# TITANIUM, a unique AC/DC TIG welding experience

# 3 industrial power sources

The TITANIUM units are high performance single and three-phase inverter machines for AC/DC TIG and MMA welding. Intelligent and connected, they offer extremely precise arc control and industrial welding performance up to 400A.

| TITANIUM | Power supply | Current range | Duty Cycle at 60% (40°C) | Weight |
|---|---|---|---|---|
| 230 AC/DC | 110 / 230 V | 3 - 230 A | 190 A at 60% | 22 kg |
| 321 AC/DC | 400 V | 3 - 320 A | 320 A à 60% | 35 kg |
| 400 AC/DC | 400 V | 3 - 400 A | 400 A at 60% | 40 kg |

## Innovative digital architecture

TITANIUM is the result of many years of development, and is the ultimate solution for all AC & DC TIG welding applications. They are equipped with the most advanced electronics and fully digital management. Two essential elements to ensure unparalleled welding quality and productivity.

They can operate in the most demanding environments with excellent efficiency. The very high duty cycle, the patented Alu Wizard welding mode, the adjustable welding current starting from 3 A, the waveform parameterisation, and the ignition optimisation are only a few of the numerous technical features. Compatible for use with welding robots, the TITANIUM is the ideal choice for all welders looking for the perfect AC/DC TIG power source..

## Highlights

High duty cycle

TIG Wizard Solution

Automatable

Welding precision

Free updates

## Applications

- Sheet metalwork
- Shipbuilding
- Railway engineering
- Metallic construction

## 7 TIG welding modes for maximum versatility

**#1** **DC Standard:** smooth current welding on most ferrous materials

**#2** **DC Pulse:** allows the assembly of parts while limiting the heat transfer (pulsations up to 2.5 kHz)

**#3** **DC FastPulse:** allows the arc constriction properties of Pulse mode to be sustained at frequencies that are comfortable or even inaudible to the welder (pulses up to 20 kHz)

**#4** **AC Standard:** welding of aluminium and its alloys (Al, AlSi, AlMg, AlMn, etc)

**#5** **AC Pulse:** precise control of penetration according to AC frequency setting (pulses up to 500 Hz)

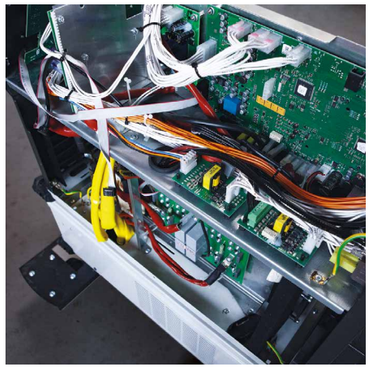
**#6** **AC Mix:** alternating AC and DC current to increase welding speed

**#7** **Wizard Mode (GYS Innovation):** tacking and TIG welding of aluminium, steel, stainless steel and copper parts with or without filler metal

## E-TIG, controlled power output

Regardless of the arc length between the torch and the welded part, the E-TIG regulates the energy output. The penetration and bead width stay constant. In the case of abrupt changes in arc length, the E-TIG system automatically adjusts the power to ensure an appropriate energy supply.

- ☑ Faster welding thanks to a concentrated arc
- ☑ Reduction of thermal discolouration on the workpiece
- ☑ Deeper penetration
- ☑ Reduced deformation
- ☑ Prevention of tungsten inclusions



## Designed for longevity, updates are free

TITANIUM power sources can withstand tough environments, as their ventilation channels help isolate the electronic components from dust contamination. The internal components are cooled by an aluminium radiator and a precise fan that automatically adapts to the actual needs of the machine. This reduces the noise level, energy consumption, and the amount of dust in the machine, which in turn extends the life of the unit. The USB connector makes it easy to update the power source's internal firmware and install new welding programs, free of charge.

# An ingenious package

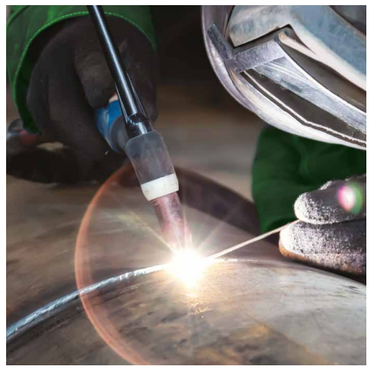
More than just a power source, the TITANIUM encompasses many features that provide great versatility and total control at every stage of the welding process. Ignition, tacking, arc behaviour and energy input have been developed in the laboratory to provide maximum convenience and outstanding performance on all materials.

