

15-key tenoroon, MARZOLI TMB, Paris, ca.1865

BASIC - OUTSIDE	mm	mm	Comments
Joint lengths			
Standing length to bell	956		
Standing length to wing joint	604		
Wing joint length	335		
Wing joint - tenon length	40.4		
Butt joint length	370		
Long joint length	441		
Long joint - south tenon length	40.9		
Long joint - north tenon length	30.7		
Bell length	281		
Vent hole distance from north	x		
Vent hole approx diameter	x		
Tone hole distance, axis			
Wing - tone hole 1 distance from north	139.2		
Wing - tone hole 2 distance from north	167		
Wing - tone hole 3 distance from north	205		
Butt - tone hole 4 distance from north	49.2		
Butt - tone hole 5 distance from north	79.3		
Butt - tone hole 6 distance from north	107.8		
Butt - tone hole F distance from north	217		
Butt - tone hole E distance from north	80.7		
Butt - tone hole Ab distance from north	240		
Butt - tone hole F# distance from north	195.6		Estimated
Long joint - tone hole D distance from north	387		
Long joint - tone hole Eb distance from north	343		
Long joint - tone hole C distance from north	252		

15-key tenoroon, MARZOLI TMB, Paris, ca.1865

Long joint - tone hole Bb distance from north	91		
Wing - major axis at tone hole 1	42.4		
Wing - major axis at tone hole 2	43.7		
Wing - major axis at tone hole 3	43.2		
Butt - major axis (side to side) at tone hole 4	59.6		
Butt - minor axis (front to back) at tone hole 4	47.2		
Butt - major axis (side to side) at tone hole 5	58.8		
Butt - minor axis (front to back) at tone hole 5	45.9		
Butt - major axis (side to side) at tone hole 6	57.4		
Butt - minor axis (front to back) at tone hole 6	45.4		
Butt - major axis (side to side) at tone hole F	51.7		
Butt - minor axis (front to back) at tone hole F	40		
Butt - major axis (side to side) at tone hole E	58.7		
Butt - minor axis (front to back) at tone hole E	45.8		
Butt - major axis (side to side) of the bottom butt ellipse	48.5		
Butt - minor axis (front to back) of the bottom butt ellipse	37.9		
Butt - major axis (side to side) of the top butt ellipse	59.5		
Butt - minor axis (front to back) of the top butt ellipse	47.1		
Long joint - minor axis (front to back) at tone hole D	34.6		There is a platform
Long joint - major axis (side to side) at tone hole D	33.3		
Long joint - minor axis (front to back) at tone hole Eb	33.5		
Long joint - major axis (side to side) at tone hole Eb	33.8		
Long joint - minor axis (front to back) at tone hole C	35.6		
Long joint - major axis (side to side) at tone hole C	35.3		

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Long joint - minor axis (front to back) at tone hole Bb	38.1		
Long joint - major axis (side to side) at tone hole Bb	37.9		
Tone hole angle, Ø, length			
Wing - tone hole 1 angle	x		
Wing - tone hole 2 angle	x		
Wing - tone hole 3 angle	x		
Wing - tone hole 1 approx. Ø	x		Half-hole key
Wing - tone hole 2 approx. Ø	5.3		
Wing - tone hole 3 approx. Ø	5.3		
Wing - tone hole 1 approx. length	x		
Wing - tone hole 2 approx. length	29.5		
Wing - tone hole 3 approx. length	29		
Butt - tone hole 4 angle	x		
Butt - tone hole 5 angle	x		
Butt - tone hole 6 angle	x		
Butt - tone hole E angle	x		
Butt - tone hole 4 approx. Ø	6.5		
Butt - tone hole 5 approx. Ø	6.5		
Butt - tone hole 6 approx. Ø	6.1		
Butt - tone hole E approx. Ø	9.4		
Butt - tone hole 4 approx. length	23.1		
Butt - tone hole 5 approx. length	23.4		
Butt - tone hole 6 approx. length	24.6		
Butt - tone hole E approx. length	16.6		
Butt - cork major axis (side to side)	x		
Butt - cork minor axis (front to back)	x		
Long joint - tone hole C angle	x		

