

# Polysoude TIG<sup>er</sup>

## Now Delivering the Future of Weld Cladding!



*Fig. 1: TIG<sup>er</sup> weld overlay lance*

All the companies involved in Weld Overlay market dream of reliable solutions, able to deposit just the required thickness of Corrosion Resistant Alloy, as fast as possible, and with the least amount of iron dilution.

In 2013, after many years of development, Polysoude introduced on the market a new cladding technology called TIG<sup>er</sup>.

Today it is recognized all around the world. This marketing name was derived from the acronyms of **Tungsten Inert Gas** electrical reinforcement. It is the natural evolution of years of research and development, pushing the limits of the TIG (GTAW) Hot Wire automatic process.

After 7 years of successful use in the market and with continuous improvement from our engineering and application groups, and listening to our customers who are currently using hundreds of our Polysoude rigs in production, we are ready to make a SIGNIFICANT NEW STEP FORWARD by launching an important evolution on the TIG<sup>er</sup> process.

Adapting ourselves to a more and more demanding market, our teams have worked on the following main targets: simplicity, flexibility, reliability, and improving upon the already impressive performance, while maintaining competitive on pricing.

### **Simplicity and flexibility**

Thanks to the ingenuity and know-how of our R&D department, the new TIG<sup>er</sup> solution significantly reduces the amount of peripheral hardware and controls required to operate the system.

A new programmable panel and an optimized layout gives the operator an improved user friendly and safe working environment.

Through simplification of the overall system, required maintenance and service support needs are greatly reduced, making the TIG<sup>er</sup> solution ideal for every application, no matter how big or small. This technology is just the perfect solution for small, medium, or large companies.



*Fig. 2: Production hall with horizontal 12m TWIN-TIGer rigs*

No special grade of tungsten electrodes or exotic shielding gas blends are required (pure Argon will usually suffice), resulting in lower operating costs.

As from its early beginnings, TIG<sup>er</sup> technology can be used on a full range of equipment such as horizontal rig's for internal pipe overlay, continuous 360 degree rotation heads (SPX), Column & Booms for cladding in vertical and horizontal welding positions, and most other hard and flexible automated solutions.

A wide range of standard and customized TIG<sup>er</sup> lances are available allowing for cladding in pipe as small as 100 mm ID. A TIG<sup>er</sup> machine can be fitted with TIG HW lances for smaller bores.

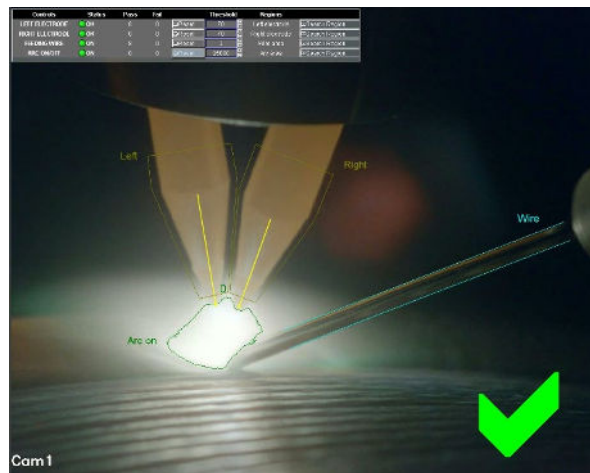
## Performance improvement

One significant improvement is the addition of our unique digital video camera technology referred to as “HD WDR” (High Definition – Wide Dynamic Range).

Use of this video technology makes it possible to view and record the welding arc with a very high degree of precision and high-resolution imaging.

This important advancement in our technology results in an improved ability to more efficiently and effectively develop welding parameters, make fine adjustments, and provide full traceability.

Last but not least, the optional real time analysis of the imaging, monitors the shape of the tungsten and the status of the hot wire guide tip. We have taken great precautions to ensure a quality weld overlay by taking out the need for the weld operator to constantly oversee these types of critical details. With this state-of-the-art technology it is possible for an operator to run multiple heads simultaneously without sacrificing quality.



*Fig.3 : Full control with WDR camera and image processing*

In terms of productivity, the TIG<sup>er</sup> is extremely impressive. Using a 1.2mm diameter single wire, we reach high weld overlay speeds, up to 2000mm/min for some applications. Thanks to cladding tests made by our welding application department, we demonstrated that a single wire can be more efficient than two wires, due to the advanced dual tungsten technology allowing us to feed wire at a higher speed. TIG<sup>er</sup> is preferred by operators over two wire systems due to the ease of managing a single wire with a single arc verses the perfect balancing act required to feed two wires into a single arc (like some of our competitors).

Thanks to the precise oversight offered by TIG<sup>er</sup> over the parameters, we can achieve the minimum thickness required in the specifications (flat surface, limited ripples, no waste). Cost savings are realized due to less filler metal being used as well as the reduction of required machining time.



*Fig. 4: High speed and top quality*

The resulting smooth overlay surface and weld deposit chemistry meet with the most stringent welding specifications and codes in the industry, resulting in the TIG<sup>er</sup> being used today in Oil & Gas, Subsea/Offshore, Nuclear, and Military applications. It has received approval by some of the most esteemed and coveted major engineering firms, contractors, fabricators and third parties around the world.

#### **Return On Investment (ROI)**

Using TIG<sup>er</sup> technology and equipment results in being the most competitive on the cladding market.

The slightly higher implementation cost required for TIG<sup>er</sup> technology is marginal considering improvements in productivity are generally 300% or greater resulting in a rapid payback.

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