

Diamond Marimbas Manual #3

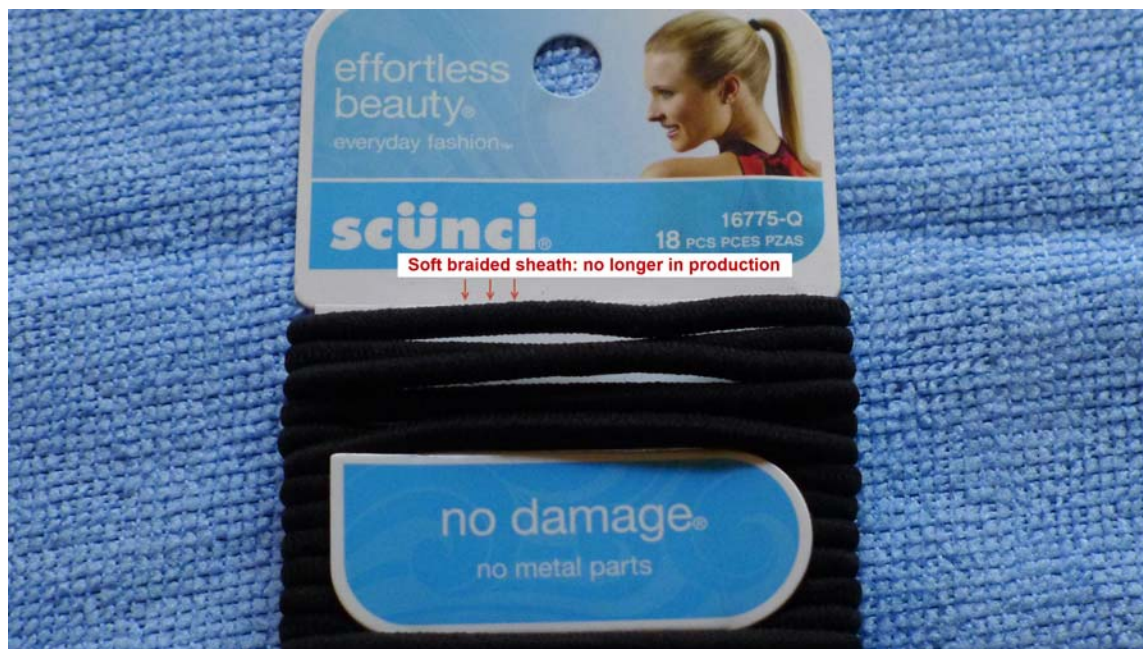
Cords and Knots

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(2019) Finished rebuilding Diamond Marimba I with 48 original pernambuco bars salvaged from the Diamond Marimba built in 1978. Six highest bars replaced with larger Honduras rosewood bars. On Diamond Marimba II with Honduras rosewood bars, replaced all Scünci cords from the 2010 installation. These Scünci cords — and the $\frac{3}{4}$ in. high HR-23 foam supports also from the 2010 installation — showed no signs of wear or deterioration. I replaced the cords to include knots with *stop pins* described below.

The foam supports should hold the bars at a height where there is a clear line of sight through the holes in the black anodized aluminum brackets and through the holes in the bars. So, the Scünci cords do not support the bars. Instead, they only prevent the bars from falling off the instrument.

Scünci hair bands — Part #16775-Q — with soft braided sheaths make no sound inside the bar holes; no longer in production. Similar current bands (#39317-A and #39322-A) with harder coiled sheaths may work (?).



For Diamond Marimbas I and II, 18-8 stainless steel stop pins: $\frac{1}{16}$ in. \times $\frac{5}{8}$ in. MSC Part #67599647.



