

Built for Speed: The CTC Blowtorch Preamplifier

by Wayne Donnelly

I had been hearing about “the new John Curl preamp” for a year or so. It was killer, said the rumors, maybe better than anything out there. This called for investigation, so, after a spate of asking around, and a few Byzantine negotiations, John Curl reluctantly agreed to lend me his own Blowtorch serial number 00001 for a few weeks. The first order of business was to correct the notion that this was Curl’s preamp. It is, as he took great pains to explain, a collaboration among three talented people—hence CTC. John Curl designed the audio circuit, power supply, etc.; Carl Thompson designed the board layouts; and Bob Crump, designer of the TG line stage and Entech Number Cruncher DAC, auditioned and selected all of the parts.

The Blowtorch arrived in two heavy-duty fiberglass carrying cases that looked able to withstand even the most simian baggage handler—a good first impression. I was even more impressed when I opened the cases. The two chassis of the Blowtorch are milled out of solid blocks of aluminum, so there are no joins. The visual effect of the control unit resembles what you might get if you slapped a couple of knobs onto the surface of the monolith from 2001. The front panel is a study in black-on-black austerity: two large stepped volume attenuators on the left side, with a chunky polarity reversal switch nestled between and below them; a substantially sized selector switch on the right side; a small CTC logo—and that’s it. Not even a power on LED (the Blowtorch is always on when plugged in).

The Blowtorch is available as a line stage only, or as a complete preamp, such as the one I received. The phono stage is an update on John Curl’s Vendetta Research preamp. The standard configuration is unbalanced inputs and both balanced and unbalanced outputs.

I dropped the Blowtorch into my usual system, displacing my Thor TA-1000 line stage and TA-3000 phono stage. The current analogue front end is a Basis 2800 with Graham 2.0 arm and Cardas Reference cartridge. The digital front end is a modified Pioneer DVD player feeding the Thor DC-1000 DAC. The amps are VTL 750 Reference, driving Eggleston Andra loudspeakers. Every component in the system has been custom modified with Bybee Quantum Purifiers, to very satisfying effect.

Imagine for a moment that you’re sitting around in your living room, chatting with your buddies and listening to some music, when suddenly Michelle Pfeiffer walks into the room. (Ladies feel free to substitute Mel Gibson or the hunk of your choice.) Michelle would get your attention, right? That’s kind of like what happened to me when I began listening to the Blowtorch. It got my attention right away, to say the least.

I began with CDs, concentrating at first on some recently reviewed discs. The Reference Recordings CD of Bernstein's *Candide Suite* has become one of my standards for judging orchestral dynamics, bass response and spatial resolution. The powerfully deep bass drum transients hit with a speed and depth beyond what I had previously heard, and the decay of those drum beats was audible even as the orchestra played on.

Actually though, these bass dynamics were just the most immediately evident attributes of the Blowtorch. I knew within the first ten minutes of listening that this was a very special component—it just took a while to sort out all of the factors that make it so. One of those factors clearly was the Blowtorch's superb soundstage resolution. I noticed that the stage was as wide and deep as what I typically hear through my tube Thor front end. The Thors are champs at soundstaging, and the Blowtorch was the first preamp I have put in the system that was in the same league. Furthermore, as I continued to listen to different material, I began to realize that the Blowtorch delivers slightly better image placement and focus than my usual reference. And to my surprise and puzzlement, I found that with the Blowtorch in the system, my listening sweet spot suddenly grew larger. There was little difference in my perception of the soundstage whether in the middle seat of my three-person sofa, or sitting to either side. I have no explanation for this phenomenon, but there it was.

My system is pretty quiet for an all-tube set up, but the complete quietness of the Blowtorch, whether listening to digital or analogue, proved revelatory. I found that I could hear even more deeply into recordings than I was accustomed to—down to the slight squeak of a musician shifting in a chair or breathing lightly. This radical lowering of the system's noise floor was easy to get used to, and was the thing I perhaps missed most when I changed back to my original system. Another impressive quality was timbral veracity. For instance, when comparing versions of Canteloube's *Songs of the Auvergne* by Netania Davrath, Dawn Upshaw and Maria Bayo, it was thrilling to hear so clearly into each of these beautiful voices—how the foundation of each singer's timbre modulates according to the singer's breath, vibrato, or even from singing directly into or turning slightly away from the microphone. Or, listening to Andrew Manze and Rachel Podger playing Bach's *Concerto in D minor for Two Violins (BWV 1043)*, was pure ear candy. It was easy to follow the interplay of these two fine artists' violins and how their distinctive sounds remain clearly audible even playing against the lively strings of the Academy of Ancient Music (don't miss this stunning CD: Harmonia Mundi HMU 907155).

More than half of my listening time with the Blowtorch was spent with LPs. Also relatively new to the system was the Basis 2800 vacuum hold-down turntable (review in progress). All of the virtues of the line stage were equally present when listening to records—and the supernal quietness of the Vendetta at any listening level was a special pleasure. I discovered that it was quite easy to hear

the difference when playing and LP with the vacuum on or off. This experience reminded me that few records are truly flat, even if the warp is so slight as to be barely visible. I discovered time and again that the flattening and damping effect of the vacuum could have a startling effect on imaging and soundstaging, locating singers and instruments more firmly in place than when the record is “unsucked.” I also heard significant improvement in the sound of virtually any LP featuring the piano. The sound of the instrument would become more solid, more palpable—and, naturally, more firmly placed in the recorded space.

