

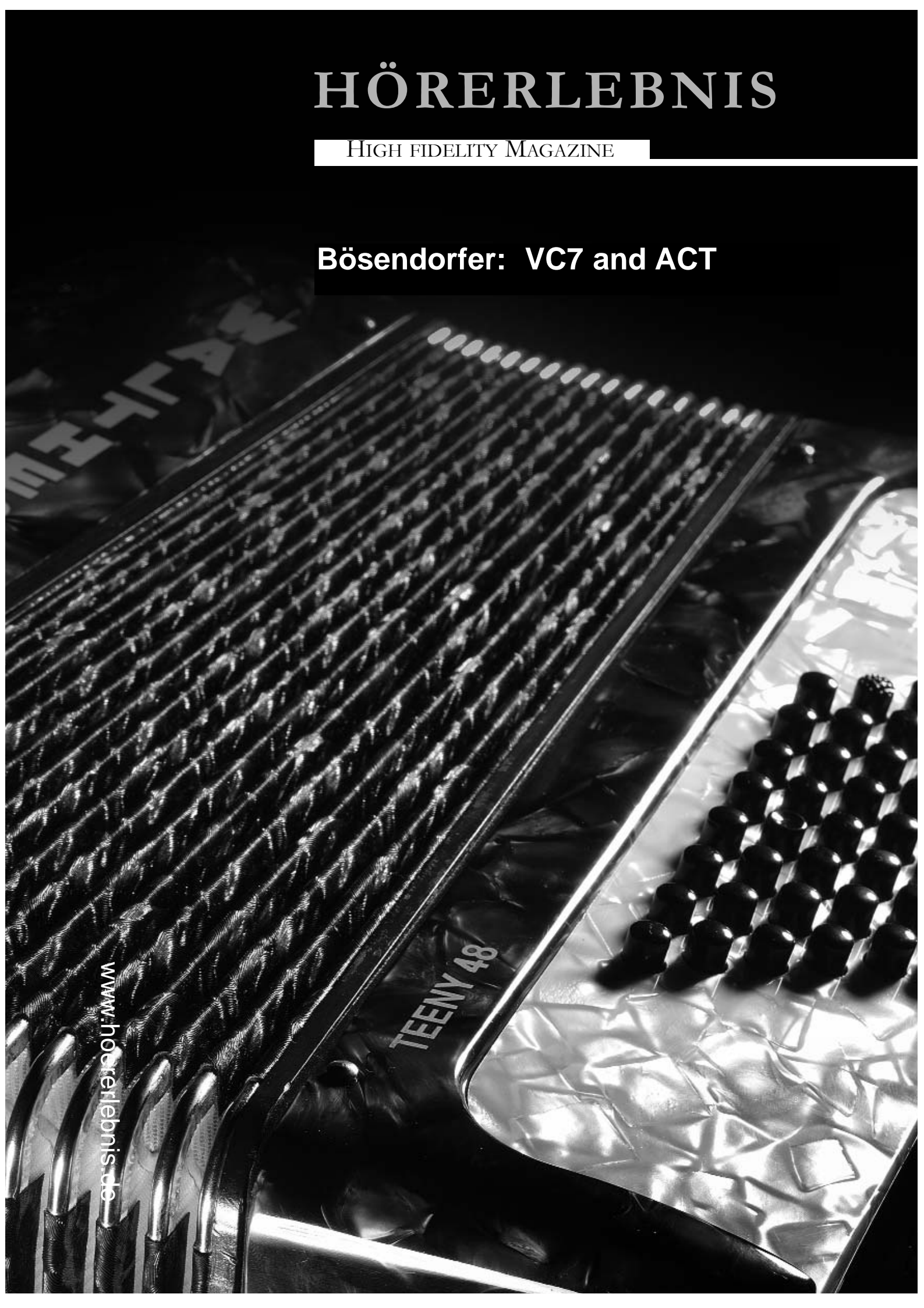
HÖRERLEBNIS

HIGH FIDELITY MAGAZINE

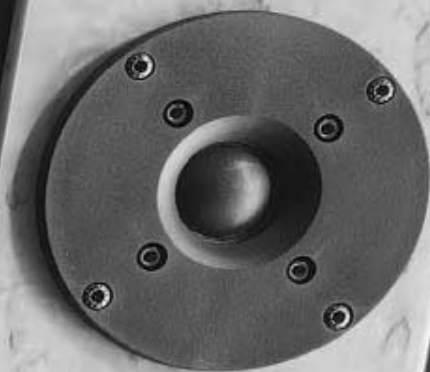
Bösendorfer: VC7 and ACT

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TEENY 48



Bosendorfer





"The Bliss Factor"