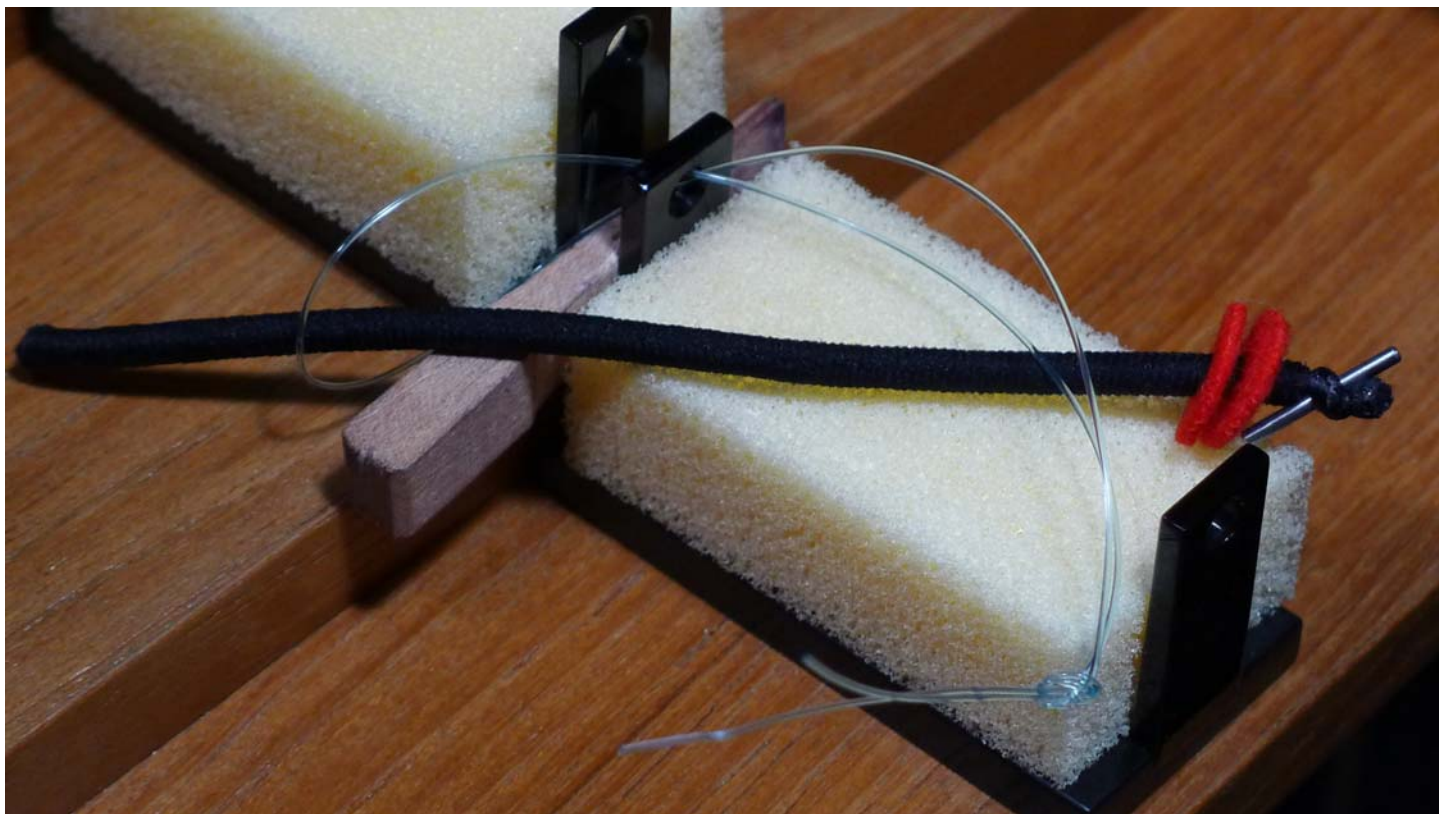
(1) Cut the band — now a cord — at the seam. (2) Insert the stop pin into a simple knot at the end of the cord. (3) Tighten the knot around the pin by stretching the cord between two pliers as tightly as possible. The white extremely elastic (silicone?) cores of these bands are impossible to tear or break with the hands.



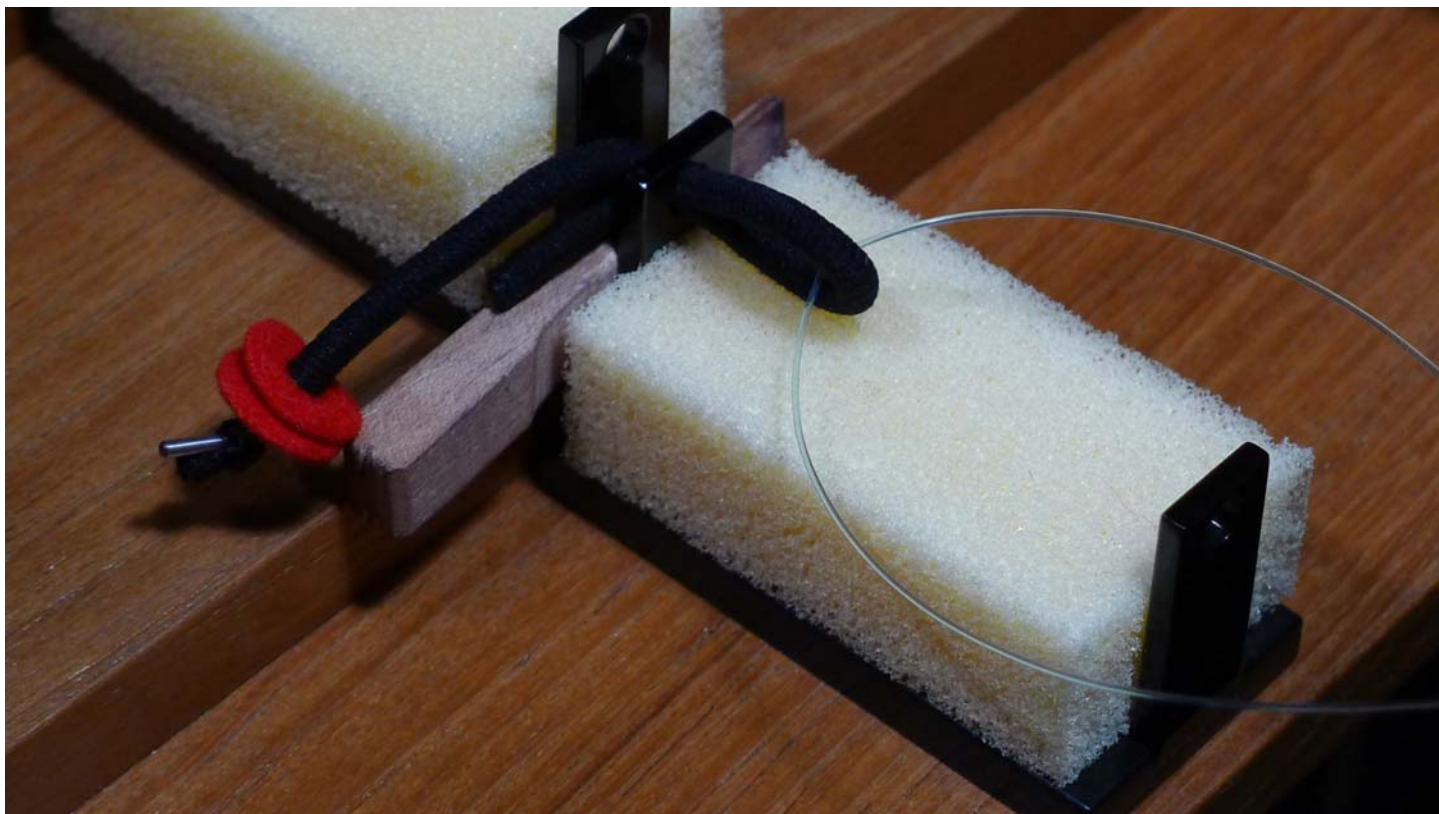
(1) To prevent the braided (Kevlar?) sheath from unraveling, singe the end of the cord at the knot with a flame. The graphic shows a “Click N Flame” long lighter, which enables one to control the location of the flame when singeing cords near the brackets. (2) Color the white elastic core with a permanent black marker. (3) Place two red Schaff Piano Supply hitch pin punchings — Part #330H — at the knotted end.