I could go on at wearisome length describing the many individual epiphanies experienced with the Blowtorch. Suffice to say that I believe it was telling me the truth about every recording I played through it, analogue or digital. Not that everything was pure pleasure. The Blowtorch was invaluable when I was listening to the Sony 777ES SACD player reviewed in the last issue, making it easier for me to evaluate the sometimes elusive qualities of that component.

So, how do I sum up the sound of the Blowtorch? The slight harmonic leanness and dryness I hear in many solid-state units is entirely absent. I’m tempted to say that it sounds like a great tube preamp—harmonically rich, with a sweet, open high end and dramatic spatial resolution. But no tube preamp I have heard comes close to matching the bass extension and truly startling speed and dynamics of the Blowtorch, or its extraordinary quietness, especially in the phono stage. Nothing I have heard gets out of the way of the music more completely, showcasing the beauty, the bloom, the rhythmic vitality of a great recording. This might just be the ultimate reviewer’s reference preamp.

The Blowtorch is not for everyone. If you have weak links elsewhere in your system, it may tell you more than you really want to know. And it is Spartan, with none of the usual amenities: no remote control here, not even a balance control—you simply use the two volume pots to adjust the channels if necessary. My review unit didn’t even have a tape loop, although CTC will provide it if requested. John Curl describes the Blowtorch as built like a race car, and I think his description is apt. To reverse the old Howlin’ Wolf song, It ain’t built for comfort, it’s built for speed. This is a preamp for the listener who cares obsessively about music, and is willing to pay the freight to get the best sound possible. There may be better sounding preamps out there, but I have yet to hear one. Perhaps the secret lies in the attitude the CTC guys took when they conceived this project. Bob Crump commented to me, “we never asked whether something was practical, or whether it was cost-effective. If it sounded better, that’s what we did.”

CTC builds each Blowtorch to order. Bob Crump interviews each customer, exploring what other components are in the system so that the unit can be optimized to work with those components. The interval between order and delivery may typically range between one and three months—scheduling is not an exact science at CTC. The basic prices, as of this writing, are \$17,000 for line

stage only; add \$5500 for the Vendetta, \$1500 for balanced inputs. (Be the first!) Prices for other features are determined at the time of order. The warranty is lifetime (“yours or ours”) parts and labor, with shipping one way.

Now that my system is back to its usual configuration, I’m happy to report that my Thor front end components are sounding just fine. Still, I find myself thinking wistfully from time to time about the Blowtorch. Maybe some day, when I grow up and get rich....

For inquiries and orders, contact Bob Crump:

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Specifications:

S/N	113db
Crosstalk @ 50K	100db
Gain	8db single ended; 14db balanced
Bandwidth	350K open loop
Spectral Analysis	2nd & 3rd order only at less than .01% IM at 3v output...
Output Impedance w/o buffer	1K

Technical Highlights

The speed and dynamics of the Blowtorch begin with an unusually complex and thorough power supply design. The goal of this design, John Curl says, is to emulate the virtues of a battery power supply, but without the current limitations that batteries demand. Those current limitations, Curl says, can limit the component’s dynamic capabilities.

CTC takes several steps to reduce electrical noise to battery-like levels. One choice is to eschew toroidal transformers—which have inherent unacceptable noise levels for CTC—in favor of quieter EI transformers. Considerable attention is paid to cleaning up the AC power coming into the supply. CTC does not use a conventional choke at the power input (Curl says that an adequate choke would be far too large physically to work within the design), but accomplishes the same things by routing incoming power first to three levels of passive filtration and then

through three active stages: high-feedback regulator, shunt regulator and finally through open loop regulators located on the line stage boards. In addition, the AC is kept separate from the ground.

The dual mono Blowtorch actually incorporates four separate main power supplies: high-level and low-level for each channel. In addition, each function throughout the circuit is equipped with its own regulator so that there is heavy regulation across the entire signal path.

The dual mono concept is obsessively executed throughout the Blowtorch. In addition to the separate volume control pots, even the common switches serve the dual mono goal. These very large switches provide sufficient distance between left and right channel contact points to virtually eliminate cross talk between the channels.

The Class A audio circuit is described by Curl as a “complimentary differential folded cascode.” (I have neither the comprehension nor the space here to fully explain the details of this design.) The differential design uses four parallel paths for signal processing—emulating, Curl says, the inherent linearity of a triode tube, but without the need for capacitor coupling. This open loop circuit (no global feedback) passes a bandwidth from DC to 350 kHz—I think we could call that high bandwidth.

The circuit boards in the Blowtorch are Teflon—more expensive and harder to work with, but better sounding than standard boards—parts are attached to both sides of the boards, to keep signal paths short. The audio circuit itself takes up only about 1.5 square inches on each board, with servos and regulators occupying the rest of the board space. John Curl praises Carl Thompson for the elegance and economy of the board layouts, which he says contribute materially to the performance of the Blowtorch.

Although the differential circuit accommodates balanced inputs, CTC has so far only built units with single-ended inputs and both single-ended and balanced outputs. Bob Crump notes that balanced inputs would require physically larger pots and switches, and they feel that there is no sonic advantage to balanced inputs if the single-ended approach is properly executed. The key, says Curl, is a clean ground.

The phono stage is based on the Vendetta Research phono preamp, designed by Curl in the mid-‘80s. That design has been considerably updated in the intervening fifteen years, as better parts have become available. One notable change is a switch from copper to silver wire—which is in fact used throughout the Blowtorch, as well as silver contacts on all switches.

Bob Crump notes that all components—switches, pots, wire, capacitors, resistors, etc.—are broken in before the units are assembled, and that the

finished units are then run in for another three weeks before they are shipped. The goal of this thorough break-in is to ensure that each Blowtorch is voiced properly before it goes to the customer.