TOPPING THE BILL

In this part of our robotics series we turn our attention to the higher priced robots and robot arms available. Two distinct categories emerge: robots that are used as teaching aids to demonstrate the principles of robotics, and those that represent the state of the art of modern robot design.

Many of the robots that we discuss in this article are expensive — some cost over £1,000 — but they do not qualify as industrial robots and are designed for both home and school use. The first group that we will look at comprises robots that are engineered to a high standard and embody many of the features of industrial robot arms. The main difference between these arms and industrial arms is that most of the arms mentioned here are designed for educational use and are used to teach the principles of robotics.

Typically, the main differences between these arms and their industrial counterparts is that these are smaller and less able to handle large objects. In many cases, of course, the educational market overlaps with the industrial market because if the industrial application requires only a relatively small, light arm then many of these arms would suffice. For instance, an industrial robot might well be needed to handle large steel ingots weighing several hundred kilograms. Equally, an industrial robot might be needed to assemble parts on a printed circuit board — a task that does not require a large and powerful arm. So, the robot arms in this category can be regarded as having the potential to carry out perfectly serious applications as well as being educational.

The second category that we shall be looking at concerns those robots whose design incorporates the very latest in contemporary robotic thinking. Many of them will be equipped with the sensory powers that we have discussed in previous articles in this series.

ARMS TO EDUCATE

A reasonably-priced robot arm is the Mentor from Cybernetic Applications. This sells for £345 in kit form, has six degrees of freedom (waist, shoulder, elbow and three axes of rotation at the wrist) and is powered by electric motors. It can be controlled from the BBC Micro, Commodore Vic-20 or the Sinclair Spectrum.

From the same company, but at the other end of

IAN McKINNELL

At Your Service
Because the Hero is both mobile and has a gripper, it can bring its owner a cup of tea in the morning (provided of course that the bedroom is not upstairs from the kitchen!) Our photograph shows the Hero and the Mentor enjoying a cup of tea