

Dutch violin

How does it work

Extremely short explanation.
There are four strings that vibrate.
The goal is to enhance the sound that the strings make.
There is a wooden box with two sound boards.
The bridge connect the strings to the two sound boards.

Frequency range is four octaves.
This means that the lowest frequency is 16 times slower than the highest ,if all other variables stay the same.
So to tap in to the energy of all vibrations you need different connections.

The legs of the bridge are connections for the high and low frequencies:

For high frequencies you need a fast connection
A smaller surface, lighter and with a higher tension.

For low frequencies you need a slow connection:
A larger surface, may be heavier and with a lower tension.

Wood is elastic and is used as a spring and sound board in one.
The thickness profiles of the sound boards are inverted.
Both sound boards have their own natural frequencies.
The bridge *also* connect the sound boards to *each other*, so these natural frequencies combine in a complex mesh.*
The sound boards will transfer energy to the surrounding air.
This is a dampening effect that reduces the hills and valleys in the mesh of natural vibrations in the sound boards.
This result in a more even enhancement of the sound.

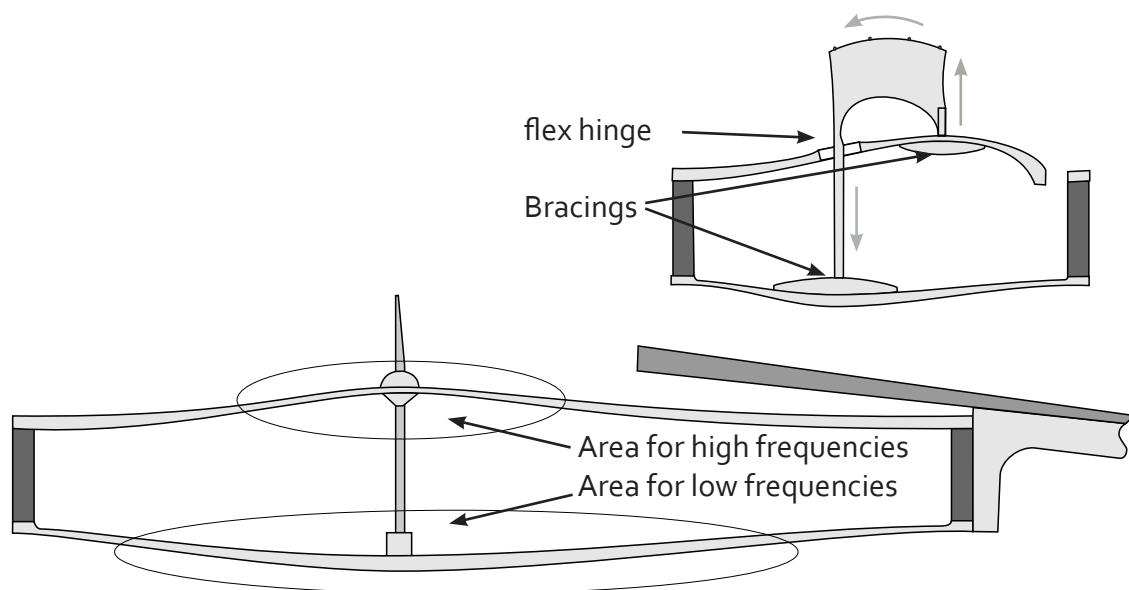
Two bracings spread the load of the strings on to the sound boards.



"X ray" top



"X ray" back



*Connect three strings together and you hear the same effect.