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**Warm Audio TB12 Tone Beast \$600**

## pros

- Ample tone-shaping capabilities.
- Fully discrete circuit design.
- Cinemag transformers.
- 71dB gain.

## cons

- External PSU.
- Brightness of the LED level meter.

## summary

The Warm Audio TB12 Tone Beast, based on the classic API 312 preamp circuit topology, offers plenty of tone-shaping options at a very affordable price. Some of its basic ingredients, such as the high-quality Cinemag transformers and the fully discrete Class-A signal path, can usually only be found in more expensive units, and few corners seem to have been cut designing this preamp. Anyone in the market for a good-sounding and versatile yet affordable preamp should have a look at the Tone Beast, but it will appeal most of all to those planning to explore its saturation and distortion capabilities.

## information

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## Warm Audio TB12 Tone Beast

### Mic, Line & Instrument Preamplifier

 Reviews : [Preamp](#)


Photos: Hannes Bieger.

### Warm Audio's latest preamp offers surprisingly high quality in an affordable package.

Hannes Bieger

Originally conceived as a preamp card for the input channels of the company's consoles, the classic discrete design of API's 312 mic preamp has played an integral part forming the sound of rock music, and American rock in particular. API still build preamps based on the original early-'70s design, and several other manufacturers now offer their own takes on this piece of recording history, for a number of reasons. First, the 312 offers a great sound, which is meaty and powerful, with a pronounced mid-range. It's also a very simple design, comprising little more than a pair of input and output transformers and a single discrete, Class-A op-amp. This means not only that a preamp based on the 312 layout is fairly easy to manufacture (though one needs high-quality ingredients!), but one could also argue that the original design is almost begging for modifications and enhancements. This is exactly what Warm Audio, based in Round Rock, Texas, have done: they've taken the basic layout of the 312, as used in their existing WA12 preamp, and built their own versatile concept around it, essentially doubling all the important circuit elements for maximum sonic variety. The result is a single-channel 1U rackmount device they call the Tone Beast.

#### top Overview

The format means that, unlike with the original 'bare bones' 312, there's ample space on the faceplate for controls. Indeed, the Tone Beast comes with all the bells and whistles one can expect from a modern well laid-out mic preamp, including dedicated switchable mic, line and instrument inputs as well as phantom power, a -20dB input pad, a polarity switch and an 80Hz high-pass filter. All switches are accompanied by red status LEDs, a simple but useful feature that should not be overlooked. This input control section already makes the Tone Beast more flexible than some of its obvious competitors, but the TB12 offers much more...

Both its Gain & Saturation and Tone Control sections can transform the preamp into a saturation generator, with a sonic scope ranging from extremely subtle coloration to the wildest fuzz sounds. The stepped gain pot sets the amplification in a range between +29 and +65 dB. It is paired with an output pot ranging from full attenuation (minus infinity) to unity gain. This, in turn, allows the amplifier stages to be driven hard without overloading the next unit in the signal path, which opens up a vast range of tonal options.

In order to explain precisely what the Tone Control section has to offer, we have to peek under the lid and consider what's inside the unit. Interestingly, the Tone Beast doubles most parts of its signal path, to offer sonic alternatives through the deployment of different components. Warm Audio have equipped the TB12 with no fewer than three high-quality American-made Cinemag transformers, one of which is a custom design, tailored to Warm Audio's specification. There's a single input transformer, but two output transformers can be swapped at the flick of a switch. The first, a steel-core transformer, boasts a rich mid-range and a tone which can be considered more 'vintage'-sounding, whereas the 50-percent-nickel-core transformer yields a more linear, transparent response. Both transformers can also be bypassed, which results in an 8dB level drop but an even cleaner signal.

Following the same logic, the other key ingredients of the signal path, the op-amps, can be swapped as well. The Tone Beast is built around two discrete op-amps, but, following the original 312 design, only one is active at any given moment. One, the x731, is based on the Melcor 1731, a predecessor to API's famous 2520 op-amp, and this is the more coloured option. The other, called x18, was modelled after Dean Jensen's classic 918, which is a cleaner and more open-sounding op-amp. Both are socketed, following API's classic six-pin layout, and in the operation manual, Warm Audio actively encourage users to experiment with the many compatible third-party op-amp blocks for yet more subtle sonic variety.