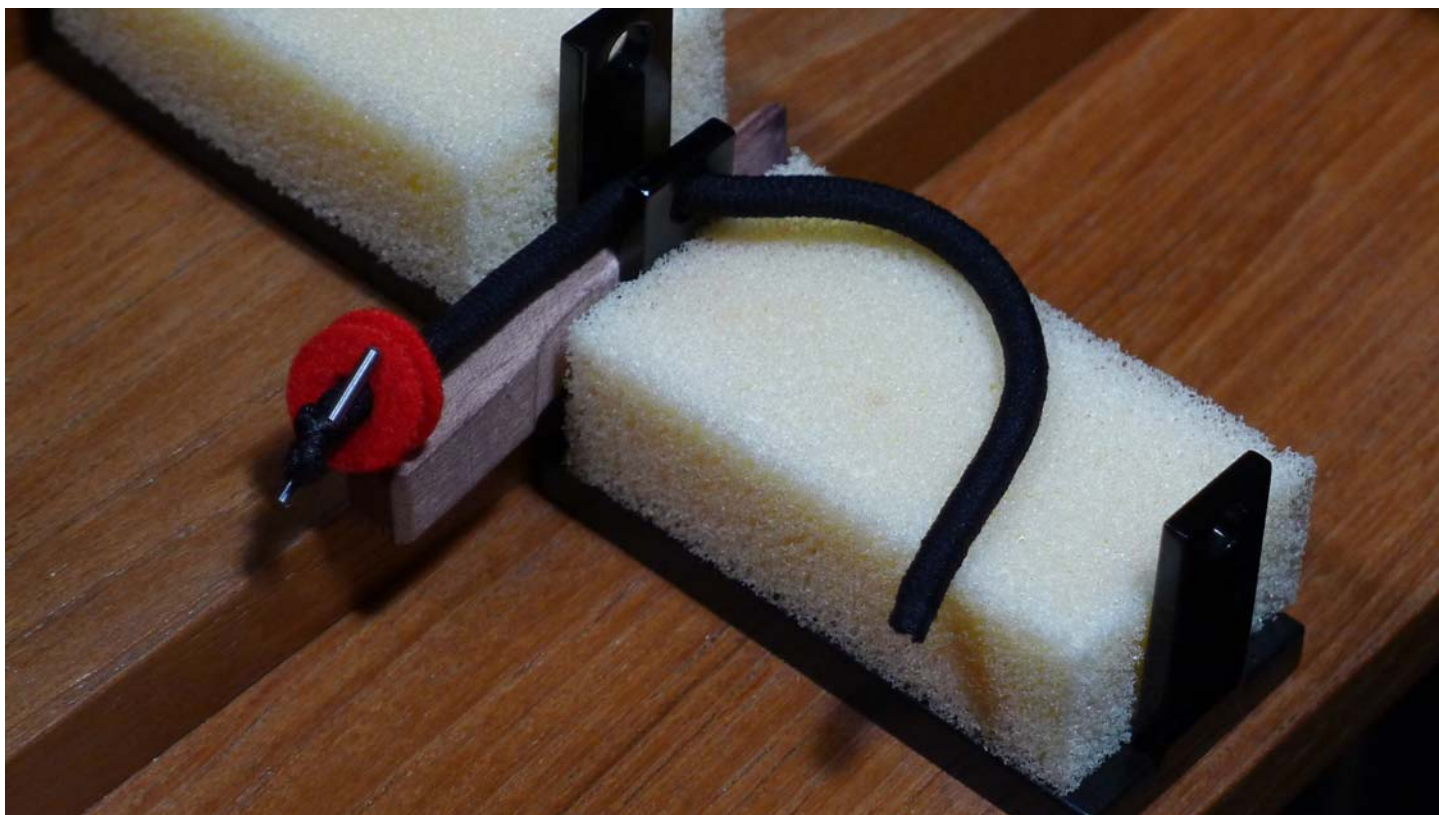
(1) When two black anodized aluminum brackets are close together, insert a wood (non-marring) wedge between the brackets to increase the space between the two brackets. (2) Make a sling from a smooth (non-snagging) monofilament line. (3) Pass the knotted end of the sling through the hole in the black anodized aluminum bracket. (4) Place the unknotted end of the cord into the other end of the sling.



