

GUARNERI *evolution*

THE PROJECT

Sonus faber

A tribute to Cremona and the classical soul

Sonus faber's tributes to the violin traditions from Cremona are the expression of a humanistic vision, one that the company has always sought in creating an authentic sense of musical experience.

Listening to music is ecstasy, seduction, rapture and intense pleasure: never should it be constriction or nuisance. This is the basis of our belief that natural and fatigue free listening are the keys to obtaining ideal sound reproduction: suggestive and sensual.

In this way we renew our tribute to the works of the master violinists of Cremona and their *modus operandi*, always watchful above all of the *Timbre*. The knowledge that allows for the obtaining of a *Timbre* is still our most vital source of inspiration.

The goal of evoking the sensuality of music also requires the use of perennial speakers, skilfully updated, knowing that they represent an unparalleled goal in terms of pure sound reproduction. The best performers, as a matter of fact, continue to use instruments that were built 250 years ago, in Cremona.

Giuseppe Guarneri del Gesù (Cremona 1698-1744) was the last and most prominent representative of a dynasty of violin makers, that for three generations worked in the era of the classic Cremonese workshops.

Recent and most precise historians paint the figure of a craftsman that during the first part of his career dedicated himself to the construction of instruments, following the most pure Cremonese style. They were perfect in terms of both esthetic and technical detail, traditional in their design and proportions, always, however, predicated by some element of creativity in their construction.

At a fairly young age, however, Guarneri reaches a decision, as if freeing himself from the chains of tradition that up to this point had in some way held him back. He began to create instruments that were incredibly innovative, concentrating not only on technical precision but more directed towards the resulting sound.

These are his most characteristic violins. The famous *Cannone*, so called thanks to the powerful sound it produced, was the most noted representative from this new production by Guarneri and it was the chosen instrument of Nicolò Paganini. Overall we are dealing with violins that were conceived with such forward thinking and with such freedom of construction that at times they were seen as wild. Each one contained innovations such as the lengthening of the sound holes, moving the corners a little bit, modifying the arching and probably also working on the thickness of the bellies and the backs.

Free thought and freedom of construction, equally, have led to the conception of **Guarneri Evolution**.

Guarneri Homage made by Sonus faber began the series of tributes to the Cremonese school of violin makers in 1993. A historic speaker that at that time represented a new path in the life of Sonus faber, thanks to its original lute shape. Its distinctive sound was expressed through its essential and transparent music reproduction.

The respect that we continue to have for this classic – a constant source of inspiration – and his prerogatives, is immense. Equally, the enormous amount of experience and knowledge we have gained through the years began to suggest to us that the Evolution of the Guarneri concept was a concrete possibility.

Furthermore, the deeper understanding of new historical findings concerning the life of Giuseppe Guarneri, struck us and freed us from the last concerns. If Guarneri Homage, and the following Guarneri Memento, reflect the more rigorous and traditional works of del Gesù, **Guarneri Evolution** is meant to recall the turning of the del Gesù in unconditional search of the Timbre.

The desire to allow the sound personality of a precious two-way system to mature to superior levels of quality, without undermining the original spirit, became so crucial. The same desire was the first motive of every project choice: to complete the celebrated original transparency with the warmth and tangibleness necessary for a seductive and evocative reproduction meant daring to step away from the traditional 5" driver and implementing a new 7" driver. A choice that was expressed by paying particular attention to the membrane composition and making full use of our most recent technologies in terms of loading systems. The increased energy thus unleashed led us to develop the acoustic enclosure, redefining its proportions and making use of new solutions linked to combining different materials, thus enhancing the virtues of the violin shape.

The new project confirms and modernizes another strong Sonus faber idea, of which the first Guarneri speaker was the earliest example: an acoustic instrument living in its environment becomes part of it, carrying out the functions of both a music source as well as being a beautiful piece of furniture. The design choices, the finishes of the new materials, the increased quality of the craftsmanship and the extreme attention paid to every detail are, just like the sound produced, the enhanced expression of this concept and the most concrete testimony that our everlasting values are not only deeply-rooted in the present, but also strengthened thanks to an Evolution process.

Guarneri Evolution expresses the renewal of continuity. An evolution made possible thanks to the combination of patented technical solutions that were developed through experience that brought us to the production of our flagship (the Sonus faber).

SYSTEM

2 way Lute shape compact monitor vented speaker system on a dedicated stand. Highly optimised speaker/floor decoupling thanks to the use of the L.V.T. (Low Vibration Transmission); a T.M.D. (Tuned Mass Damper) device is used to further dampen residual resonances through a thermo-kinetic conversion; the Stealth reflex para-a-periodic solution is used for venting the cabinet.

DRIVER UNITS, PHILOSOPHY

Despite having the most advanced technological instruments, in Sonus faber there is the deep-rooted and immovable certainty that the only true judge of design choices is, at the final stages, that incredible and unparalleled instrument, the human ear.

This is the principal aspect that inspires, ever since the birth of the company, the designing of the speaker systems.

In research phases every component is analysed, and eventually chosen, keeping this criteria in mind. All components used in **Guarneri Evolution** are built according to Sonus faber specifications, by the most skilled and renowned Scandinavian manufacturers. The drivers' final key steps are carried out by hand in Sonus faber before being sent to the assembly line. The tuning of every set of speakers (the selection and pairing) makes every couple unique, just like every violin made by the violin masters.

