	A	В	С	D	Е	F	G	Н
1	I. Bocal		Original bocal, Winckler3, No				W	Vinckler1
3	dia reed end bocal string length (0, 1)		inside diameter of reed end of bocal 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					
<u>7</u> 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 hoc	al		-+	2
9	bocar rogic		in bocal logic = 0 = 2 bocal is crioke, ii bocal logic = 1 = 2 crioke iii wing joint care, ii bocal logic =	2 => 110 0000	21			
10								
11								
12 13	II. Wing Joint Lengths		bocal receiver: Winckler3, no a choke; the upper part of the wing has been repaired, in bad shape				-+	
14	choke bore dia.	10.8	logic 1; bore diameter of choke; logic 0; either diameter bocal bottom or beginning of bore at bot	om or receive	or .			7.1
15	receiver length (1, 0) (formally choke length)	60	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)					68
16	wing joint length	507	total wing joint length, including tenon and socket					500
17	tenon length	38.7	tenon length					39
19	wj f2	230	dist top of wing to where tone hole enters bore [not at the center of the tone hole]					232
	wj e	275						276
21	wj d	317						317
22	Para dia Battam of wing joint	15.5	Mond to Average, uselly eval, Winddow? no			_	-+	14.8
24	Bore dia. Bottom of wing joint Bore dia. top of boot joint small side	14.6	Need to Average, usally oval; Winckler3 no				-	14.3
25	Bore dia. top of boot joint large side	23.9						23.4
26								
	III. Boot Lengths		logica if hi logic = 0 -> plug romerad: if hi lasis = 4 - s 1			\rightarrow	$-\!+$	4
28	bj logic bj c	99	logic=> if bj logic = 0 => plug removed; if bj logic = 1 => plug cannot be removed dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]				-+	100
	bj b	146	and the state of t					146
31	bj a	196						193
32	best-bed (Mended See b. 1)	426	Askel loosely of hour Soulude control of control of the control of			-1		426
33	bjstotal [Needed for both boot logics] bjltotal [Needed for both boot logics]	436 436	total length of boot, include socket, along the small bore side total length of boot, include socket, along large bore side			-+	-+	436 436
35	plug small [Need for logic 0 only]	0	plug thickness, large bore side				-	0
36	plug large [Need for logic 0 only]	0	plug thickness, small bore side					0
37	have followed as a second second	20.1				\Box	$-\bot$	200
38	boots [Needed for both boot logics] bootl [Needed for both boot logics]	391 391	hook length along s bore => bjs-septum length = boot - septum <= calc the septum hook length along bore => bjl-septum length = boot - septum <= calc the septum					396 396
40	DOGG [Needed for DULII DUUL (OGICS]	291	nook rengen along i bore -> bjr-septum rengur = boot - septum <= carc the septum					290
41	boots bottom [Needed for both boot logics]	22	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick]					20
42	bootl bottom [Needed for both boot logics]	22	use hook, dist of bore [same as boots bot except tenon depth will be different]					20
43	extreme bore [Needed for logic 1 only]	46.5	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width				-+	44
45	extreme bore [Needed for logic 1 only]	40.3	Outside dia of plug [measured] = Smail bore dia + large bore dia + the septum width				-	44
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]					0
47	septum length calc - do not imput value	45	dist. From very bottom of boot to spetum [bjl - bootl]	do not imput		\Box		40
48	septum length - do not imput value	45	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum calc	do not imput	value			40
50	sbore dia sep* [Needed for both boot logics]	18.2	septum small bore dia [assume = Ibore dia sep];					18.2
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]					18.2
52	sep width exp [Need for logic 0 only]	0	septum width; direct measurement if remove plug	4		-		0
53 54	sep width calc - do not imput value sep width - do not imput value	9.4 9.4	septum width; calc. => extreme bore - sbore - lbore if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = sep width calc	do not imput do not imput			-+	7.6 7.6
55		2.1	y . y		. a.uc			
56	bj g	CM	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]					340
57	bj f1	138	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]				\longrightarrow	138
58 59							-+	
60								
61							$ \mp$	
62	IV Tone Hole Diameters						+	
64	IV. Tone Hole Diameters f2	6.1				\dashv	-+	5.9
65	e	5.8						5.6
66	d	5.8						5.7
67 68		7.9					-+	6.9
69	b	7.9					-+	6.9
70	a	6.7						6.2
71	9	9.2						8.4
72 73	Π1	11.1					-+	10.9
