	A	B	C	D	E	F	G	H	I	J
1	**I. Bocal**		Original bocal; Anon24 no bocal						Herstein1	Anon11-NMM
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	2
9										
10										
11										
12										
13	**II. Wing Joint Lengths**		bocal receiver: Anon24 no, but a shelf from wear							
14	choke bore dia.	9.2	logic 1; bore diameter of choke;logic 0;either diameter bocal bottom or beginning of bore at bottom or receiver						9.7	9.3
15	receiver length (1, 0) (formally choke length)	40	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)						38	49
16	wing joint length	509	total wing joint length, including tenon and socket						535	516
17	tenon length	41.5	tenon length						44.6	38.4
18										
19	wj f2	233	dist top of wing to where tone hole enters bore [not at the center of the tone hole]						249	248
20	wj e	290							299	298
21	wj d	327							334	340
22										
23	Bore dia. Bottom of wing joint	16.3	Need to Average, usally oval; Anon24 no						18.1	16.5
24	Bore dia. top of boot joint small side	16.2							17.2	16.8
25	Bore dia. top of boot joint large side	23.5	Anon24 24mm x 23mm						23.1	23
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	1
29	bj c	96	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]						100	95
30	bj b	162							152	151
31	bj a	202							188	188
32										
33	bjstotal [Needed for both boot logics]	432	total length of boot, include socket, along the small bore side						422	419
34	bjltotal [Needed for both boot logics]	432	total length of boot, include socket, along large bore side						422	419
35	plug small [Need for logic 0 only]	0	plug thickness, large bore side						0	0
36	plug large [Need for logic 0 only]	0	plug thickness, small bore side						0	0
37										
38	boots [Needed for both boot logics]	382	hook length along s bore => bjs-septum length = boot - septum <= calc the septum						382	373
39	bootl [Needed for both boot logics]	382	hook length along l bore => bjl-septum length = boot - septum <= calc the septum						382	373
40										
41	boots bottom [Needed for both boot logics]	26	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick] 19 + 7 =26						19.7	25
42	bootl bottom [Needed for both boot logics]	26	use hook, dist of bore [same as boots bot except tenon depth will be different]						19.7	25
43										
44	extreme bore [Needed for logic 1 only]	40	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width						43	39.2
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]						41	0
47	septum length calc - do not imput value	50	dist. From very bottom of boot to spetum [bjl - bootl]	do not imput value					40	46
48	septum length - do not imput value	50	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum ca	do not imput value					40	46
49										
50	sbore dia sep* [Needed for both boot logics]	17.8	septum small bore dia [assume = lbore dia sep]						18.5	18.5
51	lbore dia sep* [Needed for both boot logics]	19.4	Anon24 vrfd gap between bores; septum large bore dia [assume = sbore dia sep]						18.8	18
52	sep width exp [Need for logic 0 only]	0	septum width; direct measurement if remove plug						7	0
53	sep width calc - do not imput value	2.8	septum width; calc. => extreme bore - sbore - lbore	do not imput value					5.7	2.7
54	sep width - do not imput value	2.8	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = sep	do not imput value					5.7	2.7
55										
56	bj g	CM	Anon24 could not remove pin from G key flap; dist from top of boot (socket) to where G hole enters bore [not at cent of tone h						338	331
57	bj f1	137	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]						131	130
58										
59										
60										
61										
62										
63	**IV. Tone Hole Diameters**									
64	f2	6.6							5.9	6
65	e	5.8							6	5.7
66	d	5.4							6	5.7
67										
68	c	7.2							7.2	8.7
69	b	6.4							7	7.3
70	a	6.6							6.9	6.1
71	g	CM	Anon24 could not remove pin from G key flap;						8.4	9.9
72	f1	11							9.4	10
73										
74	e1	13.4	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						10.9	11.5
75	d1	12	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						9.4	10.5
76	c1	11.9	c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						10.4	12
77										
78										
79										
80										
81										
82	**V. Tone Hole Depths**									
83	f2	22.4							22	25.8
84	e	19.4							21.8	25.9
85	d	18.8							23	24
86										
87	c	27							26	28.5
88	b	23.4							25.2	29
89	a	22.4							26.3	27.2
90	g	CM	Anon24 could not remove pin from G key flap; meas along bot tone hole wall [north wall, toward reed,tone hole usually at angl						20.5	14.5
91	f1	18.8	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]						24.5	21
92										
93	e1	10.4	e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist]						6	5
94	d1	10.8	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]						9	5
95	c1	11	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]						5	5.7
96										
97										
98										
99										
100										
101	**VI. Long Joint**		Anon24 There is not a table along long joint							
102	lg_length	582	total length of long joint						599	605
103	lg_tenon_bot	47.3	length bottom tenon on long joint [tenon going into boot joint]						48.5	45.7
104	lj_bot_bore	22.4	long joint bottom tenon bore diameter [tenon going into boot joint]						23.9	21.3
