



HRSA

Holland Rail Services Australia



**SPECIALTY RAIL
WELDING SERVICES**



FLASH-BUTT WELDING

In-Track Maintenance and New Construction Welding

With the largest mobile flash-butt rail welding fleet in the world, we pride ourselves as pioneers in developing high-quality and cost-effective flash-butt welding technology solutions.

Portable Production Line Welding

The flexibility of setup and the portability of the equipment allows for intra-site work locations. The easily controlled fabrication of specific lengths required for the job make roller line welding a first option for rail fabrication for many projects.

In-Track Destressing

Our 160-ton rail puller consists of a separate tensioning system that allows for complete welding application flexibility from 'free' welds to closure and destressing welds. Upon completing weld cycle, puller remains clamped to rail negating stresses in weld and allowing the welderhead to be moved out of way to immediately inspect the weld visually and its alignment.



WELDING LIGHT AND HEAVY RAIL PROFILES

Holland Rail Services Australia Pty Ltd (HRSA)

HRSA are part of Holland, L.P., a subsidiary of the Curran Group, who are a family-owned organisation operating in North America for over 100 years. As part of the Curran Group of companies, HRSA shares a common set of core values that drive every decision we make - family, respect, partnership, integrity and improvement. It's these core values that ensure operational excellence through safety, quality, and leadership.

Recognised as a global leader for Flashbutt welding solutions, we are an Original Equipment Manufacturer with over 50 years' experience in the design, manufacture, operation, maintenance, and technical innovation of Flashbutt welders. Having sold welding equipment in 36 countries, we also operate our own fleet of 200+ Flashbutt welders across our global operations producing 250,000 welds per year.

Our Global Footprint

● 200+ mobile flash-butt units across Australia, US, Canada & Mexico

○ 2 Fixed Plant locations

Other Facilities –

● HQ, Manufacturing, & Engineering based in Crete and University Park, IL

● Preventative Maintenance Facilities in Perth WA, Port Hedland WA, Brendale QLD and Truganina VIC

● Track Testing, Thermite and Track Maintenance Crews

○ **Holland Australia HQ**

Focus beyond North America with sales of Welding equipment in 36 countries



WELDING LIGHT RAIL PROFILES

Light rail systems have been a popular mode of transport since the late 1800's. With population density in major cities increasing and the need for efficient modes of transport that can be incorporated into existing infrastructure, light rail is an effective means of transport. Light rail utilises a number of different rail profiles such as 51R1 grooved rails. These rails traditionally have been joined through Aluminothermic welding processes which has led to weld quality defects and poor weld performance.

With over 300km of light rail and the largest light rail network in the world, Australia transports more than 255 million passengers annually across these networks. Reliability and performance of the rail is imperative to these operations. The added complexity that comes with light rail networks also means that standards must be rigorous like those seen on heavy rail networks.

Having 50 years' experience welding 'T' rail profiles for heavy rail networks, Holland, L.P. were tasked with providing a solution to the industry that allowed effective and efficient Flashbutt welding of light rail profiles. Using our expertise and understanding what was required for a practical solution, Holland designed the 'G-Head' welder.

The G-Head welder has been utilised on a number of different rail profiles including Voestalpine 51R1 rail produced for the Oklahoma City Streetcar Project. On this project, Holland completed the setup, delivery and decommissioning of a Flashbutt welding production line to produce Long Welded Rails (LWR's). 100m LWR's were created with a total of 846 welds for the project. This project along with many others was a vital piece of infrastructure which has helped ease urban congestion and ensure efficient modes of transport for day to day movements of people within our cities.



Figure 1: Oklahoma Streetcar Project welding 51R1 rail from Voestalpine

Welding Heavy Rail Profiles

Holland's equipment has also been designed to weld heavier rail profiles such as crane rails. Much like Light Rail Networks, infrastructure that utilise profiles such as crane rail can often be hard to access and require utmost reliability along with longevity. With experience welding heavier profile rails such as A150, a Flashbutt weld can be made within 270 seconds. Our expertise has seen Holland deliver heavy rail Flashbutt welding for Kennedy Space station, Alcoa Aluminum and various port authorities around the world.



Figure 2: Holland G-Head welding crane rail

The Equipment

The G-Head welder allows for specialty rail profiles to be welded. Designed to allow the welder head to clamp around wider profile rails, the G-Head allows for precise positioning of welder head electrodes and correct alignment positioning. With both 80 and 130 ton capacity, the G-head can be used to produce LWR's along with in-situ welding of rail.



Figure 3: Holland 130-ton G-Head

Clean shearing of the flash-butt weld is integral to the process and an important step to help increase the productivity in welding grooved rail profiles. Holland manufacture their own shear dies and can customise to suit any profile while ensuring a clean 'cut' of the weld.

