_				_			_
ш	Α	В	C	D	E	F	G
	I. Bocal		Original bocal Porthaux9 No				
	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			ш	
7							
	bocal logic	2	if bocal logic = 0 => bocal is choke; if bocal logic = 1 =>choke in wing joint calc;	if bocal logic	= 2 =>	no bo	cal
9							
10							
11							
12							
	II. Wing Joint Lengths		bocal receiver: Porthaux9 no				
14	choke bore dia.	9.3	logic 1; bore diameter of choke; logic 0; either diameter bocal bottom or beginning of bor			r	
15	receiver length (1, 0) (formally choke length)	50	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as	s string length	1)		
	wing joint length	512	total wing joint length, including tenon and socket				
	tenon length	42.5	tenon length				
18							
	wj f2	225	dist top of wing to where tone hole enters bore [not at the center of the tone hole]	]			
	wj e	305					
	wj d	341					
22							
23	Bore dia. Bottom of wing joint	15	Need to Average, usally oval; Porthaux9 yes	1			
24	Bore dia. top of boot joint small side	15.5					
25	Bore dia. top of boot joint large side	24.9	Porthaux9 OOR 24.2 x 25.5				
26						$oxed{oxed}$	
	III. Boot Lengths			I			
	bj logic	1	logic=> if bj logic = 0 => plug removed; if bj logic = 1 => plug cannot be remove				
	bj c	91	dist from top of boot to where topmost tone hole enter bore [not at center of tone	hole]			
	bj b	155		1			
31	bj a	193		-			
32				-		$\vdash \vdash$	
33	bjstotal [Needed for both boot logics]	432	total length of boot, include socket, along the small bore side	-		$\sqcup$	
34	biltotal [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]	394	hook length along s bore => bjs-septum length = boot - septum <= calc the septum				
39	bootl [Needed for both boot logics]	394	hook length along I bore => bjl-septum length = boot - septum <= calc the septu	m			
40				10 . 7 . 17			
41	boots bottom [Needed for both boot logics]	17	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick]	10 + / = 1/			
42	bootl bottom [Needed for both boot logics]	17	use hook, dist of bore [same as boots bot except tenon depth will be different]				
43		20		P	L	. 101	
	extreme bore [Needed for logic 1 only]	39	Porthaux9 vrfd small; Outside dia of plug [measured] = small bore dia + large bo	re dia + the s	eptum	wiatn	
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	38	dist. From very bottom of boot to spetum [bjl - bootl]	do not imput			
48	septum length - do not imput value	38	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]	18.6	septum small bore dia [assume = Ibore dia sep]				
51	lbore dia sep* [Needed for both boot logics]	19	septum large bore dia [assume = sbore dia sep] [mesure if cork can be removed;	for Logic 01			
52	sep width exp [Need for logic 0 only]	0	septum width; direct measurement if remove plug	loi Logic oj			
53	sep width exp [Need for logic o only]	1.4	septum width; calc. => extreme bore - sbore - lbore	do not imput	walue		
54	sep width - do not imput value	1.4	if bj logic = $0 \Rightarrow$ sep width = sep width exp; if bj logic = $1 \Rightarrow$ sep width = sep w				
55	sep width - do not impat value	1.4		do not imput	value		
	bj g	335	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole	 e1			
57	bj f1	139	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone ho				
58	5) 12	100	and from top or book (bounds) to finished 12 hold directly bone (not de cane or cone no	i.c,			
59							
60							
61							
62							
	IV. Tone Hole Diameters			1			
64	f2	5.1					
65	e	6.1					
66	d	5.4					
67							
68	c	7.7					
69	b	7					
70	a	5.7					
71 72	g	9.4					
72	f1	9.3					
73						Ш	
74 75 76	e1	10.4	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually great				
75	d1	8	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually great				
76	c1	12.8	c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater	er]			
77			Porthaux9 c1 obl. 12.5 x 13.0	1		$\sqcup$	
78				<b></b>		$\vdash$	
79				ļ			
80				-		$\sqcup$	
81	V = 0.1 5 -:			1		$\vdash$	
	V. Tone Hole Depths	20		1			
	f2	29		-		$\vdash$	
84	e	33	Death-mid extreme and beautiful ask 100 to 1	1		$\vdash$	
85	d	34	Porthaux9 extreme angle, tone hole not drilled totally into center of bore	-	-		
86	6	22.0		+			
87	h	23.8		1		$\vdash$	
88 89	ם	27 23.6	Porthaux9 extreme downward angle	1		$\vdash$	
90	n	14.2	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]	1	-	$\vdash$	
91	9 f1	24	meas along east side tone hole wall [north wall, toward reed, tone noie usually at angle]				
92	114	24	inicus along cast side tone note wan [north wan, toward reed,t note disudity at dilgh	Ĭ		$\vdash$	
93	e1	8	e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist]			$\vdash$	
23		U	102 tone note department easy west with deapth gauge [at center, or shortest dist]				

						_	
Щ	A	В	C	D	Е	F	G
	d1	5.5	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist				
95	c1	7	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]				
96							
97							
98							
99							
100						Ш	
101	VI. Long Joint		Porthaux9 There is a table along long joint				
102	lg_length	581	Porthaux9 vrfd short; total length of long joint				
103	lg_tenon_bot	46.5	length bottom tenon on long joint [tenon going into boot joint]				
