



Tungsten Electrode Tip Preparation

General Purpose

DCSP (EN) or DCRP (EP)
 FLAT: 1/4 TO 1/2 X DIA.



2-3 X DIA. Taper length

General Purpose


ACHF

 MAX BALL 1 X DIA.

Ball tip by arcing on clean metal at low current on DCRP (EP), then slowly increase current to form desired ball diameter. Return setting to AC

Tungsten Electrode Grinding Preparation




Shape by grinding longitudinally, never radially! Remove the sharp point or leave a truncated point with a flat spot. Diameter off at spot determines the amperage capacity (see below).
 Use a medium (<60grit) aluminum oxide wheel.



The included angle determines weld bead shape and size. Generally, as the included angle increases, penetration increases and bead width decreases.


Tungsten Electrode Tip Extension

Standard Parts



General purpose 3X dia

With Gas Lens Cup Parts



General purpose 3X dia
 max 6X dia
 In draft free areas

Tungsten Electrode Tip Shapes and Current Ranges

Thoriated, ceriated and lanthanated tungsten electrodes maintain a point much better than the pure or zirconiated tungsten electrodes, which have a tendency to ball up when heated, and for this reason are typically used for DCSP welding. If used on AC, thoriated and lanthanated electrodes often split. Regardless of the electrode tip geometry selected, it is important that a consistent tip configuration be used once a welding procedure is established. Changes in electrode geometry can have a significant influence not only on the weld bead width and depth of penetration, but also on the electrical characteristics of the arc. Below is a guide for electrode tip preparation for a range of sizes with recommended current ranges.

Electrode Diameter		Diameter at Tip		Constant Included Angle		Current Range		Pulsed Current Range	
MM	IN	MM	IN	Degrees	Degrees	Amps	Amps	Amps	Amps
1.0	0.040	0.125	0.005	12	12	5-15	5-25		
1.0	0.040	0.250	0.010	20	20	15-30	15-60		
1.6	1/16"	0.500	0.020	25	25	15-50	20-100		
1.6	1/16"	0.800	0.030	30	30	20-70	30-140		
2.3	3/32"	0.800	0.030	35	35	25-90	35-180		
2.3	3/32"	1.100	0.045	45	45	30-150	35-250		
3.2	1/8"	1.100	0.045	60	60	35-200	40-300		
3.2	1/8"	1.500	0.060	90	90	40-250	40-350		