| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | **I. Bocal** | | Original bocal SavPere3 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 | | | SavPere3 Receiver details here;A metal sleve as bocal receiver, extends out from top of wing | | | | |
| 11 | | | SavPere3 Necessary to meas. wing tone hole positions from bottom then subtract wing total length. | | | | |
| 12 | | | SavPere3 Top of wing has a brass fitting with screw to fix bocal into wing. | | | | |
| 13 | **II. Wing Joint Lengths** | | bocal receiver: SavPere3 no; just a slight slelf where metal bocal receiver stops | | | | |
| 14 | choke bore dia. | 9.3 | 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) | 54 | logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length) | | | | |
| 16 | wing joint length | 508 | total wing joint length, including tenon and socket | | | | |
| 17 | tenon length | 50 | tenon length | | | | |
| 18 | | | | | | | |
| 19 | wj f2 | 215 | dist from bottom of wing (not top as usual) to where tone hole enters bore [not at the center of the tone hole] | | | | |
| 20 | wj e | 294 | | | | | |
| 21 | wj d | 334 | | | | | |
| 22 | | | | | | | |
| 23 | Bore dia. Bottom of wing joint | 15.3 | Need to Average, usally oval; SavPere3 | | | | |
| 24 | Bore dia. top of boot joint small side | 15 | | | | | |
| 25 | Bore dia. top of boot joint large side | 23.2 | | | | | |
| 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 | 86 | dist from top of boot to where topmost tone hole enter bore [not at center of tone hole] | | | | |
| 30 | bj b | 159 | | | | | |
| 31 | bj a | 198 | | | | | |
| 32 | | | | | | | |
| 33 | bjstotal [Needed for both boot logics] | 435 | total length of boot, include socket, along the small bore side | | | | |
| 34 | bjltotal [Needed for both boot logics] | 435 | 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] | 393 | hook length along s bore => bjs-septum length = boot - septum <= calc the septum | | | | |
| 39 | bootl [Needed for both boot logics] | 393 | hook length along l bore => bjl-septum length = boot - septum <= calc the septum | | | | |
| 40 | | | | | | | |
| 41 | boots bottom [Needed for both boot logics] | 29 | use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick] 22 + 7 =22 | | | | |
| 42 | bootl bottom [Needed for both boot logics] | 29 | use hook, dist of bore [same as boots bot except tenon depth will be different] | | | | |
| 43 | | | | | | | |
| 44 | extreme bore [Needed for logic 1 only] | 40.3 | SavPere3 vrfd small; 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 | 42 | dist. From very bottom of boot to spetum [bjl - bootl] | do not imput value | | | |
| 48 | septum length - do not imput value | 42 | 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] | 18.3 | septum small bore dia [assume = lbore dia sep] | | | | |
| 51 | lbore dia sep* [Needed for both boot logics] | 18.5 | 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 | 3.5 | septum width; calc. => extreme bore - sbore - lbore | do not imput value | | | |
| 54 | sep width - do not imput value | 3.5 | if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = sep wid | 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 | 145 | 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 | 5.1 | | | | | |
| 65 | e | 6 | | | | | |
| 66 | d | 5.5 | | | | | |
| 67 | | | | | | | |
| 68 | c | 6.9 | | | | | |
| 69 | b | 6.8 | | | | | |
| 70 | a | 5.8 | | | | | |
| 71 | g | 9 | | | | | |
| 72 | f1 | 9.4 | | | | | |
| 73 | | | | | | | |
| 74 | e1 | 13.5 | e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] | | | | |
| 75 | d1 | 9.5 | d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]; | | | | |
| 76 | c1 | 14.5 | c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] | | | | |
| 77 | | | SavPere3 three long joint tone holes all round, not oblong | | | | |
| 78 | | | | | | | |
| 79 | | | | | | | |
| 80 | | | | | | | |
| 81 | | | | | | | |
| 82 | **V. Tone Hole Depths** | | | | | | |
| 83 | f2 | 38.5 | SavPere3 F tone holes drilled at very extreme angle | | | | |
| 84 | e | 32.5 | | | | | |
| 85 | d | 31.7 | SavPere3 D tone holes drilled at fairly extreme angle | | | | |
| 86 | | | | | | | |
| 87 | c | 31.2 | | | | | |
| 88 | b | 29.4 | | | | | |
| 89 | a | 29.8 | SavPere3 A tone holes drilled at fairly extreme angle | | | | |
| 90 | g | 16.1 | meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle] | | | | |
| 91 | f1 | 23.5 | meas along east side tone hole wall [north wall, toward reed,t hole usually at angle] | | | | |
| 92 | | | | | | | |
| 93 | e1 | 8 | e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist] | | | | |

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 94 | d1 | 10 | d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] | | | | |
| 95 | c1 | 8.5 | c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] | | | | |
