$$F = 2\pi \int_0^{R_c} (\sigma_z)_{z=0}\, r\,dr \qquad (42)$$

where R_c is the maximum wafer radius in the mid-meridian plane. Substituting equation (40) into (42), and performing the indicated integration, the results shown in equation (43) are obtained. The subscript "c" indicates that the quantity in question has been evaluated at a radius of magnitude R_c.

The boundary conditions imposed on the problem by its physical constraints are itemized in the following paragraphs. The boundary conditions shown apply to the compression of a solid, radially retarded wafer via elastically deformable compression plates. The applicable conditions for the case of no containing ring, or for a hollow wafer, will be pointed out at the appropriate place.

The first boundary condition pertains to the radial deformation at the mid-meridian wafer plane. This condition requires that at

$$r = R_c\,, \quad z = 0\,; \quad u = R_c - R_o \qquad (44)$$

where R_o is the initial wafer radius. A combination of (29)