74	e1	12.2	Winckler3 11.4 x 13mm; e1 tone hole dia, on long joint [need to average NS and EW dias, NS usu	ally greater1				12
75	d1	11	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]					9.8
76	c1	CM	[Winckler1 oblong 14.0 x 14.8] c1 tone hole dia, on long joint [need to average NS and EW dias]				\longrightarrow	12.6
77 78							-+	
79							+	
80			-					
81	V. Tono Holo Dontho					-		
82	V. Tone Hole Depths f2	27.2					+	27.3
84	e	28					= $+$	26.6
85	d	26.3						27.4
86		22.2					$-\!\!+$	24.7
87 88	b	23.3 23.7				-+	-+	24.7
89	a	22.5						25
90	g	21.5	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]					19
91	f1	19.8	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]					21.3
93	e1	9.5	e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist]				-+	5.7
94	d1	9.7	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]					5.7
95	c1	CM	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]					5.4
96 97							$-\!+\!$	
98							-+	
99								
100			W. 11.2 . 11. 1			二丁		
	VI. Long Joint	F04	Winckler3 a table along long joint total length of long joint					586
102	lg_length lg_tenon_bot	594 45.5					-+	
102 103	lg_lengtn lg_tenon_bot lj bot bore	45.5 21.9	length bottom tenon on long joint [tenon going into boot joint] Winckler3 OOR 21.3 x 22.4; long joint bottom tenon bore diameter [tenon going into boot joint]					42.4 23.9

							_	
105	A li top bore	B	Wincklar2 urfd small, long joint ton tongn have discrete (horse size into bell)	D	E	F	G	H
105 106	lj_top_bore lg_tenon_top	28.8 36.5	Winckler3 vrfd small; long joint top tenon bore diameter [tenon going into bell] length top tenon on long joint [tenon going into bell]					32.5 33.1
107	e1 distance	60	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]					60
	d1 distance	257 496	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore] Winckler3 vrfd long; dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore]	1				266
110	c1 distance	496	Whickiers vita long, distribute tenon to cr [from bot of tenon to where tone note enters bore,					474
111								
112 113								
114								
	VII. Bore diameters at Tone Holes							
116 117	f2	12 12.2						11.4 11.6
118	e d	12.6						12.2
119								
120 121	C h	14.7 15.4						14.8 15.2
122	a	15.8						15.5
123	g	19.3						19.3
124 125	f1	21.1						21
126	e1	22.2	e1 tone hole bore diameter on long joint					23.9
127	d1	24	d1 tone hole bore diameter on long joint					27.1
128 129	c1	CM	c1 tone hole bore diameter on long joint					29.8
130								
131								
132 133								
134	VIII. Bell		Winckler3 no tone hole in the bell					
	bell logic bell length (0, 1, 2)	1 295	If bell_logic = 0 => normal conical bore; if bell_logic = 1 => inverted concial bore; if bell_logic =	= 2 => bell ex	pansio	n		1 300
136	bell_length (0, 1, 2) bell bot bore (0, 1, 2)	285 28.7	Winckler3 vrfd; total length of bell [lines 141 + 144 = line 136] dia bore at the bottom of bell [end with socket]					300 31
138	bell_top_bore 0, (1, 0, 2)	25.2	dia bore at the top of bell [where low Bb exits]					27.5
	bell_center_bore (only for logic 2)		dia bore at max center of expansion					
140 141	bell_wall (only for logic 2) bell_bot_bore_expansion (only for logic 2)		bell wall thickness, Just for David 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					
143 144	bell_tenon (0, 1, 0, 2)	37.6	Winckler3, in bad shape; bell socket length					33.1
144	bell_expansion_length (only for logic 2) belflg	53.7	distance of maxium expansion to top of bell [where Bb exits] Usually about 10mm more than line 138; MEAS. 16 June 2013					44
146								
147 148	IX. PITCH							
149	pitch	415	input the historical pitch of the bassoon, must input value, best guess					415
150	freq_init	380	Initial frequency range variable					380
151 152	Delta frequency Number of frequencies	60	frequency increment parameter number of frequencies to scan for min chi sq					60
	Frequency adjust	1.05	frequency adjustment parameter					1.05
154	X. Title							
155	title		Bassoon Calculation: Winckler3-O-Veriam-Wg1-WOB-DNM					
156			<u> </u>					
156 157			Notes on long joint bore: Winckler3 very OOR in places					
157 158			Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round					
157 158 159	XI. Bore Diameter Locations	17	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal					21
157 158 159 160 161	XI. Bore Diameter Locations Bell Bore	17 10.8	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter					21 7.1
157 158 159 160 161 162	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket	10.8 0	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm				1	7.1 373
