

DP-TIG

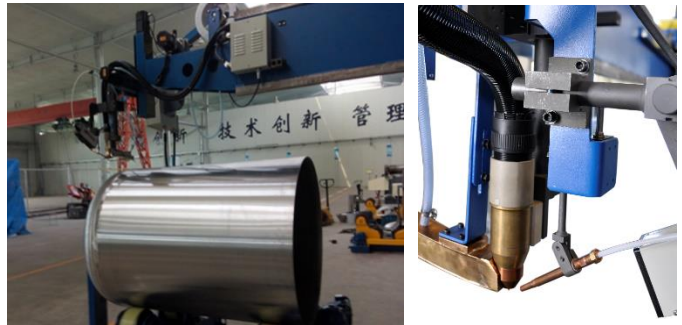
High Quality + Productivity Solution by DP-TIG

Deep Penetration (DP-TIG) Welding for the SS and Special materials High Quality + Faster Productivity

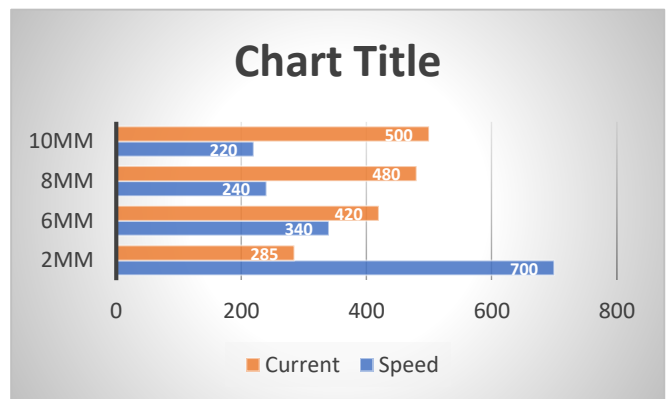
Deep penetration process (DP-TIG) is a kind of high efficiency automated TIG weld process, which solves low arc stiffness, low penetration, low melt rate problems. With DP TIG technology with one side weld helps in getting perfect back formation. With DP-TIG welding the arc on time reduces drastically compared to conventional TIG process which helps in achieving high quality weld joints at much faster rate with less consumption of the filler material.

Salient Features

- Full penetration, no backing, perfect weld back shape with butt joint.
- Suitable for multiple material like SS, CS, Ti etc, wide application
- Low running and Maintenance cost compared to other automated process;
- High productivity – Faster weld speed compared to TIG & P+T
- Drastic reduction for the Welding gas and the filler material consumption.
- Precise control – Special design torch along with the power source are synchronized to achieve complimentary operation
- Wider arc – facilitates faster weld speed with higher penetration for delivering the desired weld quality



DP-TIG Welding for SS tank



Graph for the Plate thickness with respect to the weld speed and the current used.

Application Segments

- Nuclear
- Pressure Vessels
- Oil and Gas
- Food & Pharma
- Power Plant Equipment

#	DP-TIG System Configuration
1	1000A DC TIG Power Sources
2	Weld Controller
3	DP-TIG Torch
4	Laser Chiller Unit
5	Control Connections
6	Tracking system

DP-TIG

High Quality + Productivity Solution by DP-TIG



DP-TIG circum welding system

Power Source:

Adopted special high power non-parallel inverter technology, effectively solved the issues such as imbalance between the power module in parallel, more fault points, high failure rate, etc. The power factor can achieve 0.94, the conversion efficiency can reach 89%, the duty cycle is 100%. The control system is based on digital MCU as the core of intelligent control. More features like fault automatic identification with alarm, CC mode output, fast dynamic response, etc. especially suitable for DP - TIG welding requirements.

Laser Water Chiller:

- PLC controlled system, can automatically control the operation of the whole machine;
- Full- titanium tube type tank evaporator prevents creating solid or other metal matters;
- The high efficiency heat exchanger is compact with unique design;
- Equipped with precise digital display temperature control, precise control + / - 1 °C water temperature ($\pm 0.1^{\circ}\text{C}$).

