

4-key fagottino, Johannes & Gregor Heinrich SCHERER (2), Butzbach, ca. 1764

BASIC - OUTSIDE			
Joint lengths	mm	mm	Comments
Standing length to bell	642		
Standing length to wing joint	464		
Wing joint length	271	269 + 2	Length without inner ferrule, protruding from south 269 mm
Wing joint - tenon length	29.1	27.1 + 2	
Butt joint length	221.5		
Long joint length	305		
Long joint - south tenon length	28.3		
Long joint - north tenon length	26.4		
Bell length	169		
Vent hole distance from north	x		
Vent hole approx diameter	x		
Tone hole distance, axis			
Wing - tone hole 1 distance from north	114.5		
Wing - tone hole 2 distance from north	142.5		
Wing - tone hole 3 distance from north	171		
Butt - tone hole 4 distance from north	54		
Butt - tone hole 5 distance from north	78		
Butt - tone hole 6 distance from north	101.5		
Butt - tone hole F distance from north	190		
Butt - tone hole E distance from north	72.3		
Butt - tone hole Ab distance from north	171.5		
Butt - tone hole F# distance from north	x		
Long joint - tone hole D distance from north	265		
Long joint - tone hole Eb distance from north	x		
Long joint - tone hole C distance from north	165		
Long joint - tone hole Bb distance from north	42		
Wing - major axis at tone hole 1	32.6		

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Wing - major axis at tone hole 2	33.5		
Wing - major axis at tone hole 3	34.1		
Butt - major axis (side to side) at tone hole 4	46.1		
Butt - minor axis (front to back) at tone hole 4	35		
Butt - major axis (side to side) at tone hole 5	45.4		
Butt - minor axis (front to back) at tone hole 5	34.4		
Butt - major axis (side to side) at tone hole 6	44.4		
Butt - minor axis (front to back) at tone hole 6	33.8		
Butt - major axis (side to side) at tone hole F	41.5		
Butt - minor axis (front to back) at tone hole F	32.5		
Butt - major axis (side to side) at tone hole E	45.8		
Butt - minor axis (front to back) at tone hole E	34.5		
Butt - major axis (side to side) of the bottom butt	38.8		Without ferrule
ellipse	30.1		
Butt - major axis (side to side) of the top butt ellipse	47.8		
Butt - minor axis (front to back) of the top butt ellipse	37.1		
Butt - cork major axis (side to side)	16	14.4	Big bore / small bore
Butt - cork minor axis (front to back)	16.6	14.6	Big bore / small bore
Long joint - minor axis (front to back) at tone hole D	25.9		
Long joint - major axis (side to side) at tone hole D	25.4		
Long joint - minor axis (front to back) at tone hole Eb	x		
Long joint - major axis (side to side) at tone hole Eb	x		
Long joint - minor axis (front to back) at tone hole C	28.6		
Long joint - major axis (side to side) at tone hole C	28.7		
Long joint - minor axis (front to back) at tone hole Bb	31.3		
Long joint - major axis (side to side) at tone hole Bb	31.3		

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Tone hole angle, Ø, length			
Wing - tone hole 1 angle	19.5° North		
Wing - tone hole 2 angle	13.5° South		
Wing - tone hole 3 angle	28.5° South		
Wing - tone hole 1 approx. Ø	3.9		
Wing - tone hole 2 approx. Ø	3.8		
Wing - tone hole 3 approx. Ø	3.9		
Wing - tone hole 1 approx. length	11.9		
Wing - tone hole 2 approx. length	11		
Wing - tone hole 3 approx. length	11.7		
Butt - tone hole 4 angle	19.5° North		
Butt - tone hole 5 angle	7° South		
Butt - tone hole 6 angle	20° South		
Butt - tone hole E angle	15° South		
Butt - tone hole 4 approx. Ø	5.5		
Butt - tone hole 5 approx. Ø	5.2		
Butt - tone hole 6 approx. Ø	4.5		
Butt - tone hole E approx. Ø	7.6		
Butt - tone hole 4 approx. length	15.5		
Butt - tone hole 5 approx. length	15		
Butt - tone hole 6 approx. length	15.8		
Butt - tone hole E approx. length	13.3		
Long joint - tone hole C angle	2.5° North		
Long joint - tone hole C Ø	9.9	9.6	Very irregular, possibly enlarged
Long joint - tone hole C approx. length	5		
BASIC - INSIDE			
Inner bore length			
Bore length	1108.75		Median bell socket value used
Wing bore length	270		
Butt - small bore length	214	222	Corked/uncorked