157 158 159 160 161 162 163	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket	10.8 0 345	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm				1 1 1	7.1 373 295
157 158 159 160 161 162 163 164 165	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1: measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3: measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm				1 1	7.1 373 295 197 118
157 158 159 160 161 162 163 164 165 166	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket	10.8 0 345 275 163 92	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm Winckler1 OOR; dist5; measured from the bottom of the wing joint- 14mm	Rottom wing	15.5		1 1 1	7.1 373 295 197 118 29
157 158 159 160 161 162 163 164 165 166 167 168	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1: measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3: measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm	Bottom wing top boot small	15.5		1 1 1 2 2	7.1 373 295 197 118
157 158 159 160 161 162 163 164 165 166 167 168	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm Winckler1 OOR; dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the top of the bootjoint - small bore side- 15mm dist7; measured from the top of the bootjoint - small bore side- 16mm dist8; measured from the top of the bootjoint - small bore side- 17mm				1 1 1 2 2 2	7.1 373 295 197 118 29 145 117
157 158 159 160 161 162 163 164 165 166 167 168 169 170	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm winckler1 OOR; dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the top of the bootjoint - small bore side- 15mm dist7; measured from the top of the bootjoint - small bore side- 16mm dist8; measured from the top of the bootjoint - small bore side- 17mm dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot sma top boot larg	14.6 23.9		1 1 2 2 2 2	7.1 373 295 197 118 29 145 117 0
157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 375 265	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1: measured from the bottom of the wing joint- 10mm dist2: measured from the bottom of the wing joint- 11mm dist3: measured from the bottom of the wing joint- 12mm dist4: measured from the bottom of the wing joint- 13mm Winckler1 OOR; dist5; measured from the bottom of the wing joint- 13mm Winckler1 OOR; dist5; measured from the bottom of the wing joint- 13mm dist6; measured from the top of the bootjoint - small bore side- 15mm dist8; measured from the top of the bootjoint - small bore side- 17mm dist8; measured from the top of the bootjoint - small bore side- 18mm dist9; measured from the top of the bootjoint - small bore side- 18mm dist10; measured from the top of the bootjoint - large bore side- 19mm Winckler3 very OOR, dist11; measured from the top of the bootjoint - large bore side- 20mm; 20	top boot sma top boot larg sbore dia seg lbore dia seg	14.6 23.9 18.2 18.9		1 1 2 2 2 2 2 3 3	7.1 373 295 197 118 29 145 117 0 0 360 222
157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 375 265 555	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm dist4; measured from the bottom of the wing joint- 13mm dist6; measured from the top of the bottjoint - small bore side- 15mm dist6; measured from the top of the bootjoint - small bore side- 16mm dist8; measured from the top of the bootjoint - small bore side- 17mm dist8; measured from the top of the bootjoint - small bore side- 18mm dist9; measured from the top of the bootjoint - large bore side- 19mm dist10; measured from the top of the bootjoint - large bore side- 19mm Winckler3 very OOR; dist11; measured from the top of the bootjoint - large bore side- 20mm; 20 dist12; measured from the top of the bootjoint - large bore side- 21mm; 20 dist12; measured from the top of the bootjoint - large bore side- 21mm; 20 dist12; measured from the top of the bootjoint - large bore side- 21mm	top boot sma top boot larg sbore dia ser	14.6 23.9 18.2		1 1 1 2 2 2 2 2 2 3 3 4	7.1 373 295 197 118 29 145 117 0 0 360 222 140
