



# Golden

**Do you know Quad Electrostatics? While some people will shrug their shoulders, hi-fi aficionados will lick their lips in anticipation – the British loudspeakers are setting the standards for high fidelity for more than five decades...**

# Hearing

No, they really don't look like classic loudspeakers. And inside the enclosure no traditional cardboard membrane works as a sound transducer. And no, they don't sound like traditional loudspeakers. They sound much better. If you ever had the pleasure to hear electrostatic loudspeakers in action, you will understand why for more than half a century those British miracles of sound are the first choice for sound engineers and studio musicians. But let's start from the beginning. What is an electrostatic

loudspeaker, who invented it and how does it work? Nobody is better qualified to answer these questions than Manfred Stein from Gering in the German Eifel. Since the end of the 70s the trained merchant has nurtured hi-fi components of the British manufacturer Quad – before he and his business partner Frank Hirsch advanced in the 80s from Quad dealer to Quad importer. However, while the young team in Germany soon was enjoying record sales, the manufacturer in England was slowly going down

*Stockroom: Quite a few transducers are still waiting patiently for their reactivation*

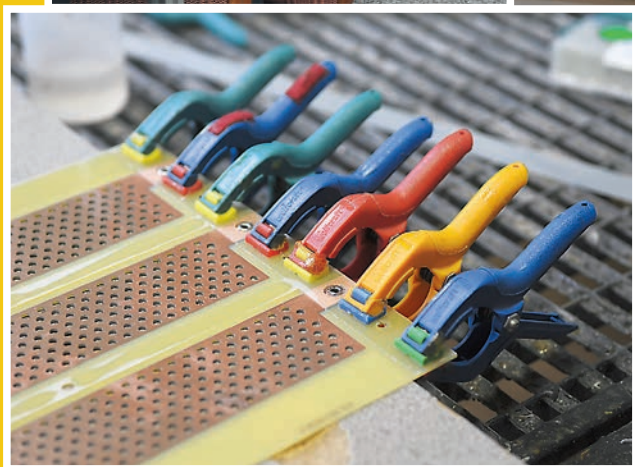




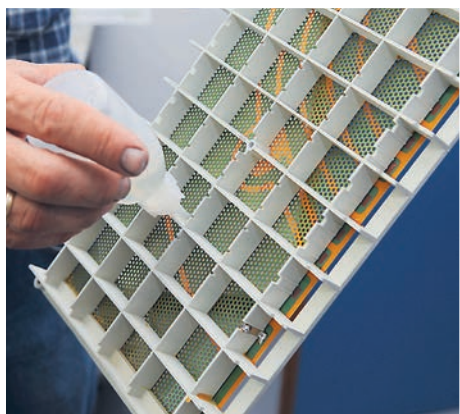
*The Quad Musikwiedergabe manufactures about 300 pairs of electrostatic loudspeakers per year.*



*Over the years many stators waiting for reactivation have accumulated in the Eifel. There's plenty of replenishment.*



*Radio and television engineer Bernd Michel glues the 0,5 mm sheet spacers on the circuit boards*



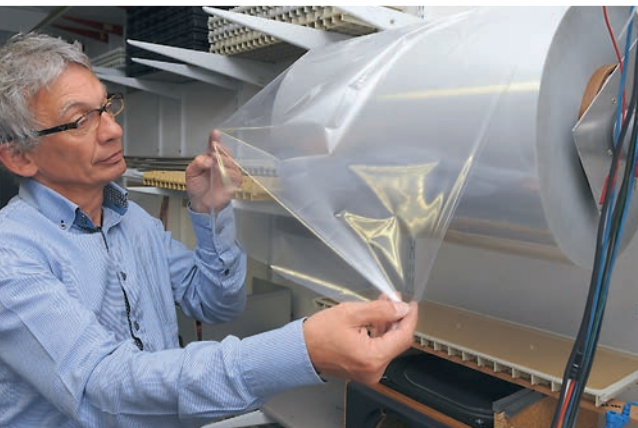
*No undesired vibrations: All the connections on the stators are newly glued.*



*Dry dock: Before the next production step the special glue on the freshly glued plastic stators must thoroughly harden. The slightest carelessness during the preparatory work can be audible in the final product...*

the drain: too high manufacturing costs, immense investments in new digital electronics and the resignation of the innovative company founder Peter Walker overstrained the small family business. When Quad was finally sold to a Chinese corporation, Peter Walker helped to transfer know-how and manufacturing equipment to the Eifel. "This allowed us to manufacture the tube amplifiers and legendary loudspeakers ourselves," Manfred Stein remembers his "turbulent 80s".

