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SPECIAL REPRINT

Loudspeaker cables from
in-akustik

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Test: **Phono-Vorstufe von Brinkmann**
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Family ties

German manufacturers in-akustik have invested a lot of time in developing their new family of cables. Do they improve the sound? Which cables are the best? Stereoplay gives the answers in a world exclusive.

“In order to top the audio quality of the successful 02 cable range without a major rise in price, we needed a new approach,” explains in-akustik developer Holger Wachsmann.

He found this new approach in the hollow conductor principle. In this form of construction the conductor is a hollow tube and is particularly suited to high frequency signals. Wachsmann uses this structural characteristic in modified form in the company’s latest cables.

His conductors are not genuine hollow conductors. Instead they consist of stranded conductors wound around a polyethylene core. The product names indicate the number of conductors in each version of the cable. The 603 has six and the 803 eight, while the 1203 has twelve of these special conductors to call on and the 1603 sixteen. However, the sister LS 603 and LS 803 pairs are configured differently to the LS 1203 and LS 1603. While the LS 603 and 803 conductors have two layers of 42 wires with a

diameter of 0.2 millimetres, the LS 1203 and 1603 have one layer of 17 copper strips of 0.25 millimetres in diameter. The LS 603 thus has a cross section of 3.96 square millimetres and the LS 803 5.3. In the case of the LS 1203, at 4.4mm², this is then somewhat less. Due to its number of conductors, the LS 1603 comes up with 5.84mm², thus also having the lowest pure Ohmic resistance.

A noticeable consequence of the cable structure being made up of conductors wound in alternating polarity around a polyethylene core is low inductance, which prevents any dramatic increase in resistance in the high frequency range. The very modest capacity is also unlikely to cause any amplifier problems.

However, we were not quite so happy with the physical quality of the BFA plugs in the Reference series.

Despite rhodanised contact surfaces, they caused heightened levels of contact resistance, as the surfaces to which the cables are screwed are very small.

It is therefore advisable to use the Reference cable lugs or practical screw connectors, with which it is also possible to change the type of connection retrospectively between BFA plugs, cable lugs or pins.

As is usual for stereoplay, as well as the reference system we also had less expensive combinations lined up for the listening test. In this way you notice whether it’s only in one particular combination that a cable sounds especially good or bad.

In all configurations the Reference LS 603 was soon already showing that it had little in common with the old range. The comparison with the LS 602 (tested in March 2004; €330) was quickly done: the increase in subtlety, bass control and spatial imaging after switching to the LS 603 was so striking that it was impossible to talk of them being in a similar league.