## TACK, the ultimate spot weld

The TITANIUM has two tacking modes with or without time delay (Multi) for pre-assembly of the workpieces before welding:

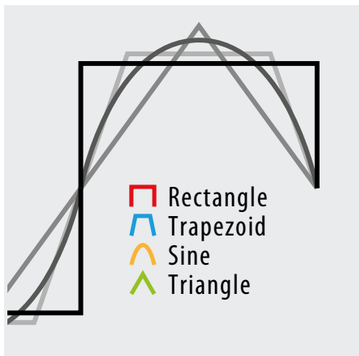
Spot TACK: allows fast and accurate tacking with minimal heat input for DC TIG welding. Ideal for multiple consecutive tacking on thin sheets, where a uniform and consistent appearance is essential. Deformation is reduced, the spot shows no oxidation, and the consistency is virtually flawless. This mode also allows for greater productivity, as the spot is concealed under the weld bead without any further action from the welder.

Traditional SPOT tacking.



## Excellent arc ignition

The TITANIUM incorporates High Frequency (HF) adjustable TIG ignition by default. In the event of contactless ignition, the arc is ignited immediately by a high-voltage pulse, which ensures perfect arc initiation, even on long cable lengths, at the first pull of the trigger. TIG Lift ignition (without HF) is primarily used in electrosensitive environments where it is important that there are no tungsten inclusions.




## 16 possible waveform combinations

The TITANIUM offers a multitude of configurations to specify the current behavior between positive and negative. These waveforms are configurable per half-wave in AC Standard, AC Pulse and DC Pulse modes. This critical function reduces the high frequency noise level, and also contributes to the stability of the arc.
The stars shown below indicate the level of productivity:

| | | | |
|---|---|---|---|
| Very stable, noisy arc | ★★★ | Quiet, soft arc | ★★ |
| Very stable, quiet arc | ★★½ | High pressure, stable arc | ★ |

## Colour interface
## 5 & 7 inches

The new TITANIUM interface is the result of many years of careful consideration and work. The GYS team always considered welders and their habits in order to best optimize their experience and interaction with this XXL colour screen..

The control panel, with 2 navigation wheels and 4 selection buttons, allows access to all functions required for AC/DC TIG welding.. Extremely user-friendly with numerous icons and animations, this multilingual interface allows the user to navigate through the various menus via clearly identified sections.

### 3 modes Display

Easy: simplified functionality
Expert: complete display
Advanced: full access to all parameters

### Update USB

The USB connector on the back of the power source makes it easy to update the firmware and install new welding programs and synergies for free.

### Configurator interface

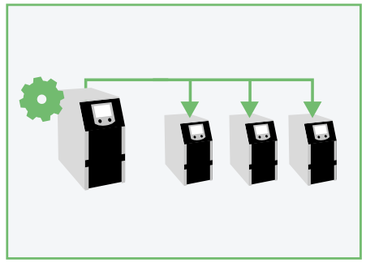
Web-based tool for interface customisation: adding a logo, limiting access to certain welding processes, disabling features, the entire HMI is customisable.

### Sharing account

The user mode allows the product to be shared between multiple welders. Each user can have their own configuration and setting preferences.

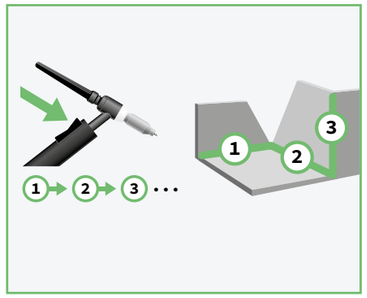
# Ergonomics & productivity

Quickly sequencing stored programs, configuring an entire machine fleet with identical settings, recording all weld data, and storing it electronically are essential criteria in industrial environments. TITANIUM power sources are the only ones to have these features as standard.



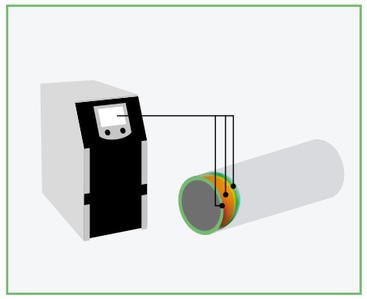
## Unlimited portability

A simple USB stick is all that is needed to configure an entire fleet of TITANIUM units. Up to 500 programs can be stored. The interface preferences, the welding programs, etc. Everything can be replicated ad infinitum. The operator can then travel with their own configuration, determined in the workshop, and set it up on the machine(s) waiting for them on a different site or at a remote location.



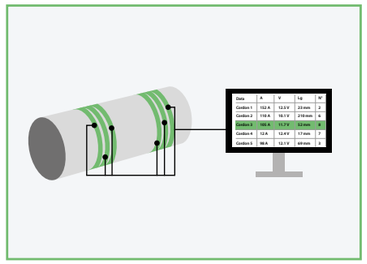

## 500 welding programs (JOBs)

Programs can be switched instantaneously by pressing the trigger of the torch. Switching from one phase to the next can be done without the need to directly modify the power source, and is an ideal solution to increase productivity, especially when the power source is not within reach of the user.



## Accurately measured energy intake

On-board digital technology provides the capability to measure welding voltages (U) and currents (I) at 20 kHz. This acquisition frequency is much better than the current clamps available on the market, and recommended by standard EN 50504. The data can be seen instantaneously through ENERGY mode.