157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 375 265 555 540	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm Winckler1 OOR; dist5; measured from the bottom of the wing joint- 13mm dist6; measured from the top of the bootjoint - small bore side- 15mm dist6; measured from the top of the bootjoint - small bore side- 16mm dist8; measured from the top of the bootjoint - small bore side- 17mm dist9; measured from the top of the bootjoint - small bore side- 18mm dist10; measured from the top of the bootjoint - small bore side- 19mm Winckler3 very OOR; dist11; measured from the top of the bootjoint - large bore side- 19mm Winckler3 from the top of the bootjoint - large bore side- 21mm dist12; measured from the top of the bootjoint - large bore side- 21mm dist13; measured from the top of the bootjoint - large bore side- 22mm	top boot sma top boot larg sbore dia seg lbore dia seg	14.6 23.9 18.2 18.9		1 1 2 2 2 2 2 3 3	7.1 373 295 197 118 29 145 117 0 0 360 222 140 102
157 158 159 160 161 162 163 164 165 166 167 168 169 171 172 173 174 175 176	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 375 265 555 540 445 363	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm Winckler1 OOR; dist5; measured from the bottom of the wing joint- 13mm Winckler1 OOR; dist5; measured from the bottom of the wing joint- 13mm dist6; measured from the top of the bootjoint - small bore side- 15mm dist7; measured from the top of the bootjoint - small bore side- 16mm dist8; measured from the top of the bootjoint - small bore side- 18mm dist9; measured from the top of the bootjoint - small bore side- 18mm dist10; measured from the top of the bootjoint - large bore side- 19mm Winckler3 very OOR; dist11; measured from the top of the bootjoint - large bore side- 21mm dist13; measured from the top of the bootjoint - large bore side- 22mm dist13; measured from the top of the bootjoint - large bore side- 23mm dist15; measured from the top of the long joint- 24mm	top boot sma top boot larg sbore dia seg lbore dia seg	14.6 23.9 18.2 18.9		1 1 1 2 2 2 2 2 2 2 3 3 3 4 4 4 4	7.1 373 295 197 118 29 145 117 0 0 360 222 140 102 69 512
157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 375 265 555 540 445 290	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm Winckler1 OOR; dist5; measured from the bottom of the wing joint- 13mm Winckler1 OOR; dist5; measured from the bottom of the wing joint- 13mm dist6; measured from the top of the bootjoint - small bore side- 15mm dist6; measured from the top of the bootjoint - small bore side- 17mm dist8; measured from the top of the bootjoint - small bore side- 18mm dist9; measured from the top of the bootjoint - large bore side- 19mm winckler3 very OOR; dist1; measured from the top of the bootjoint - large bore side- 21mm dist13; measured from the top of the bootjoint - large bore side- 22mm dist13; measured from the top of the bootjoint - large bore side- 22mm dist14; measured from the top of the bootjoint - large bore side- 23mm dist15; measured from the top of the long joint- 24mm dist15; measured from the top of the long joint- 25mm	top boot sma top boot larg sbore dia sej lbore dia sep Hook Length	14.6 23.9 18.2 18.9 391		1 1 1 2 2 2 2 2 2 3 3 4 4 4 4 4 4	7.1 373 295 197 118 29 145 117 0 0 360 222 140 102 69 512
157 158 159 160 161 162 163 164 165 166 167 168 169 171 172 173 174 175 176	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 375 265 540 445 363 290 210	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm dist4; measured from the bottom of the wing joint- 13mm dist4; measured from the bottom of the wing joint- 13mm dist6; measured from the top of the bottjoint - small bore side- 15mm dist6; measured from the top of the bootjoint - small bore side- 16mm dist8; measured from the top of the bootjoint - small bore side- 17mm dist9; measured from the top of the bootjoint - large bore side- 18mm dist10; measured from the top of the bootjoint - large bore side- 19mm Winckler3 very OOR; dist11; measured from the top of the bootjoint - large bore side- 21mm dist12; measured from the top of the bootjoint - large bore side- 22mm dist13; measured from the top of the bootjoint - large bore side- 22mm dist14; measured from the top of the bootjoint - large bore side- 23mm dist15; measured from the top of the long joint- 24mm dist15; measured from the top of the long joint- 24mm dist16; measured from the top of the long joint- 25mm	top boot sma top boot larg sbore dia sej lbore dia sep Hook Length	14.6 23.9 18.2 18.9 391		1 1 1 2 2 2 2 2 2 3 3 3 4 4 4 4 4 4 4 4	7.1 373 295 197 118 29 145 117 0 0 360 222 140 102 69 512 455 385
157 158 159 160 161 162 163 164 165 166 167 188 199 170 171 172 173 174 175 176 177 177 178 179 180	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 375 265 540 445 363 290 210 160	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameters Initial bore diameters Initial bore diameter Initial bore dia	top boot sma top boot larg sbore dia sej lbore dia sep Hook Length	14.6 23.9 18.2 18.9 391		1 1 1 2 2 2 2 2 2 3 3 3 4 4 4 4 4 4 4 4 4 4 4	7.1 373 295 197 118 29 145 117 0 0 360 222 140 102 69 512 385 385 315