	lj bot bore	24.8	Porthaux9; OOR 24.4 x 25.2; long joint bottom tenon bore diameter [tenon going	into boot joi	nt]		
105	lj_top_bore	32	long joint top tenon bore diameter [tenon going into bell]				
	lg_tenon_top	34.5	length top tenon on long joint [tenon going into bell]				
	e1 distance	50	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]				
	d1 distance	251	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]				
109	c1 distance	467	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	12.3				$\vdash$	
117	P	13.3					
118	d	13.8					
119	<u> </u>	13.0					
120	۲	16.2					
121	h	17					
122	- а	17.4				$\vdash$	
123	n	19.1					
124	<u>9</u> f1	23.2					
125		23.2					
126	e1	25.4	e1 tone hole bore diameter on long joint			$\vdash$	
127	d1	28.9	d1 tone hole bore diameter on long joint				
128	c1	30.5	c1 tone hole bore diameter on long joint				
129	CI	30.3	cr tone hole bore diameter on long joint				
130							
131						$\vdash$	
132							
133	VIII Dall		Double 1 to 1 t			$\vdash$	
	VIII. Bell	_	Porthaux9 There is not a tone hole in the bell:	2			
	bell logic	1	If bell_logic = 0 => normal conical; if bell_logic=1=>inverted concial; if bell_logic	= 2 => bell e	xpansı	on	
	bell_length (0, 1, 2)	315	total length of bell [lines 141 + 144 = line 136]				
137	bell_bot_bore (0, 1, 2)	32.1	dia bore at the bottom of bell [end with socket]				
138	bell_top_bore 0, (1, 0, 2)	30.6	dia bore at the top of bell [where low Bb exits]				
	bell_center_bore (only for logic 2)		dia bore at max center of expansion				
	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)	38.2	bell socket length				
145	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]				
146	bell_expansion_length (only for logic 2) belflg	43	distance of maxium expansion to top of bell [where Bb exits]				
			distance of maxium expansion to top of bell [where Bb exits]				
147	belflg		distance of maxium expansion to top of bell [where Bb exits]				
147 148	belfig IX. PITCH	43					
147 148 149	belfig  IX. PITCH pitch	430	input the historical pitch of the bassoon, must input value, best guess				
147 148 149 150	belfig  IX. PITCH pitch freq_init	430 430 380	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable				
147 148 149 150 151	belfig  IX. PITCH pitch freq_init Delta frequency	43 430 380 2	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter				
147 148 149 150 151 152	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies	430 380 2 60	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq				
147 148 149 150 151 152 153	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust	43 430 380 2	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter				
147 148 149 150 151 152 153 154	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title	430 380 2 60	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter				
147 148 149 150 151 152 153 154 155	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust	430 380 2 60	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq				
147 148 149 150 151 152 153 154 155 156	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title	430 380 2 60	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter				
147 148 149 150 151 152 153 154 155	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title	430 380 2 60	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter				
147 148 149 150 151 152 153 154 155 156 157	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal				
147 148 149 150 151 152 153 154 155 156 157	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title	430 380 2 60 1.05	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal				
147 148 149 150 151 152 153 154 155 156 157 158 159 160	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters				
147 148 149 150 151 152 153 154 155 156 157 158 159 160 161	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting]				
147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-0-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameters Initial bore diameter [do not include in line 160 counting] dist1; measured from the bottom of the wing joint- 10mm				1
147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 11mm				1
147 148 149 150 151 152 153 154 155 156 157 158 160 161 162 163 164	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] 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				1 1 1
147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm				1 1 1 1
147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameters Initial bore diameter [do not include in line 160 counting] 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 dist5; measured from the bottom of the wing joint- 13mm dist5; measured from the bottom of the wing joint- 14mm				1 1 1 1 1
147 148 149 150 151 152 153 154 155 156 157 158 160 161 162 163 164 165 166 167	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 310 220 155 0	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameters Initial bore diameter [do not include in line 160 counting] 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 dist5; measured from the bottom of the wing joint- 13mm dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the bottom of the wing joint- 15mm	Bottom wing	155		1 1 1 1 1 1