## Traceability of all weld beads

The TITANIUM's internal memory allows all welding data to be recorded for every weld bead, in order to present proof of compliance with the relevant manufacturing regulations (DMOS/QMOS). The sampling time of the measurements can be adjusted to one hundredth of a second. These records can be exported to a USB stick in «.csv» format and can be analysed on a simple spreadsheet.

# The history of fashion
# WIZARD

## A major advance for welders

The WIZARD was born of an observation made by experts when TIG welding aluminium: the alumina present on the surface of this material is electrically resistive and must be broken during welding by reversing the polarity. This makes it a difficult welding technique because it requires the addition of filler metal to ensure the quality of the bead, and therefore perfect mastery of the welder's gesture.

With this in mind, GYS set out to find an innovative solution to make aluminium welding easier for everyone.

## Punching and welding have never been so easy!

WIZARD synergic modes have been developed for four pointing/welding positions: flat butt, clinch, outside corner, flat corner. This feature, integrated into the TITANIUM range, ensures pointing in less than a second. With the WIZARD modes, it is possible to weld sheets from 0.5 to 10 mm thick without using filler metal.

## WIZARD Aluminium

The WIZARD ALU has reinvented TIG aluminium welding, making it accessible to all users, even novices. Compatible with automatic welding, the WIZARD ALU has its place in production workshops. By integrating the WIZARD ALU into their work processes, professionals can push back the limits of their welding capabilities and carry out even more ambitious projects with disconcerting ease.

**5** reasons | Why adopt WIZARD Modes ?

- ***Score in less than a second***
- ***Accessible to all welders***
- ***With or without filler metal***
- ***Concentrated arc energy***
- ***Fully synergistic parameter with 4 positions positions***

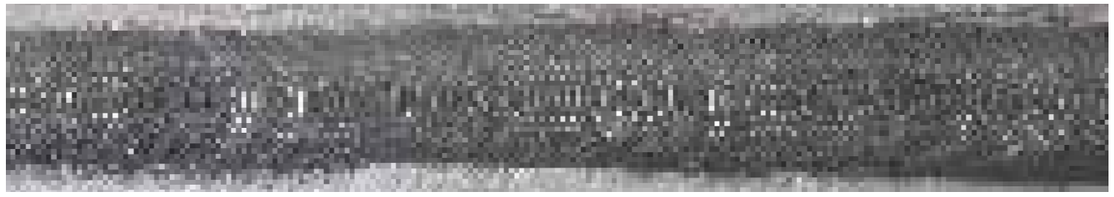
# Our methods
# WIZARD

## Our experts go further!

By extension, GYS has sought to create this same magic on steel, stainless steel and copper. These fashions are a testament to our vision of the future and our ability to turn challenges into opportunities.

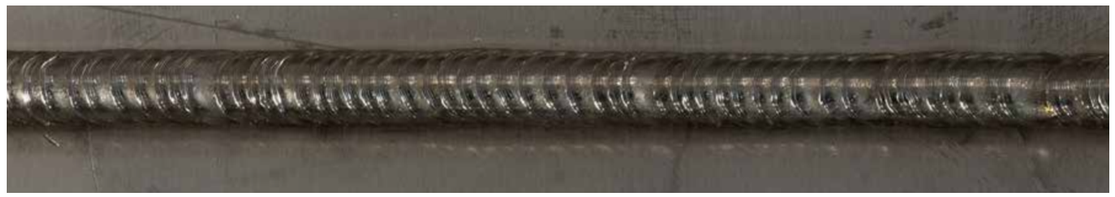
## WIZARD Alu Aéro

The WIZARD Alu Aéro mode is the quietest aluminium synergy welding mode in the world! It produces an ultra-thin weld bead thanks to exceptional control and concentration of the electric arc. By using this mode, operators can obtain superior quality welds while reducing the risk of distortion or damage to the parts being worked on.



## WIZARD Steel

With this Wizard mode, take synergic welding of steel a step further! Pre-set pulse parameters ensure weld bead quality in all positions. By using this mode, operators can make clean, strong welds, while minimising the risk of imperfections. This makes it an ideal choice for demanding applications.



## WIZARD Stainless Steel

Thanks to this mode, white welding is possible first time with standard welding equipment and processes! WIZARD Inox deploys such concentrated and controlled energy that it makes passivation of stainless steel obsolete. This mode is therefore particularly effective for applications where the quality of the weld and preservation of the material's integrity are paramount!

## Going further with
# WIZARD LAB

**Customise, create, test, develop...**
**Open the doors to the welding cycle!**

Aimed at experienced welders, the WIZARD LAB mode gives access to all the generator's parameters and enables the user to customise each stage of the cycle. The LAB function is a developer mode that lets you create your own waveforms. Take control of all the parameters of the welding cycle and create your own WIZARD modes!

The WIZARD LAB is available in 'Advanced' mode.

INVEST IN THE FUTURE

Fabricant français
depuis 1964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