

Subject: Current experiments with carbon arc

7 Jan 07

I found a relative cheap source of pencil graphite lead at the local 99cent store (200 sticks at 2.5" long by .9mm for .99 cents). It encouraged me to do a little more experimentation. I found the results depended a lot on length and size of the electrodes.

When short say at .5 inches the optimum input voltage to start the arc was about 38-40 volts with it dropping to 25 volts while running with a current of 1.5 amps. When long or about 1.2" for each then 50 volts starting and dropping to 33 volts at 1.5 amps. At 50 volts and short electrodes the current can get up to between 2 and 3 amps and the electrodes are burn up faster. Below 35 volts I could not start an arc going.

At full length of 2.5 inches for each electrode it took at least 70 volts to start the arc and would run at 50 volts and 2.4 amps. The bottom line is different voltages need to be applied as the length changes.

If any moisture got on the electrodes from handling they explode and break at that point. They would have to be heated slowly to avoid this.

Even at the lower currents and voltages the electrode glows red hot when in operation. When the electrodes are new they need to be touched together for long enough to turn the graphic electrode red and burn the oil off. They briefly ketch fire then the flame goes out. During this time if too much current is used the electrodes will sag or bend.

Once initialized, when the voltage is just barely enough to strike an arc one finds that one needs to hold the electrodes together long enough to heat them up to a low red and then barely separates them to get an arc started. Once the arc is formed depending on voltage it can be anywhere from tiny 1/32 to about 3/8 inch long. Even with constant hand adjustment of the arc it only lasts a few seconds at a time.

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The bad thing about the whole process is someone needs to be looking directly at the arc to keep the gap short enough to work. UV protection sun glasses are not enough protection. In operation they leave spots in front of ones eyes where the arc is so that one cannot tell how long it is. It is painful to look at the arc this way. Welder goggles or helmet would be needed. The UV in the light can permanently burn the eyes if no protection is used.

In these crude primitive forms and without a way to manufacture electrodes -- as the Zetas have indicated, this would be good for a moral booster or to peak interest or to create an effect. I consider it not practical for growing plants.

I am thinking if one finds carbon electrodes from old carbon zinc batteries in land fill areas after the PS that it would in the long run be better to use them to make batteries with.