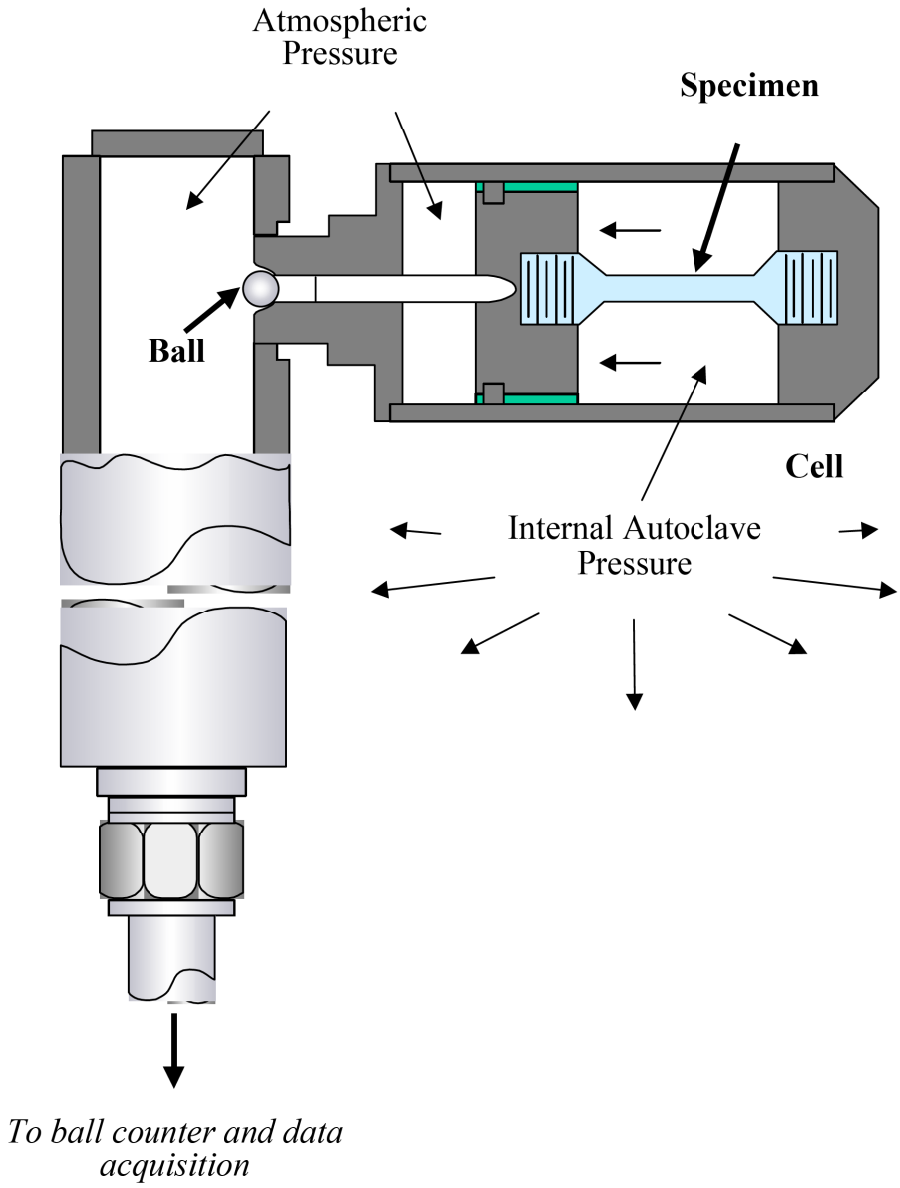


Figure 2-1. Schematic of the individually loaded, "Keno" specimens used for crack initiation testing. Each specimen is loaded by the internal pressure of the autoclave, so that differences in specimen stress can only be accomplished by altering the gage section of each specimen, although changes to all specimens can be made by altering the autoclave pressure.

