GRAND FINGERSTYLE

‘Did you know only 5% of your sting’s energy is converted to sound?’

Our Design Philosophy: Style, Stiffness, Lightness, Efficiency

So only 5% of the string's energy is converted to sound, right? OK, so if you're on a limited budget, what do you do? You make every little thing count. Inspired by hyper car design with smart construction that makes good use of energy, stiffness and strength-to-weight ratio, we set upon incorporating that into an acoustic guitar design.

The basic principle is that you need to make sure the energy goes where you want it to go and make it stay there. That means it has to travel most freely (without loss) and that acoustic impedance makes sure it doesn't go into parts that don't contribute to the sound.

So, with the string attached to a bridge and a nut, you need to make sure you don't lose anything at the nut end. That means you need a very stiff neck that doesn't absorb energy, like many of the 'softer' less vitreous neck woods, like Spanish cedar and some mahoganies.

That is why we are using solid Rosewood and maple for the neck, perfectly quarter sawn, in a five piece neck configuration. Our experience is that this is the best for stability and sustain. If a neck can make a very audible difference on an electric guitar, both in tone and sustain, it will also matter on an acoustic guitar.

Another part of the guitar that can drain energy is the sides, so we are using a double sides construction with two pieces of solid Rosewood as well a solid Rosewood lining. This will make for a much stiffer (and thus more efficient) construction and using rosewood for the linings and end block will balance the weight of the slightly heavier neck. This increases the acoustic impedance making sure any energy that moves to the sides is reflected back into the top.

Furthermore, we need to shed weight in the structure of the top and back that create stiffness. It is quite easy to increased stiffness while reducing weight if you start using architectural construction theory.

Using a pinless design we can also shed weight underneath the bridge because there is no need for bridge plate that can withstand the pressure of ball ends. So instead of using a solid (and heavy) piece of maple or rosewood, we can redesign the bridge plate to be just as stiff and strong but lighter. By increasing it’s surface we can do away with the lower braces to save more weight and gain efficiency.

Furthermore, we want to do away with the necessary for a neck reset. That is why we are using carbon fiber flying buttresses going from the neck to the sides and laminating the upper transverse brace with carbon fiber while supporting it with firm columns attached to the sides the guitar. None of this changes the sound, but greatly increases stability and rigidity; enough to give a lifetime warrantee to the original owner against neck resets.

Studying a lot of guitar physics and measurements, I have learned that rim of the guitar is very important and that the upper transverse brace is the edge of the top vibration. So, using a standard (scalloped) brace there is like a support beam with no solid connection to the walls. This is a place that needs to be completely strong and stiff, where no energy should leak out. Our design make sure energy is contained where we need it. A very strong Upper Transverse brace also helps the flying buttresses to keep the neck from rotating.

Another important part to look at is the bridge. It has a very specific target weight, the right design and the right materials of course. First off, the standard choice of ebony is actually quite poor, because it is hard to get that correct target weight. It is a very dead wood that as a very poor strength-to-weight ratio, so any super car builder would not be using such a material and neither are we. It is also low in vitreousness.

So, taking example from high-end nylon builders, who have an even smaller energy balance to work with, we will be using Brazilian Rosewood that is perfectly quartered and has the right tap tone and weight. Then you need a design that does not lose stiffness of the edges like some wings on current bridge designs. A pyramid bridge design is an excellent example of inefficient design because the wings flex and thus do not transfer energy, and instead lose it. It has very inefficient weight distribution as well.

However, a smart bridge design with the proper weight and stiffness is not enough. You also need to perfect location with regard to the X-braces and the finger braces to get good distribution of your vibrations.

Our use of A-bracing interconnecting with the upper transverse brace and neck increases stability in the weak region of the sound hole and it helps transfer neck vibrations to the top. Finally, you need a responsive back that is free to vibrate under minimal weight, so braces with weight reduction and carbon fiber supports where they are connected to the solid linings, make for a stiff yet light construction.

All this will create a very responsive instrument with a complex voice, with great sustain and good projection.

Comfort and design are also important, so the guitar will have two bevels, one for the arm and one for the tummy. We really wanted this to be like a hyper car among steel string guitars, so we designed a look that is organic and inspired by our favorite designers.

Waanders GRAND FINGERSTYLE

Specifications Waanders Grand Fingerstyle

- Master grade Alpine Spruce Top
- Master grade Madagascar Rosewood or Brazilian Rosewood back and sides
- Venetian Cutaway
- Armrest Bevel
- Tummy Bevel
- Waanders Soundports
- Fossil Ivory saddle and nut
- Macassar Ebony Bindings ,bevel and rosette
- 5-piece neck (brazilian/maple/brazilian)
- Stainless steel frets: Jescar FW37080-16-SS
- Gotoh 510 Cosmo black chrome Tuners
- Spanish Heel single neck/body construction
- Pinless Bridge (brazilian rosewood)
- Solid Rosewood linings
- Double Sides (Brazilian outside and Santa Rosewood inside)
- German Spruce bracing
- A-frame topbracing
- Open bracing
- Acoustic Spruce Honeycomb bridge plate
- Fretboard: ebony or Brazilian Rosewood
- Dubbel A-frame carbon Flying Buttress system
- Fretboard with Purfling en binding
- Macassar Ebony headplate and backplate
- Purfling for top BWBW+koa
- Side purfling BWBWB
- Perfect PLEK setup
- Smooth and finished insides for maximum reflection
- Custom Armitage Case

418 mm lower bout
310 mm upper bout
511 mm box length
120 mm deep at the tail block
100 mm deep at the head block
650 mm scale length
45 mm nut
60 mm string spacing
Radius fretboard: 16 inch

Laaudus

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