

SMOOTHER SHAVES

with Smoother Current

IF YOUR TRUSTY electric shaver "groans" in the morning and can't quite seem to "get going," maybe it needs a little d.c. "stimulation." Many of the older a.c./d.c. shavers which creep on a.c. often purr delightfully when operated on d.c. What's the answer? Build this little plug-in a.c.-to-d.c. converter—it'll take only an hour or so of your time and less than \$3.00 of your cash.

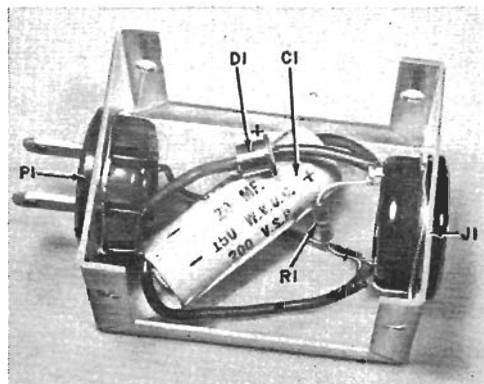
Start construction by cutting a $1\frac{3}{16}$ "



hole in the center of each end of the utility box (it's easiest to use a chassis punch, but a circle cutter will also do the trick). Next, mount plug *P1* in one hole, and jack *J1* in the other, using the retainer rings supplied. This done, wire up the converter, following the schematic diagram and the photos at right. When wiring, be especially careful not to make any connections to the metal box itself—to prevent any possibility of an electric shock.

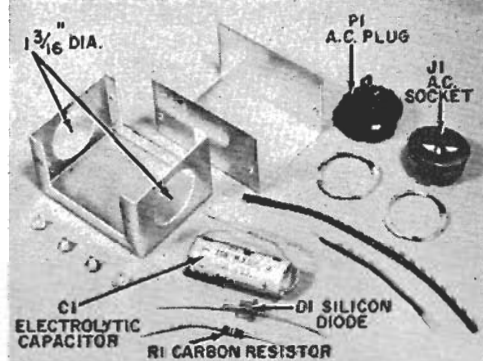
Your power converter is now ready to go. Simply plug your shaver into the converter, and the converter into a 117-volt a.c. outlet, and you'll shave with pleasure. It's best to unplug the converter when it's not in use, incidentally—someone might be tempted to insert a high-wattage or an a.c.-only appliance into it.

—Joseph R. Noonan



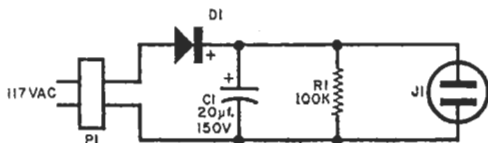
PARTS LIST

- C1*—20- μ f., 150-w.v.d.c. electrolytic capacitor
- D1*—750-ma., 200-PIV silicon diode (Lafayette Radio Type SP-197 or equivalent)
- J1*—2-pole female a.c. socket, retainer-ring mounting (Amphenol Type 61-F or equivalent)
- P1*—2-pole male a.c. plug, retainer-ring mounting (Amphenol Type 61-M or equivalent)
- R1*—100,000-ohm, $\frac{1}{2}$ -watt resistor
- 1—2 $\frac{3}{4}$ " x 2 $\frac{3}{8}$ " x 1 $\frac{5}{8}$ " aluminum utility box (Bud CU-3000-A or equivalent)
- Misc.—Insulated hookup wire, spaghetti, solder



All the parts you'll need are shown here; the photo at the top of the page tells you how to mount them.

Wire the converter exactly as shown in diagram below. "Plus" of *D1* must connect to "plus" of *C1*.





BUILD A STICK-SHIFT ELECTRIC SHAVER

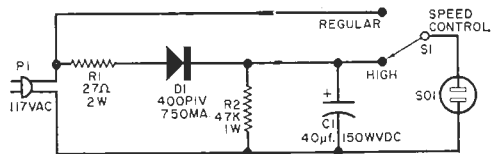
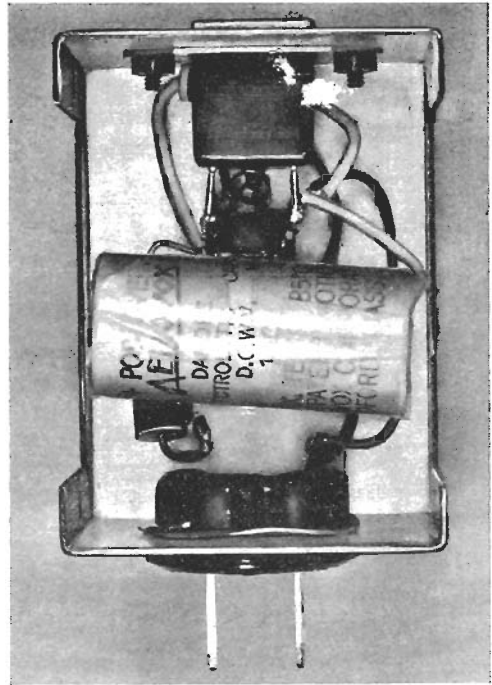
ADAPTER FOR
BRISK
WHISKER WHISKING

IN ORDER TO make electric shavers "universal" and capable of operating on both a.c. and d.c., there has to be a design compromise in the motor. Most electric shavers will cut faster and smoother if operated from d.c., or even pulsating d.c. But occasionally you may want to slow the electric razor down, and this gadget was built so that "High" and "Regular" speed control could be provided.

Mounting and wiring of the components is obvious from the photographs. A d.p.d.t. slide switch was used so that the extra terminals could be employed as tie points to support some of the wiring. Diode *D1* can be any silicon rectifier diode with a rating of 400 volts PIV and 750 mA. Don't ground any of the wires intentionally or accidentally to the metal box.

To use the shaving aid, simply plug it into a convenient outlet, set the slide switch to "High" or "Regular" speed, plug in your shaver, and you're in business. For maximum convenience—if your shaver is only used in the bathroom—replace plug *P1* with a short length of zip cord and a suitable a.c. cap, and mount the box on the wall.

—Ryder Wilson



You can house this handy electric shaver adapter in a small metal box using an Amphenol 61-M-1 a.c. plug at *P1* and a chassis receptacle at socket *SO1*. Float all of the wiring, and make certain that none of the components accidentally shorts to the box.