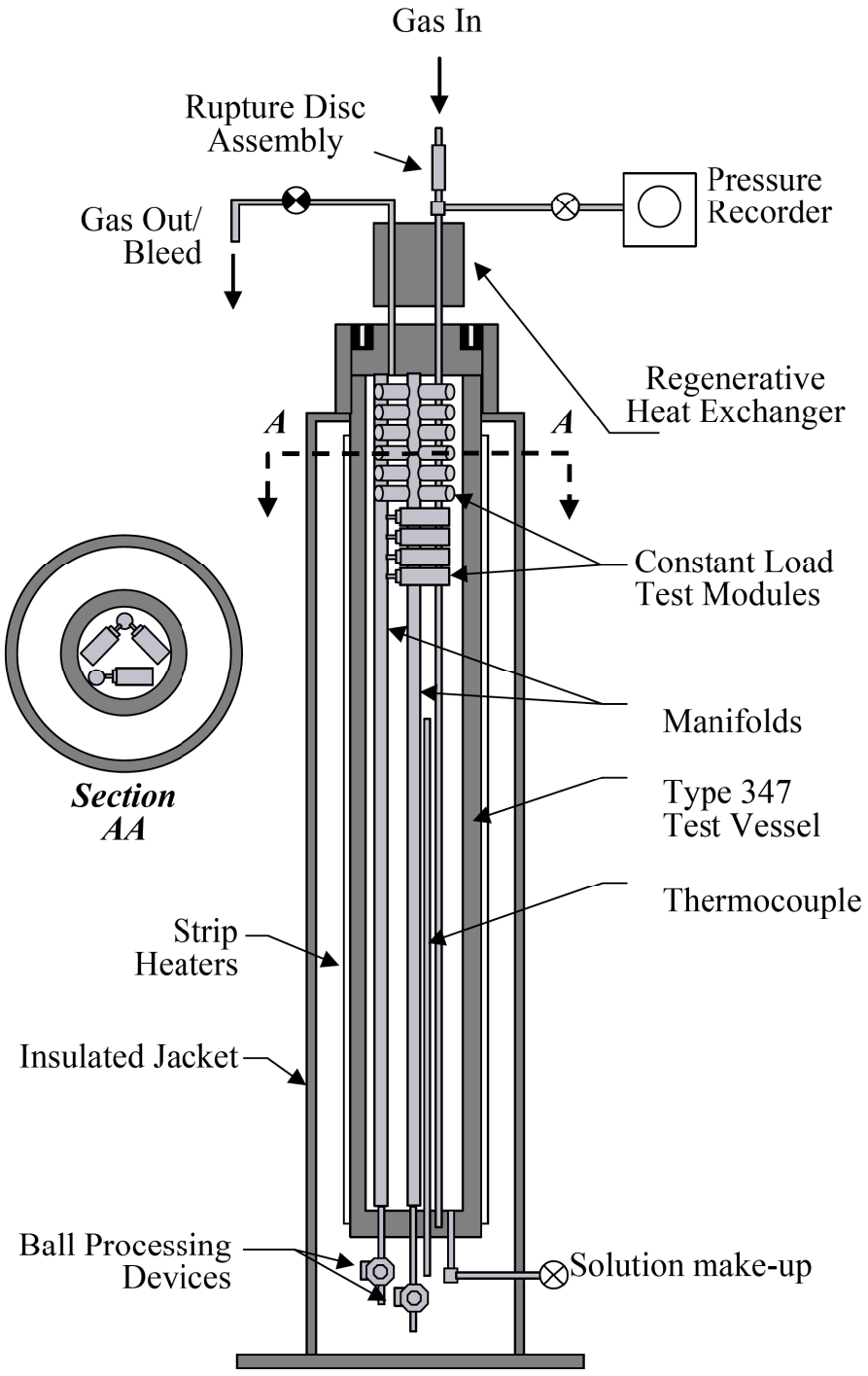
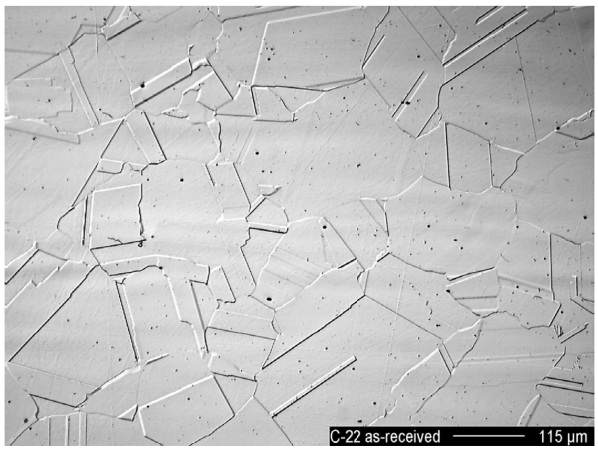
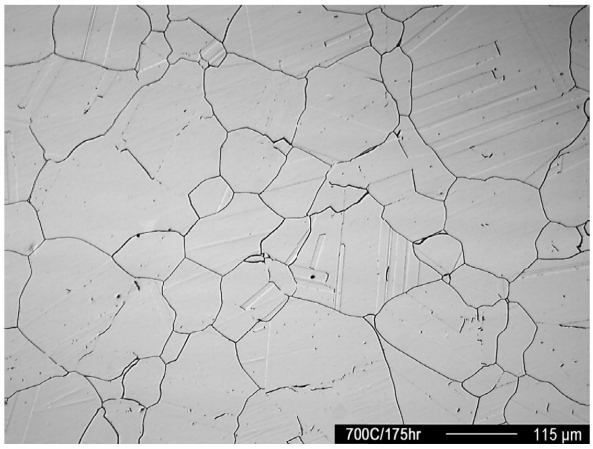