*(Translated from: HÖRERLEBNIS)
(A Listening Experience)
by Marco Kolke*

"Cometh the hour, cometh the man" says the old proverb in the sense that time will provide appropriate solutions. Development proceeds apace and new generations of products emerge which benefit from newly won scientific insights. Then inevitably, the next generation is there. The next generation of the VC7, the largest model in their loudspeaker line up, has now been introduced by the Austrian manufacturer Bösendorfer. This transducer is complemented by the Acoustic Cable Tuning system (ACT) including an HD - Shielding control unit, which represent, in the view of Dr. Rupert Löschnauer, responsible for Bösendorfer Audio, a revolution in sound reproduction.

Bösendorfer is known first and foremost as a piano manufacturer whose grand pianos, which set standards for both sound and quality, are to be seen in the most famous concert halls around the world. Jazz legends such as Oscar Peterson are faithful Bösendorfer customers. A few years ago Bösendorfer added loudspeakers to its range of products by entering into close co-operation with the acoustics expert, Professor Hans Deutsch who, as some peo-

ple know, is a trained opera singer and who worked successfully with Herbert von Karajan as his sound engineer (Tonmeister). To complete this personal profile it should be said that Hans Deutsch is also a trained physicist and acoustician.

VC7

The latest VC7 has retained its living room friendly measurement (1330h x 400d x 195w) as well as its very attractive design and two-way construction. At the front are located two silk dome tweeters impregnated with acrylic. On both side walls are two mid/bass units which fire directly onto the patented "Acoustic Sound Boards". The air is then trapped between the enclosure and the soundboard according to the Helmholtz/ Horn Resonance principle (further developed by Hans Deutsch) and then finally passed on to the room. The passive sound boards which are fixed at a clearly defined distance from the enclosure walls begin to vibrate and act as a large additional radiating surface. Tension screws allow for a precise control of the amplitude. Bösendorfer achieves by the way a similar effect with its concert grands by bracing the sound board. By mounting the mid/bass units symmetrically and in pairs on the sides of the enclosure, Hans Deutsch presents the listeners with an image that is



made up of both direct and reflected sound. As Hans Deutsch sees it, if the mids were to radiate from the front, it would lead to excessive bundling of the sound. The reproduction would be too direct which would lead to harshness and in the final analysis, to a coarse and undifferentiated sound.

The electro-dynamic drivers are manufactured to precise specifications determined by Hans Deutsch and therefore exhibit lower distortion. Hans Deutsch sees their advantage in their ability to move masses of air uniformly. This characteristic, necessary for the production of a lively, airy sound, he does not see realized in a linear fashion by ribbons, electrostatics or magnaplans.

For the mid/bass drivers, Hans Deutsch continues to favour a maché base in combination with carbon fibre as a cone material. The surrounds are not made from rubber, but rather from a UV radiation resistant foam compound without its own resonant frequency. The use of steel guarantees the greatest possible rigidity of the basket. Hans Deutsch also rejects the use of aluminium as a carrier for the coil. Kevlar, an optimally stiff and linearly damped material has proved itself for this purpose. "Fundamentally the ideal chassis construction is not determined by the largest magnet, the most powerful coil or the lightest cone material, but by an optimally balanced compromise," says Hans Deutsch. The same does not apply to the enclosure walls. The best solution is to make them as thick as possible. One would never use packing material or artificial inserts between the

drivers and the mounting surface.

Crossover technology is kept totally minimalistic. Hans Deutsch is of the view that only first order crossovers produce linear distortion. Steeper slopes imply nonlinear distortion. According to his calculations, amplitude frequency and intermodulation distortions as well as impulse modulated distortions are maximized which then exert a considerable effect on the sound. With the Bösendorfer loudspeakers he therefore attempted to harmonize the enclosure and the drive units so perfectly that it was scarcely necessary to make corrections even with simple crossovers. This results in a very lively and spacious reproduction of sound.

In the meantime Bösendorfer has taken over complete responsibility for the production of the loudspeakers in their own factory. That is a blessing. Naturally the previous standard of finish was very good. Now the production standards are incomparably higher.

