

	A	B	C	D	E	F	G
1	I. Bocal		Original bocal, AdlerFG4 Possibly, seems to be original				
2	dia reed end	3.8	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)	35.8cm	meas. along top of bocal				
5	metal bocal length bot (0, 1)	34.0cm	meas. along bottom of bocal				
6	dia wj end	8.8	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: no receiver AdlerGF4, from wear				
14	choke bore dia.	8.4	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)	30	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				
17	tenon length	51	tenon length				
18							
19	wj f2	197	dist top of wing to where tone hole enters bore [not at the center of the tone hole]				
20	wj e	280					
21	wj d	325					
22							
23	Bore dia. Bottom of wing joint	15	Need to Average, usually oval; Adler4, no bore in great shape				
24	Bore dia. top of boot joint small side	15					
25	Bore dia. top of boot joint large side	24.9					
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	75	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	201					
32							
33	bjstotal [Needed for both boot logics]	432	total length of boot, include socket, along the small bore side				
34	bjltotal [Needed for both boot logics]	432	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]	378	hook length along s bore => bjs-septum length = boot - septum <= calc the septum				
39	bootl [Needed for both boot logics]	378	hook length along l bore => bjl-septum length = boot - septum <= calc the septum				
40							
41	boots bottom [Needed for both boot logics]	31	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick] 24 + 7 = 31				
42	bootl bottom [Needed for both boot logics]	31	use hook, dist of bore [same as boots bot except tenon depth will be different]				
43							
44	extreme bore [Needed for logic 1 only]	42.2	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	54	dist. From very bottom of boot to septum [bjl - bootl]	do not imput value			
48	septum length - do not imput value	54	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]	18.8	septum small bore dia [assume = lbore dia sep]				
51	lbore dia sep* [Needed for both boot logics]	19.4	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]		septum width; direct measurement if remove plug				
53	sep width calc - do not imput value	4	septum width; calc. => extreme bore - sbore - lbore	do not imput value			
54	sep width - do not imput value	4	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = sep wi	do not imput value			
55							
56	bj g	337	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
57	bj f1	138	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	5.3					
65	e	6					
66	d	5.5					
67							
68	c	7.5					
69	b	7.5					
70	a	6					
71	g	8.9					
72	f1	9					
73							
74	e1	12.8	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]				
75	d1	11.2	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]				
76	c1	13.5	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	43	Adler4 vrfd, extreme angle				
84	e	38					
85	d	39.5					
86							
87	c	35.5	Adler4 extreme angle				
88	b	31					
89	a	35	Adler4 extreme angle				
90	g	17.5	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]				
91	f1	28	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]				
92							
93	e1	7.8	e1 tone hole depth;meas east/west with depth gauge [at center, or shortest dist]				

	A	B	C	D	E	F	G
94	d1	8.2	d1 tone hole depth; meas east/west with depth gauge [at center, or shortest dist]				
95	c1	8.6	c1 tone hole depth; meas east/west with depth gauge [at center, or shortest dist]				
96							
97							
98							
99							
100							
101	VI. Long Joint		AdlerFG4 There is a table along long joint				
102	lg_length	571	Adler4 vrfd short; total length of long joint				
103	lg_tenon_bot	50.3	length bottom tenon on long joint [tenon going into boot joint]				
104	lj_bot_bore	25.1	long joint bottom tenon bore diameter [tenon going into boot joint]				
105	lj_top_bore	33.3	Adler4 OOR 34 x 32.5; long joint top tenon bore diameter [tenon going into bell]				
106	lg_tenon_top	37.5	Adler4 vrfd bell socket longer; length top tenon on long joint [tenon going into bell]				
107	e1_distance	59	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	490	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	11.1					
117	e	12.8					
118	d	13.1					
119							
120	c	14.8	Adler4 vrfd smaller than socket				
121	b	16.1					
122	a	16.4					
123	g	19.6					
124	f1	24.7					
125							
126	e1	25.5	e1 tone hole bore diameter on long joint				
127	d1	28.2	d1 tone hole bore diameter on long joint				
128	c1	31.7	c1 tone hole bore diameter on long joint				
129							
130							
131							
132							
133			Yes, a reversed tapered bell on AdlerGF4				
134	VIII. Bell		AdlerFG4 There is not a tone hole in the bell				
135	bell_logic	1	If bell_logic = 0 => normal conical; if bell_logic = 1 => inverted conical ; if bell_logic = 2 => bell expansion				
136	bell_length (0, 1, 2)	337	total length of bell [lines 141 + 144 = line 136]				
137	bell_bot_bore (0, 1, 2)	33.1	dia bore at the bottom of bell [end with socket]				
138	bell_top_bore 0, (1, 0, 2)	31.4	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)	41	bell socket length				
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]				
145	bellfg	48	Usually about 10mm more than line 138				
146							
147							
148	IX. PITCH						
149	pitch	435	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:AdlerFG4-O-Kampmann812-Wg1-WB-DNM				
156							
157			Notes on long joint bore: AdlerFG4 normal, OOR at large tenon				
158			Notes on boot joint bore: AdlerFG4 normal				
159	XI. Bore Diameter Locations		Notes on wing joint bore: AdlerGF4 good shape, very steep cone, meas. correct				
160		22	Number of diameters				
161		8.4	Initial bore diameter [do not include in line 160 counting]				
162		357	dist1; measured from the bottom of the wing joint- 10mm				1
163		310	dist2; measured from the bottom of the wing joint- 11mm				1
164		260	Adler4 verified; 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		105	Adler 4 verified; dist5; measured from the bottom of the wing joint- 14mm				1
167		0	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing jt	15		1
168		130	dist7; measured from the bottom of the wing joint - 16mm	top boot small	15		2
169		220	dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot large	24.9		2
170		300	dist9; measured from the top of the bootjoint - small bore side- 18mm				2
171		350	dist10; measured from the top of the bootjoint -small bore side- 19mm	sbore dia sep	18.8		2
172		310	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia sep	19.4		3
173		275	dist12; measured from the top of the bootjoint - large bore side- 21mm	Hook Length	378		3
174		250	dist13; measured from the top of the bootjoint - large bore side- 22				3
175		215	dist14; measured from the top of the bootjoint - large bore side- 23				3
176		190	Adler4 vrfd; dist15; measured from the top of the bootjoint - large bore side- 24mm	lj_bot_bore	25.1		3
177		120	dist16; measured from the top of the long joint- 25mm; OOR				3
178		485	dist17; measured from the top of the long joint- 26mm; OOR				4
179		408	dist18; measured from the top of the long joint- 27mm; OOR				4
180		320	Adler4 vrfd; dist19; measured from the top of the long joint- 28mm				4
181		270	dist20; measured from the top of the long joint- 29mm				4
182		200	dist21; measured from the top of the long joint- 30mm				4
183		130	dist22; measured from the top of the long joint- 31mm				4
184		52	dist23; measured from the top of the long joint- 32mm	lj_top_bore	33.3		4