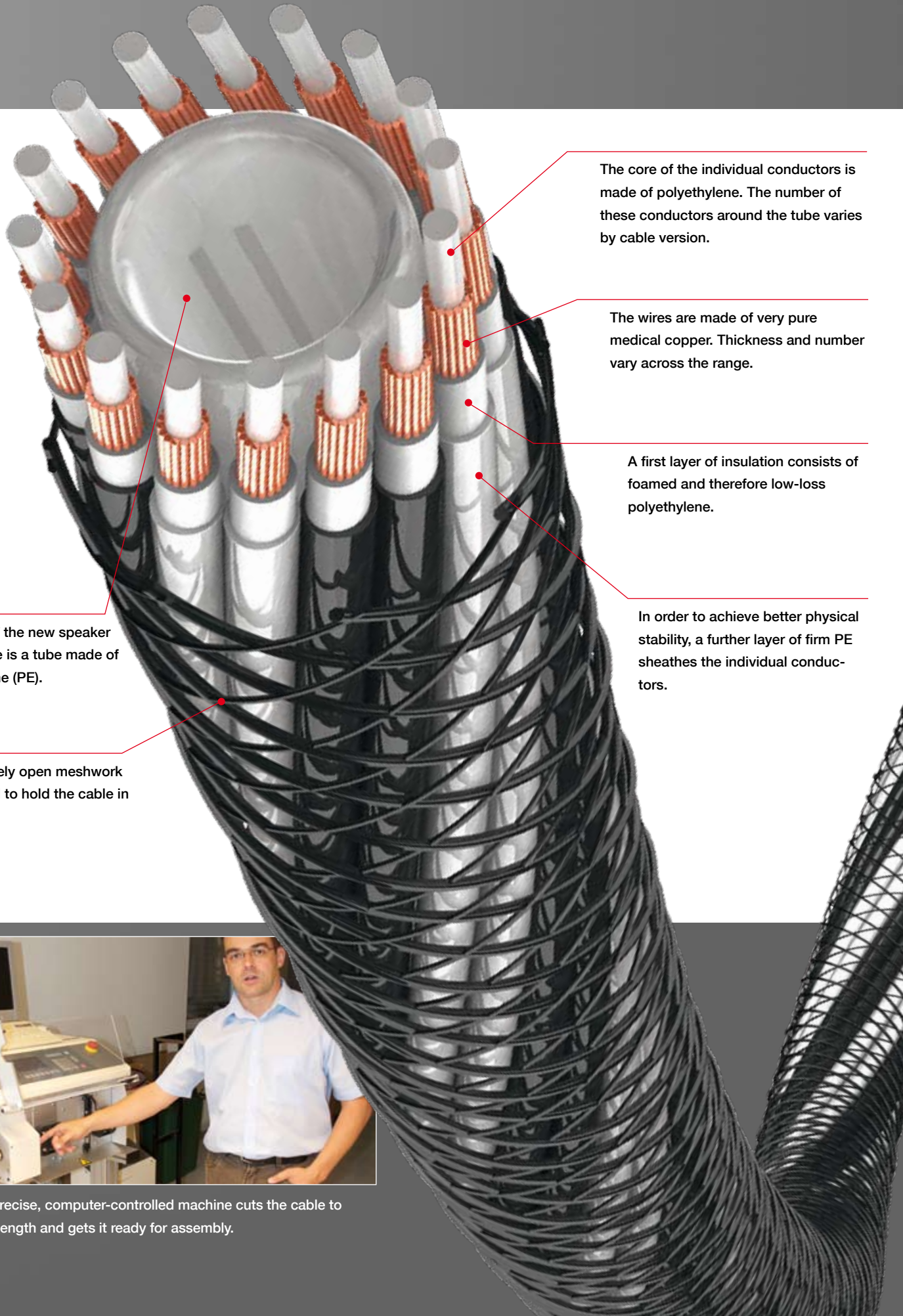
The LS 1102 (tested in March 2004; €510) was more of a true rival. But here too the LS 603 created a somewhat more subtle portrayal, sounded ►



At the company’s premises in southern Germany every cable is tailor-made by hand to the customer’s specification.



The complex cable structure calls for steady hands while attaching plugs. An extractor draws off solder fumes created in the process.



The core of the individual conductors is made of polyethylene. The number of these conductors around the tube varies by cable version.

The wires are made of very pure medical copper. Thickness and number vary across the range.

A first layer of insulation consists of foamed and therefore low-loss polyethylene.

In order to achieve better physical stability, a further layer of firm PE sheathes the individual conductors.

The core of the new speaker cable range is a tube made of polyethylene (PE).

A deliberately open meshwork is designed to hold the cable in shape.



The highly precise, computer-controlled machine cuts the cable to the desired length and gets it ready for assembly.



The new BFA plugs are physically not very robust.



The cable lugs have contact surfaces with rhodium coating.



The splitter, which separates the outgoing and return conductors, is made of solid metal.

more expressive and defined the instruments more precisely. The LS 1102 could counter that only with a somewhat heartier performance.

The LS 603 thus received one point more and a stereoplay Highlight rating.

The LS 803 impressed with an even broader, more markedly dynamic sound. The testers thus heard more during quiet sections and forte entrances came more effortlessly. The LS 803 took on the older LS 1302 (tested in October 2007; €660). While the 803 was not quite able to convey the

textured portrayal of the 1302, the testers did feel that with the interplay of the musicians the new cable was somewhat more spirited and coherent.

A stalemate was the end result, stereoplay understanding why in-akustik will no longer be selling the more expensive LS 1302.

