75 cm of the Dewar was of strip silvered double-wall construction, the space between the walls being held under a vacuum of less than $10^{-6}$ mm of mercury during an experimental run, reducing the heat leak into the liquid helium. The top was bolted with a rubber seal to the base of the brass hat, effectively sealing the Dewar from outside air. A pressure relief valve set at one-half pound was located in the hat. The helium Dewar was itself contained inside a larger cylindrical open-topped Dewar of total double-wall construction with a permanently sealed vacuum space. This outer Dewar was filled with liquid nitrogen to within a few centimeters of its brim. Styrofoam pieces were loosely inserted at the top between the two Dewars, thus keeping a small positive pressure due to nitrogen evaporating and preventing water vapor in the air from condensing inside and freezing which could result in breakage of the Dewar.

**Vacuum Systems**

Two separate vacuum systems were used in the experiment. Both used oil vapor diffusion pumps and forepumps. One system ran continuously and evacuated both the inner cylinder and the double-wall portion of the helium Dewar. The other pumped on the inside of the outer cylinder where provision had been made to leak in helium exchange gas when needed. By using a series of vernier valves, pressure could be continuously varied from 1 atmosphere to less than $10^{-6}$ mm of mercury.

**Assembly and Experimental Procedures**

After the thermometers and heater had been attached to the crystal and the crystal attached to the base, all the leads would be soldered and the inner cylinder would be assembled. The cylinder would then be evacuated and the indium seals tested with a Veeco leak.