147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] dist1; measured from the bottom of the wing joint- 10mm dist2; measured from the bottom of the wing joint- 12mm dist4; measured from the bottom of the wing joint- 13mm dist5; measured from the bottom of the wing joint- 13mm dist6; measured from the bottom of the wing joint- 14mm dist6; measured from the bottom of the wing joint- 15mm dist6; measured from the bottom of the wing joint- 15mm dist6; measured from the top of the bootjoint - small bore side- 16mm	top boot sma	15.5		2
147 148 149 150 151 152 153 154 155 156 157 158 160 161 162 163 164 165 166 166 167 168	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 80 0	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameters Initial bore diameter [do not include in line 160 counting] 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 dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the bottom of the wing joint- 15mm dist7; measured from the bottom of the wing joint- 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				
147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameters Initial bore diameter [do not include in line 160 counting] 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 dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the bottom of the wing joint- 15mm dist6; measured from the bottom of the wing joint- 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- 17mm dist9; measured from the top of the bootjoint - small bore side- 18mm	top boot sma	15.5 24.9		2
147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 0 215 0	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameters Initial bore diameter [do not include in line 160 counting] 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 dist5; measured from the bottom of the wing joint- 15mm dist6; measured from the bottom of the wing joint- 15mm dist6; measured from the bottom of the wing joint- 15mm dist6; measured from the bottom 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- 18mm dist10; measured from the top of the bootjoint - large bore side- 19mm	top boot sma top boot larg sbore dia ser	15.5 24.9 18.6		2
147 148 149 150 151 151 152 153 154 155 156 157 158 160 161 162 163 164 165 166 167 168 170 171 171	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 80 0 215 0 295	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameters Initial bore diameter [do not include in line 160 counting] 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- 13mm dist4; measured from the bottom of the wing joint- 13mm dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the bottom of the wing joint- 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 dist9; measured from the top of the bootjoint - small bore side- 18mm dist1; measured from the top of the bootjoint - large bore side- 20mm dist1; measured from the top of the bootjoint - large bore side- 20mm	top boot sma top boot larg sbore dia ser lbore dia sep	15.5 24.9 18.6 19		2
147 148 149 150 151 152 153 154 155 156 157 160 161 162 163 164 165 166 167 170 171 172 173	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 0 215 0	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameters Initial bore diameter [do not include in line 160 counting] 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 dist5; measured from the bottom of the wing joint- 15mm dist6; measured from the bottom of the wing joint- 15mm dist6; measured from the bottom of the wing joint- 15mm dist6; measured from the bottom 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- 18mm dist10; measured from the top of the bootjoint - large bore side- 19mm	top boot sma top boot larg sbore dia ser	15.5 24.9 18.6		2
147 148 149 150 151 152 153 154 155 156 157 160 161 162 163 164 165 166 167 170 171 172 173 174	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 80 0 215 0 295	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameters Initial bore diameter [do not include in line 160 counting] 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- 13mm dist4; measured from the bottom of the wing joint- 13mm dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the bottom of the wing joint- 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 dist9; measured from the top of the bootjoint - small bore side- 18mm dist1; measured from the top of the bootjoint - large bore side- 20mm dist1; measured from the top of the bootjoint - large bore side- 20mm	top boot sma top boot larg sbore dia ser lbore dia sep	15.5 24.9 18.6 19		2
147 148 149 150 151 152 153 154 155 156 157 160 161 162 163 164 165 166 167 170 171 172 173	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 80 0 215 0 225 275	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] 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 dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the bottom of the wing joint- 15mm dist6; measured from the bottom of the wing joint- 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- 20mm dist11; measured from the top of the bootjoint - large bore side- 20mm dist12; measured from the top of the bootjoint - large bore side- 21mm	top boot sma top boot larg sbore dia ser lbore dia sep	15.5 24.9 18.6 19		2 2 2 3 3 3
