Argon flow through the system. The crystals were ion bombarded for twenty minutes at 2000 volts and 0.6 ma current. The system was then immediately pumped down to a pressure of 5 micro-torr. The strip furnace was then heated to outgas the silver and swung into place approximately 1 cm from the surface of the lead. It took approximately ten minutes to pump down, at which time the silver was evaporated onto the lead. The system was vented slowly to ambient, and the mold containing the crystals removed.

One tenth of an inch was sawed off the silver-plated end of the mold containing the crystals. The crystals were removed from the mold by cooling to liquid nitrogen temperature. The difference in coefficients of the thermal expansion between graphite and lead allowed the plated samples to drop from the mold without damage.

As the original crystals were about 1 1/2" long, it was possible to obtain about 50 samples from one mold (5 cuttings). It was thought advisable to use only the lower 1/3 of the 1 1/2" long crystals to avoid possible regions of imperfect crystal growth.

3. Anneal Procedure

The study of chemical diffusion at high pressure at this university is conducted in a large volume (1" anvils) Tetrehedral-Anvil Press designed by Dr. Tracy Hall[33,34] as shown in Figure 2. This press is similar to the X Ray Tetrehedral-Anvil Press previously reported by Barnett and Hall[35] with the exceptions that it contains no x ray apparatus and is mounted oppositely (upside down) from the latter.