The LS 1203 made another clear acoustic leap forward. It caused instruments to be reproduced more naturally and emphasised voices more distinctively. It thus dared to take on the HMS Concertato (tested in

February 2010 and deemed a stereoplay Highlight; €880). The challenger from in-akustik did not have to back down here, instead earning itself a draw.

While the HMS presented the somewhat more pleasant treble tones and delivered sharper imaging, the LS 1203 countered with more zest and musicality, plus more clearly articulated voices.

The crowning glory of in-akustik's new cable family is, however, the 1603. It came up with an even more natural sound. It was thus superior both to its smaller brother and the HMS

Concertato and was allowed to pit itself against the Goldkabel Executive LS 440 (tested in July 2010; €1,500).

The 440 was minimally more direct and punchy, but the Reference LS 1603 could unravel forte passages better.

And when the full orchestra was playing, the listeners separated the individual instruments from each other more effortlessly. The LS 1603 thus ended up not only equal on points but also with a stereoplay Highlight rating.

Dalibor Beric ■



in-akustik Referenz LS 603 (Stereo 2 x 3 metres)

stereoplay test verdict

Sound increase (8)



Sound good

Value for money outstanding



in-akustik Referenz LS 803 (Stereo 2 x 3 metres)

stereoplay test verdict

Sound increase (10)



Sound good

Value for money very good



in-akustik Referenz LS 1203 (Stereo 2 x 3 metres)

stereoplay test verdict

Sound increase (13)



Sound good - very good

Value for money very good



in-akustik Referenz LS 1603 (Stereo 2 x 3 metres)

stereoplay test verdict

Sound increase (14)

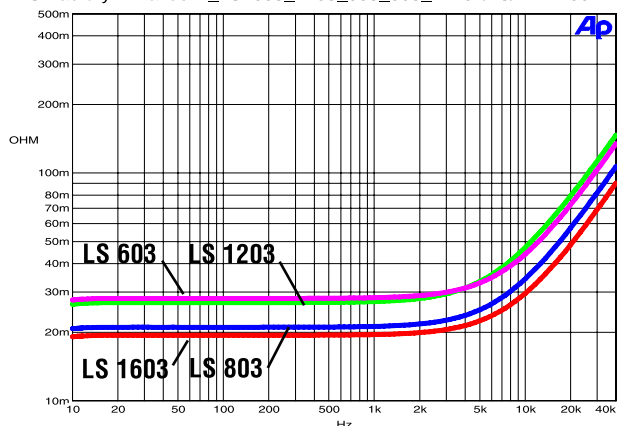


Sound good - very good

Value for money outstanding

From the test lab

TESTfactory Inakustik_LS1603_1203_803_603_z 07/25/11 12:00:22



Resistance

With normal loudspeakers where their membranes are excited into emitting sound by voice coils within a permanent magnet the current flowing through the coils generates the driving power. When it comes to speaker cables it is consequently their level of resistance and the series inductance that exert the greatest influence on signal transfer. The objective in cable development is to keep these two values as low as possible. The more towards the bottom left of the diagram the curve begins, the lower the cable resistance and the later it starts to rise, the lower its level of inductance. The art lies in achieving the right balance between these two parameters that impact on each other. And in the process an eye also needs to be kept on a third value: the parallel capacitance. If this becomes too high, it puts an additional strain on the amplifier, which can indirectly have a negative influence on the sound. Here, however, with a maximum of 305 picofarads per metre the test candidates have no problem.

Peter Schüller



Conclusion

**Dalibor
Beric**
Editor

The new in-akustik Reference 03 family of cables has not only succeeded in going one better than its predecessors, but also in setting new standards. Even the LS 603, for example, shines with sensitive reproduction and a price that is still reasonable for such handcrafted gems. That's rewarded with a stereoplay Highlight rating. The LS 803

and the LS 1203 are also among the very best in their class. Head of the family, however, is the LS 1603, which paints pictures of sound using very natural colours and can thus be the right accompaniment for many systems, including very high quality ones. Therefore it may now also proudly call itself a stereoplay Highlight!

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