TRACE ELEMENTS

Although many home computers have excellent graphics facilities, transferring a picture or design from paper to the computer's display can be a time-consuming and extremely difficult task. A far better option is to choose one of the many digital tracers that are marketed for use with microcomputers.

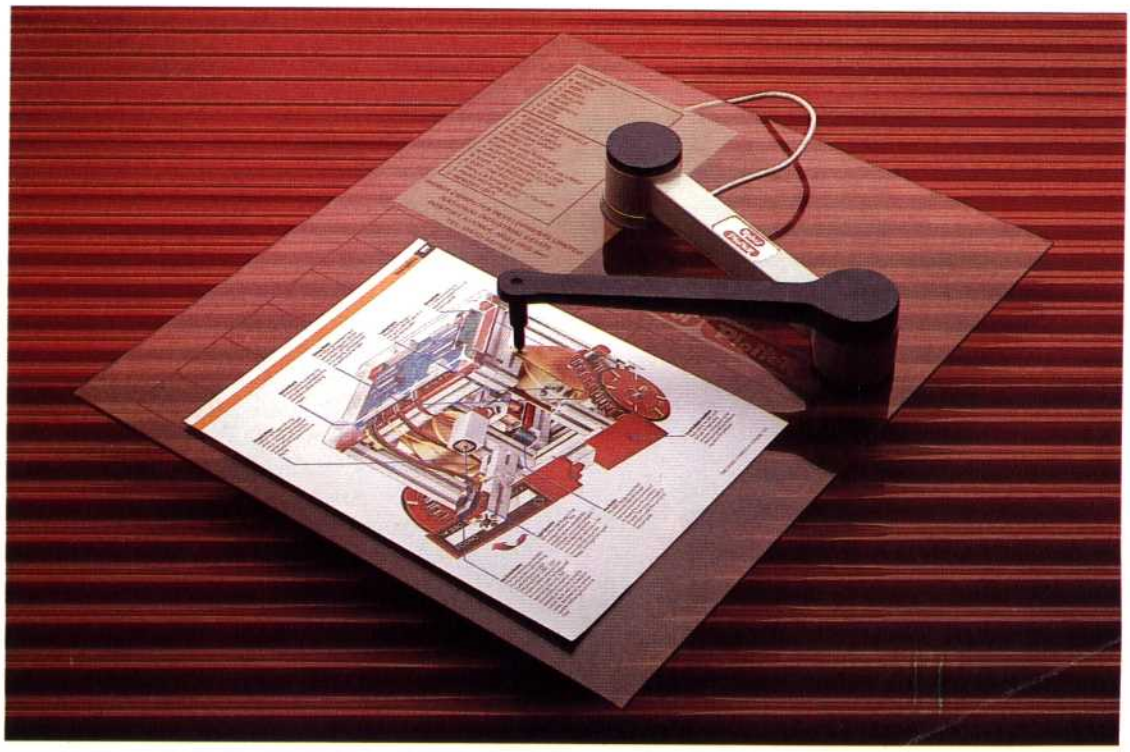
A digital tracer is a simple piece of equipment that allows you to trace over a drawing, photograph or design, and at the same time transfer the image to the computer's display. The ease with which this may be done is largely dependent on the software that accompanies the equipment. Here, we look at four digital tracers — three for the BBC Micro and one for the Sinclair Spectrum.

All of the tracers work in a similar way. A pointer is fixed at the end of a double-jointed arm, which sends electrical signals to the computer. These signals vary in strength, depending on the position of the pointer. They are converted into digital format by the computer and used to plot a point in the correct place on the screen. All the tracers are supplied with software to carry out this task, offering various options such as drawing lines in different colours. The software for the BBC models allows different display modes to be selected, trading off resolution against the number of colours available within the constraints of limited memory space.

The Robot Plotter, from Robot Computer Development, is the most impressive looking of the four tested. This model has a perspex base on which is inscribed a grid showing pixel positions. The tracer arm is anchored at one end of the base. The picture to be traced may be placed underneath the grid and viewed through the clear base. The arm on this model is extremely sturdy, being constructed from thick metal and plastic. The pointer is a pencil-like stub that juts down from the arm to the base plate. Unfortunately, with this system it is not easy to see the picture as it is being traced.

The Robot Plotter costs £69 and is sold with a single cassette containing software to run on the BBC Micro. In addition to the tracing routines, the cassette contains several circle, rectangle and line drawing routines that are used in conjunction with the arm.

The tracing program stores all images as a series of lines; thus, a map tracing would be held in memory as a sequence of short lines. This makes it easy to remove unwanted lines without affecting other nearby lines. However, a complex image requires a lot of memory and it is possible to use up all the limited spare memory of the BBC machine. Because the display is stored as a sequence of lines, it is relatively easy to transfer images created with



Robot Plotter
Artwork for tracing can be placed under the perspex work table of the Robot Plotter; the software provided includes circle and rectangle routines