

	A	B	C	D	E	F	G
1	I. Bocal		Original bocal; SaxCJ7 could be original				
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				
9							
10							
11							
12			CM=cannot observe				
13	II. Wing Joint Lengths		SaxCJ7; no bocal receiver; there is a choke				
14	choke bore dia.	10.8	logic 1; bore diameter of choke; logic 0; either diameter bocal bottom or beginning of bore at bottom or receiver				
15	receiver length (1, 0) (formally choke length)	48	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)				
16	wing joint length	CM	SaxCJ7 Wing tenon broken off and in boot joint socket; total wing joint length, including tenon and socket				
17	tenon length	CM	tenon length, SaxCJ7 bottom half on tenon, brass, stuck in boot socket				
18							
19	wj f2	221	dist top of wing to where tone hole enters bore [not at the center of the tone hole]				
20	wj e	292					
21	wj d	337	SaxCJ7 same as SaxCJ4-O-Saelemaekers				
22							
23	Bore dia. Bottom of wing joint	16.4*	Need to Average, usually oval; SaxCJ7 *but not really bottom of tenon				
24	Bore dia. top of boot joint small side	CM					
25	Bore dia. top of boot joint large side	24.8					
26							
27	III. Boot Lengths		SaxCJ7 no two whole design				
28	bj logic	1	logic=> if bj logic = 0 => plug removed; if bj logic = 1 => plug cannot be removed				
29	bj c	90	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]				
30	bj b	155	SaxCJ7 tenon stuck in boot socket				
31	bj a	193	SaxCJ7 vrfd short				
32							
33	bjstotal [Needed for both boot logics]	423	total length of boot, include socket, along the small bore side				
34	bjltotal [Needed for both boot logics]	423	total length of boot, include socket, along large bore side				
35	plug small [Need for logic 0 only]	0	plug thickness, large bore side				
36	plug large [Need for logic 0 only]	0	plug thickness, small bore side				
37							
38	boots [Needed for both boot logics]	384	hook length along s bore => bjs-septum length = boot - septum <= calc the septum				
39	bootl [Needed for both boot logics]	384	hook length along l bore => bjl-septum length = boot - septum <= calc the septum				
40							
41	boots bottom [Needed for both boot logics]	21	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick]; 14 + 7 = 21				
42	bootl bottom [Needed for both boot logics]	21	use hook, dist of bore [same as boots bot except tenon depth will be different]				
43							
44	extreme bore [Needed for logic 1 only]	43	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width				
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	39	dist. From very bottom of boot to spetum [bjl - bootl]	do not imput value			
48	septum length - do not imput value	39	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum calc	do not imput value			
49							
50	sbore dia sep* [Needed for both boot logics]	CM	septum small bore dia [assume = lbore dia sep]				
51	lbore dia sep* [Needed for both boot logics]	19.3	septum large bore dia [assume = sbore dia sep] [mesure if cork can be removed; for Logic 0]				
52	sep width exp [Need for logic 0 only]		septum width; direct measurement if remove plug				
53	sep width calc - do not imput value	#VALUE!	septum width; calc. => extreme bore - sbore - lbore	do not imput value			
54	sep width - do not imput value	#VALUE!	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = sep width calc	do not imput value			
55							
56	bj g	340	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
57	bj f1	132	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]				
58							
59							
60							
61							
62							
63	IV. Tone Hole Diameters						
64	f2	5.4					
65	e	5.8					
66	d	5.5					
67							
68	c	8.9	SaxCJ7 vrfd large				
69	b	7					
70	a	5.7					
71	g	9.3	SaxCJ7 g tone hole expands at seat				
72	f1	9.3					
73							
74	e1	CM	SaxCJ7 Could not remove low D key; e1 tone hole dia, on long joint				
75	d1	9.6	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]				
76	c1	15.8	c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]				
77							
78							
79							
80							
81							
82	V. Tone Hole Depths						
83	f2	36					
84	e	31					
85	d	32					
86							
87	c	26.4					
88	b	27					
89	a	28.5					
90	g	21	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]				
91	f1	22.5	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]				
92							
93	e1	CM	SaxCJ7 Could not remove low D key; e1 tone hole depth; meas east/west with deapth gauge				
94	d1	8.2	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]				
95	c1	7.5	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]				
96							
97							
98							
99							
100							

	A	B	C	D	E	F	G
101	VI. Long Joint		SaxCJ7 has a table along long joint				
102	lg length	618	SaxCJ7 vrrfd; total length of long joint;				