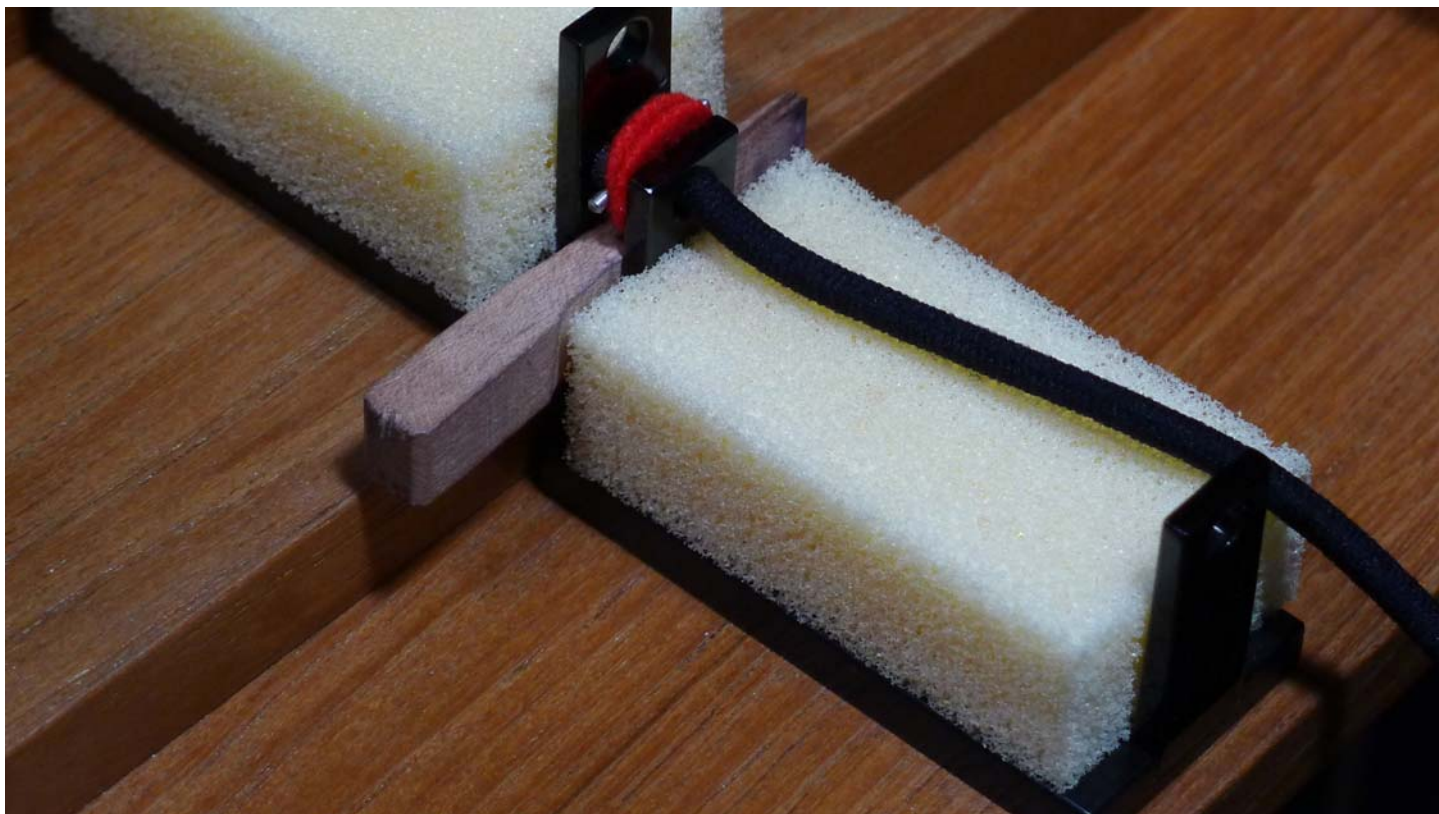
Pull on the sling. The cord initially makes a loop inside of the bracket.



