	A	B	C	D	E	F	G	H	I
1	**I. Bocal**		Original bocal; Parker3 no					Parker1	Parker2
2	dia reed end		inside diameter of reed end of bocal					4.3	
3	bocal string length (0, 1)		length of bocal inserted into receiver					44	
4	metal bocal length top (0, 1)		meas. along top of bocal					321	
5	metal bocal length bot (0, 1)		meas. along bottom of bocal					298	
6	dia wj end		inside diameter of bocal					9.7	
7									
8	bocal logic	2	if bocal logic = 0 => bocal is choke; if bocal logic = 1 =>choke in wing joint calc; if bocal logic = 2 => no bocal					2	2
9									
10									
11									
12									
13	**II. Wing Joint Lengths;** Meas w/out new reciever		bocal receiver: Parker3 NO receiver						
14	choke bore dia.	10.8	Parker3 Verified; logic 1; bore diameter of choke; logic 0; either diameter bocal bottom or beginning of bore at bot					9.4	10.8
15	receiver length (1, 0) (formally choke length)	72	Parker3 vrfd [not including new reciever]; logic 1; length of choke from top of wing joint; logic 0; length of receiver					71	61
16	wing joint length	489	Parker3 vrfd [not including new reciever]; total wing joint length, including tenon and socket					520	524
17	tenon length	48.6	tenon length					49.5	46.4
18									
19	wj f2	190	Parker3 198 - 8 =190, vrfd short; dist top of wing to where tone hole enters bore [not at the center of the tone hole					225	226
20	wj e	259	Parker3 267 - 8 =259, vrfd short					294	299
21	wj d	297	Parker3 305 - 8 =297, vrfd short					334	340
22									
23	Bore dia. Bottom of wing joint	15.6	Need to Average, usally oval; Parker3 no					15.6	16.2
24	Bore dia. top of boot joint small side	16.5						15.8	16.4
25	Bore dia. top of boot joint large side	24						24.1	26.6
26									
27	**III. Boot Lengths**		No Two whole design; Parker3 normal rounded cork						
28	bj logic	1	logic=> if bj logic = 0 => plug removed; if bj logic = 1 => plug cannot be removed					1	1
29	bj c	94	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]					96	93
30	bj b	162						162	165
31	bj a	200						200	204
32									
33	bjstotal [Needed for both boot logics]	437	total length of boot, include socket, along the small bore side					428	439
34	bjltotal [Needed for both boot logics]	437	total length of boot, include socket, along large bore side					428	439
35	plug small [Need for logic 0 only]	0	plug thickness, large bore side					0	0
36	plug large [Need for logic 0 only]	0	plug thickness, small bore side					0	0
37									
38	boots [Needed for both boot logics]	394	hook length along s bore => bjs-septum length = boot - septum <= calc the septu	Hook leng	43			396	393
39	bootl [Needed for both boot logics]	394	hook length along l bore => bjl-septum length = boot - septum <= calc the septum					396	393
40									
41	boots bottom [Needed for both boot logics]	18	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick]					15.5	23
42	bootl bottom [Needed for both boot logics]	18	use hook, dist of bore [same as boots bot except tenon depth will be different] 11 + 7 = 18					15.5	23
43									
44	extreme bore [Needed for logic 1 only]	40.1	Parker3 verified; Outside dia of plug [measured] = small bore dia + large bore dia + the septum width					42.2	39.8
45									
46	septum length exp [Need for logic 0 only]	0	dist. from very bottom of boot to septum [point between the large and small bore]					0	0
47	septum length calc - do not imput value	43	dist. From very bottom of boot to spetum [bjl - bootl]	do not imput value				32	46
48	septum length - do not imput value	43	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum calc	do not imput value				32	46
49									
50	sbore dia sep* [Needed for both boot logics]	19.2	septum small bore dia [assume = lbore dia sep]					19.3	20.3