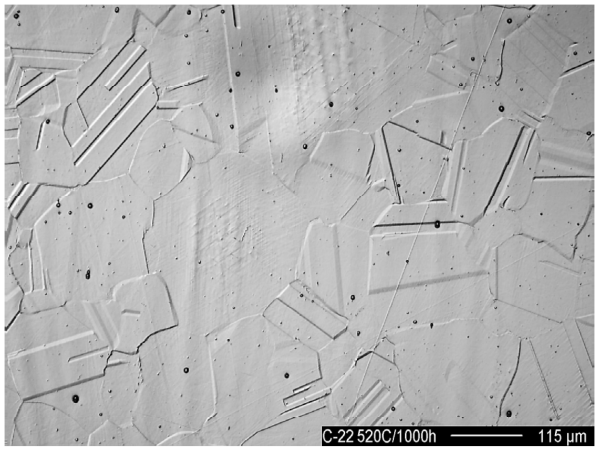
Figure 2-2. Schematic of the "Keno" autoclave, which can hold up to 50 specimens in each of three manifolds, for a total of 150 specimens. In the configuration used for these tests, flowing water was not used, although the pressurizing gas flowed at about 50 – 100 sccm.



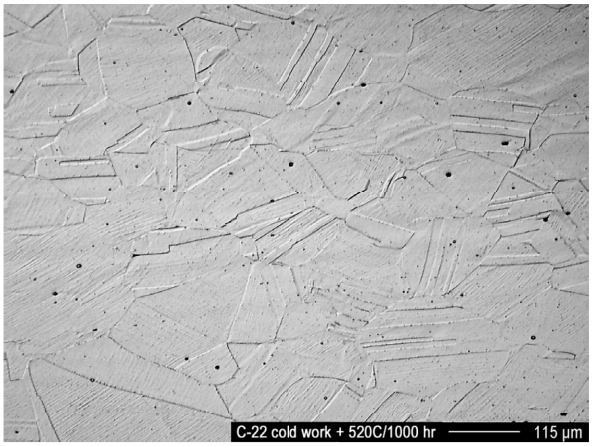
As-received (AR)