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Butt - big bore length	212.5	222	Corked/uncorked
Butt - small bore socket length	28.5		Crack on the side
Butt - big bore socket length	29		Crack on the side
Butt - small bore beginning of septum	197.5		
Butt - big bore beginning of septum	197.5		
Long joint bore length	306		
Bell bore length	170		
Inner bore beginning Ø (not socket!)	Min.	Max.	
Wing bore Ø north	9.1	9.4	
Wing bore Ø south	13	13.4	Without the inner metal protective ring. Ring inside: 12.1–12.2. Thickness ring: 0.2–0.4, 10 mm long
Bocal well length	11		
Butt - small bore Ø north	13.4	13.6	
Butt - big bore Ø north	18.9		
Long joint Ø north	21.4	21.8	
Long joint Ø south	15.2	15.6	
Bell bore Ø north	21.4	21.9	
Bell bore Ø south	23.3	23.8	
Bell socket length	31.5	32	
Bocal Ø at the beginning	3		Approximate
Bocal thickness at the beginning	0.3		
Bocal Ø at the tenon	6.8	7.9	
Bocal thickness at the tenon	0.5	0.7	
Bocal length (along top)	130		Sealed hole from top, tenon at 25.5 mm

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COMPLETE - OUTSIDE	Min.	Max.	
Bocal well thickness with ferrule	4.2	4.6	
Bocal well ferrule thickness	0.4	0.6	
Wing - tenon thickness	2	2.2	Tenon south has metal ring protector 0.3–0.5 mm thick
Wing - tenon northern extern. Ø	17.4	17.8	
Wing - tenon southern extern. Ø	17.7	17.9	
Wing - tone hole A distance from north	x		
Wing - tone hole A angle	x		
Wing - tone hole A approx. Ø	x		
Wing - tone hole A approx. length	x		
Wing - tone hole C distance from north	x		
Wing - tone hole C angle	x		
Wing - tone hole C Ø	x		
Wing - tone hole C approx. length	x		
Butt - big socket thickness with ferrule	2.6		
Butt - small socket thickness with ferrule	2.2		
Butt - top ferrule thickness	0.4	0.5	
Minimum wall thickness between butt sockets	1.8		
Butt - wood space between corks - bottom	1.8		
Butt - big bore cork Ø - bottom	15.7	16.3	
Butt - small bore cork Ø - bottom	14.6	15	
Butt - wood wall between cork/front - small bore	7.5		
Butt - wood wall between cork/front - big bore	4		
Butt - wood wall between cork/back - small bore	4.7		
Butt - wood wall between cork/back - big bore	5.5		
Wood wall between cork/side - small bore	3.3		
Wood wall between cork/side - big bore	2.7		
Butt - bottom ferrule thickness	0.5		
Long joint - south tenon thickness	2.2	2.6	

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Long joint - south tenon northern extern. Ø	20.5	21	
Long joint - south tenon southern extern. Ø	20.3	20.9	
Long joint - north tenon thickness	1.7	1.9	
Long joint - north tenon northern extern. Ø	24.4	25.1	
Long joint - north tenon southern extern. Ø	25.1	25.6	
Bell socket thickness with brass	x		Ferrule is missing
Brass thickness of the bell ferrule	x		Ferrule is missing
Bell ferrule height	x		Missing
Tone hole angle, Ø, length			
Butt - tone hole Ab angle	2° South		
Butt - tone hole F angle	9° North		
Butt - tone hole F# angle	x		
Butt - tone hole Ab approx. Ø	3		
Butt - tone hole F approx. Ø	6.6		
Butt - tone hole F# approx. Ø	x		
Butt - tone hole Ab approx. length	10		
Butt - tone hole F approx. length	11		
Butt - tone hole F# approx. length	x		
Long joint - tone hole D angle	0		
Long joint - tone hole E \flat angle	x		
Long joint - tone hole B \flat angle	0		
Long joint - tone hole D approx. Ø	9.3	10.2	Not very round
Long joint - tone hole E \flat approx. Ø	x		
Long joint - tone hole B \flat approx.Ø	10	11	Very round
Long joint - tone hole D approx. length	4		
Long joint - tone hole E \flat approx. length	x		
Long joint - tone hole B \flat approx. length	5		
COMPLETE - INSIDE			
Wing - tone hole 1 distance from south	161		
Wing - tone hole 2 distance from south	127		

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Wing - tone hole 3 distance from south	93		
Wing - tone hole A distance from south	x		
Wing - tone hole C distance from south	x		
Butt - tone hole 4 distance from north	44		
Butt - tone hole 5 distance from north	82		
Butt - tone hole 6 distance from north	47		
Butt - tone hole Ab distance from north	177		
Butt - tone hole F distance from north	188		
Butt - tone hole F# distance from north	x		
Butt - tone hole E distance from north	77		
Long joint - tone hole D distance from north	265		From south 39 mm
Long joint- tone hole E \flat distance from north	x		
Long joint - tone hole C distance from north	164		From south 141 mm
Long joint - hole B \flat distance from north	39		From south 265 mm
Bell - vent hole distance from north	x		