GrenserA2-O-Leipzig1376-Wg1-WOB-DNM

	A	B	C	D	E	F	G	H	I	J	K
1	**I. Bocal**		Original bocal; GrenserA2 no								
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: GrenserA2 there is a receiver, top part of wing has an insert, to repair and shorten the wing								
14	choke bore dia.	9.6	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)	33	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)								
16	wing joint length	496	total wing joint length, including tenon and socket; GrenserA2 wing was probably shortened, has a plastic insert as bottom of bore and tenon								
17	tenon length	38.4	tenon length								
18											
19	wj f2	230	dist top of wing to where tone hole enters bore [not at the center of the tone hole]								
20	wj e	287									
21	wj d	330									
22											
23	Bore dia. Bottom of wing joint	17.1	Need to Average, usally oval; GrenserA2 yes								
24	Bore dia. top of boot joint small side	17.3	GrenserA2 Much dry rot, bore small side in really bad shape, this is probably too large from the rot								
25	Bore dia. top of boot joint large side	24.4	The large side of boot in good shape, as is normal								
26											
27	**III. Boot Lengths**		GrenserA2 Two whole design; cork on small side of boot has fallen out.								
28	bj logic	1	logic=> if bj logic = 0 => plug removed; if bj logic = 1 => plug cannot be removed								
29	bj c	92	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]								
30	bj b	146									
31	bj a	193									
32											
33	bjstotal [Needed for both boot logics]	420	total length of boot, include socket, along the small bore side, meas. With boot cap removed								
34	bjltotal [Needed for both boot logics]	420	total length of boot, include socket, along large bore side; Boot could have been shortened								
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]	383	hook length along s bore => bjs-septum length = boot - septum <= calc the septum								
39	bootl [Needed for both boot logics]	383	hook length along l bore => bjl-septum length = boot - septum <= calc the septum								
40											
41	boots bottom [Needed for both boot logics]	18	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]	18	use hook, dist of bore [same as boots bot except tenon depth will be different]								
43											
44	extreme bore [Needed for logic 1 only]	38.6	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width								
45											
46	septum length exp [Need for logic 0 only]	36	dist. from very bottom of boot to septum [point between the large and small bore]								
47	septum length calc - do not imput value	37	dist. From very bottom of boot to spetum [bjl - bootl]	do not imput value							
48	septum length - do not imput value	37	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum c	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]	18.9	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	1.6	septum width; calc. => extreme bore - sbore - lbore	do not imput value							
54	sep width - do not imput value	1.6	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = se	do not imput value							
55											
56	bj g	327	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	6.5									
65	e	6									
66	d	5.5									
67											
68	c	6.7									
69	b	6.4									
70	a	5.5									
71	g	7.3									
72	f1	8									
73											
74	e1	8.3	GrenserA2 tone holes on long joint are small								
75	d1	8.5	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]								
76	c1	9.6	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	20.2									
84	e	20.9									
85	d	25.1									
86											
87	c	25.1									
88	b	23.7									
89	a	25.9									
90	g	14.5	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]								
91	f1	17.1	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]								
92											
93	e1	9	e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist]								
94	d1	8.8	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]								
95	c1	8.8	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; GrenserA2 a table along long joint								
102	lg_length	*606*	total length of long joint; yes 600 mm								
103	lg_tenon_bot	40.5	length bottom tenon on long joint [tenon going into boot joint]								
104	lj_bot_bore	26.1	GrenserA2 25.8 x 26.4; long joint bottom tenon bore diameter [tenon going into boot joint]								
105	lj_top_bore	32	long joint top tenon bore diameter [tenon going into bell]								
106	lg_tenon_top	32.5	length top tenon on long joint [tenon going into bell]								
107	e1 distance	51	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	485	dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore] This low C tone hole is really closer to reed than the other 2 A. Grenser, see photos								
110											
111											
112											
113											
114											
115	**VII. Bore diameters at Tone Holes**										
116	f2	12.2									

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	A	B	C	D	E	F	G	H	I	J	K
117	e	12.7									
118	d	13.3									
119											
120	c	17.2	GrenserA2 Probably large from rot								
121	b	16.9									
122	a	17.3									
123	g	20									
124	f1	23									
125											
126	e1	25.2	e1 tone hole bore diameter on long joint								
127	d1	26.5	d1 tone hole bore diameter on long joint								
128	c1	30.1	c1 tone hole bore diameter on long joint								
129											
130											
131											
132											
133											
134	**VIII. Bell**		GrenserA2; There is a tone hole in the bell: 4 mm, 148 mm from bottom, including bell socket								
135	bell_logic	1	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)	296	total length of bell [lines 141 + 144 = line 136]								
137	bell_bot_bore (0, 1, 2)	31	dia bore at the bottom of bell [end with socket]								
138	bell_top_bore 0, (1, 0, 2)	29.6	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)	33	bell socket length								
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]								
145											
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**		dated 1782								
155	title		Bassoon Calculation: GrenserA2-O-Leipzig1376-Wg1-WOB-DNM								
156											
157			Notes on long joint bore: GrenserA2 very out of round in places								
158			Notes on boot joint bore: GrenserA2 small side very out of round and cyn.								
159	**XI. Bore Diameter Locations**		Notes on wing joint bore: GrenserA2 normal								
160		20	Number of diameters								
161	**Bell Bore**	9.6	Initial bore diameter [do not include in line 160 counting]								
162	31.0mm dia. at socket	0	GrenserA2 cannot meas. insert, and repair; dist1; measured from the bottom of the wing joint- 10mm;				1				
163	30mm rod 120mm from socket	320	dist2; measured from the bottom of the wing joint- 11mm				1				
164	29.6mm dia. at bell end	271	dist3; measured from the bottom of the wing joint- 12mm				1				
165		195	dist4; measured from the bottom of the wing joint- 13mm				1				
166		48	dist5; measured from the bottom of the wing joint- 14mm				1				
167		39	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing	17.1		1				
168		28	dist7; measured from the bottom of the wing joint- 16mm	top boot sma	17.3		1				
169		20	dist8; measured from the bottom of the wing joint- 17mm	top boot larg	24.4		1				
170		365	GrenserA2; OOR, rotted; dist9; measured from the top of the bootjoint - small bore side- 18mm				2				
171		370	dist10; measured from the top of the bootjoint - large bore side- 19mm	sbore dia sep	18.1		3				
172		329	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia sep	18.9		3				
173		251	dist12; measured from the top of the bootjoint - large bore side- 21mm	Hook Length	383		3				
174		188	dist13; measured from the top of the bootjoint - large bore side- 22mm				3				
175		135	dist14; measured from the top of the bootjoint - large bore side- 23mm				3				
176		78	dist15; measured from the top of the boot joint- large bore side- 24mm	lj_bot_bore	26.1		3				
177		0	dist16; measured from the top of the long joint- 25mm				4				
178		470	GrenserA2 vrfd; dist17; measured from the top of the long joint- 26mm				4				
179		292	GrenserA2 vrfd; dist18; measured from the top of the long joint- 27mm				4				
180		240	dist19; measured from the top of the long joint- 28mm				4				
181		170	dist20; measured from the top of the long joint- 29mm				4				
182		119	dist21; measured from the top of the long joint- 30mm				4				
183		52	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	32		4				