GrenserA7-O-Michaelstein-Wg1-WOB-DNM

A								
Solvent and any state of the control			В		D	E	F	G
And the strong length (0, 1) weight of focal inserted not nective. **Section Section (1) weight (1	1	I. Bocal		Original bocal; GrenserA7 no				
A mean pose legath top (6, 1)								
meas, dick pool freezh (150, 1)				length of bocal inserted into receiver				
Second condition								
Topical logic — 1 = -chose in whose plant cate; if broad logic = 2 = -so bose 1 1 1 1 1 1 1 1 1								
Thorse lasce 2		dia wj end		inside diameter of bocal				
The control interpret of the property of the p								
1. H. Wing Joint Lengths		bocal logic	2	if bocal logic = 0 => bocal is choke; if bocal logic = 1 =>choke in wing joint calc; if bocal logic	ogic = 2 => no b	ocal		
18. Wing Joint Lengths 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 there is no receiver. 19. See Processor Comment 7 the See Processor Comme	9							
The times a point transplant The times a point The times a poin								
The Wing Joint Lengths Section Review Contents of Type is not convery Section For Section Section Contents of Contents Section Contents								
Line concentration (1, or 1) (Formally coloid recipit) 3.5 (but 1, Lamps to type 1, diamater of choice togic 0; sharth discovered score as a steele recipit) 1.0 (Formally coloid recipit) 3.5 (but 1, Lamps to display and selection of the color of the co								
Second processes of the processes of t								
Comment Comm						m or re	ceiver	
1 1 2 2 2 2 2 2 2 2					ength)			
Set top of unitg to where bose hole enters bore frost the renter of the bose hole) 20 of 1								
Service 12 23 24 25 25 26 27 28 28 28 28 28 28 28		tenon length	40	tenon length				
22 will in a common of wing joint and a common o			224					
2								
Serve diss. Section of aimp joint. 15. Need to Average, Usality oval General 7 no.				these are a bit short, verified				
2		w] a	330					
2 20 20 20 20 20 20 20		Dave dia Dattem of wing joint	15.0	Need to Average weelly evals CroncovA7 no				
2				Need to Average, usally oval, Grensel A7 110				
The Section of the Section 1 is a se								
		bore dia, top or book joint large side	27.0				-1	
28 Discrete 1		III Root Lengths		Grenser 47: Two whole design				
Solution			1					
1								
184 184				and the state of t				
Designation Section								
30 Initiatal Needed for both bott logics 420 total length of boot, include socket, along the small bore side			201					
32 Introduction		bistotal [Needed for both boot logics]	420	total length of boot, include socket, along the small hore side				
35 obus arreal (Freed for logic Q only)								
35 outs (Needed for both bot logics) 382 hook kingth along a bore => bijs-septum length = book - septum <= calc the septum width <= calc the septum length septum length septum length septum length septum length septum length calc - do not imput value <= calc the septum length septum length calc - do not imput value <= calc the septum length septum length calc - do not imput value <= calc the septum length septum length calc - do not imput value <= calc the septum length septum length calc - do not imput value <= calc the septum length septum length calc - do not imput value <= calc the septum length septum length calc - do not imput value <= calc the septum length septu								
30								
30 2000 Reeded for both boot logics 32 1000 Rength along it bore > Di-septum length = boot - septum < - calc the septum 1 1 1 1 1 1 1 1 1								
33	38	boots [Needed for both boot logics]	382	hook length along s bore => bjs-septum length = boot - septum <= calc the septum				
1			382					
42 botto bottom (Needed for both boot logics) 43 bore fine lend for logic 1 only) 44 obtained by the lend for logic 1 only) 45 bore fine lend for logic 1 only) 46 bore fine lend for logic 1 only) 47 bore fine lend for logic 1 only) 48 bore fine lend for logic 1 only) 49 bore fine lend for logic 1 only) 40 bore fine lend for logic 1 only) 40 bore fine lend for logic 1 only) 40 bore fine lend for logic 1 only) 41 bore fine lend for logic 1 only) 42 bore fine lend for logic 1 only) 43 bore fine lend for logic 1 only) 44 bore fine lend for logic 1 only) 45 bore fine lend for logic 1 only) 46 bore fine lend for logic 1 only) 47 bore fine lend for logic 1 only) 48 bore fine lend for logic 1 only) 49 bore fine lend for logic 1 only) 40 bore fine lend for logic 1 only) 40 bore fine lend for logic 1 only) 40 