

Ratios of 3.2:1 were attempted using dies whose score marks obtained when extruding at 3.33:1.	Section II		Section III		Section IV	
	206	197	206	197	230	207
286	C2	L17	202	180	257	D3
264	C2	L17	214	197	230	D3
362	C2	L31	248	206	230	D3
363	C2	L31	250	203	230	D3
373	C2	L49	226	203	230	D3
358	C2	L34	242	211	230	D3
359	C2	L35	238	209	230	D3
360	C2	L45	242	197	230	D3
361	C2	L45	241	201	230	D3
370	C2	L50	249	211	230	D3
379(e)	C5	L8	272	--	230	D3
378	C5	L8	275	--	230	D3
368	C5	L17	230	201	230	D3
374	C5	L17	223	196	230	D3
369	C5	L17	228	202	230	D3
376	C5	L17	271	224	230	D3
487	C5	L17	266	207	230	D3
450	C5	L31	250	196	230	D3
466	C5	L31	285	--	230	D3
427	C5	L33	291	--	230	D3
426	C5	L38	232	192	230	D3
372	C5	L45	243	203	230	D3
367	C6	L17	257	207	230	D3

(a) Ratios of 3.2:1 were attempted using dies whose score marks obtained when extruding at 3.33:1.
 (b) Billet coatings listed in Table IV; billet lubricants listed in Table III.
 (c) Billet surface was roughened by grit blasting followed by vapor blasting.
 (d) Fluid used was polyphenyl ether.
 (e) Billet used in Trial 378 was used in Trial 379.
 (f) See page 41 for details of compound-angle nose.

Extrusion and die broke during runout
 P_b not reached
 P_b not reached
 Small transverse cracks on extrusion
 Compound angle nose, A = 1.2(f)

TABLE XX. EXPERIMENTAL DATA FOR HYDROSTATIC EXTRUSION OF Ti-6Al-4V ROUNDS AT 400 AND 500 F

Die angle - 45 degrees (included) Billet surface finish - 60 to 120 microinches Billet diameter - 1-3/4 inch

Trial	Extrusion Ratio	Stem Speed, ipm	Type of ^(a) Stem Seal	Billet Lubricant (Details in Table III)	Extrusion Pressure, 1000 psi				Type of Curve (Fig. 26)	Length of Extrusion, inches	Comments
					Breakthrough		Runout				
					Stem	Fluid	Stem	Fluid			
					Extrusion Temperature 400 F		Fluid - Silicate Ester				
415	3.3	6	2t	L33	178	170	177	168	A2	8	
416	4.0	6	2t	L33	212	198	206	194	B2	8	
496	4.0	20	1t + 1r	L33 ^(b)	210	195	198	187	B2	12	Compound-angle nose, A = 1.2 inches ^(c)
					Extrusion Temperature 500 F		Fluid - Polyphenyl Ether				
400	3.3	6	1t	L30	205	210	--	--	--	2	P _b not reached
402	3.3	6	1t	L30	201	199	189	184	C4	3	
395	3.3	6	1t	L33	190	196	185	184	B2	10	
396	3.3	20	1t	L33	181	192	177	182	B2	11	
419	4.0	6	2t	L33	225	195	206	185	C1	10	
421	4.0	6	2t	L33	210	184	201	181	C1	12	
398	3.3	6	1t	L38	175	185	170	182	B3	8	
403	3.3	6	1t	L40	211	213	--	--	--	2	P _b not reached
404	3.3	6	1t + 1r	L43	191	182	188	181	C4	2	
405	3.3	6	1t + 1r	L44	226	216	--	--	--	2	P _b not reached

(a) 1t = 1 PTFE O-ring; 2t = 2 PTFE O-rings; 1t + 1r = 1 PTFE plus 1 rubber O-ring.

(b) Anodized coating applied.

(c) Details of compound-angle nose given on p 41.