

of the five parameter, at eight increments of radial strain, on the IFM 1620 digital computer, is $3\frac{1}{2}$ to 4 hours. The long computer times involved suggested that a series of print-out statements be inserted in the program to keep the operator informed of the machine progress. In the solution of those problems where a containing ring was involved, a pair of accept statements, with a means for returning to them at will, were also placed in the program. The reason for this is that a small change in the assumed parameters (a_2 and Δ) caused very erratic changes in their computed values; hence, the method previously used in the unconfined case for selecting new values did not provide the necessary convergence. The accept statements permitted the operator to insert new data as deemed necessary. After the desired results were obtained, the selection pattern became apparent; however, the purpose of this program is not to find an easier approach for obtaining the same solution over again, but rather to establish a method for determining the unknown parameters under any given set of conditions.

With the displacement coefficients, constraining pressure, and centerline deflection now known, the coefficients α_1 , β_1 , and γ_1 , and their derivatives, can be found from an application of equations (36) and (37), respectively. This information is sufficient for finding the applied compressive force as defined in equation (43). The computer program used in the evaluation of (43) is shown in Figure 22 and is