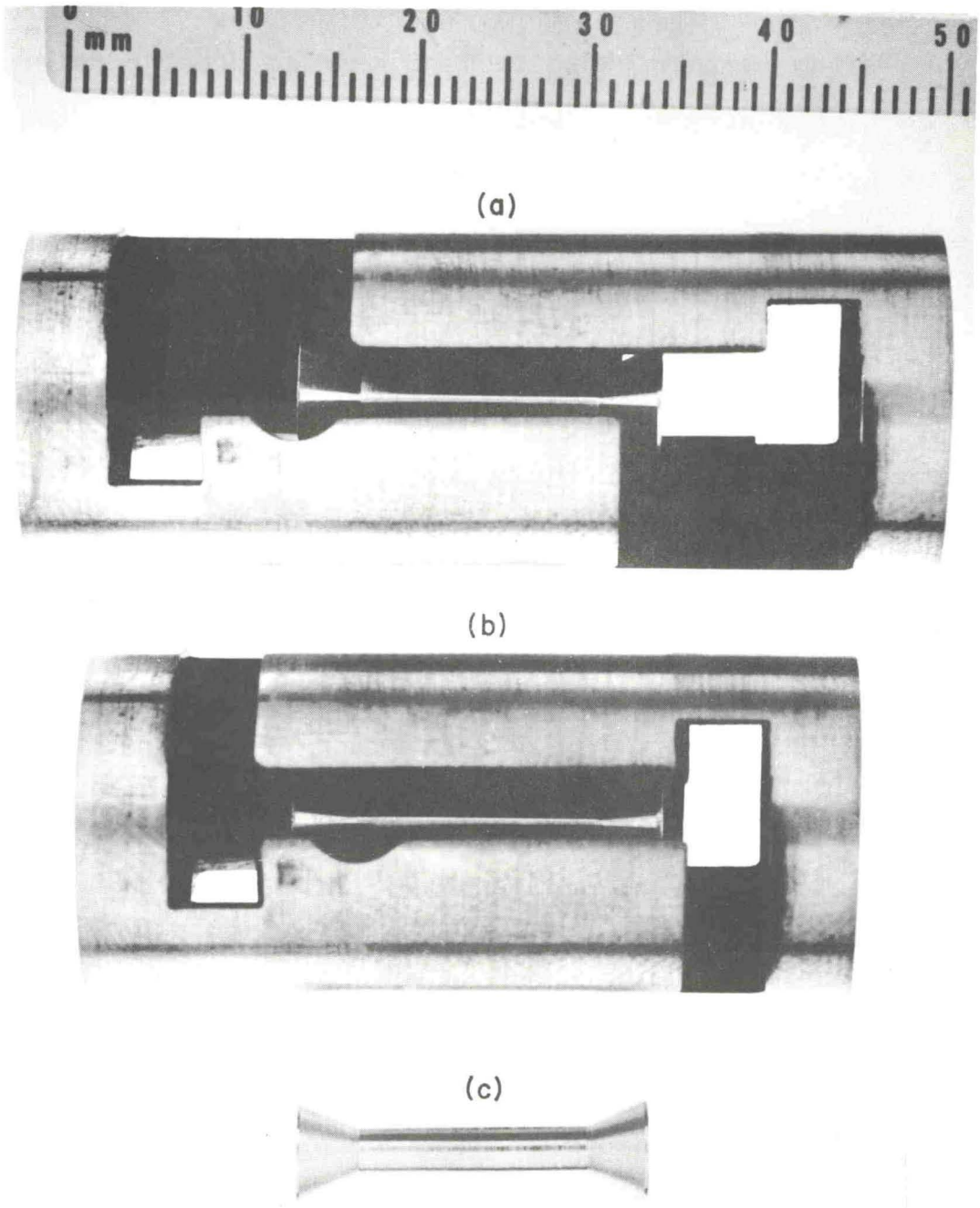

Fig. 4 Tensile yoke in a] position for insertion of sample b] position for testing and c] tensile sample alone.

The sample has an 1/8 inch gage diameter and a 1/2 inch gage length The yoke which is fabricated from high speed steel consists of three pieces A, B and C which are permanently connected by first meshing pieces A and B together and then brazing or soldering piece C in place. As shown in Figure 4, the yoke has been designed so that the sample can be easily dropped into test position through a side slot and an opening enlarged to receive the conical end of the sample. In addition effort has been made to minimize the volume of the yoke so as to provide a maximum volume of the liquid high pressure medium. This in turn will provide a minimum pressure change during sample strain as will be discussed later.

In comparison with other yoke designs this one mainly offers greater ease of assembly and smaller volume. Alignment and frictional effects were the main problem areas. The alleviation of frictional problems in the sliding members and between the yoke and bore of the high pressure unit was accomplished at some sacrifice to alignment perfection but a satisfactory compromise was attained.

Spacer

The tubular spacers (5), Figure 1, which were fabricated from either 2024 aluminum alloy or stainless steel were used to control the pressure at which the mechanical testing was to be performed. This was accomplished by keeping the volume and outside diameter of the spacer constant while changing the spacer height and inside diameter. From the