The enclosure walls are made of highly concentrated low resonance, specially layered wood, (piano lids) and are coated "according to the art of the traditional piano maker" with several layers of varnish. The matching of the veneers for each pair requires great expertise. Particular attention is given to the matching of harmonious patterns in the wood structure as well as ornaments and embellishments. The finish is amongst the best I have ever experienced. My enthusiasm is shared by an expert friend of mine who is an engineer for wood technology and responsible as the director of a famous international concern for the produc-

tion of high quality luxury goods. It has never happened before that instead of listening to music, we spent the whole evening discussing the supreme quality of the workmanship. With the VC7, one has a genuine "Bösendorfer" in one's own four walls.

Acoustic Cable Tuning (ACT)

According to Hans Deutsch, the loudspeakers and the room are inseparable. The sound waves produced by the loudspeaker drivers are not only perceived by the ears as sound. At the same time the vibrations in the air excite the room and all objects within it as well as the transducers themselves. To achieve the best possible loss-free transmission of the signal, Hans Deutsch has proceeded beyond the adjustable "Acoustic Sound Resonators" which allow for the harmonization of the VC7 with the room and together with Bösendorfer, has developed Acoustic Cable Tuning (Antenna 1&2 with HD-Shielding). In doing so he has drawn on scientific insights gained by the NASA space program in their research into the effects of resonance.

Interpreted in terms of audiophile reproduction, an essential factor influencing the reproduction is the feedback of the sound intensity coming from the vibrations or alternatively their density in the carrier medium air with the room acting as a conductor.

What we know about the effects of positioning crossovers inside or outside the enclosure, ie. that sound differences are essentially determined by the given sound intensity, is equally valid for loudspeaker cables laid out in a room. The

greater density present inside the enclosure and the accompanying influence on the sound can be compensated for by choosing cable with a somewhat laid back characteristic in the lower frequencies, provided that all relevant parameters are known and can be measured precisely.

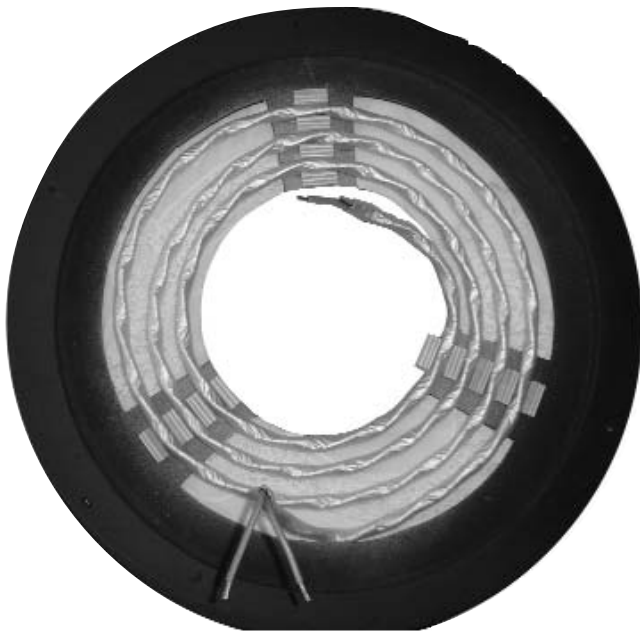
If, on the one hand, the close working together of the loudspeakers and the room is a known phenomenon which determines their optimal placement in the room, then it follows that the sound and the sound intensity in the air will have an effect on the reproduction quality of loudspeakers located in the room. Bösendorfer and Hans Deutsch can define the nature of this feedback. By using the ACT equipment this feedback can be modulated to fur-

ther optimize the realistic reproduction of the sound.

Antenna 1 reacts to airborne sounds. To capture these airborne vibrations, cables are connected to the loudspeaker in parallel with the signal cables and laid out in a random pattern in the room. They are open to the amplifier, but are connected by one conductor to the low frequency drivers in a circular enclosure. The cables and the drivers act as sensors for airborne sounds and their density in the room and are subject to the radiation impedance. Both circular enclosures for the left and right are placed if at all possible in a semicircle behind the main loudspeakers.

Antenna 2 is an ingenious cable system that registers the sound coming





The ACT - System consists of two circular enclosures, one for each channel, into which have been mounted two loudspeaker drivers (see left) and a spiral made up of cable (see above). The circular enclosures are located behind the main loudspeakers.

On the HD-Shielding control unit, small diodes indicate the chosen current.

from the floor. Here also cables are connected in parallel with the signal cables and are laid, this time, parallel to them. They are open to the amplifier.

