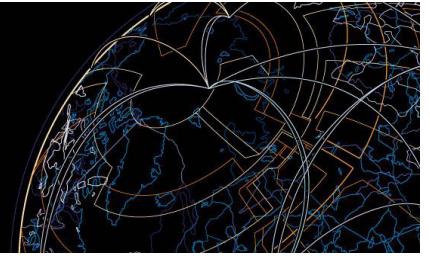


ABB Welding and Cutting Robo-TiPTiG Welding



What do you get when you fully integrate the most innovative new welding process to ABB's Robotic welding platform?

One of the most effective robotic welding function packages available in the market today - **up to four times increase in production!**

Product Overview

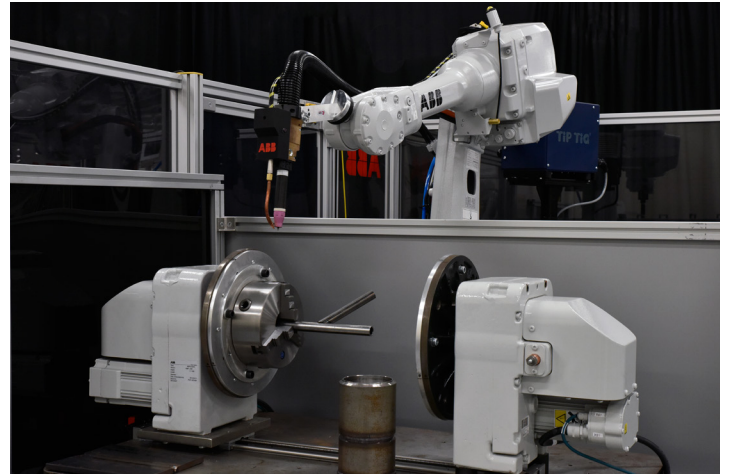
Unique to ABB, this revolutionary new, patent pending technology integrates user-friendly robotics with the TiPTiG process, enhancing its higher travel speed, lower heat input, and better quality welding advantages. The process combines proprietary Robo-TiPTiG torch technology and a fully integrated robotic interface to create the new function package.

Weld Benefits

- Highest deposition rates for any TIG process available on the market
- Slag Free; No Inter pass cleaning for increased Arc on time and weld quality
- Lowest possible heat input of any weld process resulting in lowest Heat Affected Zone (HAZ) and significantly reduced distortion and weld stress
- Increased corrosion property retention on all corrosion resistant alloys
- Highest quality with the best metallurgical and mechanical properties on all alloys
- Appropriate to all industries
- Hot wire process
- Simple to learn, simple to use, simple to teach

Customer Benefits

- Up to four times increase in production
- Significantly reduced weld defects which cost companies time and money
- Flexible system configurations based on specific welding needs



The Robo-TiPTiG Welding Package

- Base TIG welding power source - generically designed to support the use of a variety of different welding power sources
- High frequency oscillation wire feed unit
- Hot wire transformer
- Ethernet control interface
- Application specific user interface - HMI
- Robotic arm dress pack
- Welding torch and hot filler wire feed
- Software (Robotware Arc) for Robo-TiPTiG

How it Works

The mechanical action of forward and backward motion of the filler wire creates an oscillation that is transferred into the weld. This agitates the molten weld pool, which then disrupts the surface tension.

The combination of these processes produces the following benefits to the weld:

- Increased fluidity of weld pool
- Greater tolerance to joint fit-up - Significantly reduced joint sensitivity
- Greater ability to accept more wire into the weld pool - Higher deposition
- Increased travel speed 4-6 times faster - Reduced cycle time and heat input
- Agitated weld pool - Cleaner welds
- Reduced heat input - Reduced weld stress
- Ethernet Interface enabling full control over welding parameters for optimum weld quality

Robo-TiPTiG Welding

Human and Machine Interface

- Fully integrated robotic interface
- Ethernet technology
- Comprehensive operator screens - HMI

Hardware Configuration

- High-frequency wire feeder
- Hot wire technology
- AVC height control
- Robo-TiPTiG welding torch
- Integrated ethernet interface
- GTAW welding power source

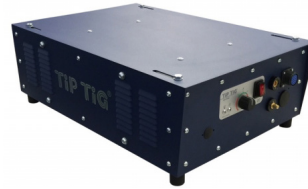
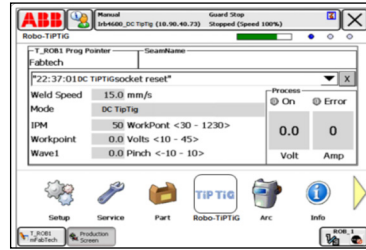
Technical Specification

Interface Module

- Model Type: TiPTiG – Hot Wire Unit
- Full Load Current: 80 Amps
- Peak Current: 100 Amps
- Input Power: 115VAC~, 50/60 Hz, 10 Amps

Wire Feed Unit

- Model Type: Robo-TiPTiG
- Input Power: max 48V DC



Comparison of Weld Processes - On a scale from 0 to 10, with 10 being the best

Weld Characteristics	Traditional TIG (GTAW)	Stick (SMAW)	Gas Shielded Flux (FCAW)	Pulsed MIG (GMAW)	Robo-TiPTiG
Deposition Rate	3	7	8	8	8
Weld Speed	3	6	8	8	8
Heat Input	3	5	7	6	10
Weld Distortion	4	6	6	6	10
Skill Level Requirement	2	4	5	9	9
Fusion Capability	8	6	6	8	10
Consumable Costs	6	5	3	9	7
Fusion Quality	9	6	6	8	10
Inclusions Porosity/Particulate	9	3	4	7	10
Start-Stops Requirements	9	3	3	7	9
Weld Fume	9	3	3	7	9
Splatter Generation	9	3	6	6	10
Position	8	6	7	6	10
Joint Fit-Up Tolerance	4	6	7	8	7
Overall Performance %	63%	48%	54%	71%	89%