bore fine lend for logic 1 only) 41 bore fine lend for logic 1 only) 41 bore fine lend for logic 1 only) 42 beginn lend for logic 1 only) 43 bore fine lend for logic 1 only) 44 bore fine lend for logic 1 only) 45 bore width explained for logic 1 only) 45 bore width explained for logic 1 only) 46 bore fine lend for logic 1 only) 47 bore fine lend for logic 1 only) 48 bore fine lend for logic 1 only) 49 bore fine lend for logic 1 only) 40 bore fine lend for logic 1 only) 40 bore fine lend for logic 1 only) 40 bore fine lend for logic 1 only) 41 bore fine lend for logic 1 only) 42 bore with explained for logic 1 only) 43 bore with explained for logic 1 only) 44 bore fine logic 1 only) 45 bore fine logic 1 only) 45 bore fine logic 1 only) 45 bore fine logic 1 only) 46 bore fine logic 1 only) 47 bore fine logic 1 only) 48 bore fine logic 1 only) 49 bore fine logic 1 only) 40 b	40							
descrime bore [Needed for logic 0 noty] 39.1 Outside dia of plug [measured] = small bore dia + large bore dia + the septum width 39.1 Outside dia of plug [measured] = small bore dia + large bore dia + the septum width 39.2 distinmination fact. do not imput value 39.3 dist. from very bottom of boot to septum [point between the large and small bore] 30.2 distinmination fact. do not imput value 30.3 dist. from very bottom of boot to spetum [point between the large and small bore] 30.4 distinmination fact. do not imput value 30.5 distore dia sept. ** Needed for both boot logics] 31.6 libror dia sept. ** Needed for both boot logics] 32.5 dep width cack. do not imput value 33.6 libror dia sept. ** Needed for both boot logics] 33.6 libror dia sept. ** Needed for both boot logics] 34.5 libror dia sept. ** Needed for both boot logics] 35.7 libror dia sept. ** Needed for both boot logics] 36.8 libror dia sept. ** Needed for both boot logics] 37.8 septum width; direct measurement if remove plug. 38.9 width cack. do not imput value 39.2 libror dia sept. ** Needed for both boot logics] 39.9 width cack. do not imput value 39.2 libror dia sept. ** Needed for both boot logics] 39.9 width cack. do not imput value 39.2 libror dia sept. ** Needed for both boot logics] 39.9 width cack. do not imput value 39.2 libror dia sept. ** Needed for both boot logics] 39.9 width cack. do not imput value 39.9 libror dia sept. ** Needed for both boot logics] 39.9 width cack. do not imput value 39.9 libror dia sept. ** Needed for both boot logics] 30.9 libror dia sept. ** Needed for both boot logics] 30.9 libror dia sept. ** Needed for both boot logics] 30.9 libror dia sept. ** Needed for both boot logics] 30.9 libror dia sept. ** Needed for both boot logics] 30.9 libror dia sept. ** Needed for both boot logics] 30.9 libror dia sept. ** Needed for booth boot logics] 30.9 libror dia sept. ** Needed for booth boot logics] 30.9 libror dia sept. ** Needed for booth booth logics] 30.9 libror dia sept. ** Needed f	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]; 18+7=2	22			
Additional Content Additio	42	bootl bottom [Needed for both boot logics]	22	use hook, dist of bore [same as boots bot except tenon depth will be different]				
43 Septum length exp Need for loojc 0 only 4 4 dist. from very bottom of boot to septum	43							
46 Septum length exp. [Needed for logic 0 only 44 38 dist. from very bottom of boot to septum [point between the large and small bore] 48 Septum length edic 4 on tot imput value 48 38 dist. from very bottom of boot to septum [point between the large and small bore] 40 41 42 43 43 43 43 43 43 43	44	extreme bore [Needed for logic 1 only]	39.1	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width				
All Septum length calc - do not imput value 38 septum length - do not imput value 49 38 septum length - do not imput value 49 38 septum length - do not imput value 49 38 septum length - do not imput value 49 38 septum length - do not imput value 49 38 septum length - do not imput value 49 38 septum length - do not imput value 49 39 septum length - do not imput value 49 39 septum length - do not imput value 40 30 septum length - do not imput value 30 30 septum length - do not imput value 30 30 septum length - do not imput value 30 30 30 30 30 30 30 3	45							
1 1 1 2 3 1 2 3 3 1 3 3 3 3 3 3 3		septum length exp [Need for logic 0 only]	44	dist. from very bottom of boot to septum [point between the large and small bore]				
1								