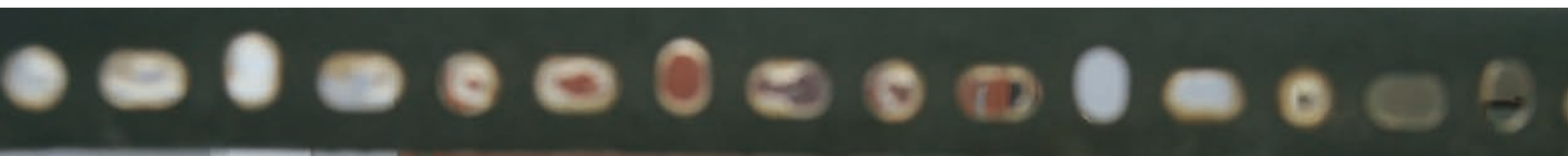
The extraordinary transducers are regarded as the masterpiece of the bustling engineer and saxophone player Peter Walker. "Instead of using magnets and relatively inert cardboard membranes for sound generation, Walker's innovation uses a thin sheet of polyester with a diameter of only 3/1000th of a millimeter," Stein explains. "The sheet is coated and conductive and vibrates at voltages of up to 6000 volts between two metal grids. Thus electrical impulses are transformed into sound."



The extremely tearproof and solid Mylar film has a thickness of 3/1000th mm

Before its "marriage" to the strator it is mounted very evenly in a special frame.

The sheet must lie absolutely flat and wrinkle-free above the strator, before it can be processed in the "oven".



Sharine Jansen moves the skid with the sheeted strator into the heating chamber. To eliminate tensions in the material the frame "braises" for 15 seconds at about 300 degrees Fahrenheit.

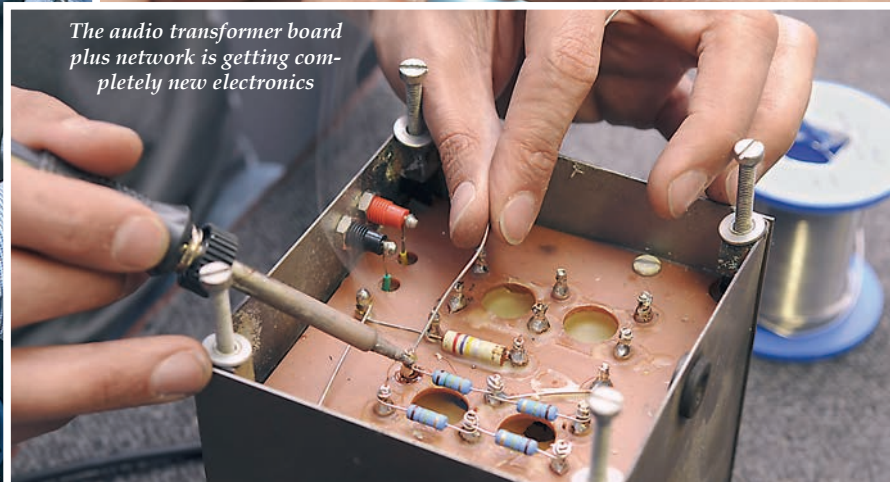
And listen how it is accomplished! The mass of the ultra-thin Mylar film is being moved only slightly and thus ensures an extremely sensitive response. The results are crystal-clear transparency and differentiated sound reproduction.