157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 175 360 335 375 265 555 540 445 363 290 210 160 0	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm Winckler1 OOR; dist5; measured from the bottom of the wing joint- 13mm Winckler1 OOR; dist5; measured from the bottom of the wing joint- 13mm dist6; measured from the top of the bootjoint - small bore side- 16mm dist8; measured from the top of the bootjoint - small bore side- 18mm dist9; measured from the top of the bootjoint - large bore side- 18mm dist10; measured from the top of the bootjoint - large bore side- 19mm Winckler3 very OOR; dist11; measured from the top of the bootjoint - large bore side- 21mm dist13; measured from the top of the bootjoint - large bore side- 22mm dist14; measured from the top of the bootjoint - large bore side- 23mm dist16; measured from the top of the long joint- 24mm dist16; measured from the top of the long joint- 25mm winckler3 oOR; dist17; measured from the top of the long joint- 25mm dist19; measured from the top of the long joint- 27mm dist19; measured from the top of the long joint- 27mm dist19; measured from the top of the long joint- 27mm dist19; measured from the top of the long joint- 27mm dist19; measured from the top of the long joint- 27mm	top boot sma top boot larg sbore dia sej lbore dia sep Hook Length	14.6 23.9 18.2 18.9 391		1 1 1 2 2 2 2 2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4	7.1 373 295 197 118 29 145 117 0 0 360 222 140 102 69 512 455 385 315 222
157 158 159 160 161 162 163 164 165 166 167 188 199 170 171 172 173 174 175 176 177 177 178 179 180	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 375 265 540 445 363 290 210 160	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameters Initial bore diameters Initial bore diameter Initial bore dia	top boot sma top boot larg sbore dia sej lbore dia sep Hook Length	14.6 23.9 18.2 18.9 391		1 1 1 2 2 2 2 2 2 3 3 3 4 4 4 4 4 4 4 4 4 4 4	7.1 373 295 197 118 29 145 117 0 0 360 222 140 102 69 512 385 385 315
157 158 159 160 161 162 163 164 165 166 167 170 171 172 173 174 175 176 177 178 180 181 182 183 184	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 375 540 445 363 290 210 0	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameters Initial bore diameters Initial bore diameter dist1: measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 11mm dist4; measured from the bottom of the wing joint- 13mm winckler1 OOR; dist5; measured from the bottom of the wing joint- 13mm winckler1 OOR; dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the top of the bootjoint - small bore side- 15mm dist6; measured from the top of the bootjoint - small bore side- 17mm dist8; measured from the top of the bootjoint - small bore side- 18mm dist10; measured from the top of the bootjoint - large bore side- 19mm winckler3 very OOR; dist11; measured from the top of the bootjoint - large bore side- 22mm dist13; measured from the top of the bootjoint - large bore side- 22mm dist13; measured from the top of the bootjoint - large bore side- 22mm dist16; measured from the top of the bootjoint - large bore side- 23mm dist16; measured from the top of the long joint- 24mm dist18; measured from the top of the long joint- 25mm winckler3 OOR; dist17; measured from the top of the long joint- 25mm dist19; measured from the top of the long joint- 28mm dist21; measured from the top of the long joint- 28mm dist21; measured from the top of the long joint- 28mm dist21; measured from the top of the long joint- 30mm	top boot sma top boot larg sbore dia sej lbore dia sep Hook Length	14.6 23.9 18.2 18.9 391		1 1 1 2 2 2 2 2 2 3 3 3 4 4 4 4 4 4 4 4 4 4 4	7.1 373 295 197 197 145 0 0 0 360 222 140 102 69 512 455 385 385 222 158 97
