Schoeps V4 U

It's a brand that is famous for its range of excellent small diaphragm mics yet most recently it's also developed its reputation as a true innovator. JON THORNTON finds innovation and excellence in its new studio mic.

When is a small diaphragm capacitor mic not a small diaphragm capacitor mic? When it's trying to be a large diaphragm capacitor microphone. OK, so that's something of a simplification, but in essence this is the idea at the heart of Schoeps' new studio vocal microphone. Venerated and long established, the German manufacturer is probably best known for the discrete and exclusively small diaphragm capacitor microphones that account for the bulk of its offering. Of course, the rationale for the small diaphragm capacitor (SDC) approach is well understood — better linearity in on-axis response and, in the case of pressure gradient capsules, greater homogeneity of off-axis responses across the frequency range. Yet it's a fact of life that the majority of microphones favoured for studio-based applications — and let's use the tag 'studio vocal microphone' even if we know that their use is wider than that — are large diaphragm designs.

One reason could be that in contemporary music recording (as opposed, for example, to classical music recording) the off-axis response is less of an influence on the overall sound. Close microphone techniques, treated studio areas and artificial reverb all conspire to make this the case. But in making a decision to design a studio vocal microphone, the folks at Schoeps decided to determine for themselves exactly what the characteristics of such a microphone should be, and which (if any) traits of a LDC were desirable.

Their listening tests somewhat unsurprisingly concluded that 'naturalness' was the most important factor — and that this was best served by having as even an off-axis response as possible. Another, related consideration was the diffuse field response of the microphone and again the consensus was that this should track the on-axis response smoothly without drawing attention to itself. One trait of LDC designs though is that the on-axis polar response starts to narrow earlier than SDC designs — entirely due to the increased diameter size on a pressure gradient capsule. And this narrowing has some effect on the diffuse field response causing it to roll off earlier.

This characteristic, Schoeps decided, was something that was desirable in a studio microphone — but what to do? On the one hand the smoothness of response seems to call for a SDC, but on the other hand this narrowing effect suggests that a large diaphragm is the way to go. The answer lies in a unique capsule design that mates a tapered collar to a small diaphragm capsule, giving it an effective diameter for certain acoustic conditions of 33mm –- certainly large diaphragm territory –- while preserving the desirable characteristics of a small diaphragm design. Of course, there's nothing new about using mechanical acoustic modifiers — the use of nosecones or ball-shaped acoustic pressure equalisers on the end of DPA mics is relatively familiar, for example. But what seems a relatively simple idea is the result of extensive testing and virtualisation. And it's not just an existing capsule bolted onto a collar; the capsule and collar have been engineered to work as one resulting in a capsule that, while drawing on existing designs, is essentially new.

First shown at the IBC exhibition, the looks of the V4 U pay unashamed homage to an earlier Schoeps design from the 1950s — the CM51/3. And a handsome looking microphone it is too, with the teardrop shaped capsule assembly sitting atop a narrow tube having more than a slight RKO look about it and capable of swivelling forwards and backwards just like its vintage ancestor. The unit supplied for review was a final preproduction version meaning that the body wasn't finished in the intended particular shade of blue but in all other respects it was identical to production versions *(It's available in blue and grey colour options. Ed.)*

In addition to the capsule, the internals have moved on somewhat from the CM51/3's Telefunken tube. Electronics are now solid state, and balanced right through the circuit topology from the impedance convertor to the transformerless output in a quest for the lowest noise and highest SPL handling. The review model shipped in a wooden box and was supplied with a Rycote universal suspension mount. I believe that the option of the same mount or a fixed clip will be available with the production version.

The published specs are certainly impressive especially at low frequencies where there's almost complete consistency in the polar pattern from 6kHz down. This tightens above 6kHz, resulting in a diffuse field response that tracks the on-axis response faithfully before gracefully falling away from about this point. The on-axis response is relatively flat, with just a very gentle HF lift from about 4kHz through to 18kHz.

Setting up the microphone and performing a quick walk around is startling — the off-axis response is tremendously smooth and consistent and that diffuse field response means that there's almost no sense of colouration to ambience or other off-axis sounds other than that gentle HF roll-off. It's probably the most impressive microphone I've heard in this respect. Given that it's promoted as a vocal mic, female sung vocals were next. Initial impressions are that it sounds clear, precise and surprisingly rich — think Brauner precision coupled with a little 414 weight. Reduce the working distance and the proximity effect is noticeable from about 10cm distance and to my ears it seems to kick in a little higher up than with the Brauner Phantom used for comparison. At 10cm away this complements some voices but any closer and it starts to muddy rather than add weight to the sound.

In general the V4 U seems to work in vocal and other applications (acoustic guitar, electric guitar, bongos and a cajón were all paraded in front of it) with a little bit of space but the surprising thing is just how good it sounds when you do. There's still a terrific sense of focus on the source, but a depth to the sound and any space it's in that never intrudes or sounds dissonant — and here I may have found the ultimate mic for working with guitar cabs at moderate distances, by the way. It certainly never sounds like a small diaphragm capacitor mic in most applications but neither does it sound quite like a large diaphragm design — it's sometimes the 'imperfections' that give these their individual characters.

Which isn't to say that the V4U is characterless –- far from it. It has a character all of its own and even after a relatively short acquaintance I'd add it to our mic cupboard in a heartbeat. It's a great example of clever thinking, innovation and even its price (Euro 2050) is reasonable in the scale of things. I'd suggest that you don't think of it as just a 'studio vocal mic' — it's so much more than that.

PROS	**Precise, solid yet smooth sound; astonishingly smooth off-axis response, great sense of focus on a variety of sources; quiet; solid build.**
CONS	**May not have the immediately obvious 'character' of some LDCs; proximity effect a little overblown in low mids.**

Contact
SCHOEPS, GERMANY
Web: www.schoeps.de