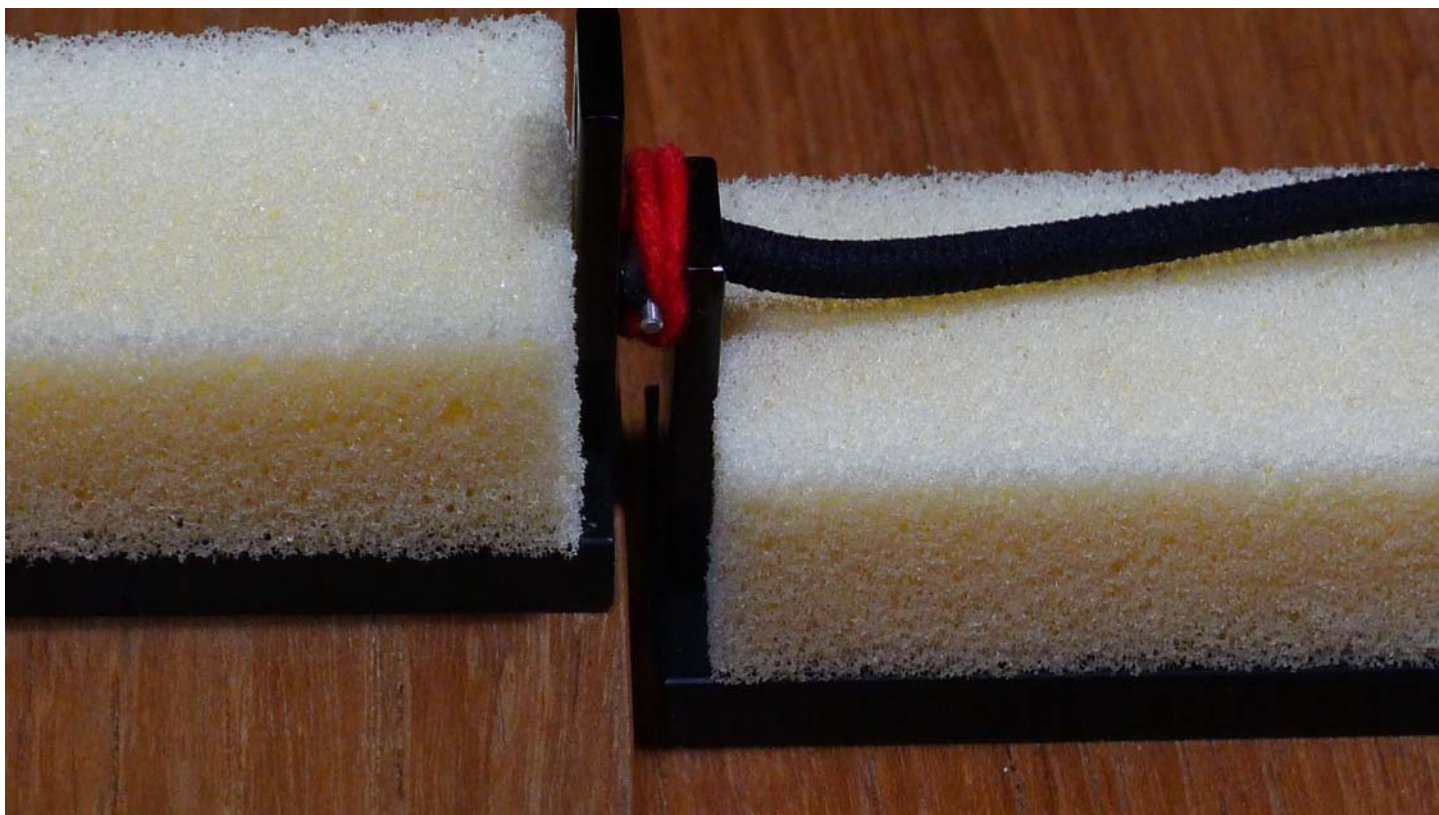
Continue pulling on the sling until the unknotted end of the cord passes through the bracket.



(1) Pull on the cord until the stop pin and red punchings are seated against the bracket. (2) If there is not enough space, push the wood wedge *gently* further between the brackets to make more space. (3) After seating the pin, thread two more punchings on the cord and push them against the bracket. (See the second photo on p. 5.)