So store da sep* Needed for both boot logics 17.8 septum small bore dia [assume = bore dia sep]		septum length - do not imput value	38	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum calc	do not imput va	lue		
Signature Sign								
Sep width exp [Need for logic 0 only] 0 septum widty; (air.ext measurement if remove plug 0 on or imput value 54 sep width - do not imput value 3.2 septum width; (air.ext measurement if remove plug 1 on or imput value 1					0.1			
3.2 septum width; calc. => extreme bore = sbore = sbore septum width calc sept					0]			
Sample S					de cestiment	de la		
Signature Sign								
Section Sect		sep width - do not imput value	3.2	D logic = 0 = 2 sep width = sep width exp; if D logic = 1 = 2 sep width = sep width calc	do not imput va	ilue		
118 dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]		hi a	226	dist from top of hoot (cocket) to where C halo enters here [not at cont of topo hole]				
Section Sect								
Section Sect		5) 11	110	also from top or boot (socket) to where I'I had enters bore [not at cent or tone hole]				
Section Sect								
1								
STATE STAT								
Signature Sign								
1		IV. Tone Hole Diameters						
5.4			4.9					
4.9	65	e						
Section		d	4.9					
6.2								
1		c						
1		b						
1		a						
73		g						
14		T1	7.5					
3.5 d1		01	0.5	Grancer A7 Ohlong 8 9 v 10 0 v a1 tana hala dia van lang inint Franch to average NC 1 5 M	diacl		-	
Second		d1			uiasj		-	
77		41			NS usually groa	terl	-	
78 79 80 80 81 82 V. Tone Hole Depths 83 87 86 86 87 87 88 89 80 89 80 80 80 80 80 80 80 80 80 80 80 80 80		<u></u>	0.2	States To Strong S A 6.0, CI cone note dia, on long joint [need to average N3, EW dias,	usuany grea	.cci j	\rightarrow	
The second of							-	
80	79							
State								
S2 V. Tone Hole Depths							\neg	
33 12		V. Tone Hole Depths						
84 e 24.8 85 d 27.8 86		f2	24					
S5 d 27.8		e						
S6		d						
87 c 20.5								
88 b 22.3 Second Seco	87	с	20.5					
89 a 21.8 9 9 9 9 13.1 meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle] 91 f1 19.5 meas along east side tone hole wall [north wall, toward reed,t hole usually at angle] 92 93 e1 7.4 e1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] y 94 d1 97.9 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] y 95 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] y 96 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] y 97 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] y 98 d1	88	b						
91 f1 19.5 meas along east side tone hole wall [north wall, toward reed,t hole usually at angle] 92 93 e1 9.4 e1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] y 94 d1 97.9 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] y 94 d1 97.9 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99.5 d1 tone hole d2 tone	89	a	21.8					
91 f1 19.5 meas along east side tone hole wall [north wall, toward reed,t hole usually at angle] 92 93 e1 9.4 e1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 94 d1 97.9 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 99 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 90 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 90 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 90 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 90 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 90 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 90 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 90 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 90 d1 tone hole d2 d2 d2 d3	90	g						
93 e1 7.4 e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist] y 94 d1 7.9 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist] 9		f1	19.5	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]				
94 d1 7.9 d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]								
		e1						
95 c1 7 c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]	94	d1						
	95	c1	7	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]				

GrenserA7-O-Michaelstein-Wg1-WOB-DNM

06	A	В	C CrencerA7 tone hole surface flattened	D	E	F	G
96 97			GrenserA7, tone hole surface flattened				
98							
99							
100							
101	VI. Long Joint		There is a table along long joint; GrenserA7; yes a table along long joint				
102	lg_length	590	total length of long joint; yes 600 mm				
	lg_tenon_bot	42.6	length bottom tenon on long joint [tenon going into boot joint]				
	lj_bot_bore	23.8	long joint bottom tenon bore diameter [tenon going into boot joint]				