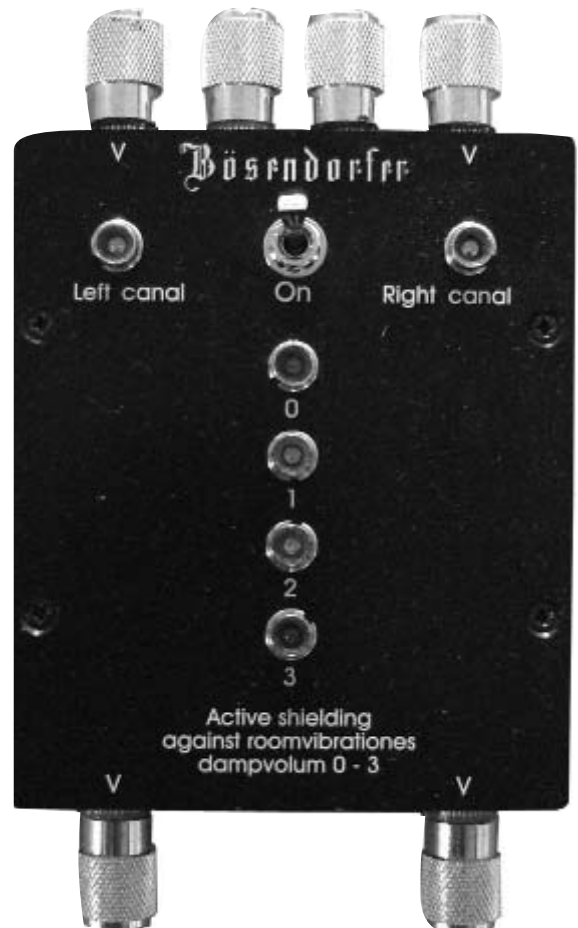
The HD-Shielding control unit is a current regulating and monitoring system (20mA and 15.4 Volts DC), which is used both with Antenna 1 and Antenna 2. Its job is to electronically isolate the signal cable from sound degradation coming from the room and the sound field within the room.

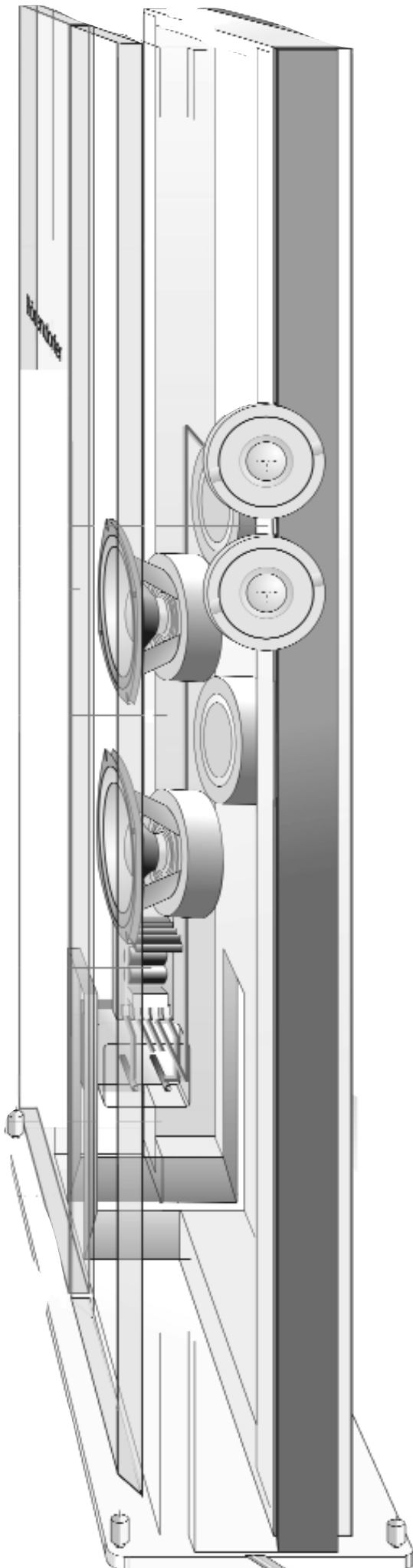
It is adjusted by means of the current switch located on the underside of the power supply. The value chosen is shown by the coloured diodes. A change in the setting brings about a significant change in the sound image which can be adapted to compensate for room conditions or to one's personal taste. This system works in direct contrast to

the desired effects gained by the use of Antenna 1 and 2. Nevertheless ACT and HD-Shielding complement each other through the way in which they are used: while Antenna 1 and 2 amplify positive musical resonances coming via acoustic feedback, HD-Shielding eliminates excessive and false resonances.

