

# Magsafe Conversion

Do-it-yourself Manual.

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The following pages are to be followed/performed by a competent technician or a knowledgeable person familiar with electronics and soldering. By following performing these steps, you release MCT, inc. / mikegyver.com any responsibility to the damage of your Apple products. The person performing the modification acknowledges that they are responsible for any damage, data loss, or anything else the results in the non-operation of your Apple product.

Thank you for purchasing the Magsafe DIY manual. Please read through this DIY before you begin.

This booklet includes pictures and instructions that are based on our Universal 90w Car adapter sold at mikegyver.com. These parts can be found from Radio Shack. Although this manual is written for the average user, there is some assumption that you are technically inclined, handy with a soldering iron, know about electronics and know exactly what components that you will be using. If you don't, it might be easier to purchase our completed units. ☺

Note: The following pages are for those who want to convert their existing Apple Magsafe power adapters to use with the other power adapters. I must warn you that you MUST know what you are doing! One user wanted me to convert their iBook/Powerbook 24vdc adapter, and I had a hard time explaining that it will not work! He could have blew out a brand new \$2,400 laptop!

If you are using our 90w Universal Car adapter you'll need:

Parts:

- 1 One DC power Plug 5.5mm OD x 2.1 mm ID
- 2 One In-line DC jack. 5.5mm OD X 2 mm Center Pin.
- 3 Apple Adapter with magsafe connector. The Apple Airline adapter WILL not work!

Tools needed:

- 1 Soldering iron
- 2 Wire cutter/stripper

If you are making a cable with standard DC plug (for Kensington or iGo) you'll need:

Parts:

- 1 One Kensington or iGo adapter that can output 16vdc with at least 3.5A
- 2 Kensington smart tip "N2" or a tip for the IBM X20 Laptop (if you are using other adapters).
- 3 One In-line DC jack. 5.5mm OD X 2 mm Center Pin. (If Radio Shack does not have it try mouser.com part # 163-0302)
- 4 Optional: One DC power Plug 5.5mm OD x 2.1 mm ID (male side), if you want to continue to use your Apple adapter.

- 5 Apple Adapter with magsafe connector. The Apple Airline adapter WILL not work!

Tools:

- 1 Soldering iron
- 2 Wire cutter/stripper

Let's get started!

Here are the following Prep work:

1. Cut power cord about 16 inches away from the Apple adapter... It's really up to you how long, I just like it about 16 inches away from the brick adapter.



2. On the magsafe end of the cable slide on the protective cover (handle) on.
3. After stripping away insulation, solder white (positive center wire) to center pin. Be careful to avoid putting too much heat on the center pin or you'll melt the plastic. The solder the outer wire to outer lead as shown:



4. Slide and screw on the plastic cover handle



5. For Kensington or iGo: Plug in the Kensington smart tip N2 (or iGo tip), then plug in your newly created in line DC magsafe connector. Then plug everything in and your all set!

Your completed setup should look like this:



You are finished here if you are doing this for the Kensington or the iGo adapters.

Proceed on if you are doing this with our 90w universal adapter:

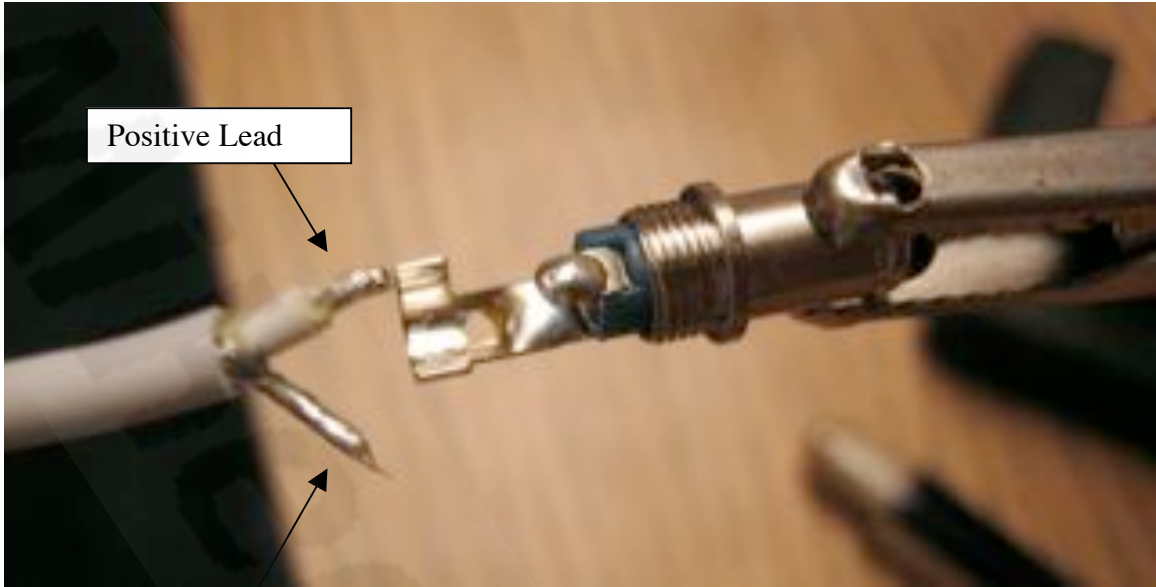
6. Likewise, strip out the wire on the apple power cord like so(On the Apple adapter brick side). You must keep it about 5mm stripped back or else it won't look pretty when you slide the DC power plug on.