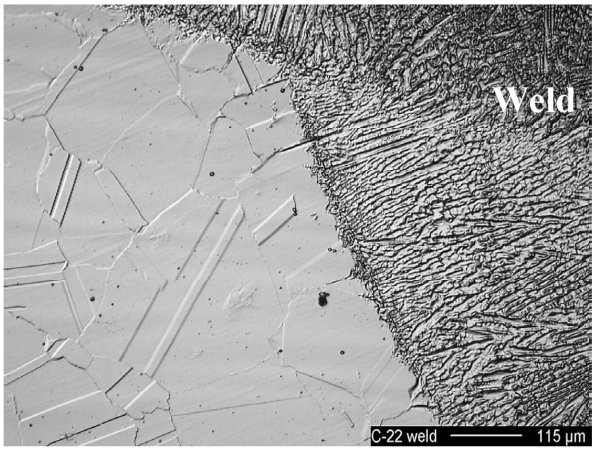
AR + HT1 (700°C/ 175 hr)



AR + HT2 (520°C/1000hr)

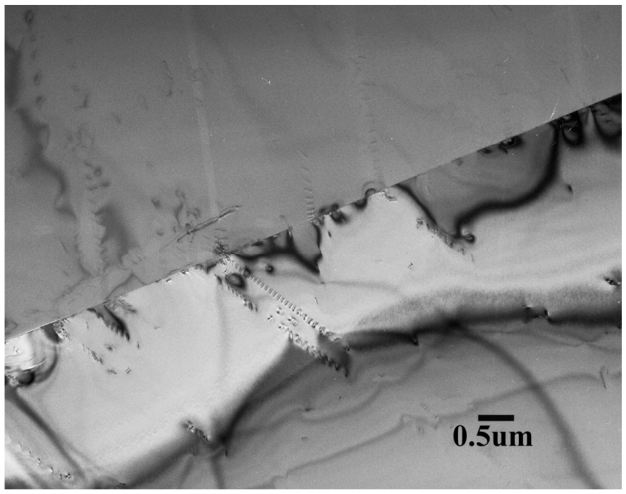


AR + 20% cold work + HT2 (520°C/1000 hr)

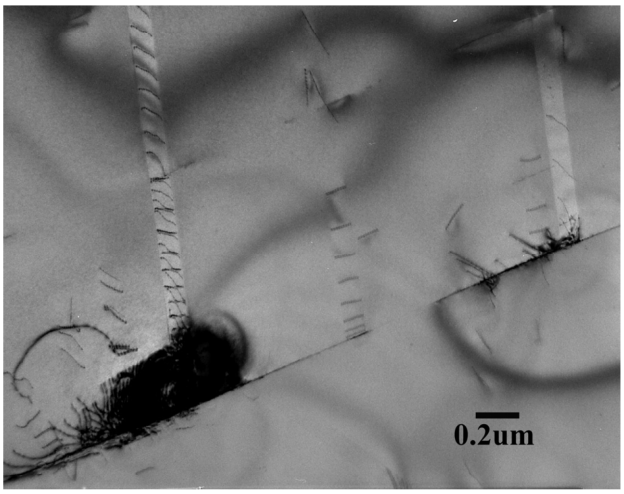


AR Weld Fusion Region

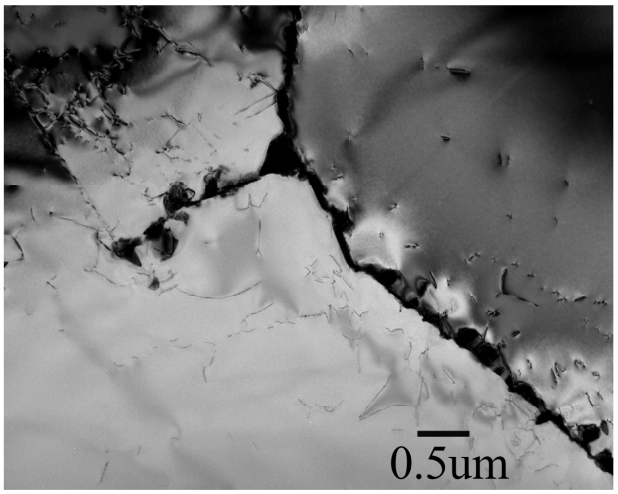
Figure 2-3a. Optical metallography of Alloy 22 heat treatments used in Keno Run 2. Etched with 10g oxalic acid in water at ~ 6V for 5-15 seconds. Viewed using differential interference contrast (DIC).



