
THE INNER EAR REPORT
A MAGAZINE WORTH LISTENING TO
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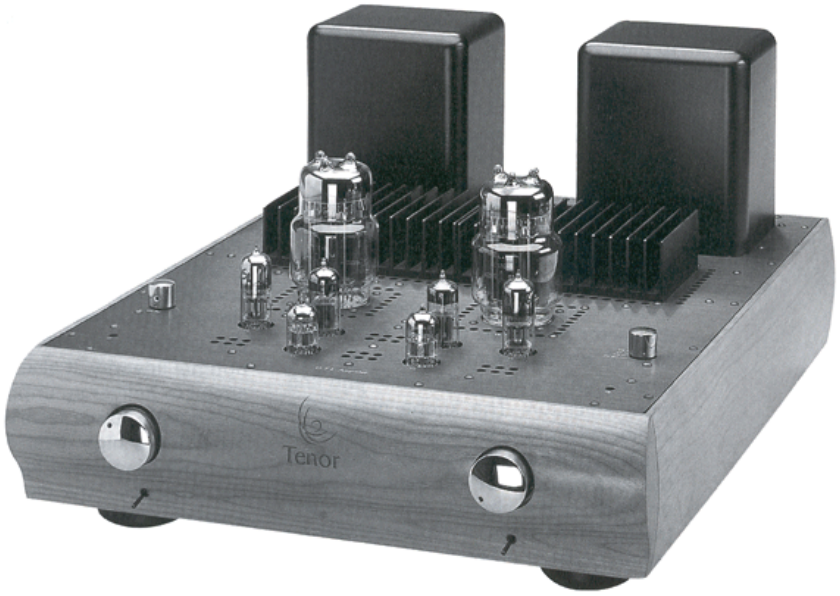
Tenor 15 Wi OTL Monoblocks



This Canadian company was formed in 1998, but preliminary design work did not begin until 1997, when "2 die-hard audiophiles and a talented electronics engineer decided to bring the OTL circuitry performance envelope to a higher level". The company's first prototype, a 15 watt integrated unit with passive volume control and input selector, was built and compared to many known reference amplifiers, matching some and outperforming others. Tenor Audio then decided to further develop the prototype into a commercial product line.

The principal owners share responsibilities with Francois Lemay as general manager, Robert Lamarre in charge of distribution and sales and Michel van den Broeck as technical development manager. Lemay has more than 15 years experience as testing manager for the Quebec government consumer protection office. Lamarre is a professional engineer and has designed the unique Lamhorn horn speakers. Van den Broeck, an electronics engineer, moved to Canada in 1988 from Belgium where he began building tube gear at the age of 14. While still in Belgium, he opened his own shop building and modifying vacuum tube amplifiers for musicians. Shortly after his migration to Canada Van den Broeck was gainfully employed designing navigation systems for airports, which involved RF and microwave technology, skills he has since been able to apply to consumer audio designs. As well, he began customizing tube preamplifiers and amplifiers. He has a fixed interest in OTL designs and is convinced that power supply regulation plays an important role. Thus, Michael developed a design program based on a set of very precise objectives. The program ran for about three years at a cost of a half million dollars and included methodical research, circuit simulation and quality parts selection, not to speak of very critical listening sessions. The first new gen-

Source:
Tenor Audio

Price:
$24,500.00Cdn
$15,900.00US

Rating: ♪♪♪♪

eration OTL was presented in January 2001 in Las Vegas, where some of our staff members actually had a look and listen to the amplifiers, which brings us to their...

Appearance:
These monoblocks are outright stunning. They also look important as size here is incorporated with brawn and elegance. Each monoblock is 17.25 inches wide, 23 inches deep, stands 11 inches high and weighs 69 pounds. The front and side panels are made of polished wood—a very handsome grain has been chosen. The front panel accommodates a selector switch on the left and a gain control on the right, as well as two small toggle switches for mute and line input selection. The knobs match the appearance of the wood panel and hints at a touch of European styling. However, the arrangement of the vacuum tubes on each unit's chassis and the input transformers have a North American touch. Looking down on the amps, the large input transformers are near the rear, followed by heat sinks and the tube array. DC and bias switches are on left and right sides and can be adjusted with a small screwdriver with the help of a VU meter located between the transformers. On the rear of the amps, four inputs can be chosen; inputs 1, 2 and 3 are connected to the gain control, while input 4—one RCA and one XLR (balanced)—is a dedicated preamplifer connection. A pair of massive gold-plated binding posts, the (detachable) power cord well, the fuse and the main power switch complete the rear panel. Each amplifier stands on large rubber feet and it's important to place them on a hard surface to assure proper ventilation and to clear the openings for the bottom-mounted cooling fans. For our evaluation sessions, we placed these large amplifiers on 2-inch ceramic cones, well above our carpet-covered floor, which brings us to the nitty gritty...

Tenor has positioned themselves in the high performance category

Technology:
OTL stand for "output transformer-less" technology—pursued by many, perfected by few. The company states that their circuitry is based on fundamental electrical engineering principals and science. The topology is essentially a fully symmetrical balanced Circlotron type OTL and OCL output stage driven by a two gain driver stage. A unique feature is the use of high power solid-state regulation on all 10 voltages supplied by the two beefy 750 VA custom made power transformers. This method assures unconditional stability and can be found in many laboratory-grade power supplies. This stability enabled Tenor designers to control signal and power conditions to enable the vacuum tubes to operate at their optimal linearity. It also allows the basic circuit to deliver an unprecedented level of dynamic power reserve of 6 dB, while providing a high level of stability even on highly capacitive loads. Under these circumstances, the designers state that a signal's Harmonic Structural Integrity (HSI) can be maintained in all conditions and at all power levels—the foremost condition to preserved the musical essence of a recording.

