	A	B	C	D	E	F	G	H	I
1	**I. Bocal**		Original bocal ProwseJ2 No						Prowse1
2	dia reed end		inside diameter of reed end of bocal						
3	bocal string length (0, 1)		length of bocal inserted into receiver						
4	metal bocal length top (0, 1)		meas. along top of bocal						
5	metal bocal length bot (0, 1)		meas. along bottom of bocal						
6	dia wj end		inside diameter of bocal						
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
9									
10									
11									
12									
13	**II. Wing Joint Lengths**		bocal receiver: ProwseJ2, no bocal reciever						
14	choke bore dia.	10.2	logic 1; bore diameter of choke; logic 0;either dia. bocal bottom or beginning of bore at bottom or receiver						10.4
15	receiver length (1, 0) (formally choke length)	51	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)						48
16	wing joint length	524	ProwseJ2, vrfd long; total wing joint length, including tenon and socket;						524
17	tenon length	44.1	tenon length						44.4
18									
19	wj f2	227	dist from top of wing to where tone hole enters bore [not at the center of the tone hole]						225
20	wj e	294							290
21	wj d	330							328
22									
23	Bore dia. Bottom of wing joint	16.9	Need to Average, usally oval; ProwseJ2 no						16
24	Bore dia. top of boot joint small side	16.4	ProwseJ2 boot smaller than bottom of wing						16.6
25	Bore dia. top of boot joint large side	24.2							24
26									
27	**III. Boot Lengths**								
28	bj logic	1	logic=> if bj logic = 0 => plug removed; if bj logic = 1 => plug cannot be removed						1
29	bj c	96	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]						92
30	bj b	161							163
31	bj a	196							200
32									
33	bjstotal [Needed for both boot logics]	430	total length of boot, include socket, along the small bore side						429
34	bjltotal [Needed for both boot logics]	430	total length of boot, include socket, along large bore side						429
35	plug small [Need for logic 0 only]	0	plug thickness, large bore side						0
36	plug large [Need for logic 0 only]	0	plug thickness, small bore side						0
37									
38	boots [Needed for both boot logics]	393	hook length along s bore => bjs-septum length = boot - septum <= calc the septum						393
39	bootl [Needed for both boot logics]	393	hook length along l bore => bjl-septum length = boot - septum <= calc the septum						393
40									
41	boots bottom [Needed for both boot logics]	17	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick] 11 + 7 = 17						13
42	bootl bottom [Needed for both boot logics]	17	use hook, dist of bore [same as boots bot except tenon depth will be different]						13
43									
44	extreme bore [Needed for logic 1 only]	44.9	ProwseJ2 Vrfd large, thick boot;Outside dia of plug=small bore dia+large bore dia+the septum width						45.6
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
47	septum length calc - do not imput value	37	dist. From very bottom of boot to spetum [bjl - bootl]	do not imput value					36
48	septum length - do not imput value	37	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum calc	do not imput value					36
49									
50	sbore dia sep* [Needed for both boot logics]	19.6	septum small bore dia [assume = lbore dia sep]						19.1
51	lbore dia sep* [Needed for both boot logics]	19.9	septum large bore dia [assume = sbore dia sep] [mesure if cork can be removed; for Logic 0]						19.1
52	sep width exp [Need for logic 0 only]	0	septum width; direct measurement if remove plug						0
53	sep width calc - do not imput value	5.4	septum width; calc. => extreme bore - sbore - lbore	do not imput value					7.4
54	sep width - do not imput value	5.4	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = sep w	do not imput value					7.4
55									
56	bj g	359	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]						361
57	bj f1	150	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]						150
58									
59									
60									
61									
62									
63	**IV. Tone Hole Diameters**								
64	f2	5.3							4
65	e	6.3							6
66	d	5.4							4.3
67									
68	c	6.8							6.6
69	b	7.1							6.2
70	a	6.1							4.8
71	g	8.8							8.8
72	f1	10.4							9.8
73									
74	e1	11.3	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						11.8
75	d1	10.7	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						10.5
76	c1	13.1	c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						13
77									
78									
79									
80									
81									
82	**V. Tone Hole Depths**								
83	f2	26.5							24
84	e	28.8							26.5
85	d	27.8							24
86									
87	c	22							25.5
88	b	23.8							26.7
89	a	22.6							23.8
90	g	14.5	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]						18
91	f1	25.8	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]						21.5
92			ProwseJ2 vrfd; long joint tone holes of normal length						
93	e1	9.2	e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist]						17.1
94	d1	9.6	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]						15.1
95	c1	10	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]						12.7