147 148 149 150 151 152 153 154 155 156 157 158 160 161 162 163 164 165 169 170 171 172 173 174 175 175	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 215 0 225 275 255 199 95	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] 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- 13mm dist4; measured from the bottom of the wing joint- 13mm dist5; measured from the bottom of the wing joint- 15mm dist5; 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 - large bore side- 19mm dist11; measured from the top of the bootjoint - large bore side- 20mm dist12; measured from the top of the bootjoint - large bore side- 21mm dist13; 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 ser lbore dia sep	15.5 24.9 18.6 19		2 2 2 3 3 3 3
147 148 149 150 151 152 153 154 155 156 157 158 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 174 175	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 80 0 215 0 295 275 255 190	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameters Initial bore diameter [do not include in line 160 counting] 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- 13mm dist4; measured from the bottom of the wing joint- 13mm dist5; measured from the bottom of the wing joint- 15mm dist6; measured from the bottom of the wing joint- 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 dist9; measured from the top of the bootjoint - small bore side- 18mm dist11; measured from the top of the bootjoint - large bore side- 20mm dist11; measured from the top of the bootjoint - large bore side- 21mm dist11; 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	top boot sma top boot larg sbore dia ser lbore dia sep Hook Length	15.5 24.9 18.6 19 394		2 2 2 3 3 3 3 3
147 148 149 150 151 152 153 154 155 156 157 158 160 161 162 163 164 165 169 170 171 172 173 174 175 175	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 215 0 225 275 255 199 95	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] 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- 13mm dist4; measured from the bottom of the wing joint- 13mm dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the bottom of the wing joint- 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- 19mm dist11; measured from the top of the bootjoint - large bore side- 20mm dist12; 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 dist13; measured from the top of the bootjoint - large bore side- 22mm dist14; measured from the top of the bootjoint - large bore side- 22mm dist15; measured from the top of the bootjoint - large bore side- 22mm dist15; measured from the top of the bootjoint - large bore side- 22mm dist15; measured from the top of the bootjoint - large bore side- 23mm dist15; measured from the top of the bootjoint - large bore side- 23mm dist15; measured from the top of the bootjoint - large bore side- 23mm dist15; measured from the top of the bootjoint - large bore side- 23mm	top boot sma top boot larg sbore dia ser lbore dia sep Hook Length	15.5 24.9 18.6 19 394		2 2 2 3 3 3 3 3
147 148 149 150 151 152 153 154 155 156 160 161 162 163 164 165 166 167 170 171 172 173 174 175 176	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 215 0 225 190 955 555	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Notes on boot joint - 11mm dist2; measured from the bottom of the wing joint- 13mm dist5; measured from the top of the bootjoint - small bore side- 16mm dist8; measured from the top of the bootjoint - large bore side- 19mm dist11; measured from the top of the bootjoint - large bore side- 20mm dist12; 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- 22mm 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- 24mm	top boot sma top boot larg sbore dia ser lbore dia sep Hook Length	15.5 24.9 18.6 19 394		2 2 2 3 3 3 3 3 3
147 148 149 150 151 152 153 154 155 156 157 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 80 0 215 0 295 275 255 190 95 555 5465	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] 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 dist5; measured from the bottom of the wing joint-14mm dist6; measured from the bottom of the wing joint-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 dist9; measured from the top of the bootjoint - large bore side-19mm dist11; measured from the top of the bootjoint - large bore side-20mm 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-25mm dist17; measured from the top of the long joint-25mm dist17; measured from the top of the long joint-25mm	top boot sma top boot larg sbore dia ser lbore dia sep Hook Length	15.5 24.9 18.6 19 394		2 2 2 3 3 3 3 3 3