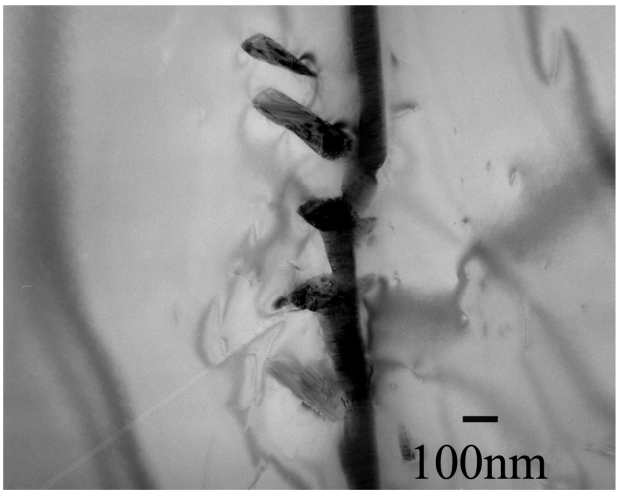
As-received (AR)



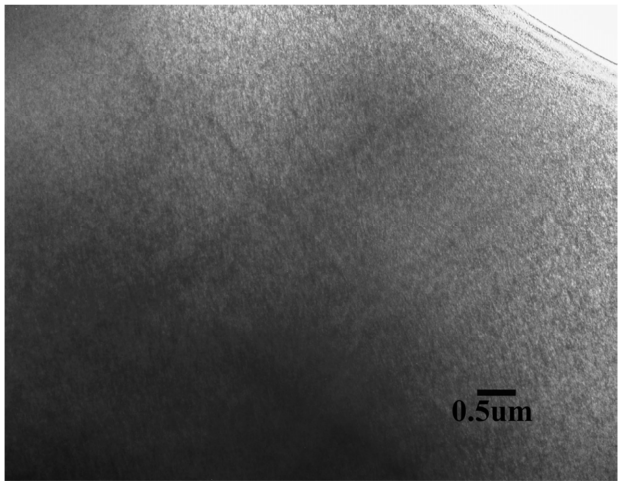
As-received (AR) Higher magnification



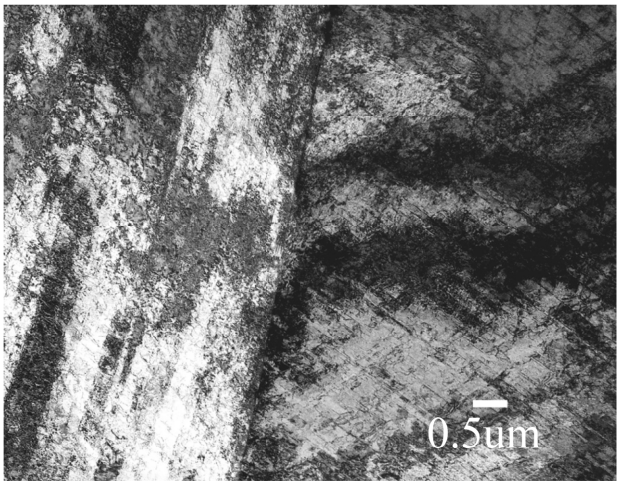
AR + HT1 (700°C/ 175 hr)



AR + HT1 (700°C/ 175 hr) Higher magnification



AR + HT2 (520°C/1000 hr)



AR + 20% cold work + HT2 (520°C/1000 hr)

Figure 2-3b. TEM of Alloy 22 heat treatments used in Keno Run 2 (viewed in bright field).