105	lj_top_bore	31.9	long joint top tenon bore diameter [tenon going into bell]						30.8	30.5
106	lg_tenon_top	27.5	length top tenon on long joint [tenon going into bell]						40.1	35.4

	A	B	C	D	E	F	G	H	I	J
107	e1 distance	64	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]						67	56
108	d1 distance	252	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]						257	255
109	c1 distance	474	dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore]						462	507
110										
111										
112										
113										
114										
115	**VII. Bore diameters at Tone Holes**									
116	f2	12.2							12.8	11.7
117	e	13.1							13.6	12.5
118	d	13.4							13.9	13.2
119										
120	c	17							17.8	17.1
121	b	17.1							18.3	17.2
122	a	17.1							18.4	17.7
123	g	20	Anon24 could not remove pin from G key flap; but could meas. tone hole						18.9	18.5
124	f1	21.6							21.8	21.5
125										
126	e1	23	e1 tone hole bore diameter on long joint						23.4	22.5
127	d1	26	d1 tone hole bore diameter on long joint						25.1	25.2
128	c1	29.5	c1 tone hole bore diameter on long joint						28.4	29.3
129										
130										
131										
132										
133										
134	**VIII. Bell**		Anon24 There is not a tone hole in the bell							
135	bell logic	1	If bell_logic = 0 => normal conical bore; if bell_logic = 1 => inverted concial bore; if bell_logic = 2 => bell expansion						1	1
136	bell_length (0, 1, 2)	285	Anon24 vrfd short; total length of bell [lines 141 + 144 = line 136]						277	260
137	bell_bot_bore (0, 1, 2)	29.3	dia bore at the bottom of bell [end with socket]						29	30.8
138	bell_top_bore 0, (1, 0, 2)	26	Anon24 OOR; dia bore at the top of bell [where low Bb exits]						24.6	27.5
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)	28	Anon24 socket in bad shape; bell socket length						39.6	36
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]							
145	Belfig	38							49.5	34.5
146										
147										
148	**IX. PITCH**									
149	pitch	415	input the historical pitch of the bassoon, must input value, best guess						415	415
150	freq_init	380	Initial frequency range variable						380	380
151	Delta frequency	2	frequency increment parameter						2	2
152	Number of frequencies	60	number of frequencies to scan for min chi sq						60	60
153	Frequency adjust	1.05	frequency adjustment parameter						1.05	1.05
154	**X. Title**									
155	title		Bassoon Calculation: Anon24-O-Markneukirchen1023-Wg1-WOB-DNM							
156										
157			Notes on long joint bore: Anon24 normal							
158			Notes on boot joint bore: Anon24 normal							
159	**XI. Bore Diameter Locations**		Notes on wing joint bore: Anon24 good shape							
160		18	Number of diameters						20	20
161	Bell bore at socket 29.3mm	9.2	Initial bore diameter [do not include in line 160 counting]						0	9.3
162	29mm rod, 87mm from socket, OOR	390	dist1; measured from the bottom of the wing joint- 10mm				1		0	365
163	28mm rod, 156mm from socket	332	dist2; measured from the bottom of the wing joint- 11mm				1		370	302
164	27mm rod, 200mm from socket, OOR	295	dist3; measured from the bottom of the wing joint- 12mm				1		317	253
165	Bell at top 26.0	223	dist4; measured from the bottom of the wing joint- 13mm				1		273	190
166		148	dist5; measured from the bottom of the wing joint- 14mm				1		200	138
167		25	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing	16.3		1		153	93
168		0	dist7; measured from the bottom of the wing joint- 16mm	top boot sma	16.2		1		89	40
169		96	dist8; measured from the bottom of the wing joint- 17mm	top boot larg	23.5		2		13	60
170		0	dist9; measured from the top of the bootjoint - small bore side- 18mm				2		129	288
171		0	dist10; measured from the top of the bootjoint - large bore side- 19mm	sbore dia sep	17.8		3		270	318
172		353	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia sep	19.4		3		260	245
173		243	dist12; measured from the top of the bootjoint - large bore side- 21mm	Hook Length	382		3		194	163
174	110 on boot large side	115	Anon24 vrfd gap; dist13; measured from the top of the bootjoint - large bore side- 22mm				3		119	575
175		515	dist14; measured from the top of the bootjoint - large bore side- 23mm				4		65	488
176		473	dist15; measured from the top of the long joint- 24mm	lj_bot_bore	22.4		4		443	418
177		405	dist16; measured from the top of the long joint- 25mm				4		350	360
178		324	Anon24 vrfd gap; dist17; measured from the top of the long joint- 26mm				4		240	295
179		250	dist18; measured from the top of the long joint- 27mm				4		185	235
180		203	dist19; measured from the top of the long joint- 28mm				4		150	180
181		140	dist20; measured from the top of the long joint- 29mm				4		116	125
182		70	dist21; measured from the top of the long joint- 30mm				4		32	0
183		0	dist22; measured from the top of the long joint- 31mm				4		0	0
184		0	dist23; measured from the top of the long joint- 32mm	lj_top_bore	31.9		4		0	0
185									10	10
186									11	11
187									12	12
188									13	13
189									14	14
190									15	15
191									16	16
192									17	17
193									18	18
194									19	19
195									20	20
196									21	21
197									22	22
198									23	23
199									24	24
200									25	25
201									26	26
202									27	27
203									28	28
204									29	29
205									30	30
206									31	31
207									32	32