147 1488 1499 150 151 152 153 154 155 156 157 158 160 161 162 163 164 165 166 167 171 172 173 174 175 176 177 178 179 179 179 179 179 179 179 179 179 179	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 215 0 225 275 255 190 95 350 360 370 360 370 370 370 370 370 370 370 37	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] 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- 13mm dist4; measured from the bottom of the wing joint- 13mm dist5; measured from the bottom of the wing joint- 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- 19mm dist11; measured from the top of the bootjoint - large bore side- 19mm dist12; measured from the top of the bootjoint - large bore side- 20mm dist12; 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 dist15; measured from the top of the long joint- 24mm dist15; measured from the top of the long joint- 25mm dist17; measured from the top of the long joint- 26mm dist18; measured from the top of the long joint- 27mm dist19; measured from the top of the long joint- 28mm	top boot sma top boot larg sbore dia ser lbore dia sep Hook Length	15.5 24.9 18.6 19 394		2 2 2 3 3 3 3 3 3
147 1488 150 151 152 153 154 155 156 157 160 161 162 163 164 165 166 167 170 171 172 173 174 175 176 177 177 178 179 180	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 215 0 295 275 190 95 465 390 360	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] 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 dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the bottom of the wing joint- 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 dist9; measured from the top of the bootjoint - large bore side- 19mm dist11; measured from the top of the bootjoint - large bore side- 20mm dist12; measured from the top of the bootjoint - large bore side- 21mm dist13; 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- 22mm dist15; measured from the top of the long joint- 25mm dist17; measured from the top of the long joint- 25mm dist18; measured from the top of the long joint- 25mm dist17; measured from the top of the long joint- 25mm dist17; measured from the top of the long joint- 26mm dist18; measured from the top of the long joint- 26mm dist19; measured from the top of the long joint- 26mm	top boot sma top boot larg sbore dia ser lbore dia sep Hook Length	15.5 24.9 18.6 19 394		2 2 2 3 3 3 3 3 3
147 1488 150 151 152 153 154 155 156 161 162 163 164 165 166 167 171 172 173 174 175 176 177 178 179 180 181 181 182	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 80 0 215 5 190 95 275 275 275 275 275 275 275 27	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] 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- 13mm dist4; measured from the bottom of the wing joint- 13mm dist5; measured from the bottom of the wing joint- 14mm dist6; measured from the bottom of the wing joint- 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 dist9; measured from the top of the bootjoint - large bore side- 20mm 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 dist13; measured from the top of the bootjoint - large bore side- 22mm dist14; measured from the top of the long joint- 25mm dist15; 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- 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- 28mm dist21; measured from the top of the long joint- 29mm dist21; measured from the top of the long joint- 29mm dist21; measured from the top of the long joint- 29mm dist21; measured from the top of the long joint- 29mm dist21; measured from the top of the long joint- 29mm	top boot sma top boot larg sbore dia ser lbore dia sep Hook Length	15.5 24.9 18.6 19 394		2 2 2 3 3 3 3 3 3
147 148 149 150 151 152 153 154 155 156 157 160 161 162 163 164 165 166 167 171 172 173 174 175 177 178 179 179 179 179 179 179 179 179	belfig  IX. PITCH pitch freq_init Delta frequency Number of frequencies Frequency adjust X. Title title	430 380 2 60 1.05 19 9.3 415 362 310 220 155 0 215 0 225 195 555 190 95 360 275 275 255 190 360 295 360 360 360 360 360 360 360 360	input the historical pitch of the bassoon, must input value, best guess Initial frequency range variable frequency increment parameter number of frequencies to scan for min chi sq frequency adjustment parameter  Bassoon Calculation: Porthaux9-O-PrivateCollection-Wg1-WOB-DNM  Notes on long joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on boot joint bore: Porthaux9 normal Notes on wing joint bore: Porthaux9 normal Number of diameters Initial bore diameter [do not include in line 160 counting] 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 dist5; measured from the bottom of the wing joint-14mm dist6; measured from the bottom of the wing joint-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 dist9; measured from the top of the bootjoint - large bore side-19mm dist11; measured from the top of the bootjoint - large bore side-20mm dist12; measured from the top of the bootjoint - large bore side-20mm 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 bootjoint - large bore side-23mm dist15; 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-27mm dist19; measured from the top of the long joint-28mm dist19; measured from the top of the long joint-28mm dist19; measured from the top of the long joint-28mm dist19; measured from the top of the long joint-28mm dist19; measured from the top of the long joint-28mm dist19; measured from the top of the long joint-28mm	top boot sma top boot larg sbore dia ser lbore dia sep Hook Length	15.5 24.9 18.6 19 394		2 2 2 3 3 3 3 3 3