TBi Industries

TBi Tungsten Electrodes

- *Conform to Norm DIN EN ISO 6848*
- *Quality from a European manufacturer*

TBi Green — Tungsten Electrodes WP

Length	**150 mm**						
Diameter (mm)	1.0	1.6	2.0	2.4	3.0	3.2	4.0
Part no.	400P024150 (__please insert diameter)						

Length	**175 mm**						
Diameter (mm)	1.0	1.6	2.0	2.4	3.0	3.2	4.0
Part no.	400P0__175						

- Green electrodes are undoped electrodes, made of pure tungsten. They are mainly used for alternating current welding processes (AC) of aluminum and guarantee good arc quality.

TBi Gold Plus — Tungsten Electrodes WLa15

Length	**150 mm**						
Diameter (mm)	1.0	1.6	2.0	2.4	3.0	3.2	4.0
Part no.	400PG__150						

Length	**175 mm**						
Diameter (mm)	1.0	1.6	2.0	2.4	3.0	3.2	4.0
Part no.	400PG__175						

- Gold Plus electrodes are universal electrodes and suitable for almost all applications. These electrodes are characterized by a low electrode temperature and very good ignition properties.
- anthanized electrodes (WL) can be used for direct current (DC) and alternating current welding (AC), preferably in lower and middle current range.
- Can also be used for automated welding (orbital, robots, rotary tables, etc.).
- Suitable for welding unalloyed, high-alloy steels such as steel, aluminum, titanium, nickel, copper and magnesium.

TBi Blue — Tungsten Electrodes WLa20

Length	**150 mm**						
Diameter (mm)	1.0	1.6	2.0	2.4	3.0	3.2	4.0
Part no.	400P3__150						

Length	**175 mm**						
Diameter (mm)	1.0	1.6	2.0	2.4	3.0	3.2	4.0
Part no.	400P3__175						

- Blue electrodes are lanthanized electrodes (WL) and can be used for direct current (DC) and alternating current welding (AC).
- The higher lanthanum content compared to the gold electrode (WLa15), has a positive effect on the ease of ignition.
- Preferably used for automated welding (orbital, robots, rotary tables, etc.).
- Suitable for welding unalloyed, high-alloy steels such as steel, aluminum, titanium, nickel, copper and magnesium.

TBi Gray — Tungsten Electrodes WCe20

Length	**150 mm**						
Diameter (mm)	1.0	1.6	2.0	2.4	3.0	3.2	4.0
Part no.	400P5__150						

Length	**175 mm**						
Diameter (mm)	1.0	1.6	2.0	2.4	3.0	3.2	4.0
Part no.	400P5__175						

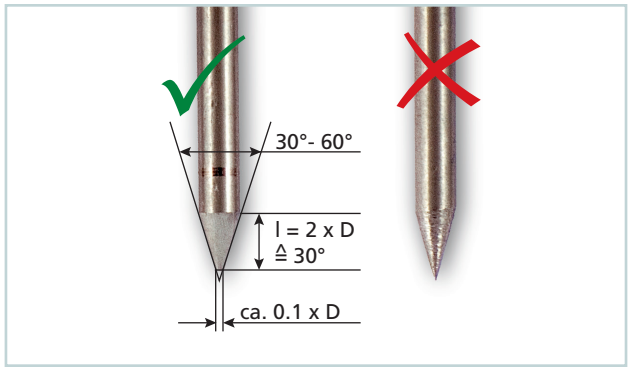
- Gray WCe electrodes are used for direct and alternating current welding. Well suited for welding unalloyed or high-alloy steels.
- Cerocid (CeO2) additive causes a behavior similar to thoriated electrodes (red). They do not contain any radioactive substances.
- Very good ignition properties, even when the electrode is often re-ignited with hot electrode.

Applications of tungsten electrodes for welding with direct and alternating current

Diameter electrodes in mm	Diameter tolerance in mm	Direct current in ampere				Alternating current in ampere	
		Electrode negative polarized		Electrode positive polarized		Equal proportion of positive and negative half-waves	
		Pure tungsten	Tungsten with oxide	Pure tungsten	Tungsten with oxide	Pure tungsten	Tungsten with oxide
Ø1.0	± 0.05	10 – 75	10 – 75	Not applicable	Not applicable	15 - 55	15 - 70
Ø1.6	± 0.05	60 – 150	60 – 150	10 – 20	10 – 20	45 – 90	60 – 125
Ø2.0	± 0.05	70 – 180	100 – 200	15 – 25	15 – 25	65 – 125	85 – 160
Ø2.4	± 0.1	120 – 220	150 – 250	15 – 30	15 – 30	80 – 140	120 – 210
Ø3.2	± 0.1	160 – 310	225 – 330	20 – 35	20 – 35	150 - 190	150 - 250
Ø4.0	± 0.1	275 - 450	350 - 480	35 - 50	35 - 50	180 - 260	240 - 350
Ø4.8	± 0.1	380 - 600	480 - 650	55 - 70	55 - 70	240 - 350	330 - 450
Ø6.4	± 0.1	575 - 900	750 - 1000	70 - 125	70 - 125	325 - 450	450 - 600

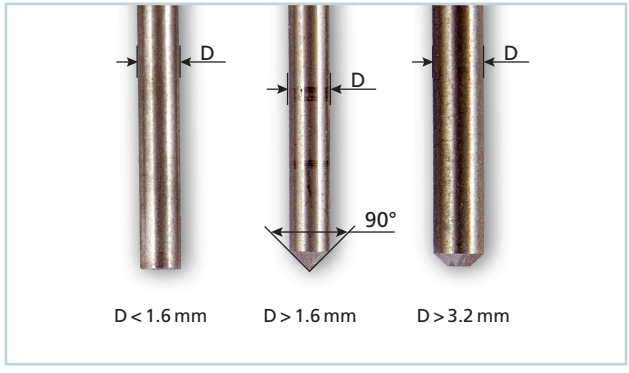
Shape of the tungsten electrode tip for TIG welding

Direct current Welding (DC) (negative pole at the electrode)



- Always grind electrodes lengthways.
- Remove grinding marks if necessary by polishing.
- Blunt the tip approx. 0,1 x diameter after grinding. You will get a longer service circle, less notches and no particle breakout.

Alternating current welding (AC)



- With larger diameters the electrode should be grinded.
- Dome formation at the electrode tip!

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