the assumed cylindrical expansion of the wafer. The two values are used, as stated above, to determine the remaining three parameters. With this information, a new value of a_2 is computed from equation (53). Note here that a check is made to assure that the shearing stress existing at the top surface of the wafer does not exceed the shear strength τ_o of the wafer material. The computed and original values of a_2 are compared, and a new selection of a_2 is made and the computing starts again. This iteration scheme is repeated until such time that the computed and original values differ by less than 1%. Once this result has been accomplished, equation (57) is employed for the calculation of a new value of the wafer centerline deflection, Δ . If the value differs by more than 1% from the value used in its calculation, then the entire procedure listed above is repeated again, with a new selection for Δ , until the results are within the 1% margin. Fortunately, the ability to determine an approximate value for Δ at the outset, appreciably shortens the iteration process.

After all parameters have been computed within the indicated margin of error, the results are punched in card form, and the machine advances to the next load level, as indicated by an appropraite increase in the radius ratio, and commences to compute a new set of parameters. This procedure is continued , at equal increments, until the wafer achieves a 32% expansion, or up to the load limit of the containing ring; if one is used. The time required for a complete evaluation