"If you love classical music or jazz, you will appreciate the detailed imaging of the individual instruments," Manfred Stein raves. But it's true: When you close your eyes you will feel like sitting directly in front of the orchestra and when you focus

on the violoncellist you can hear her breathe ... Unfortunately the clientele is as clearly defined as the sound of the British loudspeakers. For hard rock, pop or techno fans the Quads are only suitable to a limited extent: If you are looking for punch-



The ultra-thin sheet is coated with a graphitic lacquer to make it conductible



The audio transformer board plus network is getting completely new electronics

*Diodes, resistors, capacitors, integrated circuits – each spare part is available in sufficient quantities*



The storeroom contains templates for all the wooden parts of the electrostatics



The Quad team is doing all the woodwork too ...

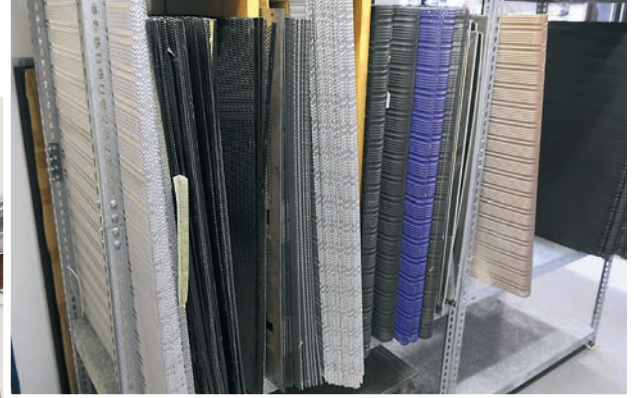
ing basses, the electrostatics are not for you – unless you are willing to use a separate subwoofer for low end support. But if you are looking for absolutely natural fidelity the electrostatic design is unsurpassed to this day. At the moment the Quad team

around Manfred Stein is mainly refurbishing veteran ESL57 and ESL63 models. By now, these loudspeakers come from all over the world to the Eifel, where they are technically and optically prepared for the next decades. And the customer determines how far the restoration goes. No



Each refurbished loudspeaker will be thoroughly tested before it leaves the manufacture

*Final assembly: Chief technician Marco Weber mounts a cover to protect the delicate inner workings of the electrostatics.*



*The original tools are still used to manufacture the distinct front panel grids.*



### The Address

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matter if only a small scratch or the front panel grid or the entire inner workings have to be repaired – Stein offers individual solutions for every hi-fi follower. And he is not satisfied until his customer smiles happily. He even offers prospects a small vacation home within the manufacture where they can audition and compare different models in a relaxed and undisturbed atmosphere.

For many fans of electrostatic loudspeakers Gering has become the center of their audio world: Each autumn Manfred Stein hosts his famous Quad festival in the German highlands – a weekend full of acoustic events and listening adventures. Like-minded people from all over Europe meet to play their favorite music, share experiences or bring their own electrostats for general overhaul.

And how is the cooperation with the Chinese trademark holder? “We have a very friendly business relationship,” Stein reports. “While the Chinese have specialized in manufacturing the last hi-fi series developed in England, we focus mainly on the classic models.”



*Weber seals the rear with a transparent foil to protect the delicate Mylar film and stators from dust – blow-dried crease-free, of course!*

*Just to make sure: The rear of the soundboard must also be closed with a thin metal grid*





*The gems are carefully packaged before they are shipped.*



*Unmatched warm sound: The old Quad tube amplifiers are still sought-after by many music lovers*



*As the refurbished loudspeakers have to travel long distances by parcel post, Stein designed special shipping cartons.*

And they include not only the electrostatic loudspeakers but the legendary British tube amplifiers as well. From the metal enclosure to the smallest capacitor - Manfred Stein has all the ingredients and the necessary expertise to whip those old devices into shape again. The electrostatic Float-QA headphones - developed by sound engineer Jürg Jecklin - are manufactured in the Eifel as well.

Every pleasure has its price, of course. "A refurbished pair of ESLs from our stock is available from 3600 Euros upwards," Stein explains. "A brand-new pair of Quad transducers can cost up to 13000 Euros." Is this asking too much? Certainly not - no orchestra in the world would play for this salary in your living room every day ...

**Text and photos: Martin Brüggemann**



*Electrostatics in pocket size: The Float-QA headphones developed by sound engineer Jürg Jecklin are manufactured in the Eifel as well.*