

Hirschstein1-O-Rachor-Wg1-WOB-DNM

	A	B	C	D	E	F	G	H
1	I. Bocal		Original bocal; A bocal came with instr. probably not 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			Put here choke vs receiver details? Very top of Wing joint rotted out, very large, cannot meas.					
11								
12								
13	II. Wing Joint Lengths		bocal receiver: yes/no? Choke bore dia and receiver length from Poerschmann					
14	choke bore dia.	9.7	logic 1; bore diameter of choke; logic 0; diameter bocal bottom or beginning of bore at bottom or receiver					
15	receiver length (1, 0) (formally choke length)	38	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)					
16	wing joint length	535	total wing joint length, including tenon and socket					
17	tenon length	44.6	tenon length					
18								
19	wj f2	249	dist top of wing to where tone hole enters bore [not at the center of the tone hole]					
20	wj e	299						
21	wj d	334						
22								
23	Bore dia. Bottom of wing joint	18.1	Need to Average, usually oval; yes					
24	Bore dia. top of boot joint small side	17.2	oval;					
25	Bore dia. top of boot joint large side	23.1	oval;					
26								
27	III. Boot Lengths							
28	bj logic	1	logic=> if bj logic = 0 => plug removed; if bj logic = 1 => plug cannot be removed					
29	bj c	100	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]					
30	bj b	152						
31	bj a	188						
32								
33	bjtotal [Needed for both boot logics]	422	total length of boot, include socket, along the small bore side, meas. With boot cap removed					
34	bjltotal [Needed for both boot logics]	422	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]	382	hook length along s bore => bjs-septum length = boot - septum <= calc the septum					
39	bootl [Needed for both boot logics]	382	hook length along l bore => bjlt-septum length = boot - septum <= calc the septum					
40								
41	boots bottom [Needed for both boot logics]	19.7	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick]					
42	bootl bottom [Needed for both boot logics]	19.7	use hook, dist of bore [same as boots bot except tenon depth will be different]					
43			For boots & bootl: meas. Between septum and bottom of bore formed by wood, two cork system boot					
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]	41	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 [bjl - bootl]			do not imput value		
48	septum length - do not imput value	40	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = sep			do not imput value		
49								
50	sbore dia sep* [Needed for both boot logic]	18.5	septum small bore dia [assume = lbore dia sep]					
51	lbore dia sep* [Needed for both boot logics]	18.8	septum large bore dia [assume = sbore dia sep] [measure if cork can be removed; for Logic 0]					
52	sep width exp [Need for logic 0 only]	7	septum width; direct measurement if remove plug					
53	sep width calc - do not imput value	5.7	septum width; calc. => extreme bore - sbore - lbore			do not imput value		
54	sep width - do not imput value	5.7	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width			do not imput value		
55								
56	bj g	338	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]					
57	bj f1	131	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]					
58								
59			Notes on turn-around: cork is made of ??? could add friction, ??mm of curve; two cork design					
60								
61								
62								
63	IV. Tone Hole Diameters							
64	f2	5.9						
65	e	6						
66	d	6						
67								
68	c	7.2						
69	b	7						
70	a	6.9						
71	g	8.4						
72	f1	9.4						
73								
74	e1	10.9	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]			oblong 10.7 x 11.2		
75	d1	9.4	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]					
76	c1	10.4	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	22						
84	e	21.8						
85	d	23						
86								
87	c	26						
88	b	25.2						
89	a	26.3						
90	g	20.5	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]					
91	f1	24.5	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]					
92								
93	e1	6	e1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]					