Laser Water Chiller:

The system will work under the voltage of three-phase 415V + / -10% and 50Hz + / -1%, and the system will give an alarm signal immediately when it is out of range.

PLC control system;

Upto 30 programs can be saved.

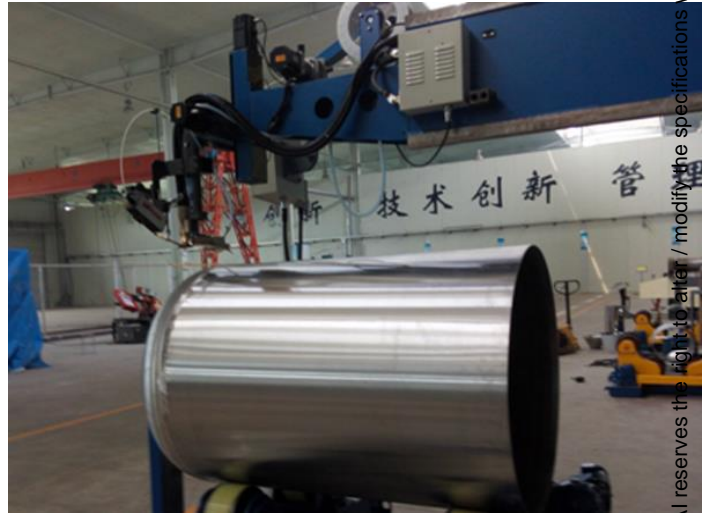
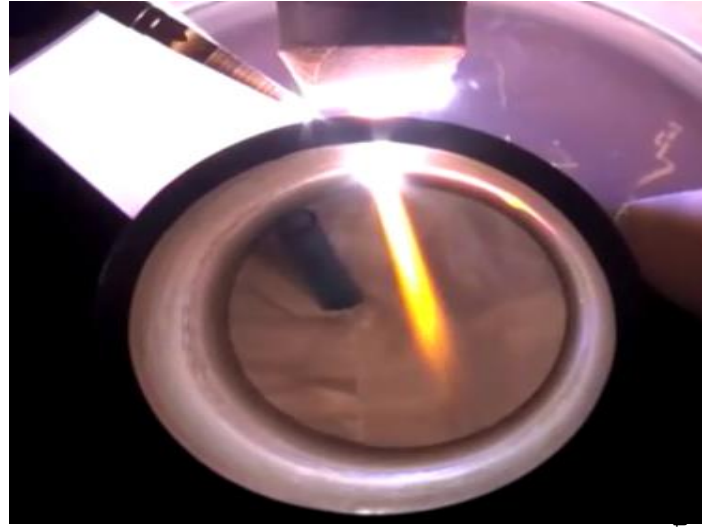
Fault indicator system for Over voltage, Over current, Phase sequence protection, Water cooling fault etc.

Torch Adjustment system:

The adjustment mechanism of welding torch is cross slide, driven by stepper motor, guided by linear guide rail, and the travel of cross slide is 200x200mm.

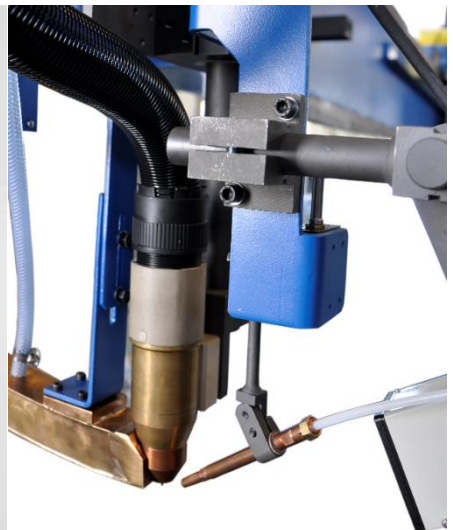
DP-TIG

High Quality + Productivity Solution by DP-TIG



Power Source

Laser WCU



DP- TIG torch