51	lbore dia sep* [Needed for both boot logics]	19.8	septum large bore dia [assume = sbore dia sep] [mesure if cork can be removed; for Logic 0]					19.8	20.4
52	sep width exp [Need for logic 0 only]	0	septum width; direct measurement if remove plug					0	0
53	sep width calc - do not imput value	1.1	septum width; calc. => extreme bore - sbore - lbore	do not imput value				3.1	-0.9
54	sep width - do not imput value	1.1	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = sep w	do not imput value				3.1	-0.9
55									
56	bj g	364	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]					363	363
57	bj f1	159	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]					158	162
58									
59									
60									
61									
62									
63	**IV. Tone Hole Diameters**								
64	f2	5						4.3	4.8
65	e	5.5						5	5.1
66	d	5.3						4.5	4.9
67									
68	c	6.2	Parker3 RH finger holes large					6	6
69	b	6.9						5.6	5.6
70	a	5.5						5.2	5.2
71	g	8.4	Parker3 vrfd large					7.4	6.9
72	f1	8.8						8.4	8.4
73									
74	e1	9	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]					8.8	8.3
75	d1	7.5	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]					8.2	7.5
76	c1	11.7	c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]					11.9	11.4
77									
78									
79									
80									
81									
82	**V. Tone Hole Depths**								
83	f2	28.3						24.6	27
84	e	28						25.7	32
85	d	29						27	33
86									
87	c	21						21.2	25.1
88	b	26.1						24.8	23.8
89	a	23.2						21.9	23.8
90	g	16.1	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]					15.6	14.5
91	f1	22.5	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]					18.5	21.2
92									
93	e1	9.4	e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist]					8.6	10
94	d1	11.2	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]					9.5	9
95	c1	10	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]					8.8	8.5
96									
97									
98									
99									
100									
101	**VI. Long Joint**		Parker3 There is a slight table along long joint						
102	lg_length	588	total length of long joint;					586	586

	A	B	C	D	E	F	G	H	I
103	lg_tenon_bot	48.8	length bottom tenon on long joint [tenon going into boot joint]					48.9	49.5
104	lj_bot_bore	24.8	long joint bottom tenon bore diameter [tenon going into boot joint]					24.4	24.7
105	lj_top_bore	30.2	long joint top tenon bore diameter [tenon going into bell]					30.3	30.6
106	lg_tenon_top	41.6	length top tenon on long joint [tenon going into bell] yes					41.8	41.6
107	e1 distance	57	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]					56	57
108	d1 distance	244	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]					243	242
109	c1 distance	447	dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore]					446	446
110									
111									
112									
113									
114									
115	**VII. Bore diameters at Tone Holes**								
116	f2	11.7						11.5	12.1
117	e	13.4						12.7	13.5
118	d	13.9						13.4	14.2
119									
120	c	16.9	Parker3 bore near Boot finger holes very OOR					15.8	16.7
121	b	17.1						16.7	17.2
122	a	17.5						17.3	17.5
123	g	20.7						20.2	20.8
124	f1	23.6						24.1	23.9
125									
126	e1	24.9	e1 tone hole bore diameter on long joint					24.5	25.1
127	d1	26.3	d1 tone hole bore diameter on long joint					26.2	26.6
128	c1	29.1	c1 tone hole bore diameter on long joint					28.3	29.1
129									
130									
131									
132									
133									
134	**VIII. Bell**		Parker3 There is not a tone hole in the bell						
135	bell logic	0	If bell_logic = 0 => normal conical; if bell_logic = 1 => inverted concial; if bell_logic = 2 => bell expansion					0	0
136	bell_length (0, 1, 2)	310	total length of bell [lines 141 + 144 = line 136]					310	335
137	bell_bot_bore (0, 1, 2)	30.8	dia bore at the bottom of bell [end with socket]					30.6	30