THE HIGH FREQUENCY SPECTRUM

The high frequency spectrum is handled by an Evolution version of a classic Ragnar Lian 29 mm Ultra dynamic linearity tweeter, visco-elastically decoupled from the front baffle. Ragnar Lian is the creator of the two best and most renowned in history soft dome 1.1" tweeters (the D28 and the D29), that are unmatched in terms of naturalness. The 'Evolution' version has been improved in order to optimize the extremely high frequencies, minimizing the anti-phase behaviour of the centre of the dome. The silk membrane, apart from having the traditional front coating, benefits from further work on the back of the diaphragm, through the application of a layer of viscose coating that distributes the deadening and progressively increases it towards the apex of the membrane.

THE MIDRANGE/LOW FREQUENCY SPECTRUM

The midrange/woofer is the key element among the transducers of the **Guarneri Evolution**. The Evolution from 5" to 7" increases the dynamics to the musical crescendos. The driver was chosen for its natural sound. The recipe for the diaphragm consists of an amalgamation of non-pressed cellulose pulp that is slowly stabilized through a natural process of air drying. The experience of adding papyrus to the cellulose pulp (the Sonus faber) has led us to discovering the beneficial characteristics of other natural fibres: Kapok, the lightest natural fibre in the world, and Kenaf, a fibre very similar to hemp. These fibers are included in the new formula. In this way we have been able to reduce colorations, typical of the classic formula, without losing anything in sound freshness. The powerful magnet system, with the 1.7" voice-coil and the triple Kellogg/Goeller copper rings make this unit eddy current free. Like the tweeter, the midrange/woofer is visco-elastically decoupled from the front baffle.

THE CROSSOVER

Special attention has been given to the design of the crossover, in order to address the musical criteria of the **Guarneri Evolution** project. The choices of the transfer functions along with the relative drive units, define the quality of the speaker system. The **Guarneri Evolution** crossover uses the progressive slope architecture. Great attention has been paid to have the best amplitude and phase response. One of the features of this cross-over system lies in the innovative form of filtering carried out for the high-pass of the tweeter and is called paracross topology.

The crossover frequency is 2800 Hz. The best possible quality in relation to sound performance, carefully evaluated by ears, was the central criteria for selecting the components for the crossover: Mundorf Supreme capacitors, Jantzen inductors.

Each circuit is treated, before being installed in the casing, with a viscose-bituminous covering material in order to eliminate any possible vibrations.

THE ACOUSTIC ENCLOSURE

The cabinet is the highest expression of the lute shape design. The progressive gentle curve, made of multilayer cross-grained okumè, is applied through separate smoothed layers, thus applying the technique of constrained layer damping. The acoustic environment of the transducer of mid bass is optimized to a degree of theoretical perfection. Sub-structural ribs are strategically placed inside the cabinet to strengthen it.

Guarneri Evolution introduces the S.M.D.: Surface Mass Damper system that minimizes any discolouring of the cabinet.

THE SUPPORT COLUMN

More than just a simple pedestal, the support column is a symbiotic element of **Guarneri Evolution**. An instrument that reflects some of the fundamental elements of the concept the Sonus faber such as L.V.T. (Low Vibration Transmission) otherwise known as a system of mechanical decoupling from the floor obtained through a specifically optimized elastomer suspension. It substantially reduces the transmission of spurious vibrations in the listening environment and inhibits the produce of damaging phenomenon such as acoustic feedback. The Anima Legata another derivative of the Sonus faber, is made up of two surfaces, worked and positioned orthogonally to a concentric compressed traction bar in the column. A thickening volumetric eliminates any resonance in the cavity of the column, thanks to the friction between the grains a thermo-kinetic dissipation is generated.

INNOVATIVE FEATURES

The Exo-Skeleton clamp is implemented by the 2 CNC machined avional nickel-plated end-covers (on the top and on the bottom of the cabinet). Their role is to control and constrain residual resonances of the enclosure walls. The two end-covers are linked by the dual avional rear wings, functioning as a high speed mechanical interface that conveys spurious vibrations to the base of the cabinet. A Tuned Mass Damper, with multiple tuning frequencies, as seen on record skycrapers and F1 cars, converts the residual vibrations into heat (thermo-kinetics) by out-of-phase vibrations.

The Stealth Reflex is the Sonus faber patented solution to implement a para-aperiodic vented system. Besides allowing to reduce the dimensions of the cabinet, better low frequency and lower distortions are reached. It has also the advantage of eliminating the port noises typical of classic bass-reflex systems.

The finishes of the wooden parts of the **Guarneri Evolution** see, as true to the highest level of violin makers, the extremely careful application of 7 layers of hand polished lacquer, carefully carried out by our craftsmen.

The Avional metal parts of the Exo-skeleton, on the other hand, feature high-tech, exclusive Nickel coating chemical processes. This surface finish is over 30 micron thick, extremely tough and homogeneous, with a remarkable resistance to corrosion. It is applied through a multiple phase process, with a first mirror polishing/coating step, carefully handmade by skilled craftsmanship, followed by a first material application. Two successive handmade polishing phases, each one spaced out with a material application having different chemical/timing specifications, complete a finishing that represents the best expression in its category.

Guarneri Evolution is yet another phenomenal example of our belief, 'Proudly hand crafted in Italy'.

'Enjoy the music'.