	lj_top_bore lg_tenon_top	31.2 32.1	long joint top tenon bore diameter [tenon going into bell] length top tenon on long joint [tenon going into bell]				
	e1 distance	57	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]				
	d1 distance	256	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]				
109	c1 distance	478	dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore]				
110							
111							
112							
113							
114 115	VII Rore diameters at Tone Heles						
116	VII. Bore diameters at Tone Holes f2	11.8					
117	P	12.5					
118	d	13.3					
119							
120	с	16.8					
121	b	17.5					
122	a	17.6					
123 124	<u>g</u> f1	19.7 23.6					
125	11	23.0					
126	e1	24.7	e1 tone hole bore diameter on long joint				
127	d1	27.1	d1 tone hole bore diameter on long joint				
128	c1	30.5	c1 tone hole bore diameter on long joint				
129							
130							
131 132							
132							
	VIII. Bell		GrenserA7; There is a tone hole in the bell:				
135	bell logic	1	If bell_logic = 0 => normal conical bore; if bell_logic = 1 => inverted concial bore; if bell_l	ogic = 2 => bel	expan	sion	
136	bell_length (0, 1, 2)	302	total length of bell [lines 141 + 144 = line 136]				
137	bell_bot_bore (0, 1, 2)	31.7	dia bore at the bottom of bell [end with socket]				
138	bell_top_bore 0, (1, 0, 2)	31.5	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				
	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]				
	Outside diameter of wood at expansion		Just for David				
143	bell tenon (0, 1, 0, 2)	31.5	bell socket length				
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]				
145	belflg	46.5	Usually about 10mm more than line 138				
146							
147	IX. PITCH					\vdash	
148	pitch	415	input the historical pitch of the bassoon, must input value, best guess				
	freq_init	380	Initial frequency range variable				
	Delta frequency	2	frequency increment parameter				
152	Number of frequencies	60	number of frequencies to scan for min chi sq				
	Frequency adjust	1.05	frequency adjustment parameter				
	X. Title		dated 1788			\vdash	
155 156	title		Bassoon Calculation: GrenserA7-O-Michaelstein-Wg1-WOB-DNM			\vdash	
157			Notes on long joint bore: GrenserA7 normal				
158			Notes on boot joint bore: GrenserA7 small side very cyndrical				
159	XI. Bore Diameter Locations		Notes on wing joint bore: GrenserA7 top near bocal receiver worn??				
160		17	Number of diameters				
161		10.9	Initial bore diameter [do not include in line 160 counting]				
162 163		0 335	GrenserA7 there is an insert in top of bore, makes a choke, no meas. 10 mm dist1- 10mm GrenserA7 OOR 310 x 360; dist2; measured from the bottom of the wing joint- 11mm				1
164		265	GrenserA7 OOR 310 X 360; dist2; measured from the bottom of the wing joint- 11mm GrenserA7 OOR 255 x 275; dist3; measured from the bottom of the wing joint- 12mm				1
165		204	dist4; measured from the bottom of the wing joint- 13mm				1
166			dist5; measured from the bottom of the wing joint- 14mm				1
167		118					1
		0	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing jt	15.2		
168		0	dist6; measured from the bottom of the wing joint- 15mm dist7; measured from the top of the bootjoint - small bore side- 16mm	top boot small	16.8		2
169		0 0 97	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				2
169 170		0 0 97 0	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	top boot small top boot large	16.8 24.6		2 2 2
169 170 171		0 0 97 0 348	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 dist10; measured from the top of the bootjoint - large bore side- 19mm	top boot small top boot large sbore dia sep	16.8 24.6 17.8		2 2 2 3
169 170 171 172		0 0 97 0 348 315	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 dist10; measured from the top of the bootjoint - large bore side- 19mm dist11; measured from the top of the bootjoint - large bore side- 20mm	top boot small top boot large sbore dia sep lbore dia sep	16.8 24.6 17.8 18.1		2 2 2 3 3
169 170 171 172 173 174		0 0 97 0 348	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 dist10; measured from the top of the bootjoint - large bore side- 19mm	top boot small top boot large sbore dia sep	16.8 24.6 17.8		2 2 3 3 3 3
169 170 171 172 173 174 175		0 97 0 348 315 262 218 170	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 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- 22mm dist14; measured from the top of the bootjoint - large bore side- 22mm	top boot small top boot large sbore dia sep lbore dia sep Hook Length	16.8 24.6 17.8 18.1 382		2 2 3 3 3 3