Commentary

To Hans Deutsch resonances are the very foundation of lifelike sound. One has to decide which resonances enhance the sound (musical resonances) and which resonances have a negative effect (false resonances) To want to indiscriminately dampen out all resonances and to attempt to straighten up frequency curves by means of costly crossovers is for him not the right approach. He sees





his loudspeakers as instruments which exhibit excellent and harmonious resonance properties.

High quality audiophile sound reproduction can only, to his way of thinking, be measured with great difficulty, or indeed not at all. Therefore Hans Deutsch introduced the concept of the "Bliss Factor" as a measure of quality, by which he means that it expresses the degree of personal well-being and acceptance experienced by the listener. With the VC7 this factor is very high and indeed Hans Deutsch has concluded work on this loudspeaker. "It is finished", he said.

Often one's first impressions determine whether one wants to go on listening to a hitherto unknown component. Many incorrect judgments are made by inexperienced audiophiles after having a superficial listen. But even for music lovers who are secure in their judgments, the fascination of some component may lie in particular characteristics that are immediately apparent. Through decades of hi-fi technical mal-education of our hearing, the perception of music is concentrated on the middle frequencies. Nobody notices that the highs and lows don't have the same quality and that musical images are distorted and lacking in homogeneity. The VC7 with ACT will immediately catch the attention of sensitive listeners and they will be delighted. Right away I was pleasantly surprised. Voices have an inner coherence which is unbelievable (Marta Topferova: "La Marea", Harmonia Mundi -World Village). Extreme examples are mezzo sopranos; through most loudspeakers they sound brittle, a



In famous concert halls Bösendorfer loudspeakers support the live sound (see ceiling installation). These sound systems are now offered world wide (see above). This cutaway drawing illustrates the construction of the VC7 (see left).

little hard and raw and through bad loudspeakers, downright annoying. The Bösendorfer flagship on the other hand can reproduce voices so smoothly that listening becomes a listening experience (Noa: "Ave Maria", Geffen). The recording is reproduced with a natural pliancy, a warm timbre and sensuous touch that is difficult to describe. Very few loudspeakers that I know can do that. It is the same with instruments such as piano, guitar and flute, the use of the VC7 gives one the impression that the

music lives right out there in front ("Showcase", Opus 3 2100).

If one listens more consciously, a dynamic wealth of detail with very precisely defined contours opens up over the whole frequency range. The presentation is at once lively, room filling, with subtle detail and is completely homogeneous. I don't perceive any discontinuity between the two tweeters and the four mid/bass drivers; the transition is seamless perhaps, because of the very nature of the construction there can be no unpleasant effects from the crossover.

Even in a loudspeaker like the VC7 compromises have to be made in reproducing the low frequencies. Hans

Deutsch opted for transparency and sound pressure rather than for a saturated voluminous bass. Well defined contours are more to my taste. The fact that this loudspeaker even after long periods of listening always remains expressive and easy on the ear is no doubt attributable to the very sensitive voicing (Brahms "Horn Trio" Opus 40, Mercury). Through the VC7 one can for example detect the finest subtleties when comparing cables so that one has a first class working tool or one can just relax and listen to music (Louis van Dijk: "I could have danced all night" van den Hul 99CR04).

These Bösendorfer loudspeakers are as sensitive to placement as they are good at reproducing music. The quality of the reproduction depends very heavily on the degree to which the speakers are angled. As Hans Deutsch developed them to be as free as possible from phase errors, they react when turning-in to the most minute changes down to the millimeter level. (The task is to achieve the correct phase pattern in the reproduction which is made up of a layering of direct and indirect radiation. It is this phase pattern that is mainly responsible for the plasticity of the representation of instruments and voices in the room and indeed the representation of the room itself). In my listening room (4.7m x 11m) I prefer a front location that allows the loudspeakers to stand as freely as possibly with a distance of 3m between them and a distance of 2.5m from the back wall. While music was playing I stood on the outside of the loudspeaker, tipped it back a little so that only the rear corner

facing me remained on the floor, resting on its Black Diamond shoe. The loudspeaker can now be turned in and out without much effort. The correct position has been achieved when the sound is rounded, colourful and three dimensional, the exact opposite of flat and shallow. Once the correct position has been achieved, there is no longer any doubt as to where the musicians are located on the stage with the furthest corners totally illuminated. One has to make an effort of will to remove oneself from the charm of the music played through these loudspeakers. It is the uniformity and completeness of the music that is undeniably the strength of this transducer. (Anna Netrebko: "Violetta" , DGG - Clearaudio).

