GrenserH6-O-BrusMIM0183-Wg1-WOB-DNM

	A	B	C	D	E	F	G	H
1	**I. Bocal**		Original bocal; GrenserH6 no bocal					
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								
13	**II. Wing Joint Lengths**		bocal receiver: GrenserH6 yes, a real receiver, not just formed by wear					
14	choke bore dia.	8.7	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)	29.3	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)					
16	wing joint length	515	total wing joint length, including tenon and socket; GrenserH6 shorter of the two wings [longer wing 525mm]					
17	tenon length	39.2	tenon length[longer wing 39.3mm]					
18								
19	wj f2	238	dist top of wing to where tone hole enters bore [not at the center of the tone hole]					
20	wj e	294						
21	wj d	338						
22								
23	Bore dia. Bottom of wing joint	16.1	Need to Average, usally oval; GrenserH6 slightly oval					
24	Bore dia. top of boot joint small side	16.7						
25	Bore dia. top of boot joint large side	25.3						
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	85	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]					
30	bj b	145						
31	bj a	189						
32			GrenserH6 Two hole system like Herschstein					
33	bjstotal [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 => bjl-septum length = boot - septum <= calc the septum					
40								
41	boots bottom [Needed for both boot logics]	20.5	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick]	13.5 + 7				
42	bootl bottom [Needed for both boot logics]	20.5	use hook, dist of bore [same as boots bot except tenon depth will be different]					
43								
44	extreme bore [Needed for logic 1 only]	41.6	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width					
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]					
47	septum length calc - do not imput value	40	dist. From very bottom of boot to spetum [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 = septum calc	do not imput value				
49								
50	sbore dia sep* [Needed for both boot logics]	18.1	septum small bore dia [assume = lbore dia sep]					
51	lbore dia sep* [Needed for both boot logics]	18.4	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]	0	septum width; direct measurement if remove plug					
53	sep width calc - do not imput value	5.1	septum width; calc. => extreme bore - sbore - lbore	do not imput value				
54	sep width - do not imput value	5.1	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = sep v	do not imput value				
55								
56	bj g	324	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]					
57	bj f1	124	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	5.6						
66	d	5.4						
67								
68	c	7.8						
69	b	7.2						
70	a	5.7						
71	g	8.4						
72	f1	9.7						
73								
74	e1	10.5	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]					
75	d1	9.2	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]					
76	c1	11	GrenserH6 Oblong in the shape of a "D"; c1 tone hole dia, on long joint					
77								
78								
79								
80								
81								
82	**V. Tone Hole Depths: Wing 1 shorter**							
83	f2	18.3	GrenserH6 vrfd short					
84	e	19.5	GrenserH6 épaule not very pronounced, see extra meas.					
85	d	23.5	GrenserH6 vrfd short					
86								
87	c	25.6						
88	b	23.7						
89	a	30.6	GrenserH6 extreme downward angle					
90	g	14.5	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]					
91	f1	19	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]					
92								
93	e1	9.5	e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist]					
94	d1	11.4	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]					
95	c1	8.4	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]					
96								
97								
98								
99								
100								

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	A	B	C	D	E	F	G	H
101	**VI. Long Joint**		GrenserH6 a table along long joint					
102	lg_length	610	total length of long joint					
103	lg_tenon_bot	42	length bottom tenon on long joint [tenon going into boot joint]					
104	lj_bot_bore	24.2	long joint bottom tenon bore diameter [tenon going into boot joint]					
105	lj_top_bore	32.4	long joint top tenon bore diameter [tenon going into bell]					
106	lg_tenon_top	34.5	length top tenon on long joint [tenon going into bell]					
107	e1 distance	58	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]					
108	d1 distance	260	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]					
109	c1 distance	512	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	11.9						
117	e	12.7						
118	d	13.4						
119								
120	c	16.5						
121	b	16.9						
122	a	17.1						
123	g	20.1						
124	f1	23						
125								
126	e1	24.2	e1 tone hole bore diameter on long joint					
127	d1	27.8	d1 tone hole bore diameter on long joint					
128	c1	30.9	c1 tone hole bore diameter on long joint					
129								
130								
131								
132								
133								
134	**VIII. Bell**		GrenserH6 a tone hole in the bell [plugged]: 6mm, 134 mm from bottom, include bell socket					
135	bell logic	0	If bell_logic = 0 => normal conical bore; if bell_logic = 1 => inverted concial bore; if bell_logic = 2 => bell expansion					
136	bell_length (0, 1, 2)	295	total length of bell [lines 141 + 144 = line 136]					
137	bell_bot_bore (0, 1, 2)	32.2	dia bore at the bottom of bell [end with socket] OOR					
138	bell_top_bore 0, (1, 0, 2)	34.5	dia bore at the top of bell; GrenserH6 34.5 mm is about 20 down in top of bell, at very top it expands to about 37.5 mm					
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)	34.5	bell socket length					
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]					
145	belflg	49	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	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: GrenserH6-O-BrusMIM0183-Wg1-WOB-DNM					
156								
157			Notes on long joint bore: GrenserH6; OOR in places					
158			Notes on boot joint bore: GrenserH6; normal					
159	**XI. Bore Diameter Locations**		Notes on wing joint bore: GrenserH6; normal					
160		23	Number of diameters					
161	**Bell Bore**	8.7	Initial bore diameter [do not include in line 160 counting]					
162	32.2mm dia. at socket	377	dist1; measured from the bottom of the wing joint- 10mm				1	
163	32mm rod 110mm from socket	326	dist2; measured from the bottom of the wing joint- 11mm				1	
164	32mm rod 155mm from top of bell	265	dist3; measured from the bottom of the wing joint- 12mm				1	
165	34.5mm dia.at bell end	202	dist4; measured from the bottom of the wing joint- 13mm				1	
166		95	dist5; measured from the bottom of the wing joint- 14mm				1	
167		44	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing jt	16.1		1	
168		50	dist7; measured from the top of the bootjoint - small bore side- 16mm	top boot small	16.7		2	
169		155	dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot large	25.3		2	
170		290	GrenserH6 OOR; dist9; measured from the top of the bootjoint - 18mm				2	
171		375	dist10; measured from the top of the bootjoint - large bore side- 19mm	sbore dia sep	18.1		3	
172		310	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia sep	18.4		3	
173		267	GrenserH6 OOR; dist12; measured from the top of the bootjoint - 21mm	Hook Length	382		3	
174		175	dist13; measured from the top of the bootjoint - large bore side- 22mm				3	
175		125	dist14; measured from the top of the bootjoint - large bore side- 23mm				3	
176		560	dist15; measured from the top of the long joint- 24mm	lj_bot_bore	24.2		4	
177		498	dist16; measured from the top of the long joint- 25mm				4	
178		441	dist17; measured from the top of the long joint- 26mm				4	
179		380	dist18; measured from the top of the long joint- 27mm;				4	
180		328	dist19; measured from the top of the long joint- 28mm;				4	
181		261	dist20; measured from the top of the long joint- 29mm				4	
182		225	dist21; measured from the top of the long joint- 30mm				4	
183		81	dist22; measured from the top of the long joint- 31mm;				4	
184		9	dist23; measured from the top of the long joint- 32mm;	lj_top_bore	32.4		4	