



## **Introduction to OTC DAIHEN Asia Co., Ltd**

Speaker : Mr. Masanao Tago  
(International Sales Manager OTC DAIHEN Asia Co., Ltd Thailand)

OTC DAIHEN Asia Co., Ltd, was established in April 1989 with a factory at Navanakorn Industrial Estate, Thailand producing arc welding machines and plasma cutting torches. Today it not only manufacture products but also provide sales and after-sales support of OTC-DAIHEN brand arc welding machines, plasma cutting machines and industrial robots to customers in South East Asia in collaboration with OTC-DAIHEN global network. As a specialist in arc welding field, it can supply all welding and automation equipment through a single source, and its product and spare parts storage facility meets customers' requirements with prompt delivery. Demonstration centers in two locations in Thailand carry out welding tests and help offer the best solution for customers' requirements.

Priority is " Customer satisfaction and serving society "

## **Leading Edge of Current Waveform Control on Welding Power Source**

Speaker : Mr. Kouhei Ono  
(Welding Products Division, Welding Research Department,  
DAIHEN Corporation, Japan)

The development of arc welding equipment has progressed with the evolution of power electronics and digital control techniques coupled with demands for improved functions and performances through automation and high productivity. Under such circumstances, Daihen has tried to meet these demands by developing an exclusive LSI chip which specializes in welding control through high-speed and high-precision controlled welding current waveform. This talk will feature the digital inverter controlled welding power source equipped with the LSI chip and its peripheral equipment, and the effects of welding current waveform control when applied to gas metal arc welding process. In the non-pulsed welding process, the welding current waveform control (optimized by welding consumables usage) produces high quality welds in many applications ranging from high speed welding for sheet metal to high deposit welding for heavy plates through digital external characteristic control provided by high speed and high-precision calculations. The pulsed welding process not only produces stable metal transfer (one pulse per one drop) under the time variation of shielding gas mixture ratio, but also high quality welds of difficult joints. These are realized by the adoption of the most suitable pulse waveform and enhanced digital filter.



## TECHNICAL TALK

Thursday 25th February 2016



### **Development on New Metal Transfer Control using Synchronous Control**

Speaker : Mr. Taro Kusumoto  
(FA Robot Division, Engineering Department,  
DAIHEN Corporation, Japan)

By changing the wire feed direction according to the arc phenomena, a gas metal arc welding process has been developed and applied in ultra-sheet plate joining on MAG welding process. This has resulted in ultra-low spatter generation and low heat input into the base metal in a current range of the short-circuit transfer mode. When such a welding process can produce stable metal transfer in a current range of the globular transfer mode using carbon dioxide shielding gas, it can contribute to further improvements in productivity. Under these circumstances, Daihen has developed the Buffer Position Control and the Pulsed Dip Transfer Process. The Buffer Position Control can compensate the constant mean wire feed rate by controlling the interference reduction of the wire feed direction between the push feeder and the pull feeder. The Pulsed Dip Transfer Process forms the pulsatile output of the welding current during arc duration to stabilize the metal transfer with constant voltage characteristic and improve the heat input to the base metal. This talk will highlight the principles of these controls and the effect of high speed welding with ultra-low spatter generation during sheet metal joining.

**Key Words :** Wire feed control, Buffer position control, Current waveform control, Pulsed Dip Transfer Process, Deep penetration, Ultra low spatter.