

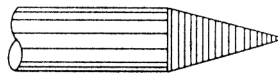
## TUNGSTEN ELECTRODE PREPARATION

Proper electrode tapering is imperative for optimum arc stability and welding performance. The arc end of the electrode is to be ground to a cone, and it is essential to have a smooth concentric shape. Cone length should be two or three times that of the electrode diameter, after grinding, a special fine-grit abrasive wheel should be used for finishing. Ground grooves will adversely affect arc stability, especially in the low current range, and will reduce life altogether. For grinding, the electrode should be clamped in a drill chuck.

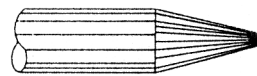
Grinding on a diamond wheel is preferred over silicon carbide and aluminum oxide wheels.

Rough-point tungsten electrodes on an 80-grit wheel; finish on a 120-grit wheel.

Suppliers can recommend the best wheel in structure and hardness for pointing. In general, a wheel with an open structure is best because it picks up fewer contaminants and runs cooler.



Wrong—crosswise grind marks restrict welding current, cause arc wander, chance inclusion\* in weld.



Right—lengthwise grind marks don't restrict current. Finish pointing on a 120-grit wheel.

TYPICAL CURRENT RANGES FOR TUNGSTEN ELECTRODES.a

Electrode Dia, In.	Straight Polarity Direct Current, amps	Reverse Polarity Direct Current, amps	High-Frequency Unbalanced Wave AC, amps			High-Frequency Balanced Wave AC, amps		
	EWP, EWTh-1, EWTh-2, EWTh-3	EWP, EWTh-1, EWTh-2, EWTh-3	EWP	EWTh-1, EWTh-2, EWZr	EWTh-3	EWP	EWTh-1, EWTh-2, EWZr	EWTh-3
0.010 . . . .	up to 15	b	up to 15	up to 15	b	up to 15	up to 15	b
0.020 . . . .	5-20	b	5-15	5-20	b	10-20	5-20	10-20
0.040 . . . .	15-80	b	10-60	15-80	10-80	20-30	20-60	20-60
1/16 . . . . .	70-150	10-20	50-100	70-150	50-150	30-80	60-120	30-120
3/32 . . . . .	150-250	15-30	100-160	140-235	100-235	60-130	100-180	60-180
1/8 . . . . .	250-400	25-40	150-210	225-325	150-325	100-180	160-250	100-250
5/32 . . . . .	400-500	40-55	200-275	300-400	200-400	160-240	200-320	160-320
3/16 . . . . .	500-750	55-80	250-350	400-500	250-500	190-300	290-390	190-390
1/4 . . . . .	750-1000	80-125	325-450	500-630	325-630	250-400	340-525	250-525