157 158 159 160 161 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 180 181 182 183 184 185	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 325 540 445 363 290 210 160 0	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm dist4; measured from the bottom of the wing joint- 13mm dist4; measured from the bottom of the wing joint- 13mm dist6; measured from the top of the bootjoint - small bore side- 15mm dist6; measured from the top of the bootjoint - small bore side- 16mm dist8; measured from the top of the bootjoint - small bore side- 17mm dist9; measured from the top of the bootjoint - large bore side- 18mm dist10; measured from the top of the bootjoint - large bore side- 19mm Winckler3 very OOR; dist11; measured from the top of the bootjoint - large bore side- 22mm dist12; measured from the top of the bootjoint - large bore side- 22mm dist14; measured from the top of the bootjoint - large bore side- 23mm dist16; measured from the top of the long joint- 24mm dist16; measured from the top of the long joint- 24mm dist17; measured from the top of the long joint- 25mm dist19; measured from the top of the long joint- 25mm dist20; measured from the top of the long joint- 28mm dist20; measured from the top of the long joint- 31mm	top boot sma top boot larg sbore dia sej lbore dia sej Hook Length lj bot bore	14.6 23.9 18.2 18.9 391 21.9		1 1 2 2 2 2 2 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4	7.1 373 295 197 197 10 0 0 360 222 222 140 102 69 512 455 385 315 222 158 97 60
157 158 159 160 161 162 163 164 165 166 167 170 171 172 174 175 176 177 180 181 182 183 184 185 186 187	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 325 540 445 363 290 210 160 0	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm dist4; measured from the bottom of the wing joint- 13mm dist4; measured from the bottom of the wing joint- 13mm dist6; measured from the top of the bootjoint - small bore side- 15mm dist6; measured from the top of the bootjoint - small bore side- 16mm dist8; measured from the top of the bootjoint - small bore side- 17mm dist9; measured from the top of the bootjoint - large bore side- 18mm dist10; measured from the top of the bootjoint - large bore side- 19mm Winckler3 very OOR; dist11; measured from the top of the bootjoint - large bore side- 22mm dist12; measured from the top of the bootjoint - large bore side- 22mm dist14; measured from the top of the bootjoint - large bore side- 23mm dist16; measured from the top of the long joint- 24mm dist16; measured from the top of the long joint- 24mm dist17; measured from the top of the long joint- 25mm dist19; measured from the top of the long joint- 25mm dist20; measured from the top of the long joint- 28mm dist20; measured from the top of the long joint- 31mm	top boot sma top boot larg sbore dia sej lbore dia sej Hook Length lj bot bore	14.6 23.9 18.2 18.9 391 21.9		1 1 2 2 2 2 2 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4	7.1 373 295 197 197 145 0 0 0 360 222 140 102 69 512 455 385 385 222 158 97
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157 158 160 161 162 163 164 165 166 167 171 171 172 173 174 175 176 181 181 182 183 184 185 186 187 188 188 189 190 191 191 192	XI. Bore Diameter Locations Bell Bore 28.7mm diameter at socket 28mm rod 105mm from socket 27mm rod 200mm from socket 26mm rod 245mm from socket	10.8 0 345 275 163 92 72 175 360 335 325 540 445 363 290 210 160 0	Notes on long joint bore: Winckler3 very OOR in places Notes on boot joint bore: Winckler3 small side very out of round Notes on wing joint boret: Winckler3 normal Number of diameters Initial bore diameter dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm dist3; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm dist4; measured from the bottom of the wing joint- 13mm dist4; measured from the bottom of the wing joint- 13mm dist6; measured from the top of the bootjoint - small bore side- 15mm dist6; measured from the top of the bootjoint - small bore side- 16mm dist8; measured from the top of the bootjoint - small bore side- 17mm dist9; measured from the top of the bootjoint - large bore side- 18mm dist10; measured from the top of the bootjoint - large bore side- 19mm Winckler3 very OOR; dist11; measured from the top of the bootjoint - large bore side- 22mm dist12; measured from the top of the bootjoint - large bore side- 22mm dist14; measured from the top of the bootjoint - large bore side- 23mm dist16; measured from the top of the long joint- 24mm dist16; measured from the top of the long joint- 24mm dist17; measured from the top of the long joint- 25mm dist19; measured from the top of the long joint- 25mm dist20; measured from the top of the long joint- 28mm dist20; measured from the top of the long joint- 31mm	top boot sma top boot larg sbore dia sej lbore dia sej Hook Length lj bot bore	14.6 23.9 18.2 18.9 391 21.9		1 1 2 2 2 2 2 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4	7.1 373 295 197 197 118 29 145 117 0 0 360 222 140 102 69 512 455 385 315 222 158 97 60 15 10 11 11 11 11 11 11 11 11 11
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