7. Slide the plastic DC power plug sleeve on the Apple adapter cord for later... You don't know how many times I've forgotten to slide this on only to realize that I forgot AFTER I soldered on the power tip.



8. Get the Apple adapter side, the one where this is only 16" of cord. Solder the negative wire to the outer prong and the positive lead to the center prong.



Negative Lead

9. What it should look like after soldering.



10. Screw on the DC power sleeve...



14. The Universal power adapter have locks (if you will) that will fix a voltage in a particular voltage range. Find the lock that is 16v. Move the selector switch to 16v, then insert the lock in.

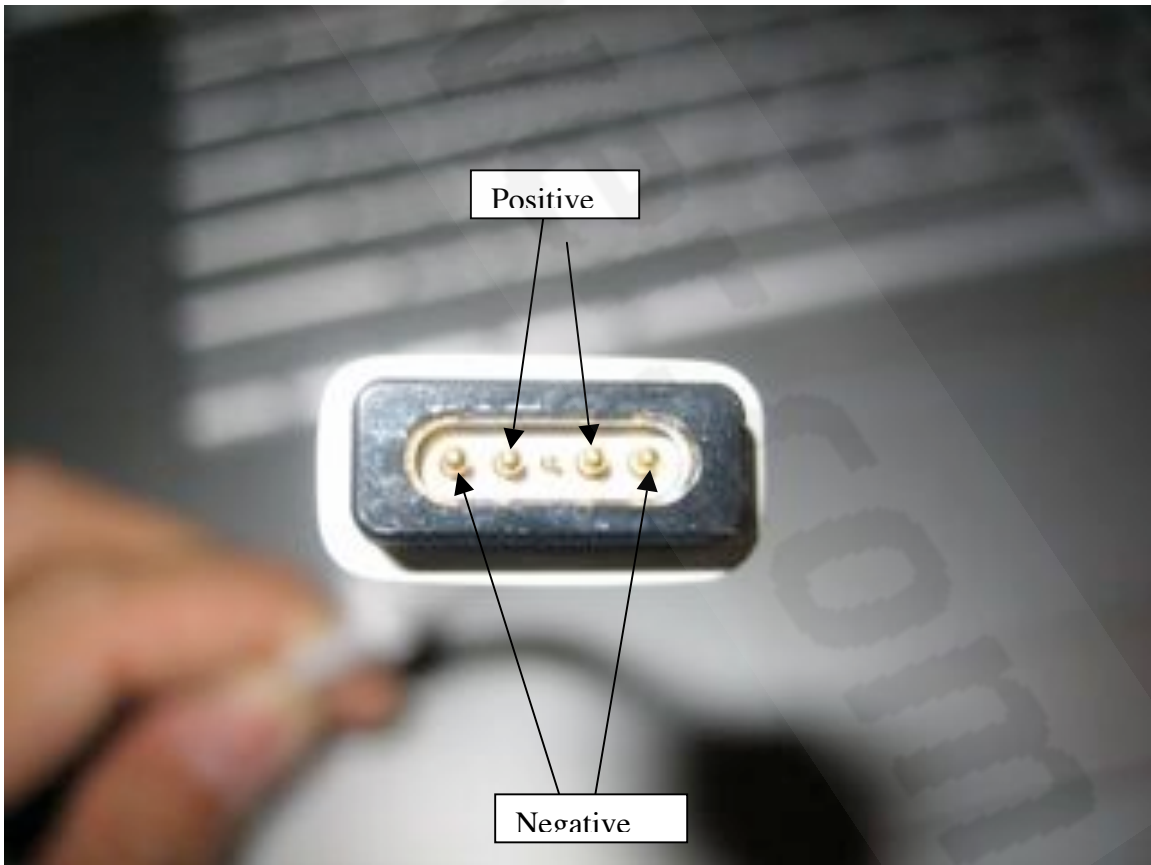


15. You're Finish! Plug in the newly converted DC connector to the 90w universal adapter!

And of course this is what everything should look like:



Just FYI. Here is the pinout for the MagSafe connector.



The way the 85W apple adapter works is that when unloaded it is 6.5vdc. As soon as it senses resistance, it jumps up to 16.5vdc. When the laptop demands it, it will take it up to 18.5vdc.

I locked the car adapter to 16vdc because in most applications it is sufficient at 16vdc. It also make it easier for me to deploy it out to both the pro and the macbook.

Why the Apple Magsafe airline adapter will not work.

For reason unknown to us. Apple has limited the features of their own Magsafe airline adapter. There is circuitry in the empower plug that prevents use in cars, while on the magsafe side they prevent charging.

We have successfully disable some (not all) of these “features” but after the amount of time put into it, we continued to suggest the standard Apple adapter for you to modify.