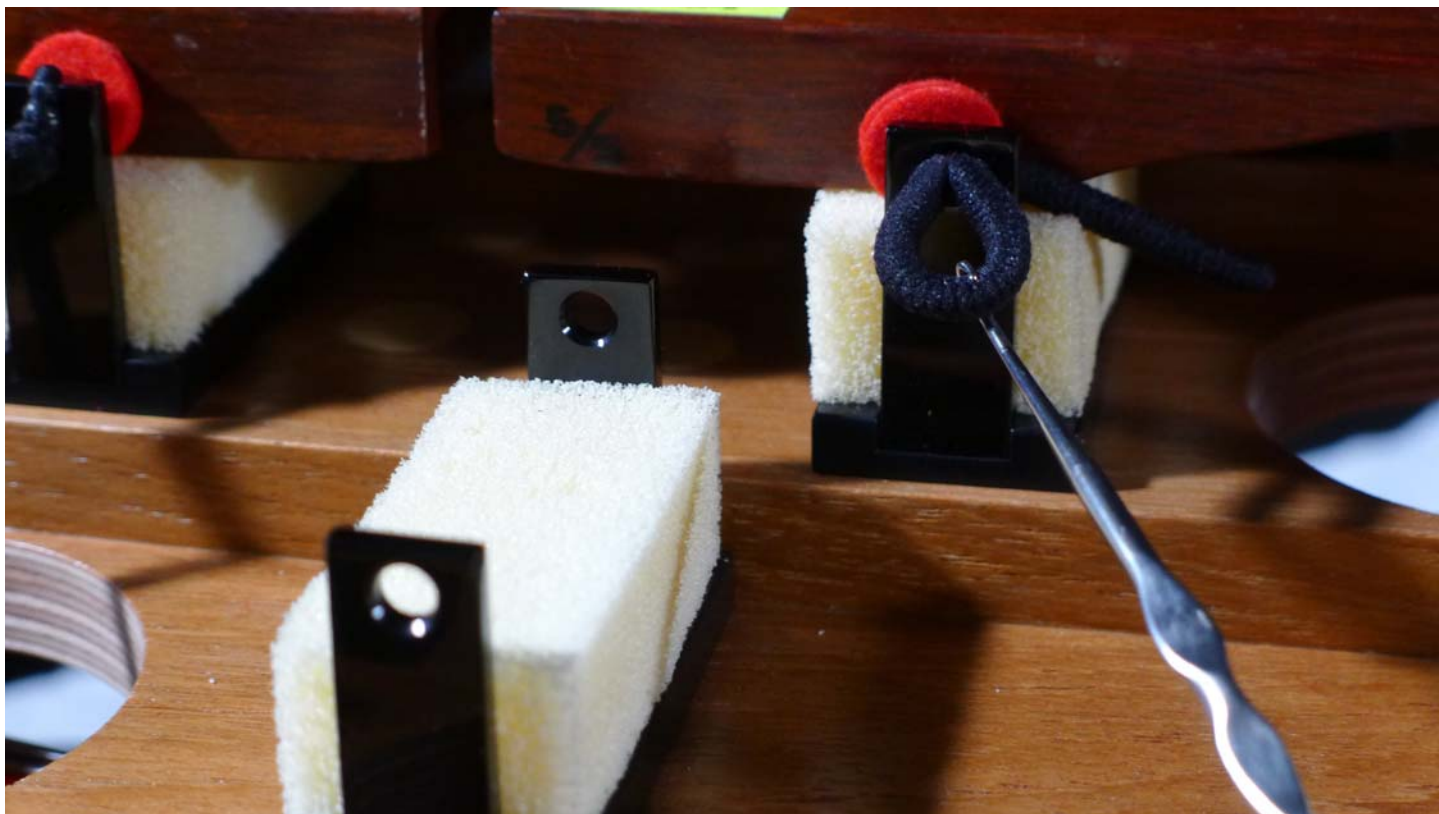
Once the pin and punchings are seated, remove the wedge.



In places where two brackets are not close together, simply thread the cord without a sling and without a wedge through the hole in the bracket.



(1) Thread the loose end of the cord through the bar hole. (2) Thread two more punchings on the cord and push them against the bar. (3) Pass a crochet hook, or any soft wire with a hook end, through the bracket hole. (4) Grab the loose cord end with the hook and pull the cord through the bracket hole. (5) Do not pull the cord all the way through the hole. Instead, stop pulling when the cord makes a loop outside the bracket.



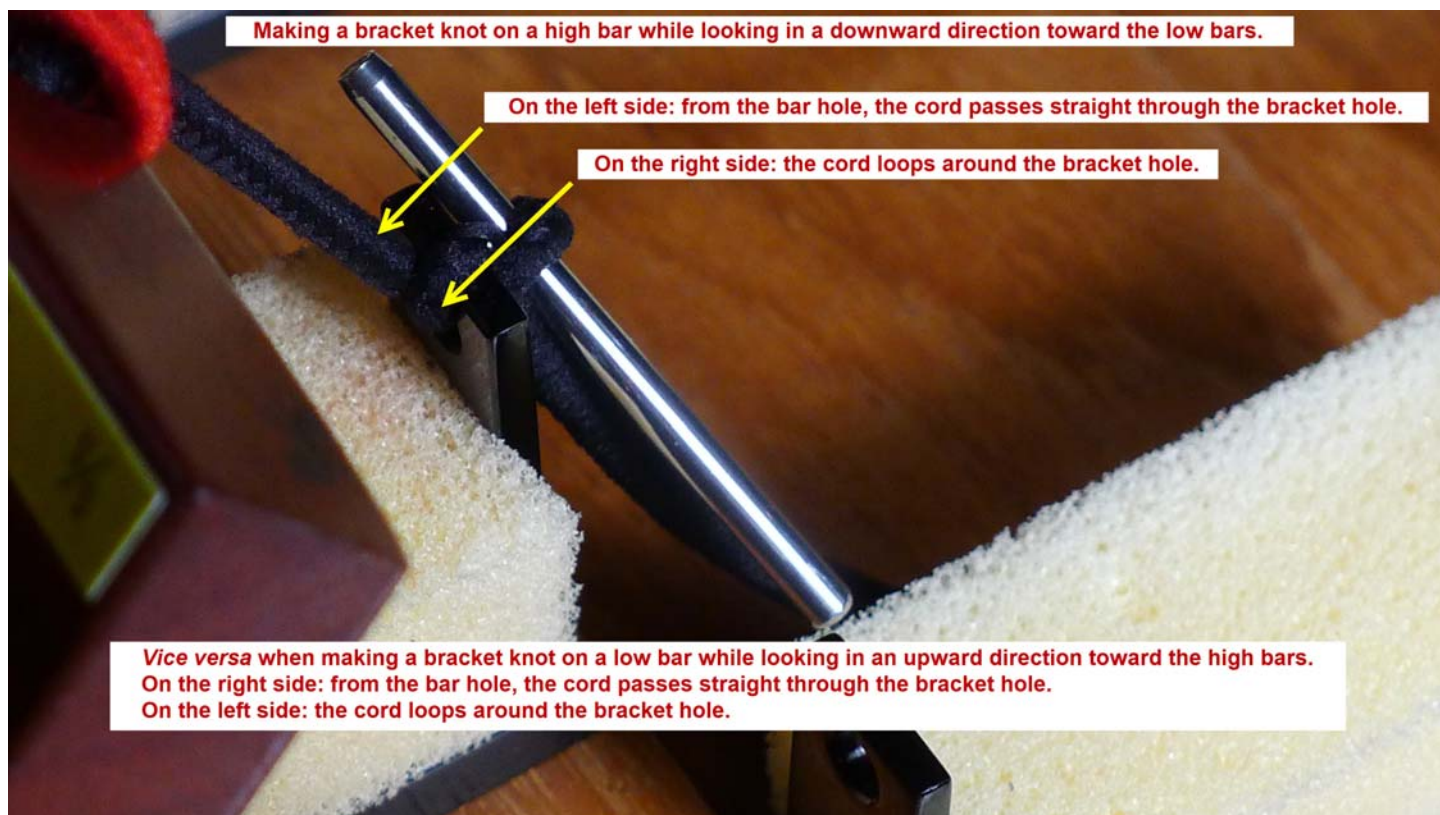
(1) Turn the loop two times in a counterclockwise direction. (2) Insert the loose end through the loop.



