	A	B	C	D	E	F	G	H	I	J
1	**I. Bocal**		Original bocal; Porthaux10, no bocal							Porthaux5
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			Put here choke vs receiver details, Porthaux10 no reciever, a choke							
11										
12										
13	**II. Wing Joint Lengths**		bocal receiver: Porthaux10 no							
14	choke bore dia.	9.7	logic 1; bore diameter of choke; logic 0; either diameter bocal bottom or beginning of bore at bottom or receiver							9.8
15	receiver length (1, 0) (formally choke length)	52	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)							49
16	wing joint length	529	Porthaux10 vrfd; total wing joint length, including tenon and socket							513
17	tenon length	53.8	tenon length							54.2
18										
19	wj f2	221	dist top of wing to where tone hole enters bore [not at the center of the tone hole]							213
20	wj e	298								292
21	wj d	344								337
22										
23	Bore dia. Bottom of wing joint	15.7	Need to Average, usally oval; Porthaux10 no							16
24	Bore dia. top of boot joint small side	15.8								15.4
25	Bore dia. top of boot joint large side	23.4								22.1
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	92	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]							97
30	bj b	154								153
31	bj a	201								193
32										
33	bjstotal [Needed for both boot logics]	430	total length of boot, include socket, along the small bore side,							432
34	bjltotal [Needed for both boot logics]	430	total length of boot, include socket, along large bore side							432
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]	389	hook length along s bore => bjs-septum length = boot - septum <= calc the septum							389
39	bootl [Needed for both boot logics]	389	hook length along l bore => bjl-septum length = boot - septum <= calc the septum							389
40										
41	boots bottom [Needed for both boot logics]	19	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick] 12 + 7=19							23
42	bootl bottom [Needed for both boot logics]	19	use hook, dist of bore [same as boots bot except tenon depth will be different]							23
43										
44	extreme bore [Needed for logic 1 only]	45	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width							44.5
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	41	dist. From very bottom of boot to spetum [bjl - bootl]	do not imput value						43
48	septum length - do not imput value	41	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum	do not imput value						43
49										
50	sbore dia sep* [Needed for both boot logics]	18.4	septum small bore dia [assume = lbore dia sep]							18.5
51	lbore dia sep* [Needed for both boot logics]	19.2	septum large bore dia [assume = sbore dia sep] [mesure if cork can be removed; for Logic 0]							19
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	7.4	septum width; calc. => extreme bore - sbore - lbore	do not imput value						7
54	sep width - do not imput value	7.4	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = s	do not imput value						7
55										
56	bj g	335	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]							335
57	bj f1	153	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	5.7								6
65	e	6.3								6.1
66	d	6								5.8
67										
68	c	7.5								7.5
69	b	6.8								6.9
70	a	6.4								6.4
71	g	8.2								7.9
72	f1	8.3								8.3
73										
74	e1	11.5	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]							12.9
75	d1	8.3	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]							8.3
76	c1	13.7	c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]							14.3
77										
78										
79										
80										
81										
82	**V. Tone Hole Depths**									
83	f2	34.9	Porthaux10, extreme angle, tone hole not drilled totally into center of bore							32.6
84	e	31.5								33.8
85	d	38	Porthaux10, extreme angle							35.9
86			Porthaux10, long finger holes on boot joint							
87	c	30	Porthaux10, extreme angle							23.1
88	b	28.5								21.9
89	a	37.5	Porthaux10, extreme downward angle							23.6
90	g	19.5	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]							14.2
91	f1	20.2	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]							20.3
92										
93	e1	10.3	e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist]							10.7
94	d1	9.8	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]							10.4
95	c1	9.8	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]							9.8
96										
97										
98										
99										
100										
101	**VI. Long Joint**		Porthaux10 a table along long joint							