169 170 171 172 173 174 175 176		0 0 97 0 348 315 262 218 170 554	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 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- 22mm dist14; measured from the top of the bootjoint - large bore side- 23mm dist15; measured from the top of the lootjoint - large bore side- 23mm dist15; measured from the top of the long joint- 24mm	top boot small top boot large sbore dia sep lbore dia sep	16.8 24.6 17.8 18.1		2 2 3 3 3 3 4
169 170 171 172 173 174 175 176		0 0 97 0 348 315 262 218 170 554 520	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 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- 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 dist16; measured from the top of the long joint- 25mm	top boot small top boot large sbore dia sep lbore dia sep Hook Length	16.8 24.6 17.8 18.1 382		2 2 3 3 3 3 3 4 4
169 170 171 172 173 174 175 176 177		0 97 0 348 315 262 218 170 554 520 440	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 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- 22mm dist15; measured from the top of the bootjoint - large bore side- 22mm dist15; measured from the top of the lootjoint - large bore side- 23mm dist16; measured from the top of the long joint- 24mm dist16; measured from the top of the long joint- 25mm GrenserA7 OOR 420 × 460; dist17; measured from the top of the long joint- 26mm	top boot small top boot large sbore dia sep lbore dia sep Hook Length	16.8 24.6 17.8 18.1 382		2 2 3 3 3 3 3 4 4 4
169 170 171 172 173 174 175 176 177 178		0 0 97 0 348 315 262 218 170 554 554 440 350	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 dist10; measured from the top of the bootjoint - large bore side- 19mm dist11; measured from the top of the bootjoint - large bore side- 29mm 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 dist16; measured from the top of the long joint- 25mm GrenserA7 OOR 420 x 460; dist17; measured from the top of the long joint- 26mm GrenserA7 OOR 320 x 380; dist18; measured from the top of the long joint- 27mm	top boot small top boot large sbore dia sep lbore dia sep Hook Length	16.8 24.6 17.8 18.1 382		2 2 3 3 3 3 4 4 4 4
169 170 171 172 173 174 175 176 177 178 179		0 0 97 0 348 315 262 218 170 554 520 440 350 253	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 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- 22mm dist14; measured from the top of the bootjoint - large bore side- 22mm dist15; measured from the top of the long joint- 24mm dist16; measured from the top of the long joint- 25mm GrenserA7 OOR 420 x 460; dist17; measured from the top of the long joint- 26mm GrenserA7 OOR 320 x 380; dist18; measured from the top of the long joint- 27mm dist19; measured from the top of the long joint- 28mm	top boot small top boot large sbore dia sep lbore dia sep Hook Length	16.8 24.6 17.8 18.1 382		2 2 3 3 3 3 3 4 4 4 4 4
169 170 171 172 173 174 175 176 177 178		0 0 97 0 348 315 262 218 170 554 554 440 350	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 dist10; measured from the top of the bootjoint - large bore side- 19mm dist11; measured from the top of the bootjoint - large bore side- 29mm 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 dist16; measured from the top of the long joint- 25mm GrenserA7 OOR 420 x 460; dist17; measured from the top of the long joint- 26mm GrenserA7 OOR 320 x 380; dist18; measured from the top of the long joint- 27mm	top boot small top boot large sbore dia sep lbore dia sep Hook Length	16.8 24.6 17.8 18.1 382		2 2 3 3 3 3 4 4 4 4 4 4 4
169 170 171 172 173 174 175 176 177 178 180 181		0 0 97 0 348 315 262 218 170 554 520 440 350 253 198	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 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- 22mm dist13; measured from the top of the bootjoint - large bore side- 22mm dist15; measured from the top of the long joint - 24mm dist16; measured from the top of the long joint- 25mm GrenserA7 OOR 420 x 460; dist17; measured from the top of the long joint- 26mm GrenserA7 OOR 320 x 380; dist18; 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 dist20; measured from the top of the long joint- 29mm	top boot small top boot large sbore dia sep lbore dia sep Hook Length	16.8 24.6 17.8 18.1 382		4 4