

A	B	C	D	E	F	G	H	I	J
1. <b>Bocal</b>	SaxCJ8	Original bocal; SaxCJ8 no					SaxCJ3	SaxCJ2	SaxCJ1
2 dia reed end	NMM1308	inside diameter of reed end of bocal					Kampmann	Brus 2625	Sigal
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							
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	2
10									
11									
12									
13 <b>II. Wing Joint Lengths</b>		bocal receiver; SaxCJ8 there is NOT a receiver							
14 choke bore dia.	9.1	logic 1; bore diameter of choke; logic 0; either diameter bocal bottom or beginning of bore at bottom or receiver					10.4	10.1	9.5
15 receiver length (1, 0) (formally choke length)	34	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)					47	40	34
16 wing joint length	515	total wing joint length, including tenon and socket					513	521	508
17 tenon length	46.8	tenon length					46.7	46.5	45.8
18									
19 wj f2	225	dist top of wing to where tone hole enters bore [not at the center of the tone hole]					219	233	221
20 wj e	290						290	298	287
21 wj d	335						335	340	332
22									
23 Bore dia. Bottom of wing joint	16.2	SaxCJ8 No Need to Average					16	16.3	16.5
24 Bore dia. top of boot joint small side	17.3	SaxCJ8 vrfd large; No Need to Average, usually oval					17.1	15.8	16.7
25 Bore dia. top of boot joint large side	24.1						24.5	24.6	25.5
26									
27 <b>III. Boot Lengths</b>		Two whole design: SaxCJ8 no							
28 b1 logic	1	logic==> if b1 logic = 0 ==> plug removed; if b1 logic = 1 ==> plug cannot be removed					1	1	1
29 b1 c	85	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]					94	100	90
30 b1 b	150						156	162	152
31 b1 a	190						192	205	189
32									
33 b1total [Needed for both boot logics]	425	total length of boot, include socket, along the small bore side					418	447	432
34 b1ltotal [Needed for both boot logics]	425	total length of boot, include socket, along large bore side					418	447	432
35 plug small [Need for logic 0 only]	0	plug thickness, large bore side					0	0	0
36 plug large [Need for logic 0 only]	0	plug thickness, small bore side					0	0	0
37									
38 boots [Needed for both boot logics]	385	hook length along s bore ==> bis-septum length = boot - septum <= calc the septum					383	390	383
39 bootl [Needed for both boot logics]	385	hook length along l bore ==> b1l-septum length = boot - septum <= calc the septum					383	390	383
40									
41 boots bottom [Needed for both boot logics]	23	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick]; 16+7=23					26	21.5	30
42 bootl bottom [Needed for both boot logics]	23	use hook, dist of bore [same as boots bot except tenon depth will be different]					26	21.5	30
43									
44 extreme bore [Needed for logic 1 only]	42	SaxCJ8 Cannot measure; Outside dia of plug [measured] = small bore dia + large bore dia + the septum width					42.2	40	43.8
45									
46 septum length exp [Need for logic 0 only]		dist. from very bottom of boot to septum [point between the large and small bore]							
47 septum length calc - do not imput value	40	dist. From very bottom of boot to septum [b1l - bootl]	do not imput value				35	57	49
48 septum length - do not imput value	40	if b1 logic = 0 ==> septum = septum exp; if b1 logic = 1 ==> septum = septum calc	do not imput value				35	57	49
49									
50 sbore dia sep* [Needed for both boot logics]	18.5	septum small bore dia [assume = lbore dia sep]					19	19	19.1
51 lbore dia sep* [Needed for both boot logics]	19.5	septum large bore dia [assume = sbore dia sep] [measure if cork can be removed; for Logic 0]					19.2	19.1	19.1
52 sep width exp [Need for logic 0 only]		septum width; direct measurement if remove plug					0		