Everything is believable and convincing because of its realness which if it were absent would make the reproduction taste of hi-fi. The full warmth of a wooden drum is very flattering, the balance between chest and throat of a singer, even with the critical baritone voice, is well realized. A grand piano in the bass area is not just a piano but a Bösendorfer. It is an instrument full of life that one can feel and one perceives in the air around the piano.

Hans Deutsch has created with the VC7 a loudspeaker which in its various dimensions constantly achieves the correct proportions. This includes the size of the cabinet as well as the living room friendly timeless design. Likewise, the mature construction right down to the smallest detail, but above all, it is the rarely heard harmoniousness of the sound that makes the VC7 an exceptional musical transducer. In achieving

this, Acoustic Cable Tuning plays no small part. If after setting up and allowing a little time to get used to it, the difference to the "naked" VC7 is clearly discernable; then after considerable listening it becomes absolutely striking.

One might say that it resembles the jump in quality experienced by moving up from the smaller model to the VC7: a degree of improvement that justifies the price. The natural character of voices and instruments is enhanced by ACT. Fine shadings in the music are reproduced effortlessly. In particular I found voices (Fritz Wunderlich: Der junge FW", Clearaudio) to be more finely nuanced, more detailed in the fundamental tones and more velvety. Also the VC7 handles sudden large increases in volume when reproducing large orchestras with greater ease, so that the ability to differentiate is greatly increased. This is augmented by a gain in the wealth of colour, warmth and substance. The most important thing for me is the increase in sensuousness and the radiation of inner power which carries one away and imbues the music with a captivating quality and earns the synergistic combination of VC7 and ACT an absolutely top mark on the upwardly open "bliss-scale". *MK*

Translation: Dr. Charles Cull

Technical Specification:

The Product: VC7

Price: About Euro 5,000 each.

Acoustic Cable Tuning

Euro 5,000 pair.

Manufacturer and Distributor: L.

Bösendorfer Piano Works Ltd

Graf Starbemberg - Gasse 14
Telephone: 43 (1) 504 66 51 0
Email: audio@boesendorfer.com
Internet: www.boesendorfer.com

Review Equipment:

Turntable: Transrotor Eternita, Transrotor Fat Bob, Pluto 12a

Tonearm: SME V, SME 3012R, SME 312, Pluto 5a Special, Pluto 2 A. SME 2-12-Zoll, Unify from Clearaudio

Cartridges: Clearaudio Titanium, van den Hul Black Beauty and Condor

Transformer: Ortofon SPU T 100

CD Player: Burmester 916, Phonosophie Impulse 2 and Power Control 3;

SACD Player: XA Sony 333 ES from Clockwork DAC 980, Audio Alchemy DTI 3.2

Preamplifier: Burmester 808 MK V, Phonosophie Bi Control 2 and Power Control 2

Phono Stage: Blue Amp Model 42 and Surzur, EAR 834 (2x)

Power amplifier: Burmester 911 MKII (Mono), Phonosophie Bi-Stage Twin 1/ 4

Integrated Amplifiers: Unison Research Simply 845 (Triode), Symponic Line RG 14

Loudspeakers: Acapella Violincello, Bösendorfer V7R and ACT, ASW Genius 401, Jupiter von Deuvel Loudspeaker, C5 MK II from Ascendo

Cables (NF/LS/Power): Acapella (Silver), Dolphin Black and Gold, Sun-wire, HMS-Gran Finale, NF 3S/LS3S/NK 3 from Klang and Kunst, HMS-Phonocable Gran Finale Jubilee, Phonocable Sun-wire (3x), Power cable Phonosophie, Peter Feldmann Electronic, Power board: Phonosophie, Bi-wiring Adapter from Phonosophie

Power Conditioning: Power Animator and Optimizer from Artkustik, Burmester

Powerconditioner, Wanddosen AG from Phonosophie, Power conditioner from Peter Feldmann, Tuning Chips from Perfect Sound

Isolating Bases: Pagode Master Reference from Finite Elemente, Copulare Tonbases, Acapella-Musikbases (also for Loudspeakers)

Room tuning: Sound resonator from Acoustic Systems, Super Tools (JH +JJ) from Audio Tuning Tools, Room animator from Artkustik/Phonosophie, Harmonizer from Stein Music

Cleaners: Audiotop (Acapella), Fast Audio, LP Washing Machine D. Matrix from Clearaudio