96									
97									
98									
99									
100									
101	**VI. Long Joint**		ProwseJ2 There is a normal table along long joint						
102	lg_length	574	total length of long joint						577

	A	B	C	D	E	F	G	H	I
103	lg_tenon_bot	47.8	length bottom tenon on long joint [tenon going into boot joint]						50.3
104	lj_bot_bore	24.8	long joint bottom tenon bore diameter [tenon going into boot joint]						24.9
105	lj_top_bore	30.5	long joint top tenon bore diameter [tenon going into bell]						30.6
106	lg_tenon_top	36.4	length top tenon on long joint [tenon going into bell]						36.6
107	e1 distance	56	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]						58
108	d1 distance	245	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]						247
109	c1 distance	446	dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore]						447
110									
111									
112									
113									
114									
115	**VII. Bore diameters at Tone Holes**								
116	f2	12.3							12
117	e	13.1							13.1
118	d	13.8							13.3
119									
120	c	16.5							16.4
121	b	17.6							17.1
122	a	18.1							18.2
123	g	20							19.8
124	f1	22.8							23
125									
126	e1	24.1	e1 tone hole bore diameter on long joint						24.1
127	d1	26.3	d1 tone hole bore diameter on long joint						27.2
128	c1	29	c1 tone hole bore diameter on long joint						35.1
129									
130									
131									
132									
133									
134	**VIII. Bell**		ProwseJ2 There is not a bell tone hole						
135	bell logic	0	If bell_logic=0=>normal conical bore;if bell_logic=1=>inverted concial bore; if bell_logic=2=>bell expansion						0
136	bell_length (0, 1, 2)	322	total length of bell [lines 141 + 144 = line 136]						314
137	bell_bot_bore (0, 1, 2)	30.5	dia bore at the bottom of bell [end with socket]						30.3
138	bell_top_bore 0, (1, 0, 2)	38.2	ProwseJ2 vrfd end of caliper jaws 38.2mm; dia bore at the top of bell [where low Bb exits]						43
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)	36.9	bell socket length						37
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]						
145	Bellflg	70.5							57
146									
147									
148	**IX. PITCH**								
149	pitch	430	input the historical pitch of the bassoon, must input value, best guess						430
150	freq_init	380	Initial frequency range variable						380
151	Delta frequency	2	frequency increment parameter						2
152	Number of frequencies	60	number of frequencies to scan for min chi sq						60
153	Frequency adjust	1.05	frequency adjustment parameter						1.05
154									
155			Bassoon Calculation: ProwseJ2-O-Edinburgh3318-Wg1-WOB-DNM						
156									
157			Notes on long joint bore: ProwseJ2 normal OOR in places						
158			Notes on boot joint bore: ProwseJ2 good						
159	**XI. Bore Diameter Locations**		Notes on wing joint bore: ProwseJ2 good						
160		18	Number of diameters						19
161	**Bell Bore**	10.2	Initial bore diameter						10.4
162	30.5mm dia. at socket	0	dist1; measured from the bottom of the wing joint- 10mm				1		0
163	30mm rod 130mm from socket	392	dist2; measured from the bottom of the wing joint- 11mm				1		368
164	31mm rod 70mm from bell top end	325	dist3; measured from the bottom of the wing joint- 12mm				1		275
165	32mm rod 50mm from bell top end	250	dist4; measured from the bottom of the wing joint- 13mm				1		250
166	33mm rod 40mm from bell top end	178	dist5; measured from the bottom of the wing joint- 14mm				1		155
167	34mm rod 35mm from bell top end	115	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing jt	16.9		1		115
168	35mm rod 30mm from bell top end	0	dist7; measured from the top of the bootjoint - small bore side- 16mm	top boot small	16.4		2		0
169	36mm rod 25mm from bell top end	125	dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot large	24.2		2		115
170	38.2mm dia. at bell end	185	dist9; measured from the top of the bootjoint - small bore side- 18mm				2		170
171		310	dist10; measured from the top of the bootjoint - small bore side- 19mm	sbore dia sep	19.6		2		335
172		350	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia sep	19.9		3		350
173		275	dist12; measured from the top of the bootjoint - large bore side- 21mm	Hook Length	393		3		288
174		198	dist13; measured from the top of the bootjoint - large bore side- 22mm				3		255
175		142	dist14; measured from the top of the bootjoint - large bore side- 23mm				3		167
176		540	dist15; measured from the top of the long joint - 24mm	lj_bot_bore	24.8		4		525
177		435	dist16; measured from the top of the long joint- 25mm				4		477
178		345	dist17; measured from the top of the long joint- 26mm				4		365
179		370	dist18; measured from the top of the long joint- 27mm				4		336
180		170	dist19; measured from the top of the long joint- 28mm				4		220
181		122	dist20; measured from the top of the long joint- 29mm				4		180
182		0	dist21; measured from the top of the long joint- 30mm				4		80
183		0	dist22; measured from the top of the long joint- 31mm				4		0
184		0	dist23; measured from the top of the long joint- 32mm	lj_top_bore	30.5		4		0