138	bell_top_bore 0, (1, 0, 2)	46	dia bore at the top of bell [low Bb] Parker3 bell flares at the last 35mm, 15mm below end of bell, dia. is 36.6 [leng					43	48
139	bell_center_bore (only for logic 2)		dia bore at max center of expansion						
140	bell_wall (only for logic 2)		bell wall thickness, Just for David						
141	bell_bot_bore_expansion (only for logic 2)		dist of bottom to maxium of expansion [including bell socket length,if bell logic=0 =>100]						
142	Outside diameter of wood at expansion		Just for David						
143	bell_tenon (0, 1, 0, 2)	42.2	bell socket length					42.5	42.2
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]						
145	belflg	60	Usually about 10mm more than line 138					57	59.5
146									
147									
148	**IX. PITCH**								
149	pitch	430	input the historical pitch of the bassoon, must input value, best guess					430	430
150	freq_init	380	Initial frequency range variable					380	380
151	Delta frequency	2	frequency increment parameter					2	2
152	Number of frequencies	60	number of frequencies to scan for min chi sq					60	60
153	Frequency adjust	1.05	frequency adjustment parameter					1.05	1.05
154	**X. Title**								
155	title		Bassoon Calculation: Parker3-O-Peebles-Wg1-WOB-DNM						
156									
157			Notes on long joint bore: Parker3 out of round in places						
158			Notes on boot joint bore: Parker3 out of round in many places, esp. sm bore at finger holes						
159	**XI. Bore Diameter Locations**		Notes on wing joint bore: Parker3 out of round in some places						
160		17	Number of diameters					20	19
161	**Bell Bore**	10.8	Initial bore diameter [do not include in line 160 counting]					9.4	10.8
162	30.8mm dia. at socket	0	dist1; measured from the bottom of the wing joint- 10mm				1	362	0
163	30.0mm dia 50mm from socket	338	dist2; measured from the bottom of the wing joint- 11mm				1	315	343
164	29.5mm dia 100mm from socket	283	dist3; measured from the bottom of the wing joint- 12mm				1	262	302
165	28.3mm dia 150mm from socket	248	dist4; measured from the bottom of the wing joint- 13mm				1	210	255
166	27.0mm dia 100mm from bell	160	dist5; measured from the bottom of the wing joint- 14mm				1	142	192
167	27.5mm dia 50mm from bell	110	dist6; measured from the bottom of the wing joint- 15mm	Bottom wi	15.6		1	75	115
168	30.5mm dia 25mm from bell	0	dist7; measured from the top of the bootjoint - small bore side- 16mm	top boot s	16.5		1	110	0
169	46mm dia. at bell end	145	dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot l	24		2	180	130
170		245	dist9; measured from the top of the bootjoint - small bore side- 18mm				2	257	223
171		360	dist10; measured from the top of the bootjoint - large bore side- 19mm	sbore dia	19.2		2	356	295
172		380	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia s	19.8		3	375	363
173		350	dist12; measured from the top of the bootjoint - large bore side- 21mm	Hook Lend	394		3	334	348
174		315	dist13; measured from the top of the bootjoint - large bore side- 22mm				3	287	308
175		240	dist14; measured from the top of the bootjoint - large bore side- 23mm				3	221	238
176		0	dist15; measured from the top of the long joint- 24mm	lj_bot_bor	24.8		3	168	160
177		510	dist16; measured from the top of the long joint- 25mm				4	495	532
178		405	dist17; measured from the top of the long joint- 26mm				4	330	433
179		275	dist18; measured from the top of the long joint- 27mm				4	242	293
180		192	dist19; measured from the top of the long joint- 28mm				4	165	210
181		155	dist20; measured from the top of the long joint- 29mm				4	80	147
182		0	dist21; measured from the top of the long joint- 30mm				4	0	12
183		0	dist22; measured from the top of the long joint- 31mm				4	0	0
184		0	dist23; measured from the top of the long joint- 32mm	lj_top_bor	30.2		4	0	0