The amplifiers' vacuum tube complement includes (per pair) four 6C33 output tubes, four 6H6P, four 6H30P and four 12AX7A input tubes. Rated power at pure Class A is 15 watts into 16 ohm loads, 15 watts into 8 ohm loads and 10 watts into 4 ohm loads. Bandwidth is quoted from 2Hz to 160kHz (good for super tweeters and SACD players); harmonic and intermodulation distortion is less than 0.5%; signal to noise ratio is 100dB ('A weighted'); input impedance is 40kohms; output impedance is 0.7 ohms; input sensitivity is 700mV balanced and unbalanced. A "soft start" and mute function delays operation for about 60 seconds.

The Sound:
Our in-house Wyetech Opal preamplifier was used to drive the Tenor monoblocks. A Cary CD player (to be reviewed in our next issue), an Audio Aero Prima CD player (reviewed in Vol. 13 #4) and a Magnum MD 108 tuner served as source

components. All wiring was accomplished with Nordost Valhalla interconnects and speaker cables. For our auditioning sessions, we used the Tannoys and StudioLAB speakers (both reviewed in this issue), the Energy Veritas 2.4 (reviewed in our last issue) and the JMlab Micro Utopias (reviewed in Vol. 13 #3). This "international" mix of loudspeakers (a pair from Scotland, two pairs from Canada and one pair from France) allowed us to observe the amplifiers' reaction to different loudspeaker designs. However, we found that the Tenors behaved almost identically with all loudspeakers, thereby authenticating the company's claim to unconditional stability. We had not expected this as synergy should have been another element to consider.

All loudspeakers reacted to the amplifiers in a positive manner, introducing full-bodied, highly resolved information from down yonder (30Hz) to the highest limit of the Tannoys with the SuperTweeter (54kHz). The amplifiers' sonic character imprinted itself upon all system configurations, adding harmonic texture, an expansive richness and warmth to the loudspeakers' performance. The Tenors also offered imaging accuracy; the re-creation of size and locations of instruments astonished all listeners. Focus, front-to-back dimension, horizontal and vertical reach took a back seat to none. We noticed that the sound stage shot up by as much as two feet when we disconnected other amps and connected the Tenors. It is almost pointless to describe the amplifiers' sound, but old habits don't die! The highs are as smooth as a baby's bottom and remain effortless in character, even when burdened by dynamic passages or almost deafening sound pressure levels. Midrange is a statement of clarity and offers the kind of finesse necessary to extract the most subtle musical information. That's inner detail at its best whereby sonic subtleties within complex program material are highly resolved without restricting data in the high or

The re-creation of size and locations of instruments astonished all listeners

low frequency ranges. The bass region—all of it from 100Hz down to the loudspeakers' limitations—is superabundant, but also introduces listeners to resolution. This is a rare listening experience, almost a lecture on how it's done right.

We thought that the best system configuration was achieved with the Tannoys, though even the rather inexpensive StudioLABs took on that certain high-end glow, not usually found in medium priced systems. The Energy speakers—superb mid-priced gems—never sounded better. The JMlabs (smallish enclosures with deep bass restrictions) almost sounded like their more expensive siblings, the Mezzo Utopias. All in all, these amplifiers are great and in all likelihood will improve the performance of most (good) loudspeakers.

These monoblocks can be used as integrated amplifiers

What we haven't told you is that these monoblocks can be used as integrated amplifiers, as they offer enough inputs on the rear to connect four source components through a single volume control. Thus, we connected the tuner and CD players and found that the sound was extremely good, but not as precise and airy as with the use of our (great) preamplifier. While the "direct connect" function allows using the amps without a preamplifer—often resulting in better sound than most preamplifiers can muster—we recommend looking for the best preamplifier money can buy, for only then can the amplifiers' performance really be appreciated.

Synopsis & Commentary:
It seems that Tenor has put a lot of thought and planning into their design. Interestingly, their research laboratory is in the old Canadian RCA building in Montreal where the first turntable and vacuum tube amplifiers where made back in the early 1900s. Ironically, vacuum tube amplifiers are likely the hottest high-end designs in the current consumer electronics market and various technologies are pursued. We see merit in most designs whether they are single ended (SE) or push-pull (PP) or both (SEPP). Output transformerless (OTL) are a bit different and one may ask what advantages an OTL amplifier has over a conventional one with an output transformer? As some output transformers currently used are difficult to wind to achieve the best possible performance, some designers have chosen to eliminate the transformer altogether. Nevertheless, circuitry, tubes and peripheral parts must be chosen to complement such designs, as tubes have relatively high output impedances (compared to transistors). In OTL designs tubes with large cathodes and high peak emission capability are used. A well designed OTL amplifier is capable of the best audio performance available today. However, OTLs usually require more maintenance and care than transformer-coupled amps, which may be why OTLs have often been criticized for unreliability. This was a problem with some low-cost designs where shortcuts had been taken (most low-end OTL manufacturers have since gone out of business). We'd like to assure our readers that a well designed OTL, such as the one under review, can be just as reliable as a transformer-coupled amp, and offer outstanding musical audio—high-end audio at that. The folks at Tenor state that their philosophy is simple and straight forward: "to produce products only when they offer a completely new level of listening pleasure". While many manufacturers have made similar statements (marketing hyperbole), only a handful have actually achieved this objective. We believe that with the design of the 15 Wi monoblocks, Tenor has positioned themselves in the high performance category—the rank where performance and price actually relate and result in great audio.

www.tenoraudio.com