Insert a smooth pin into the open knot.



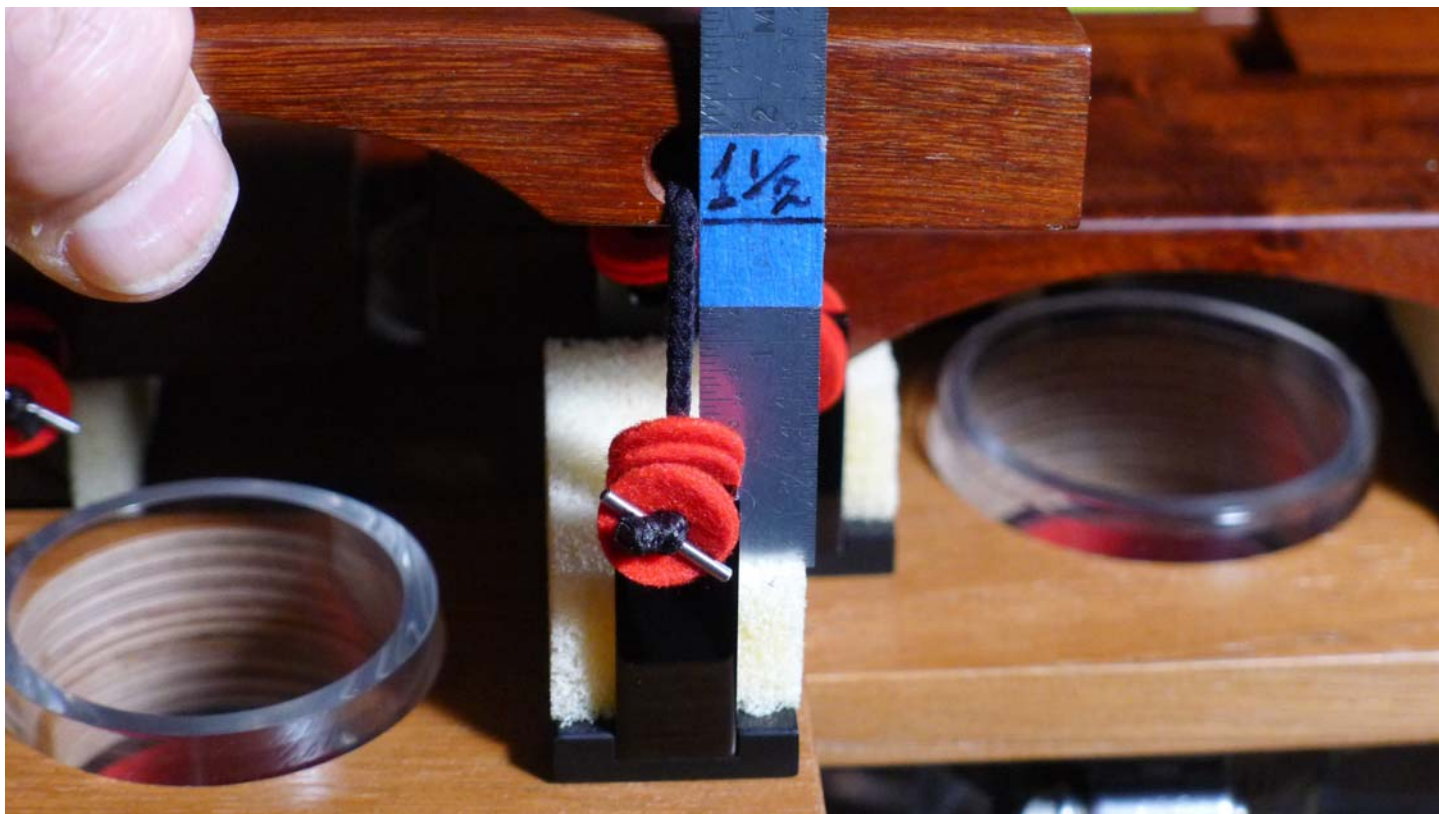
The loose knot with a pin should have the features described in the following graphic.