53 sep width calc - do not imput value	4	septum width; calc. ==> extreme bore - sbore - lbore	do not imput value				4	1.9	5.6
54 sep width - do not imput value	4	if b1 logic = 0 ==> sep width = sep width exp; if b1 logic = 1 ==> sep width = sep w	do not imput value				4	1.9	5.6
55									
56 b1 g	345	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]					337	344	340
57 b1 f1	130	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]					137	146	136
58									
59									
60									
61									
62									
63 <b>IV. Tone Hole Diameters</b>									
64 f2	6.2						5.3	5.5	4.9
65 e	5.6						6	6.1	5.8
66 d	5.6						5.6	5.8	5.5
67									
68 c	8.4	SaxCJ8 verified finger holes on boot very large					8.8	8.3	9
69 b	8.6						7.3	7.4	8.5
70 a	5.9						5.6	6.9	6.5
71 g	10						9.5	10.3	10.3
72 f1	10.7						8.8	9.8	9.8
73									
74 e1	14.6	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]					13.3	13.2	13.4
75 d1	9.5	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]					10.4	10	9.4
76 c1	16.9	SaxCJ8 Oblong 16.4 x 17.4 c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]					16	15.7	16
77									
78									
79									
80									
81									
82 <b>V. Tone Hole Depths</b>		SaxCJ8 vrfd short							
83 f2	32						36	28	31.1
84 e	28						29	26.5	29
85 d	31.5						32	26	30
86									
87 c	24						23.8	26	28.4
88 b	25.5						25	27.5	28.7
89 a	25						25	26	27.5
90 g	18	meas along bot tone hole wall [north wall, toward reed, tone hole usually at angle]					17	16	19.5
91 f1	23	meas along east side tone hole wall [north wall, toward reed, t hole usually at angle]					19.2	25	23.7
92									
93 e1	5.8	e1 tone hole depth; meas east/west with depth gauge [at center, or shortest dist]					6.8	5.5	6.8
94 d1	6	d1 tone hole depth; meas east/west with depth gauge [at center, or shortest dist]					7.3	5.2	7.5
95 c1	7	c1 tone hole depth; meas east/west with depth gauge [at center, or shortest dist]					3.5	5.8	8.2
96									
97									
98									
99									
100									
101 <b>VI. Long Joint</b>		SaxCJ8 There is a table along long joint							
102 lq length	616	total length of long joint;					617	582	605
103 lq tenon bot	46.4	length bottom tenon on long joint [tenon going into boot joint]					47.7	47.3	44.6
104 lj bot bore	24.3	long joint bottom tenon bore diameter [tenon going into boot joint]					24.7	23.7	23.7
105 lj top bore	32.7	long joint top tenon bore diameter [tenon going into bell]					34.5	32.3	34.4
106 lq tenon top	37.4	length top tenon on long joint [tenon going into bell]					37.8	29.7	37.8
107 e1 distance	57	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]					60	60	55
108 d1 distance	262	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]					255	261	250
109 c1 distance	540	dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore]					543	467	464
110									
111									
112									
113									
114									
115 <b>VII. Bore diameters at Tone Holes</b>									
116 f2	12.1						12.4	12.5	12.4
117 e	13.2						13.8	13.6	13.3
118 d	13.6						14.3	14.6	14.3
119									
120 c	17.3						17.6	15.8	17.1
121 b	17.5						18.2	17.1	17.6
122 a	18.1						18.4	17.1	17.6
123 g	19.6						20.1	19.5	19.3

	A	B	C	D	E	F	G	H	I	J
124	F1	22.6						23.7	21.9	23.6
125										
126	e1	24.8	e1 tone hole bore diameter on long joint					24.7	24.8	24.5
127	d1	27.7	d1 tone hole bore diameter on long joint					28.4	27.9	27.1
128	c1	31.2	c1 tone hole bore diameter on long joint					32.9	30.7	31.2
129										
130										
131										
132										
133										
134	<b>VIII. Bell;</b>		<b>SaxCJ8 There is not a tone hole in the bell;</b>							
135	bell logic	1	If bell logic = 0 => normal conical bore; if bell logic = 1 => inverted conical bore; if bell logic = 2 => bell expansion					0	0	0