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94	d1	9	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]					
95	c1	5	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]					
96								
97								
98								
99								
100								
101	VI. Long Joint		There is a table along long joint??? No, but tone hole seats are flattened, of course					
102	lg_length	599	total length of long joint					
103	lg_tenon_bot	48.5	length bottom tenon on long joint [tenon going into boot joint]					
104	lj_bot_bore	23.9	long joint bottom tenon bore diameter [tenon going into boot joint] Average out of round 23.3x24.6					
105	lj_top_bore	30.8	long joint top tenon bore diameter [tenon going into bell]					
106	lg_tenon_top	40.1	length top tenon on long joint [tenon going into bell]					
107	e1_distance	67	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]					
108	d1_distance	257	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]					
109	c1_distance	462	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	12.8						
117	e	13.6						
118	d	13.9						
119								
120	c	17.8						
121	b	18.3						
122	a	18.4						
123	g	18.9						
124	f1	21.8						
125								
126	e1	23.4	e1 tone hole bore diameter on long joint					
127	d1	25.1	d1 tone hole bore diameter on long joint					
128	c1	28.4	c1 tone hole bore diameter on long joint					
129								
130								
131								
132								
133								
134	VIII. Bell		There is no tone hole in the bell: omm, 0 mm from bottom, include bell socket					
135	bell_logic	1	If bell_logic = 0 => normal conical bore; if bell_logic = 1 => inverted conical bore; if bell_logic = 2 => bell expansion					
136	bell_length (0, 1, 2)	277	total length of bell [lines 141 + 144 = line 136]					
137	bell_bot_bore (0, 1, 2)	29	dia bore at the bottom of bell [end with socket]					
138	bell_top_bore 0, (1, 0, 2)	24.6	dia bore at the top of bell [where low Bb exits]					
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)	39.6	bell socket length					
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]					
145	Belfig	49.5						
146								
147								
148	IX. PITCH							
149	pitch	415	input the historical pitch of the bassoon, must input value, best guess					
150	freq_init	380	Initial frequency range variable					
151	Delta frequency	2	frequency increment parameter					
152	Number of frequencies	60	number of frequencies to scan for min chi sq					
153	Frequency adjust	1.05	frequency adjustment parameter					
154	X. Title							
155	title		Bassoon Calculation: Hirschstein1-O-Rachor-Wg1-WOB-DNM					
156								
157			Notes on long joint bore: very out of round in places					
158			Notes on boot joint bore: There is a constriction at septum, 19 mm above, narrows down to 18.5 at septum					
159	XI. Bore Diameter Locations		Notes on wing joint bore: ????					
160		20	Number of diameters					
161		0	Initial bore diameter [do not include in line 160 counting]					
162		0	dist1; measured from the bottom of the wing joint- 10mm					1
163		370	dist2; measured from the bottom of the wing joint- 11mm					1
164		317	dist3; measured from the bottom of the wing joint- 12mm					1
165		273	dist4; measured from the bottom of the wing joint- 13mm					1
166		200	dist5; measured from the bottom of the wing joint- 14mm; very out of round 185 to 220					1
167		153	dist6; measured from the bottom of the wing joint- 15mm; 140x165	Bottom win	18.1			1
168		89	dist7; measured from the bottom of the wing joint- 16mm	top boot str	17.2			1
169		13	dist8; measured from the bottom of the wing joint- 17mm	top boot lar	23.1			1
170		129	dist9; measured from the top of the bootjoint - small bore side- 18mm					2
171		270	dist10; measured from the top of the bootjoint - large bore side- 19mm	sbore dia se	18.5			3
172		260	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia se	18.8			3
173		194	dist12; measured from the top of the bootjoint - large bore side- 21mm	Hook Lengh	382			3
174		119	dist13; measured from the top of the bootjoint - large bore side- 22mm					3
175		65	dist14; measured from the top of the bootjoint - large bore side- 23mm					3
176		443	dist15; measured from the top of the long joint- 24mm	lj_bot_bore	23.9			4
177		350	dist16; measured from the top of the long joint- 25mm					4
178		240	dist17; measured from the top of the long joint- 26mm;Oor 220x260					4
179		185	dist18; measured from the top of the long joint- 27mm					4
180		150	dist19; measured from the top of the long joint- 28mm					4
181		116	dist20; measured from the top of the long joint- 29mm					4
182		32	dist21; measured from the top of the long joint- 30mm					4
183		0	dist22; measured from the top of the long joint- 31mm					4
184		0	dist23; measured from the top of the long joint- 32mm	lj_top_bore	30.8			4