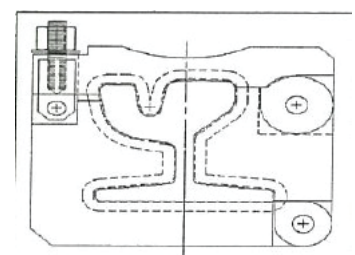


Figure 4: 51R1 Shear Die

The G-Head, like all Holland Flashbutt Welders, utilises Holland's proprietary operating system, Inteliweld. The brains behind our welder, the Inteliweld® is a single system control right at the Welderhead. With hardened electronic equipment, the system has sub millisecond weld process control and the ability to make automated weld parameter adjustments throughout the weld cycle to ensure consistency in weld performance. Automated calibration checks are completed by the system and our team of weld experts can provide real time remote diagnostic support by accessing the system from anywhere in the world.



Figure 5: Inteliweld control system on welderhead

With reporting functions including autogenerated production reports, Holland can provide their clients with immediate information about the weld along with customised dashboards to help track both progress and delays. A 'Birth Certificate' is produced for each weld made with information about the weld so our customers can see the performance and quality of each weld.

Technical Partnerships

Holland has a long and successful history of partnering with vendors, suppliers, and institutions of higher learning within the rail sector. With those partnerships Holland delivers expert information, most notably within Flashbutt welding, and receives technical guidance and roadmaps to future improvements or opportunities within the sector. Holland typically has a front-row seat for specification writing and review as well as being on the cutting edge of new technologies within the steel industry. At these levels of engagement, there are high levels of trust and cooperation. A limited list of these partnerships is below:

- *Transportation Technology Centre, Inc. (TTCI)*
- *AREMA*
- *Nippon Steel Trading*
- *EVRAZ – Rocky Mountain Steel*
- *Steel Dynamics, Inc. (SDI)*
- *Monash University – Institute of Railway Technology*
- *Edison Welding institute (EWI)*
- *Cummins, Volvo, John Deere*

Research Team

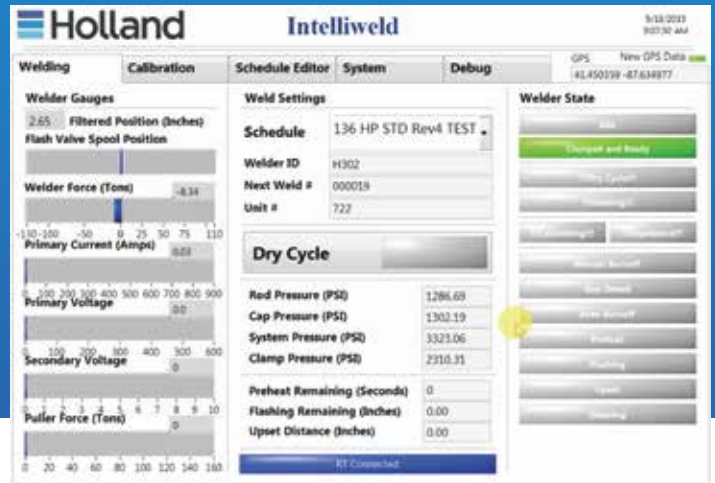
Supported by our in-house technical teams, Holland has a research and development team whose focus is the improvement in safety, reliability, productivity and operational ease of any rail welding or rail welding derivative known. This team works in developing new technologies or improvements to 'old' technologies to support Holland's technical growth within the rail industry and deliver those developments to our customers. We have a full-service metallurgical laboratory that can carry out slow bend tests and macro and micro examinations of welds. Within this lab, we perform continuous testing of our welds produced in research or in production so that we can speed the investigation or innovation of welds and the process of FBW.

Other Services

HRSA currently have 6 Flashbutt welders in Australia, which allows us to fully support our customers with all their Flashbutt needs. Our Flashbutt welding systems are easily incorporated into existing operational practices and can be integrated onto several different platforms. With our operational experience, we can provide innovative solutions to deliver Flashbutt welding services in the most challenging environments for all rail types.

INTELLIWELD™ CONTROL SYSTEM

- Low consumption weld capability
- Real-time weld monitoring, control and diagnostics
- Real-time automated data collection, weld parameter certification, charting and archiving
- Real-time automated full fleet operational dashboard



The Intelliweld® control system provides unparalleled control over the flashing process & rail consumption (low consumption welding). Simple program adjustments allow us to tailor rail consumption to your requirements for localized track structures & target rail neutral temperature. Lower rail consumption reduces the amount of de-clipping and clipping required, improving productivity and reducing labor costs.

TOP TEN FEATURES

1. Single system control
2. Hardened electronic equipment
3. Remote welder interface for software updates and troubleshooting
4. Certified weld schedule lock
5. Sub millisecond weld process control
6. Flashing interrupt monitoring
7. In process automated weld parameter adjustment
8. Automated calibration routine
9. Valve null readings determined during calibration
10. Automated weld quality checks

> 250K WELDS PER YEAR

> 98% UPTIME

> 99% WELD QUALITY CONFORMANCE

- Specialised FBW teams operating Holland engineered, built and supported equipment in partnership with Aries Rail
- Australian workforce fully trained in FBW operations by Holland FBW experts
- Holland best-in-class FBW training, research and testing in support of operations

- Mobile, portable and semi-fixed environments
- In-country fleet of 4 MobileWelders and 2 Portable production line welders
- Onshore warehouse with replacement parts available

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