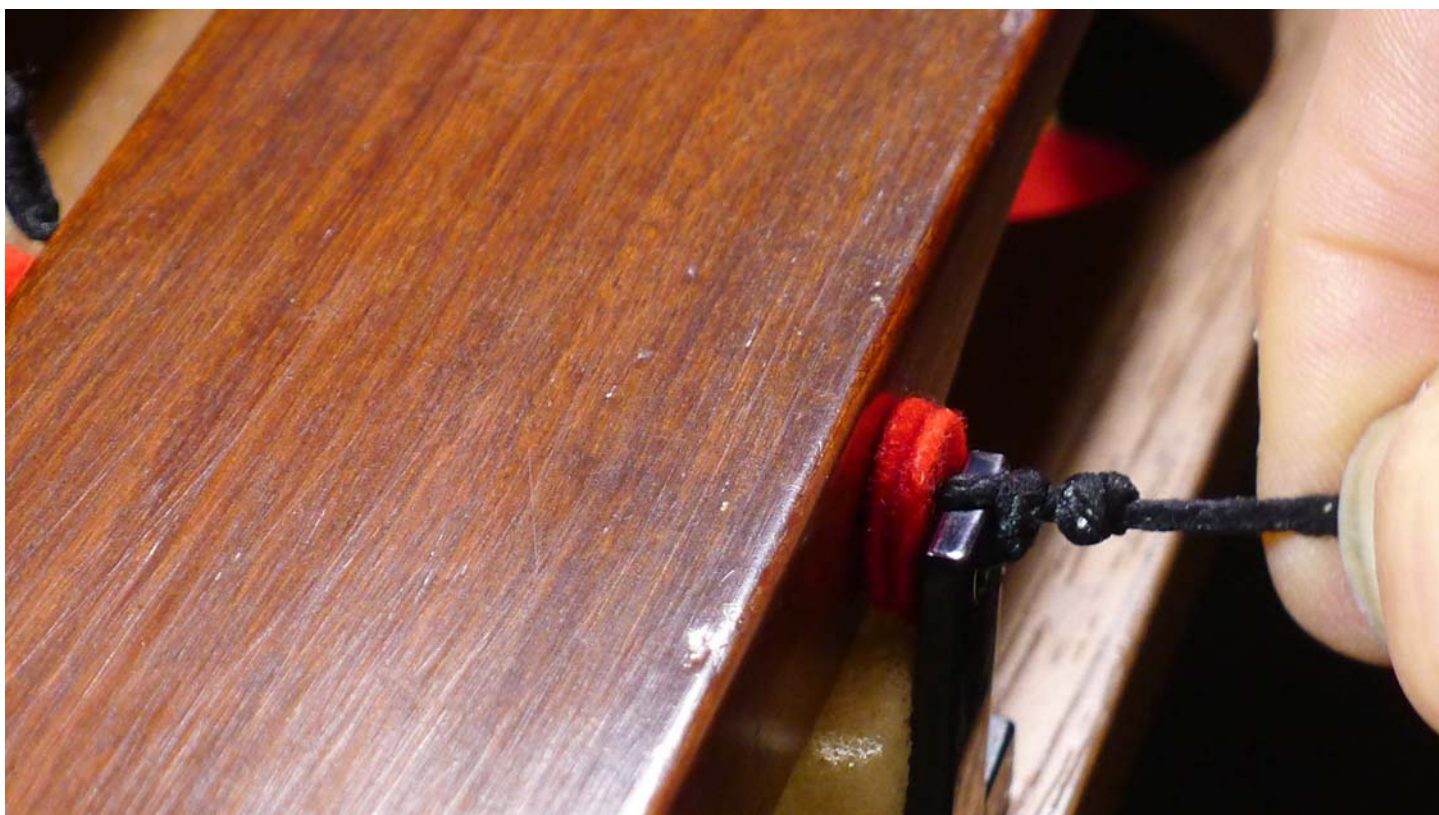
(1) Tension the cord by pulling on the loose end of the cord. (2) Check the tension of the cord by lifting the bar to its maximum height above the foam. At the maximum height, both ends of the bar should be $1\frac{1}{2}$ inches above the foam supports. If too low, pull on the pins to loosen the knot.



- (1) When the bar is at the desired height, tighten the knot against the pin. (2) Recheck the height of the bar.
- (3) Pull the pin out. (4) Retighten the knot against bracket.



Make a second simple knot as closely as possible to the bracket knot. This security knot prevents the bracket knot from being pulled through the bracket hole.



(1) For support, hold the knot with needle nose pliers and cut the cord approximately $\frac{1}{16}$ in. or less below the security knot. (2) With needle nose pliers, hold the knot away from the foam supports and singe the braided sheath at the end of the cord. (3) With needle nose pliers, color the end of the cord with a black permanent marker. (4) With needle nose pliers, push the two knots in a downward direction.



Short cord ends below the security knots are extremely important because they create a gap between the cords and the bars located directly below the ends; consequently, the cords will not make rattling or buzzing noises when these bars vibrate.

