

Build your own laser printer at a fraction of the cost of those expensive store-bought units.

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A LASER PRINTER CAN REALLY ADD that extra touch to your printouts. The superb graphics resolution gives your printouts a professional look, and the fast text output (8 pages per minute) can really speed up your printing. Although laser-printer prices have dropped drastically in the last few years, they are still a little too expensive for the average person. However, you can now build your own laser printer at home and save thousands of dollars!

How it works

Laser printers are essentially souped-up copy machines. They

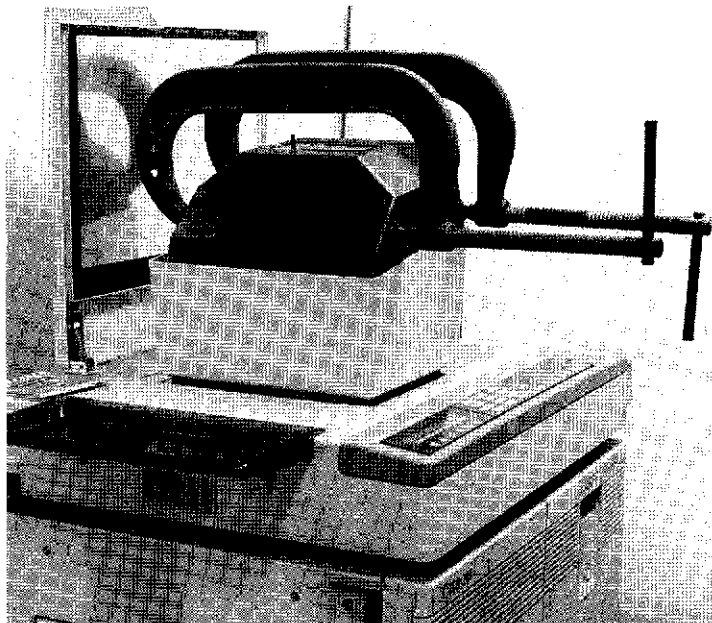


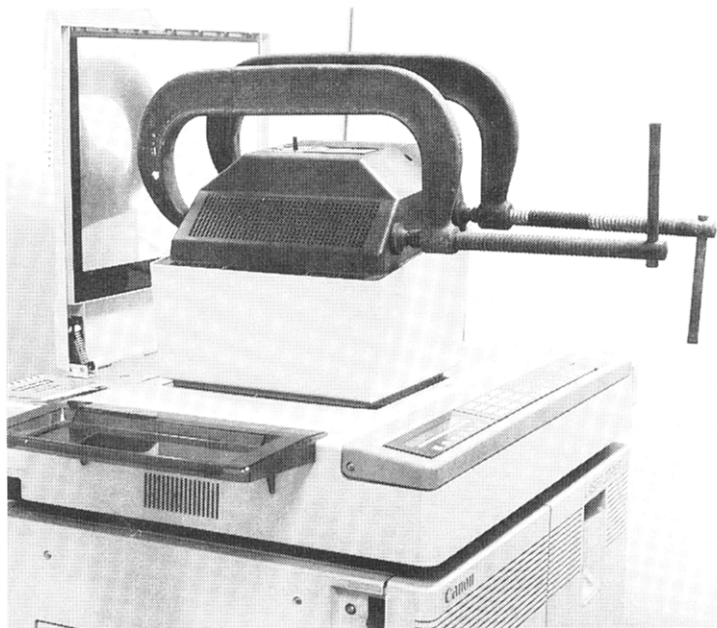
FIG. 1—THE MONITOR CAN BE SECURED to the copier surface using C clamps, superglue, or even large rubber bands. The exact method you use depends on your particular copier/monitor combination.

use a photosensitive drum which is exposed to a laser beam. The laser beam can be turned on and off while spinning mirrors sweep the laser beam across the drum selectively discharging it. Toner

is transferred to the drum in the charged places and then onto paper to produce the final image.

Since a copy machine already has the paper feed, the photosen-
continued on page 84

POOR MAN'S LASER PRINTER



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LASER PRINTER

continued from page 17

sitive drum, the toner, and the motors to move the paper through the copier, we can convert a photocopier into a "laser printer" with relative ease.

To produce the image on the paper we simply need to place an image onto the copier which can be copied onto the paper. The copier will do the rest of the work for us.

Since a computer monitor is capable of high-resolution graphics, we will use a computer monitor strapped onto the copy machine to produce our image to be transferred to the paper.

Construction

The system can be built using a monochrome monitor. However, a VGA monitor should be used, as it has much better graphics resolution. The better the monitor, the better the final image.

Construction of the "laser printer" is accomplished by strapping the VGA monitor onto

the copy machine. Also the light bulb inside the copier must be removed. The computer monitor must be located on the glass surface of the copier so that it is lined up with the 8½- by 11-inch paper area.

The monitor can be secured to the copier surface using C clamps, superglue, or even large rubber bands or Bungee cords—the kind you use to strap things to the top of the car with, not the kind you jump off bridges with. The exact method used will depend on the copy machine and how easy the monitor can be secured to it. Figure 1 shows how we did it. Be sure that the cables to the monitor are not laying between the copier's glass surface and the monitor screen, and that they reach to your computer's video output. The monitor should not be glued into place until you have "laser" printed a few pages to check the alignment of the monitor on the copier glass. Once a few pages have been printed, and the monitor's alignment has been established as correct, then the monitor can be secured to the copier.

To remove the copier's light

bulb, open up the copier and find the bulb. It is usually located near the copier's glass surface, and may be accessible only by removing the copier's glass. The light bulb must be removed because the VGA monitor will now supply the light to expose the photosensitive drum. (The light is normally supplied by the light bulb reflecting off of the paper of the original.)

Usage

To test the "laser printer," put a graphics image onto the VGA monitor screen and simply press the COPY button. The image on the copier output paper should be a reproduction of the VGA image. Use several images to test the alignment of the VGA monitor, repositioning the monitor until the image is well centered. The monitor can then be secured to the copier.

Both text and graphics can be printed, with the only limits being those of the VGA display. Since copy machines can easily produce eight pages per minute, the "laser printer" is a very cheap alternative to purchasing a "real" one.

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