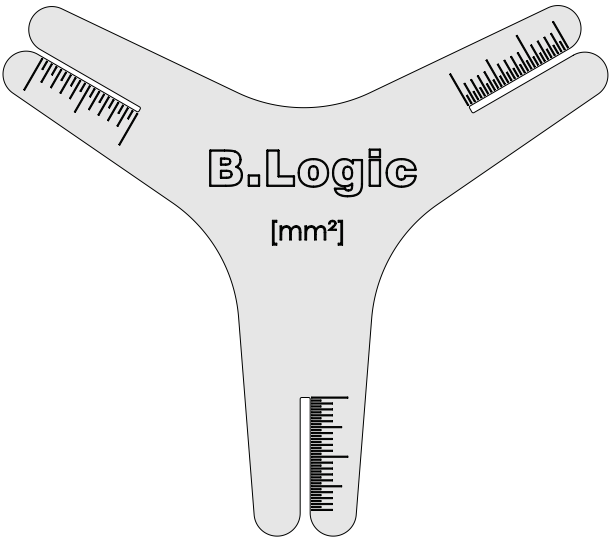


Type	Pernambuco	MÜSING	ARCUS
Violin	5 - 6,5	7,5	7 - 8
Viola	7 - 8,5	9,5	9 - 10
Cello	9 - 11	12	12 - 13
Bass	11 - 13,5	14	13 - 15

B.Logic



Precision Hair Gauge

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Basics

The hair and the stick of the bow act like two springs, and their elasticity must be matched precisely to provide the best possible playability.

The elasticity of the bow is a combination of the resiliency of the stick and the depth of its camber. The resiliency is the product of the modulus of elasticity of the material multiplied by the diameter of the stick to the fourth power. This is why a thicker bow stick made from a lighter and more flexible wood will still be more resilient than a thinner one made from a heavier and stiffer wood. As such, bows made from lighter wood usually have superior playing characteristics.

On the other hand, thinner sticks cut from denser wood normally draw a better sound, as the vibrations that run along the stick experience less deflection. Pernambuco wood with a higher density usually also features less damping than lighter wood.

Hollow made, thin-walled sticks from carbon fibre composites with a low resin content and precisely arranged fibres can offer even less damping than the best pernambuco sticks and can be made with significantly increased resiliency.

Recommended Hair Thickness in mm²

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These numbers refer to clean hair without a coat of rosin. To measure the hair, push into one of the three slots and compress gently with a finger.

With rosin the measurement is about 10% greater.

To identify the original thickness of a ribbon of hair that has lost hairs through use, the total hank underneath the slide can give a good indication.

Defining the Ideal Hair Thickness

The elasticity of a single horse hair, in relation to its cross section, is quite uniform. That is why it is possible to determine the elasticity of the entire hank by its volume or “thickness“ in mm².

(Counting hairs can be misleading, as their diameter can alter significantly.)

The ideal hair thickness is found, when the bow jumps easily but can still be nicely controlled.

Variables	Thicker hair	Thinner hair
Elasticity of the stick	stiffer	softer
Depth of camber	deeper	shallower
Playing control	calm / steady	bouncier / more lively / nervous
Sound	softer / warmer	cleaner / more brilliant

The hair thickness also influences the sound. A thinner ribbon supports a rather open and clear sound, while a thicker ribbon renders a sound that is a bit warmer and softer.

We recommend starting a rehair with a somewhat thicker hank to compensate for a loss of hair, for example by adding 0.5 mm² to the targeted final hair thickness.

We recommend mounting all hairs with their stronger end towards the frog. We usually measure the hair thickness from the frog end of the bow.

All Arcus bows made since 2010 feature an engraving of the ideal hear thickness. You can find this number to the left of the serial number on the underside of the stick.

