated Defect Repair Process

KEY FEATURES

Milling of prescribed cavity for defect excavation

Low temperature preheat (no gas preheating required)

Precise control of wire shape and stick-out length

Unconventional square weave pattern

CNC milling for “near-perfect” alignment across repair

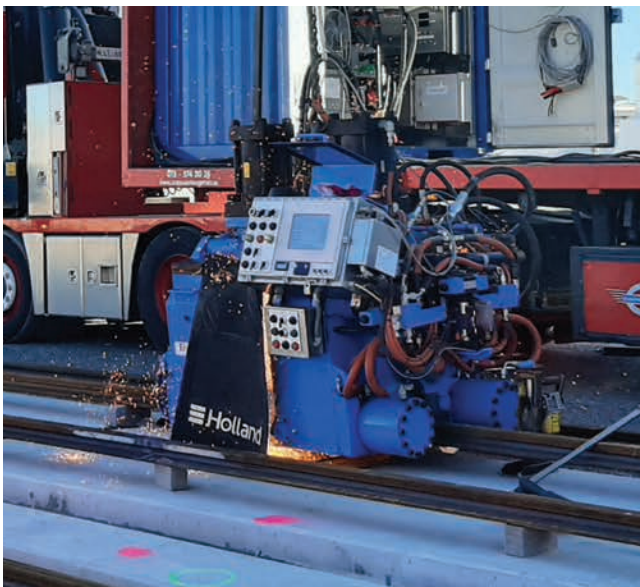
Flash-Butt Welding Solutions for Grooved Rail

Higher Quality Welds for Safer Passenger Operations

Holland's G-Head welders are especially adapted to accommodate the wide shape of grooved rails like those used in tramways and craneways.

The G-Head design ensures precise positioning of welder head electrodes and accurate alignment to produce higher quality welds versus other methods. G-head welders have been used in North America and Europe to provide consistency and integrity to light rail networks and craneways for over 40 years.

Available in 80-ton and 130-ton configurations, G-Head welders support both long welded rail production and in-situ welding for crane and grooved rails.



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