Methods of Heating the Sample:

Heating of the sample has been accomplished by various, although similar, techniques. The presses have been constructed in such a way that each of the anvils is electrically insulated from the press frame itself and consequently from each other. Two anvils were then wired together and connected to one side of the power supply and the other two were wired together and connected to the other side of the power supply. When a tetrahedron is inserted into the press, having, of course, the proper internal arrangement, current can pass through one set of two anvils, through the sample or sample heaters, and back out the other set of two anvils. This heating method is basic to all the runs made. The only thing that changes is the means of getting current through the tetrahedron and the type of sample heating arrangement employed. These various arrangements will be discussed separately in the section concerned with each specific sample.

Detecting the Temperature of the Sample:

A method has been developed whereby several thermocouple wires are imbedded in the tetrahedron and run out through the gaskets to a recorder to measure the temperature of the sample, or, for that matter, the temperature at any point inside the tetrahedron.

Platinum-platinum 10% rhodium thermocouple wires were used exclusively in the runs made. Each set of runs employed various thermocouple arrangements and these will be described in the section concerning the specific runs. However, the method of bringing the thermocouple wires out of the tetrahedron through the gaskets is a technique that has been used exclusively throughout all the runs.