Pure Tungsten Electrode

Pure tungsten electrodes are the ones without any addition of oxide. This allows the tip to form a clean, balled end which provides good arc stability on AC. The power of electronic transgression is as high as 4.5ev. Requiring a high voltage for arc derivation, it has a low current capacity and is easily burnt. It's good for application under the condition of AC and in the situation of low welding requirements.

Thoriated Tungsten Electrode

2% Thoriated Tungsten contains a nominal 2 wt-% or thorium oxide (ThO2) that is evenly dispersed throughout the entire length of the Tungsten. The most common type of Tungsten used today. Thoriated tungsten electrode provides excellent resistance from weld pool contamination while at the same time offers the welder easier arc starting capabilities and a more stable arc. Generally speaking, thoriated tungsten electrodes are used for DC electrode negative or straight polarity applications such as carbon & stainless steels, nickel alloys and titanium.

Lanthanated Tungsten Electrode

The lanthanated tungsten electrodes are becoming more popular in the circle of welding in the world soon after they were developed, because of their good welding performance. The electric conductivity of lanthanated tungsten electrode is most closed to that of 2% thoriated Tungsten electrodes. Welders can easily replace thoriated tungsten electrodes with lanthanated tungsten electrodes at either AC or DC and not have to make any welding program changes.

Cerium Tungsten Electrode

Cerium tungsten electrodes have good starting arc performance under the condition of low current. As the arc current is low, these electrodes can be used for welding of pipe, stainless steel and fine parts. Cerium-Tungsten is the best substitute for Thoriated-Tungsten under the condition of low DC.

Zirconiated Tungsten Electrode

Zirconated tungsten electrodes are good at the performance in AC welding, especially under high load current. These electrodes can retain a balled end when welding, which results in less tungsten permeation and good corrosion resistance. It balls up well in AC welding and has a more stable arc than pure tungsten. Especially with excellent performance in high load AC welding, it is not replaceable by any other electrodes. It also resists contamination well in AC welding.

Yttrium Tungsten Electrode

Yttrium tungsten electrodemainly applied in military and aviation industry with narrow arc beam, high compressing strength, and highest welding penetration at medium and high current.

Composite Tungsten Electrode

Their performances can be much improved by adding two or more rare Earth oxides which are mutually complementary. The composite tungsten electrodes have thus become out of the ordinary in the electrode family.