

Replacing a LECTRIC eBIKE Bottom Bracket Support Leg, Version 1.2

By **R. G. Sparber**

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Background

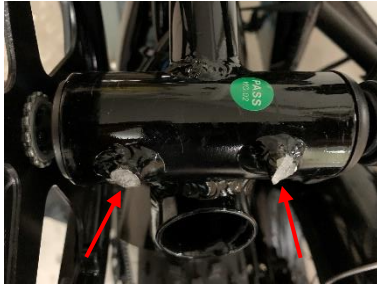


I've been looking at eBikes and eBike kits for a few months. It isn't hard to spend \$1600 on an entry-level eBike. I can easily spend \$800 on a kit that converts my existing touring bike. The problem with these kits is that a bike is a complex, integrated, system. Making a change this big can result in a dangerous bike. For example, do I also need to upgrade the brakes? Do I have to bend the forks out a little to get the new wheel with hub motor to fit?

I, along with around 15,000 other people over the last year, went the LECTRIC eBIKE route. Their bike lists for \$1000 but is \$899 on pre-order. All of the system integration problems related to a kit are avoided. But wait, there is more to this story!

This company happens to be located in Phoenix, a 40-minute drive from my home. I was able to make an appointment for a test drive. That went very well. The bike sold itself. I was then able to check out their previously owned and also damaged bikes.

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As far as I could see, all of the damaged bikes had the bottom bracket support leg broken off. It was aluminum and sheared just beyond the weldment.



The second bike we looked at had zero miles on it. I was out the door for \$835, which includes \$63 in tax. This support leg is needed when the bike is folded up. It keeps weight off of the front sprocket.



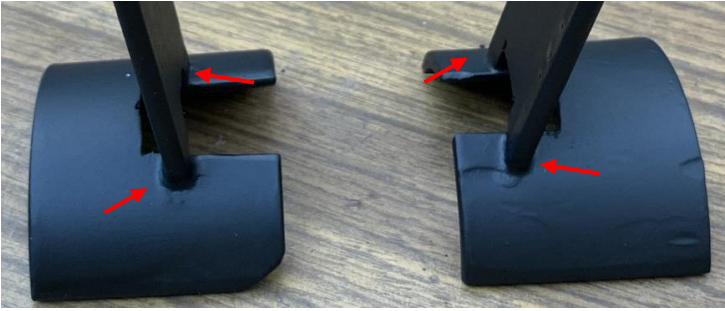
I decided to form a replacement leg from 1/8th inch strap. The curved base is 1½ inches wide, and the leg is 1 inch wide.

I cold formed the pieces using a mandrel and a dead blow hammer. For the base, I clamped the strap and a piece of 1¾ inch diameter stock in my bench vise. A few wacks and I had formed the strap to the needed radius. I was guided by repeated trial fits.



I estimated the size of the two cut-outs and then sawed and filed until it fit². I had to file a bevel on the inside of the curve to clear the weldments. This close fit prevents the support from rotating.

² I don't have the picture of just the base so am showing the base with support leg attached.



I am a little concerned about my method of attaching the base to the support leg. Due to bad planning, I didn't leave much metal for the joints. I was concerned that welding would burn through. So, instead, I silver brazed the joint. Because brazing fills the gaps and forms a fillet, it is strong. The part that broke off the bottom bracket was aluminum, and I'm using steel.

If a joint fails, I will flank the support leg with more steel and braze it into place.



A pair of stainless steel hose clamps securely locks the assembly to the bottom bracket.



I still must cover the bottom of the support leg in thick rubber. That paint will scratch off the first time it rests on concrete and is slid around.

The paint job sure makes the assembly look professional.

This was a fun project, and it sure feels good to have saved a substantial amount of money.

I welcome your comments and questions.

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