KIT REVIEW

Wolze Hardware Phono Preamp

Reviewed by Eric Barbour

Thanks to the DIY revolution in the audio scene, more people are willing to try their hand at kit construction. And thanks to this willingness, more and more kits are being offered to the public. Unfortunately, many of the existing kits are not really suitable for the beginner—the days of Heathkit-level and Eico-level assembly manuals and support are behind us forever. If skill is required to build a kit, many budding audiophiles might be (and often are) disgruntled enough to go back to web-surfing or other "easy" hobbies.

Fortunately, occasional *GA* contributor Dave Wolze has started a small company to offer audio kits that are truly easy to build. His Wolze Hardware Company kits will be available through Antique Electronic Supply (6221 S. Maple Ave., Tempe, AZ 85283, (480) 820-5411, Fax (480) 820-4643, E-mail info@tubesandmore.com) at first, with distribution to other countries possible in the future. The retail price is $225.

PHOTO 1: The assembled Wolze preamp.

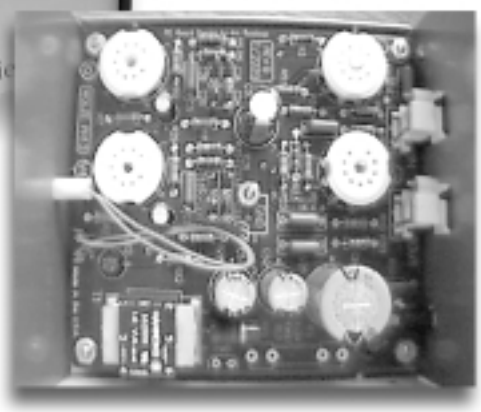

PHOTO 2: Inside the preamp.

KIT PARTS

After I offered him some general tips on how such a kit should be designed, Dave plunged ahead with his own design for a small RIAA-equalized phono preamp, built entirely on a PC board (including the input and output jacks). Wolze discovered that the EF86 was still being made in Russia, and that it was capable of excellent performance, although it has been criminally underused by the audio industry. In spite of its pentode construction, the EF86 was designed for low-noise audio applications—and designed to sound good, unlike some of the triode tubes currently in vogue. Dave passed me a preliminary copy of the kit for review.

Because all of the components mount on the single PC board, I assembled the preamp with great ease (*Photo 1*). I estimate that someone with a small amount of kit-building experience could assemble this in two hours or less. This is a marked improvement over the low-cost kits offered by firms such as ASUSA and Electronic Tonalities, which usually involve point-to-point wiring and greater skill. In the Wolze preamp (and in future products from Wolze), you simply stuff and solder the PC board, install it in the cabinet using standoffs, plug in the tubes, put the cover on, and plug the finished device into the system (*Photo 2*).

A small 18V AC "wall wart" power adapter provides the power. Although some people don't like these devices, in this case a wall wart offers some advantages: lower cabinet cost, smaller cabinet size, and the ability to sell the preamp anywhere in the world simply by changing the adapter to suit the local AC supply and socket configuration.

The AC is rectified and filtered to give 24V DC to run the tube heaters (wired in series), while the raw AC is run through the secondary of a small filament transformer. 120V AC appears across the primary of this transformer (mounted directly on the PC board), which is rectified and filtered to give approximately 140V DC for plate power. This scheme is simpler, more ingenious, and far less expensive than a specialized transformer.

The preamp's channel circuit, which also displays considerable ingenuity, consists of only two EF86 pentodes, directly coupled and having a feedback loop that provides the RIAA phono equalization. There is only one coupling capacitor in the circuit—on the output. Computer people would call this a "clever hack," since it uses many repetitions of a few (minimum) identical components, while requiring only one high-precision resistor to achieve good RIAA equalization matching. The following line stage or power amplifier should have an input impedance of 250kW or greater.

The stock tubes included are four Svetlana EF86s, which work extremely well. If you wish slightly better sonic performance, you can upgrade to top-quality NOS EF86s, such as Telefunken, Siemens, or Amperex (at considerable extra cost). You can also retrofit WIMA capacitors (available from Antique Electronic Supply) for a small performance improvement. The coupling capacitor was chosen to help suppress low frequencies due to record warp; the manufacturer does not recommend large-value coupling capacitors for this reason.

LISTENING TESTS

In case readers are not aware of it, this design is similar to that used in certain classic European hi-fi preamps, such as the Quad 22 and the Leak "Point One Stereo." Such vintage items have risen

sharply in price, since Asian audiophiles have discovered that they deliver a pleasant, well-balanced sound with excellent stereo imaging. Unlike so many "modern" preamps, which commonly use 6DJ8-type triodes for their higher transconductance (and thus lower noise, assuming a good-quality 6DJ8 of course!), the classic two-EF86 arrangement gives a beautiful, sweet, and defect-free tonality, without frequency-response problems.

Listening was conducted with an Empire turntable, having an Audio-Technica arm and middle-line ADC moving-magnet cartridge. Such components are of the type often used by audiophiles on a budget, who I see as the primary market for this preamp.

In my listening tests, I found that the Wolze phono stage has a sound quality amazingly similar to that of the classic Leak preamps. It has major advantages over the older products, of course: no aging capacitors to replace or corroded switch or tube contacts. And this kit even costs less than a classic; shoppers currently in the market for a Leak Point One Stereo preamp will end up paying about $300–400 for one in good condition.

Electrical performance was also very good, especially for a low-cost tube product. Maximum deviation from the RIAA EQ curve over the 500–20kHz range was about 1.1dB at 10kHz. Noise and hum appearing at the output, with the input shorted, was in the 100mV range. Midband voltage gain was about 90.

Visible clipping of the output waveform occurred at about 15V p-p, giving more than 25dB headroom over customary line-signal levels. The preamp is suitable for use with conventional moving-magnet cartridges and with high-output moving coil types designed to be used with a 47kW load. Low-output MC cartridges will require a pre-preamp or matching transformer.

Most important, this unit *sounds* good. Given its low cost and all-tube design, this represents both a remarkable achievement and a "best buy" rating. You could easily do worse than this, and unfortunately, some audiophiles have paid a lot of money for phono stages that do sound worse. Finally, Wolze tells me that he is planning to introduce a companion line-stage with five inputs, effects loop, and volume and balance controls. It will also be in kit form for a very reasonable price. ❖