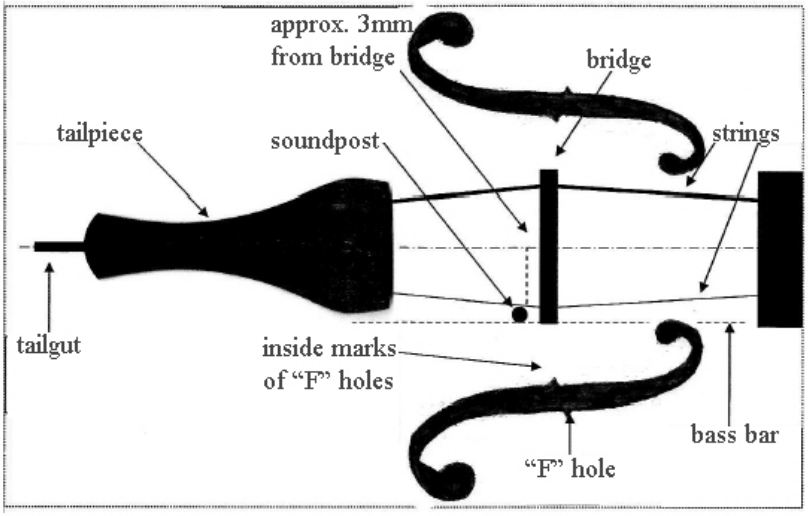
Adjustments to the string instruments

The string instrument has a very particular shape and construction. For this reason, when the mobile parts, which make up the frame, are not positioned or set in the ideal geometric place for the regularity of the instrument's oscillation, the sound undergoes changes that make it more difficult to obtain a regular, beautiful and precise sonority.

The mobile parts

The soundpost, bridge, tailpiece, tailgut and end button

1



The soundpost is placed internally by pressure between the body and the back. It is at the foot of the high point of the bridge. The functioning of the instrument depends on this position.
To obtain an ideal sonority, the outside edge of the sound post must be in line with the body. This must be joined to the central part of the "F" instrument and the narrow outside of the bridge. The cleanliness and quality of the instrument depend upon the distance from the bridge, the perpendicularity of the back and the adaptation of the surfaces.

The bridge is situated at the centre of the base of the instrument, which corresponds to the glueing of the body, centred vertically in line with the inside marks of the "F" holes, "diapason" fig. 1 and horizontally between the internal edges which are central to the "F" holes.

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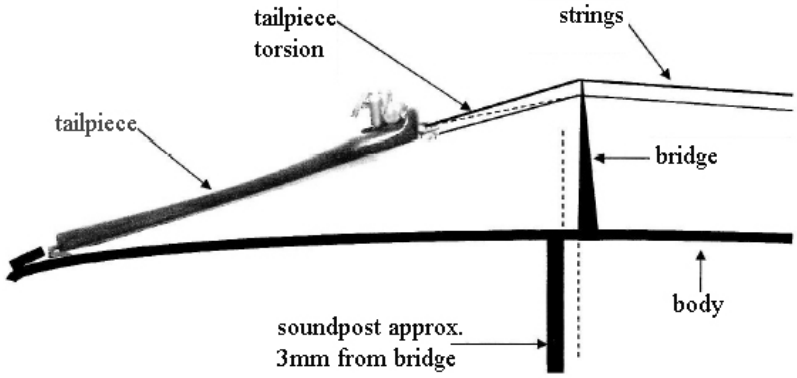
The table below shows the traditional diapason, expressed in centimetres for the violin and violoncello.
The measurement is taken from the upper edge of the body next to the neck to the line between the inside marks of the two “F” holes.
The inclination of the bridge is relative to the measurement of the vibrating string from the bridge to the topnut.

2



Table

The variation of the inclination of the bridge can occur simply by tuning the instrument. Tuning varies the length of the vibrating string, which must be as precise as possible.
From time to time, it is a good idea to accurately measure the length of the strings with a metal ruler.

The table below shows the traditional lengths of the various sizes of violins and violoncellos.

Instrument	Vibrating string	Diapason
Violin 4/4	32.8cm	19.5cm
Violin 3/4	31cm	18.5cm
Violin 1/2	27.8cm	16.5cm
Violoncello 4/4	69cm	40cm
Violoncello 3/4	64.3cm	37cm
Violoncello 1/2	59.5cm	35cm

If, despite these measurements, the inclination of the bridge is not correct, it is advisable to consult a lutist, to find out if it is possible to reach the traditional measurements.

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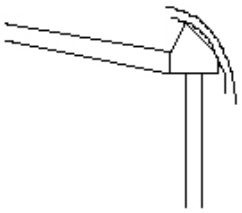
The tailpiece attachment can be accidentally moved from its axis Fig. 7 if the strings are completely slackened and the end button moves from its place. If this happens, it is necessary to position the attachment on the main axis Fig. 8 and push the end button back into place Fig. 6.
The end button in the settling phase may need help via torsion exercised by two fingers.

3



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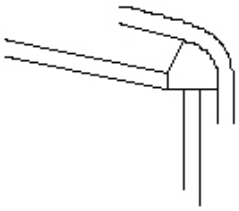

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6

7

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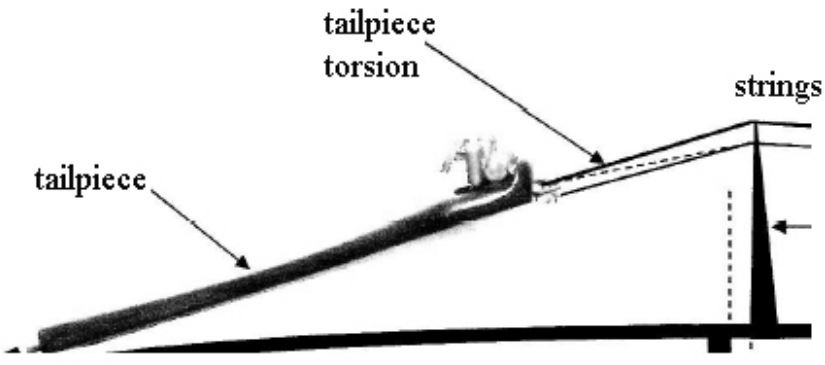
Due to the round shape of the tailpiece attachment, it is sometimes possible that the tailpiece, Fig. 9, gets twisted. On the diagram, we can see this defect by the dotted line, where the first strings are no longer parallel from the bridge to them tailpiece. When this happens, it is necessary to correct the position of the tailpiece, by turning it on itself, in the direction, which will bring the strings parallel again.

9



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