From: <Jack ……)
To: cjune@proto-power.com
Subject: Cheater test
Date: Tuesday, June 08, 1999 2:22 PM
Hello Charles;

Follows, for better or worse, the message I posted to "theforge," a gathering of blacksmiths from around the world, some of whom consider me the “welding guru”. The same message will be posted to the FidoNet echo "Metalsmith", of which I am the moderator.
I hope you prosper..

Jack ....
<This message is directed to those of you who are arc welding with the familiar AC buzzboz; the rest of y'all feel free to journey on to the next message.

As I said I would I finally found the opportunity to spend several hours with my newly acquired DC Cheater, a small rectangular box that contains (presumably) an array of diodes and (obviously) a cooling fan and lugs to connect your welder to the input side and your cables to the output. It converts your AC machine to an AC-DC welder capable of welding at up to 195 amps if your machine will go that high, and up to 80% duty cycle at that heat, if your machine will do likewise, which it probably won't.

After about 4 hours of use, 2 of them in repairing a broken water tank and the other 2 just fooling around and not including an hour or so Sunday, I can say the DC Cheater will do everything one would expect it to do.

OK, if that's all you need to know, you can stop here, check out the web page:

http://www.proto-power.com/dc_cheater.html

info@proto-power.com

or mail to:
148 Nicola Road
Middleton NH 03887

The person on the other end is Charles June. who will pay me absolutely nothing for this testimonial and the same amount as a commission on any sales. It doesn't matter if you mention my name or not, the pay's the same.

For those of you who want to know what it *did*, read on.

Conditions; Hot, muggy, shop temp 90+

Equipment: Miller Thunderbolt 225AC about 21 years old, 40' 2'/0 ground, 12’ of 2/0 cable connecting the welding machine to the input of the DC Cheater. 40' 2/0 stinger lead with 15' #1 whip added.

Total 65' of stinger lead. Bernard "Shortstub" electrode holder, 400A rating. This is not the familiar tong-type. it has a twist-grip that tightens a moveable copper jaw to hold the electrode against a stationary upper jaw, I can burn a rod down to the point where the coating stops and change electrodes without groping and trying to get it into the groove in a tong type jaw. I like it a lot.

I grabbed up some of each electrode I had with the exception of stainless and 6013 and started with scrap pieces of 1/4" and 3/8" plate.

For your convenience, DCEP is Electrode Positive (reverse polarity) and DCEN is Electrode Negative (straight polarity) No AC tests were made.

6010 electrodes; 1/8" dia

This is Lincoln 5P "pipeline" rod. I found it in my neighbor's shed along with some other stuff, it's about 30 years old in an open can but seemed to not have been damaged. It's intended for DCEP and I haven't run any in ages and ages. A little hard to light off until I got the heat range right, 115A on 3/8" and about 95A on 1/4". You folks with shorter cables will probably run a little cooler than I do.

Good penetration, all positions, no problem. I changed to DCEN and burned a hole in some 22 ga sheet at 75 amps then welded up the hole at the same amperage. At 200 amps it cuts 3/8" plate nicely.

6011, (McKay) the AC-DC all-position do anything deep-penetrating fast

freezing electrodes, DCEN. good for sheet metal, sounds funny. DCEP: Suddenly. 6011 has become "idiot rod." as easy to run as 6013, light it and lay it down and it continues to weld. Also cuts clean at 200 A using either 1/8" or 5/32" electrodes 'Nuff said.

7014. (Airco): The rod I love to hate. Running a bead with 7014 reminds me of trying to herd warm Jell-0; the DC cheater didn't change this.

7018 DCEP: (Lincoln, I think, maybe Hobart) I have a nearly full 50# box of 5/32" dia; I could hardly get it lit with AC and could not keep it lit once I got it going; it was the lost cause and relegated to the bottom shelf of the hotbox for "someday." At 150-160A it not only lit, it ran continuously without any problems not created by the operator. Restarts, usually difficult with 7018 were easy. Further tests included running 3 sticks of 5/32" 6011 and 2 of 7018 back to back at 150A with no stopping except to change electrodes and three arc breaks with the 7018, with instant restarts resulting in about 50" of continuous bead; I stepped over to the shelf that the DC Cheater was sitting on and felt it, it was only slightly warmer than the surrounding air, perhaps an increase of 10 degrees or so.