15-key tenoroon, MARZOLI TMB, Paris, ca.1865			
Long joint - tone hole C Ø	x		
Long joint - tone hole C approx. length	x		
BASIC - INSIDE			
Inner bore length			
Bore length	1559.4		
Wing bore length	336		
Butt - small bore length	289		
Butt - big bore length	290		
Butt - small bore socket length	40.4		
Butt - big bore socket length	43.5		
Butt - small bore beginning of septum	255		
Butt - big bore beginning of septum	256		
Long joint bore length	442		
Bell bore length	282		
Inner bore beginning Ø (not socket!)	Min.	Max.	
Wing bore Ø north	x		Bocal well Ø north 10.9 mm
Wing bore Ø south	12.6		
Bocal well length	16.5		
Butt - small bore Ø north	13.2		
Butt - big bore Ø north	21.6		
Long joint Ø north	28		
Long joint Ø south	21.8		
Bell bore Ø north	27.7		
Bell bore Ø south	27		
Bell socket length	30.7		
Bocal Ø at the beginning	3.9		
Bocal thickness at the beginning	0.3		

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Bocal Ø at the tenon	7.4		
Bocal thickness at the tenon	0.6		
Bocal length (along top)	257.5		
COMPLETE - OUTSIDE	Min.	Max.	
Bocal well thickness with ferrule	5.2		
Bocal well ferrule thickness	0.4		
Wing - tenon thickness	3.2		
Wing - tenon northern extern. Ø	20.9		
Wing - tenon southern extern. Ø	19.9		
Wing - tone hole A distance from north	x		
Wing - tone hole A angle	x		
Wing - tone hole A extern. 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 extern. Ø	x		
Wing - tone hole C approx. length	x		
Butt - big socket thickness with ferrule	2.8		
Butt - small socket thickness with ferrule	3.2		Inside metal cover
Butt - top ferrule thickness	0.7		
Minimum wall thickness between butt sockets	2		
Butt - wood space between corks - bottom	x		
Butt - big bore cork Ø - bottom	x		
Butt - small bore cork Ø - bottom	x		
Butt - wood wall between cork/front - small bore	x		
Butt - wood wall between cork/front - big bore	x		
Butt - wood wall between cork/back - small bore	x		

15-key tenoroon, MARZOLI TMB, Paris, ca.1865			
Butt - wood wall between cork/back - big bore	x		
Wood wall between cork/side - small bore	x		
Wood wall between cork/side - big bore	x		
Butt - bottom ferrule thickness	x		
Long joint - south tenon thickness	3		
Long joint - south tenon northern extern. Ø	29		
Long joint - south tenon southern extern. Ø	28.4		
Long joint - north tenon thickness	1.9		
Long joint - north tenon northern extern. Ø	31.6		
Long joint - north tenon southern extern. Ø	32.5		
Bell socket thickness with brass	3.6		
Brass thickness of the bell ferrule	0.7		
Bell ferrule height	17.7		
Tone hole angle, Ø, length			
Butt - tone hole Ab angle	x		
Butt - tone hole F angle	x		
Butt - tone hole F# angle	x		
Butt - tone hole Ab approx. Ø	11.6		
Butt - tone hole F approx. Ø	10		
Butt - tone hole F# approx. Ø	5.6		
Butt - tone hole Ab approx. length	x		
Butt - tone hole F approx. length	x		
Butt - tone hole F# approx. length	x		
Long joint - tone hole D angle	x		
Long joint - tone hole E \flat angle	x		
Long joint - tone hole B \flat angle	x		
Long joint - tone hole D approx. Ø	x		
Long joint - tone hole E \flat approx. Ø	7.1		

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Long joint - tone hole B \flat approx.Ø	12.3		
Long joint - tone hole D approx. length	x		
Long joint - tone hole E \flat approx. length	x		
Long joint - tone hole B \flat approx. length	x		
COMPLETE - INSIDE			
Wing - tone hole 1 distance from south	x		
Wing - tone hole 2 distance from south	155		
Wing - tone hole 3 distance from south	118		
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	92		
Butt - tone hole 6 distance from north	121		
Butt - tone hole Ab distance from north	189		
Butt - tone hole F distance from north	x		
Butt - tone hole F \sharp distance from north	x		
Butt - tone hole E distance from north	x		
Long joint - tone hole D distance from north	x		
Long joint- tone hole E \flat distance from north	x		
Long joint - tone hole C distance from north	x		
Long joint - hole B \flat distance from north	x		
Bell - vent hole distance from north	x		