TABLE A-II

FINAL DIMENSIONS BEFORE ASSEMBLY

	Die Ring A	Ring B Max	Ring B Min	Ring C Max	Ring C Min	Ring D Max	Ring D Min	Ring D After Assy.	Vega o.d.
o.d. i.d.	12.505 11.500	11.5005 7.483	7.363	7.498 5.478	7.378 5.358	5.500* 3.500	5.380* 3.380	3.365*	No. 1 3.5005* No. 2 3.5010* No. 3 3.5020*
	Punch No. 1								
o.d. i.d.	7.005 6.000	6.005 4.359	4.239	4.375 2.853	4.255 2.733	2.875 1.375	2.755* 1.350	1.325*	1.375*
	Punch No. 2								
o.d. i.d.	6.9995 6.0001	6.0002 4.359	4.239	4.3752 2.8533	4.2552 2.7335	2.8752* 1.354	2.7552 1.340		

The measurements of the die and punch No. 1 are all within 0.0005-inch. Those of punch No. 2 are as listed.

Final o.d. of Die A-Ring after assembly = 12.517 inches.
Final o.d. of Punch No. 1 A-Ring after assembly = 7.020 inches.
Final o.d. of Punch No. 2 A-Ring after assembly = 7.020 inches.

*These dimensions were not final before final assembly.

At C-D Interface: $f_t = 19,800 \left(1 + \frac{\overline{3.50}^2}{\overline{1.41}^2}\right) = 144,000$ psi

$$f_c = \frac{b^2 p}{b^2 - a^2}\left(1 + \frac{a^2}{r^2}\right) = \frac{\overline{1.41}^2 (103,000)}{\overline{1.41}^2 - \overline{0.66}^2}\left(1 + \frac{0.66^2}{1.41^2}\right)$$

$= 163,000$ psi

At i.d. of Ring D:

$$f_c = 132,000\left(1 + \frac{\overline{0.66}^2}{\overline{0.66}^2}\right) = 264,000 \text{ psi}$$

These stresses are plotted as shown in Figure A-3(b) and added to Figure A-1(b) values, the summation being shown as Figure A-3(c).

2. Strain Gage Data

From Table A-I an average reading of 72,600 psi was recorded. (Gage No. 4 was not averaged in for reasons outlined in Subsection A, 2). A 6.9-percent difference exists between the calculated (67,600 psi) and test (72,600 psi) values. These values agree close enough for our intents and purposes.

C. INSTALLATION OF CENTER ASSEMBLY INTO A, B, C, AND D. (Figure A-4)

The i.d. of Ring D was machined so that a 0.006-inch radial interference exists between the center assembly and combination rings A, B, C, and D.

It was assumed that no appreciable stresses were induced by the punch on the Vega since no interference or taper were built into its design.

For $\delta = 0.006$ inch

$$p = \frac{E\,\delta}{2bc^2}(c^2 - b^2) = \frac{29 \times 10^6 (0.006)(\overline{3.50}^2 - \overline{0.658}^2)}{2 \times 0.658 \times 3.50^2}$$

$= 128,000$ psi