| 96 | | | | | | | |
| 97 | | | | | | | |
| 98 | | | | | | | |
| 99 | | | | | | | |
| 100 | | | | | | | |
| 101 | **VI. Long Joint** | | SavPere3 There is a table along long joint | | | | |
| 102 | lg_length | 590 | total length of long joint | | | | |
| 103 | lg_tenon_bot | 47.3 | length bottom tenon on long joint [tenon going into boot joint] | | | | |
| 104 | lj_bot_bore | 23.3 | long joint bottom tenon bore diameter [tenon going into boot joint] | | | | |
| 105 | lj_top_bore | 33.4 | SavPere3 32.1 x 34.7; long joint top tenon bore diameter [tenon going into bell] | | | | |
| 106 | lg_tenon_top | 37.5 | length top tenon on long joint [tenon going into bell] | | | | |
| 107 | e1 distance | 55 | dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore] | | | | |
| 108 | d1 distance | 254 | dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore] | | | | |
| 109 | c1 distance | 475 | 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 | 11.5 | | | | | |
| 117 | e | 12.5 | | | | | |
| 118 | d | 13.1 | | | | | |
| 119 | | | | | | | |
| 120 | c | 15.1 | | | | | |
| 121 | b | 15.7 | | | | | |
| 122 | a | 16.2 | | | | | |
| 123 | g | 19.4 | | | | | |
| 124 | f1 | 21.6 | | | | | |
| 125 | | | | | | | |
| 126 | e1 | 24.1 | e1 tone hole bore diameter on long joint | | | | |
| 127 | d1 | 27.3 | d1 tone hole bore diameter on long joint | | | | |
| 128 | c1 | 30.4 | c1 tone hole bore diameter on long joint | | | | |
| 129 | | | | | | | |
| 130 | | | | | | | |
| 131 | | | | | | | |
| 132 | | | | | | | |
| 133 | | | | | | | |
| 134 | **VIII. Bell** | | SavPere3 No tone hole in bell | | | | |
| 135 | bell logic | 0 | If bell_logic=0=>normal conical;if bell_logic=1=>inverted concial; if bell_logic=2=>bell expansion | | | | |
| 136 | bell_length (0, 1, 2) | 329 | total length of bell [lines 141 + 144 = line 136] | | | | |
| 137 | bell_bot_bore (0, 1, 2) | 31.9 | dia bore at the bottom of bell [end with socket] | | | | |
| 138 | bell_top_bore 0, (1, 0, 2) | 33.5 | 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 | bell socket length | | | | |
| 144 | bell_expansion_length (only for logic 2) | | distance of maxium expansion to top of bell [where Bb exits] | | | | |
| 145 | Bellflg | 42.6 | | | | | |
| 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: Savarypère3-O-Waterhouse-Wg1-WOB-DNM | | | | |
| 156 | | | Dated on boot 1821 | | | | |
| 157 | | | Notes on long joint bore: SavPere3 normal | | | | |
| 158 | | | Notes on boot joint bore: SavPere3 normal | | | | |
| 159 | **XI. Bore Diameter Locations** | | Notes on wing joint bore: SavPere3 normal | | | | |
| 160 | | 22 | Number of diameters | | | | |
| 161 | | 9.3 | Initial bore diameter | | | | |
| 162 | | 412 | dist1; measured from the bottom of the wing joint- 10mm | | | | 1 |
| 163 | | 343 | dist2; measured from the bottom of the wing joint- 11mm | | | | 1 |
| 164 | | 263 | dist3; measured from the bottom of the wing joint- 12mm | | | | 1 |
| 165 | | 185 | dist4; measured from the bottom of the wing joint- 13mm | | | | 1 |
| 166 | | 70 | dist5; measured from the bottom of the wing joint- 14mm | | | | 1 |
| 167 | | 12 | dist6; measured from the bottom of the wing joint- 15mm | Bottom wing jt | 15.3 | | 1 |
| 168 | | 185 | dist7; measured from the top of the bootjoint - small bore side- 16mm | top boot small | 15 | | 2 |
| 169 | | 240 | dist8; measured from the top of the bootjoint - small bore side- 17mm | top boot large | 23.2 | | 2 |
| 170 | | 345 | SavPere3 330 x 360; dist9; measured from the top of the bootjoint - small bore side- 18mm | | | | 2 |
| 171 | | 375 | dist10; measured from the top of the bootjoint - large bore side- 19mm | sbore dia sep | 18.3 | | 3 |
| 172 | | 305 | dist11; measured from the top of the bootjoint - large bore side- 20mm | lbore dia sep | 18.5 | | 3 |
| 173 | | 182 | SavPere3 175 x 190; dist12; measured from the top of the bootjoint - large bore side- 21mm | | | | 3 |
| 174 | | 115 | dist13; measured from the top of the bootjoint - large bore side- 22mm | | | | 3 |
| 175 | | 0 | dist14; measured from the top of the bootjoint - large bore side- 23mm | | | | 3 |
| 176 | | 535 | dist15; measured from the top of the long joint - 24mm | lj_bot_bore | 23.3 | | 4 |
| 177 | | 490 | dist16; measured from the top of the long joint- 25mm | | | | 4 |
| 178 | | 450 | dist17; measured from the top of the long joint- 26mm | | | | 4 |
| 179 | | 355 | dist18; measured from the top of the long joint- 27mm | | | | 4 |
| 180 | | 277 | dist19; measured from the top of the long joint- 28mm; verified | | | | 4 |
| 181 | | 175 | dist20; measured from the top of the long joint- 29mm; verified | | | | 4 |
| 182 | | 127 | dist21; measured from the top of the long joint- 30mm | | | | 4 |
| 183 | | 88 | 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 | 33.4 | | 4 |