Now, the mean stuff! I have about 6 lbs. of McKay 55-TIC hardfacing electrode, AC-DC (they lied) used for (they said) .building up switch points and frogs on the railroad and for wearfacing bucket teeth and stuff. It’s not as miserable to work with as it was with AC which left lumps and bumps and looked like a 9-year-old kid had done it.I actually came out very smooth and I’m sure my technique has not improved since last week when I made the new front skids for the family bush-hog. The electrodes are a tube with an inner core and outer coating; with AC they turned orange at about half the length; with DC they remained cool.

#6 Stellite: Like spreading warm butter.

Nickel; The same.

When I quit this evening, the electrode holder had gotten warm to the point where it was uncomfortable to hold it with welding gloves on, the machine and the DC Cheater were still humming right along.

I did not overwork the equipment at any time, though I worked it to the rated capacity.

In all cases, weld bead appearance was improved, the 6011 was a lot smoother than with AC and of course, penetration was adequate as evidenced by a slight

undercutting at the edge of the bead. I look for this in my welds, it tells me that the bead has really got a good grip on the workpiece(s).

It works, it does what it's designed for and represented to do and I consider it money well spent. FWIW, the box of 7013 I have was given to me and is worth about $60, the 40 or so lbs of 6010 that was given to me is worth about $40. Because I can now use them, I've saved $100 in welding supplies; the DC Cheater cost me that much less.

Nobody has *ever* given me any AC rod..

I would suggest that if anyone buys one, they make the following changes in the recommended setup.

This is your chance to extend your cables, especially you Lincoln owners whose leads are hard-wired into the box. In order to install the DC Cheater, you will need to cut your existing leads and wire the Cheater in line; with the standard length leads supplied with most buzzboxes you won't have enough lead left to work. Get thee to the welding supply store and buy about 40' of #1 cable and the necessary end fittings and make up a 15 ft. ground and a 25 ft. stinger lead.
Use the existing leads to connect to the AC side of the Cheater.
You'll never realize how cramped you were with those short cables and my experience has shown that you can go up to about 40' of leads using #1 cable if you want to.

For those of you that know how, wire the 110V cord that powers the cooling fan into your existing fan circuit in. your buzzbox; and turn the Cheater fan switch on and *leave* it on. This will start the Cheater fan when you turn the welding machine on, and prevent your turning on the welder and forgetting to turn on the cooling fan. I almost did this. twice.

Dear Sir,

Just a quick note, speaking of how well your dc converter works with my old Thunderbolt to give it new capability, in our case to due some heavy sheet metal/dumpster work.

A good friend, electrical engineer, who assembles satellites stopped by as I was assembling, and was impressed with the component qualitty and design. He was less impressed with the fact that I had the boards improperly oriented when I made my first wiring hookups.

The converter workes great, does not seem to even get warm, and certaintly is worth every investment. It has one more advantage not mentioned in your webpage, it is portable and may be moved from welder to welder. It will be borrowed by another shop as soon as our small project if finished.

By the way, kudo to the folks at www.weldingsupply.com who were very helpful in gettng me the fittings, and extra cable to hook everything up. I had misordered some parts, ie., needed #2 instead of #4 cable, they have the 1/2 inch lugs for #2 cable , connectors, etc and called me to straighten everything out.

Got it all together, fifity feet of cable, works great.

Thanks again, Dave, Maryland

Dear Charles,
I just wanted to let you know that the cheater I bought works haven't welded stick yet but heliarc is fabulous and smooth as it can be and that means a lot when you've been without a welder for a while . I weld all day at work but this is for fun thanks
Bob

Hey Charles, thank you much, got the package this morning and welded with it this evening. It is absolutely everything you promised!!
Always wondered why I was keeping the old Thunder-bolt around, often thought about a conversion, am really glad I went this way, it's like having a whole new machine (actually it is). Will recommend it to friends, thanks again.
Wayne
B.C. Canada