103	lg tenon bot	48.8	length bottom tenon on long joint [tenon going into boot joint]				
104	lj_bot_bore	24.2	SaxCJ7 OOR 23.5 x 24.8; long joint bottom tenon bore diameter [tenon going into boot joint]				
105	lj_top_bore	34.3	long joint top tenon bore diameter [tenon going into bell]				
106	lg_tenon_top	38.4	length top tenon on long joint [tenon going into bell]				
107	e1 distance	CM	SaxCJ7 Could not remove low D key; dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]				
108	d1 distance	254	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]				
109	c1 distance	470	SaxCJ7 vrrfd short; [SaxCJ3 & 4 long]; dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore]				
110							
111							
112							
113							
114							
115	VII. Bore diameters at Tone Holes						
116	f2	CM	SaxCJ7 Constriction in bore prob from repair				
117	e	13.1					
118	d	13.8					
119							
120	c	CM					
121	b	CM					
122	a	CM					
123	g	20.1					
124	f1	23.4					
125							
126	e1	CM	SaxCJ7 Could not remove low D key; e1 tone hole bore diameter on long joint				
127	d1	26.5	d1 tone hole bore diameter on long joint				
128	c1	30.2	c1 tone hole bore diameter on long joint				
129							
130							
131							
132							
133							
134	VIII. Bell		SaxCJ7 There is not a tone hole in the bell				
135	bell logic	0	if bell logic = 0 => normal conical bore; if bell logic = 1 => inverted conical; if bell logic = 2 => bell expansion				
136	bell_length (0, 1, 2)	375	SaxCJ7 vrrfd long; 375 with bell; 350 with Military bell removed; total length of bell;				
137	bell_bot_bore (0, 1, 2)	32.1	dia bore at the bottom of bell [end with socket];				
138	bell_top_bore 0, (1, 0, 2)	35.8	dia bore at the top of bell [where low Bb exits]; meas. at top of wooden tenon where metal bell is attached; 86mm at top of bell flare				
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 maximum 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)	38.4	bell socket length				
144	bell_expansion_length (only for logic 2)		distance of maximum expansion to top of bell [where Bb exits]				
145	bellfg	92	Usually about 10mm more than line 138;				
146							
147							
148	IX. PITCH						
149	pitch	430	input the historical pitch of the bassoon, must input value, best guess				
150	freq_init	380	Initial frequency range variable				
151	Delta frequency	3	frequency increment parameter				
152	Number of frequencies	18	number of frequencies to scan for min chi sq				
153	Frequency adjust	1.05	frequency adjustment parameter				
154	X. Title						
155	title		Bassoon Calculation: SaxCJ7-O-STAM-Wq1-WOB-DNM				
156							
157			Notes on long joint bore: SaxCJ7 OOR more than normal				
158			Notes on boot joint bore: SaxCJ7 small side no meas. large side normal				
159	XI. Bore Diameter Locations		Notes on wing joint bore: SaxCJ7 bad shape				
160			Number of diameters				
161		10.8	Initial bore diameter [do not include in line 160 counting]				
162		0	dist1; measured from the bottom of the wing joint- 10mm				1
163		330	dist2; measured from the bottom of the wing joint- 11mm				1
164		CM	SaxCJ7 Constriction in bore prob from repair; dist3; measured from the bottom of the wing joint- 12mm				1
165		185	dist4; measured from the bottom of the wing joint- 13mm				1
166		105	dist5; measured from the bottom of the wing joint- 14mm				1
167		50	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing jt	16.4*		1
168		6	dist7; measured from the top of the bootjoint - small bore side- 16mm	top boot small	CM		1
169		CM	dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot large	24.8		2
170		CM	dist9; measured from the top of the bootjoint - small bore side- 18mm				2
171		CM	dist10; measured from the top of the bootjoint - large bore side- 19mm	bore dia sep	CM		2
172		352	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia sep	19.3		3
173		295	dist12; measured from the top of the bootjoint - large bore side- 21mm	Hook Length	384		3
174		218	dist13; measured from the top of the bootjoint - large bore side- 22mm				3
175		150	dist14; measured from the top of the bootjoint - large bore side- 23mm				3
176		563	dist15; measured from the top of the long joint- 24mm	lj_bot_bore	24.2		4
177		470	dist16; measured from the top of the long joint- 25mm				4
178		380	dist17; measured from the top of the long joint- 26mm				4
179		345	dist18; measured from the top of the long joint- 27mm				4
180		285	dist19; measured from the top of the long joint- 28mm				4
181		230	dist20; measured from the top of the long joint- 29mm				4
182		195	dist21; measured from the top of the long joint- 30mm				4
183		165	dist22; measured from the top of the long joint- 31mm				4
184	ROD 33mm at 50 mm form tenon	100	SaxCJ7 OOR 130 x 70; dist23; measured from the top of the long joint- 32mm	li_top_bore	34.3		4