102	lg length	615	total length of long joint							614
103	lg_tenon_bot	53	length bottom tenon on long joint [tenon going into boot joint]							53
104	lj_bot_bore	24.2	long joint bottom tenon bore diameter [tenon going into boot joint]							24.1
105	lj_top_bore	31.5	long joint top tenon bore diameter [tenon going into bell]							32.5
106	lg_tenon_top	37.7	length top tenon on long joint [tenon going into bell]							37.3
107	e1 distance	61	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]							62
108	d1 distance	266	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]							264

#	A	B	C	D	E	F	G	H	I	J
109	c1 distance	488	dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore]							487
110										
111										
112										
113										
114										
115	**VII. Bore diameters at Tone Holes**									
116	f2	12.2								11.6
117	e	13.8								13
118	d	14.1								13.6
119										
120	c	16								16
121	b	16.3	Porthaux10, OOR							17
122	a	16.4								17.4
123	g	19.5								20.6
124	f1	22.2	Porthaux10, boot large side bore does not expand as rapidly as most							20.8
125										
126	e1	25.2	e1 tone hole bore diameter on long joint							25.2
127	d1	28.2	d1 tone hole bore diameter on long joint							28.2
128	c1	30.9	c1 tone hole bore diameter on long joint							31.3
129										
130										
131										
132										
133										
134	**VIII. Bell No Bell**		There is no tone hole in the bell: Porthaux10 no bell							
135	bell logic		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)		total length of bell [lines 141 + 144 = line 136]							333
137	bell_bot_bore (0, 1, 2)		dia bore at the bottom of bell [end with socket]							33
138	bell_top_bore 0, (1, 0, 2)		dia bore at the top of bell [where low Bb exits]							34.8
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)		bell socket length							37.2
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]							
145	belflg		Used Porthaux5 Bate number							38.7
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	**X. Title**									
155	title		Bassoon Calculation:Porthaux10-O-BrusMIM4355-Wg1-WOB-DNM							
156	XI. Temperament # (chron order)									
157	Input Temperament #		Notes on long joint bore: Porthaux10, normal							0
158			Notes on boot joint bore: Porthaux10, small side OOR							
159	XI. Bore Diameter Locations		Notes on wing joint bore: Porthaux10, normal							
160		20	Number of diameters							17
161		9.7	Initial bore diameter [do not include in line 160 counting]							9.8
162		445	dist1; measured from the bottom of the wing joint- 10mm				1			449
163		387	dist2; measured from the bottom of the wing joint- 11mm				1			356
164		330	dist3; measured from the bottom of the wing joint- 12mm				1			275
165		280	dist4; measured from the bottom of the wing joint- 13mm				1			0
166		200	dist5; measured from the bottom of the wing joint- 14mm				1			134
167		40	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing	15.7		1			42
168		95	dist7; measured from the top of the bootjoint - small bore side- 16mm; was 1	top boot sm	15.8		2			0
169		245	dist8; measured from the top of the bootjoint - small bore side- 17mm; was 1	top boot lar	23.4		2			0
170		305	dist9; measured from the top of the bootjoint - small bore side- 18mm				2			245
171		0	dist10; measured from the top of the bootjoint - large bore side- 19mm; was	sbore dia se	18.4		2			0
172		308	dist11; measured from the top of the bootjoint - large bore side- 20mm; yes	lbore dia se	19.2		3			219
173		265	dist12; measured from the top of the bootjoint - large bore side- 21mm; yes	Hook Length	389		3			135
174		180	dist13; measured from the top of the bootjoint - large bore side- 22mm				3			75
175		98	dist14; measured from the top of the bootjoint - large bore side- 23mm				3			0
176		0	dist15; measured from the top of the long joint- 24mm	lj_bot_bore	24.2		3			595
177		565	dist16; measured from the top of the long joint- 25mm				4			555
178		445	dist17; measured from the top of the long joint- 26mm				4			442
179		400	dist18; measured from the top of the long joint- 27mm				4			395
180		363	dist19; measured from the top of the long joint- 28mm				4			357
181		185	Porthaux10, vrfd gap, et OOR; dist20; measured from the top of the long joint- 29mm				4			270
182		150	dist21; measured from the top of the long joint- 30mm				4			202
183		110	dist22; measured from the top of the long joint- 31mm				4			145
184		0	dist23; measured from the top of the long joint- 32mm; very OOR	lj_top_bore	31.5		4			0