136	bell length (0, 1, 2)	297	total length of bell					330	297	330
137	bell_bot_bore (0, 1, 2)	30.9	dia bore at the bottom of bell [end with socket];					33.1	32.6	33.5
138	bell_top_bore 0, (1, 0, 2)	32.2	dia bore at the top of bell [where low Bb exits];					36.5	33.5	37.3
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)	38.2	bell socket length					38.8	36.5	38
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]							
145	bellfg	38	Usually about 10mm more than line 138;					45.8	39.5	45
146										
147										
148	<b>IX. PITCH</b>									
149	pitch	430	input the historical pitch of the bassoon, must input value, best guess					430	430	430
150	fren_init	380	Initial frequency range variable					380	380	380
151	Delta frequency	3	frequency increment parameter					3	3	3
152	Number of frequencies	18	number of frequencies to scan for min chi sq					18	18	18
153	Frequency adjust	1.05	frequency adjustment parameter					1.05	1.05	1.05
154	<b>X. Title</b>									
155	title		<b>Bassoon Calculation: SaxCJ8-O-NMM1308-Wg1-WOB-DNM</b>							
156										
157			<b>Notes on long joint bore: SaxCJ8 normal</b>							
158			<b>Notes on boot joint bore: SaxCJ8 normal</b>							
159			<b>Notes on wing joint bore: SaxCJ8 good shape</b>							
160	<b>XI. Bore Diameter Locations</b>									
161	<b>Bell Bore</b>	20	Number of diameters					19	20	23
162	30.9 at socket	9.1	Initial bore diameter [do not include in line 160 counting]					10.4	10.1	9.5
163	30.5mm rod 165mm from bell	404	dist1; measured from the bottom of the wing joint- 10mm				1	0	0	462
164	31mm rod 140mm from bell	350	dist2; measured from the bottom of the wing joint- 11mm				1	425	420	410
165	32mm rod 110mm from bell	305	dist3; measured from the bottom of the wing joint- 12mm				1	332	325	327
166	Top of Bell 32.2 [Bb exit]	243	dist4; measured from the bottom of the wing joint- 13mm				1	266	265	255
167		120	dist5; measured from the bottom of the wing joint- 14mm				1	196	195	196
168		61	dist6; measured from the bottom of the wing joint- 15mm				1	155	170	140
169		0	dist7; measured from the top of the bootjoint - small bore side- 16mm	Bottom wing fit	16.2		1	0	115	19
170		0	dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot small	17.3		1	0	155	94
171		180	dist9; measured from the top of the bootjoint - small bore side- 18mm	top boot large	24.1		2	0	345	258
172		0	dist10; measured from the top of the bootjoint - large bore side- 19mm	sbore dia sep	18.5		2	0	0	370
173		358	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia sep	19.5		3	358	320	325
174		295	dist12; measured from the top of the bootjoint - large bore side- 21mm	Hook Length	385		3	285	232	302
175		210	SaxJC8 OOR 190 x 230; dist13; measured from the top of the bootjoint - large bore side- 22mm				3	218	140	270
176		103	dist14; measured from the top of the bootjoint - large bore side- 23mm				3	170	75	185
177		590	dist15; measured from the top of the long joint- 24mm	li bot bore	24.3		4	122	538	578
178		535	dist16; measured from the top of the long joint- 25mm				4	530	495	478
179		505	dist17; measured from the top of the long joint- 26mm				4	478	430	404
180		425	SaxJC8 OOR 410 x 440; dist18; measured from the top of the long joint- 27mm				4	405	400	364
181		322	dist19; measured from the top of the long joint- 28mm				4	375	295	315
182		245	SaxJC8 OOR 230 x 260; dist20; measured from the top of the long joint- 29mm				4	335	220	222
183		133	dist21; measured from the top of the long joint- 30mm				4	295	165	185
184		79	dist22; measured from the top of the long joint- 31mm				4	170	70	144
185		33	dist23; measured from the top of the long joint- 32mm	li top bore	32.7		4	125	0	96