

## PRECISION WELDING OF PARTS AS SMALL AS NEEDLE TIPS

Pre-ground electrodes and specialty electrode materials are being used to enhance the performance of gas tungsten arc welding (Tig) and plasma welding of wires, needles, pace-makers, medical tools and components, bellows, batteries, and a variety of precision instruments.

High-quality electrode materials with exact tip geometry tolerances offer a noticeable difference in precision at the arc to produce higher-quality welds with much longer electrode life. One supplier of these products and services is Pro-Fusion, a new company founded by Bernard Mannion and Jack Heinzman III in Newbury Park, CA.

Their new company will begin by offering pre-ground welding electrodes, tungsten electrode grinders, several tungsten alternatives, and a new line of plasma welding torches. Pro-Fusion also offers job shop welding services and precision machine shop services.

Pro-Fusion's customer, J&J Precision of Thomaston, CT., offers contract welding that can involve sealing the ends of small tube diameters. J&J makes eyelets and performs stamping, forming, machining, grinding, and assembly of precision metal components.

J&J's owner, John Maxwell, investigated the latest arc welding technology not as a joining, but as a heating and sealing, procedure. By using



**Pro-Fusion, a new company in Newbury Park, CA, is offering the technology and services to use specialty electrode materials with pre-ground electrode tips to enhance precision arc welding.**

precision pre-ground electrodes with a micro-arc welding system, Maxwell was able to seal the tube by momentarily imposing a welding arc on its ending. This melted the tube and produced a smooth hemispherical surface. The pre-ground electrodes ensure accuracy and repeatability, according to Pro-Fusion. J&J uses the same technology for rod and wire end rounding, welding of custom endings to tubes, and creation of ball endings on wire.

Other applications for pre-ground electrodes include repetitive welds on identical parts, quality or critical-function welds, and parts with significant accumulated value prior to welding.

---

*This reprint is adapted from an article published in the May 1999 issue of Mechanical Engineering magazine.*

---

**Pro-Fusion** specializes in welding products such as Pre-Ground Welding Electrodes, Tungsten Electrode Grinders, Tungsten Materials of All Types, Job Shop Welding Services, Machine Shop Services, & introducing a new line of plasma welding torches.

For more information contact: **Pro-Fusion**  
10901 McBride Lane, Knoxville TN, 37932.  
Phone: 865.671.7682. Fax: 865.671.7686.  
Email: [sales@pro-fusiononline.com](mailto:sales@pro-fusiononline.com)  
Web Site: [www.pro-fusiononline.com](http://www.pro-fusiononline.com)

