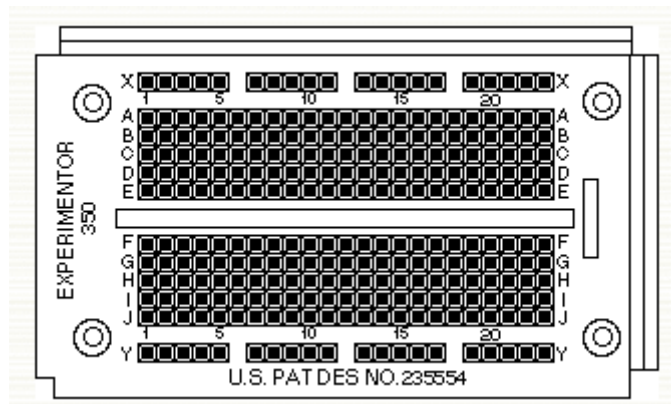


Breadboarding

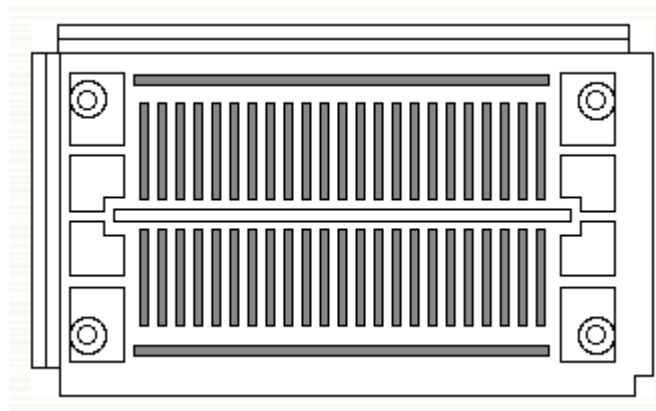
The best method of experimenting with ICs is to use a "breadboard" to build circuits. Breadboards, more formally known as *solderless modular sockets*, get their name from the early days of radio, when it was common to build vacuum tube circuit prototypes on a wooden breadboard.

Today's breadboards are a grid of insulating plastic atop a pattern of conducting metal strips. Here is a top view of a typical breadboard:



Component leads and wires are inserted into the holes and make contact with the conducting metal strips underneath, thus "connecting" them together.

The pattern of conducting strips underneath the insulating plastic is shown below. Notice there are two horizontal strips along both sides of the breadboard and a series of shorter vertical strips. The two horizontal strips are normally used for power supply connections, with one strip being the supply voltage and the other being the ground connection. (Breadboards with four horizontal strips are available, and are used for circuits requiring dual polarity or multiple voltage power supplies.) The horizontal strips are often known as *rails*.



Note the gap separating the vertical strips. The dual in-line package (DIP) IC is normally placed across this gap. One row of pins is on one side of the gap, and the other row of pins is on the opposite side.

Breadboards come in a variety of sizes, and are usually measured in terms of the number of connection or "tie points" provided. Some breadboards come with binding posts for connecting a power supply; deluxe models have power supplies built in and with additional supports for potentiometers, LEDs, and meters

The ECE shop will provide a suitable medium size breadboard at a cost of \$20.