Published in SOS November 2013

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### Neve 1073LB & 1073LB EQ

#### 500-series Microphone Preamplifier & Equaliser

Neve's venerable 1073 preamp and equaliser are both now available in API's popular 'Lunchbox' format. Were they worth waiting for?



### Cloud Microphones Cloudlifiers

#### In-line Microphone Preamplifiers

Do these in-line mic preamplifiers mean you can use a passive ribbon mic with any preamp?



### Slate Pro Audio Fox | Media

#### Dual-channel Microphone Preamplifier

Test plots to accompany the article.



### Cloud Microphones Cloudlifier

#### Audio Examples

Audio files to accompany the article.

### Slate Pro Audio Fox Dual-channel Microphone Preamplifier

With two channels and four 'flavours' on offer, Slate's mic preamp promises plenty of flexibility. Does it also deliver on quality?



### Neve 4081

#### Four-channel Microphone Preamplifier

Neve believe that there's scope to bring classic designs up to date — and that's exactly what they've done here, taking their revered 1081 mic preamplifier as the starting point.



### Radial Tonebone PZ Pre

#### Acoustic Instrument Preamp

James Dunkley is on the case of the Radial Tonebone PZ Preamp.



### Drawmer HQ Preamplifier & D-A Converter

Can a preamp and D-A converter successfully straddle the pro-audio and hi-fi markets? Drawmer believe it can...



### Studio Projects VTB1

#### Microphone Preamplifier

This hybrid mic preamp can go from solid-state clean to valve warmth — and for a surprisingly low price, too. Is



The capacitors in the circuitry surrounding the op-amps can be swapped, too. The 'vintage' setting employs tantalum capacitors, while the 'clean' option relies on electrolytics. This is by far the most subtle of all the modifications, and in some situations it doesn't change the sound much at all, but its effect becomes increasingly apparent as the preamp is driven further into distortion. The palette of controls is rounded off by the Tone switch, which is active on all inputs (microphone, line, and high impedance). On the mic input, with the Tone switch disengaged, the input impedance is 600Ω. Activating the Tone switch sets the impedance to 150Ω, giving an additional 6dB level boost (increasing the maximum gain to +71dB), which may be more suitable when recording with a passive ribbon mic.

Finally, and slightly unusually, the high-impedance instrument signal is fed into the input transformer via a little additional discrete transistor circuit. This way, instrument signals can also benefit from the sonic character of the input transformer.

Although that's it for the on-board tonal tweakery, it's still not all the Tone Beast has to offer, as there's an insert point into which external equipment such as EQs and compressors may be patched. This comes between the op-amps and the output transformers.

#### ▲ top Value For Money

The Tone Beast feels sturdy, uses quality components and should provide years of reliable performance. In fact, I find it amazing that Warm Audio can offer a fully discrete Class-A circuit with components of this quality, complete with the various alternative options, in this price bracket. Usually, this kind of technology can only be found in units costing two or three times as much as the TB12.

Inevitably, though, a few corners have been cut in order to make this possible, and while some take nothing away from the overall qualities of the unit — and while I did not find any real flaws — there are some points I'd like to discuss. First, the Tone Beast relies on an external 'wall-wart' type power supply. This is not a problem per se, and a quality internal PSU would have driven the manufacturing cost up quite a bit, but most high-end units employ internal power supplies unless there's good reason not to, and some manufacturers even take pride in over-designing them! Secondly, I'm not a big fan of the five-segment LED level meter: it employs blue, green, yellow and red LEDs, and the blue one is noticeably brighter than the other ones. In fact, it is so bright that it makes me feel uncomfortable looking at the Tone Beast when it lights up, especially in a dimly lit environment!

#### ▲ top In Use

Apart from this minor criticism, the Tone Beast has proven to be a very reliable and versatile preamp over the course of the review period. It takes some time and effort to get used to all the nuances it has to offer, simply because Warm Audio have put so many features inside this box, but thankfully the controls are clearly laid out and the labels easy to read.

These days, 'sonic colour' is something of a buzz phrase, and the character that can be imparted by transformers in particular seems to be in vogue. But while the TB12 has all the ingredients typically associated with such 'colour', such as the transformers, Tantalum caps and discrete op-amps, please don't think that using any of these options will drastically change the sound in any given situation. In many use cases these variations remain very subtle, and will only be audible to the critical listener. How much such nuances matter in the context of the full, final mix will often be debatable. Mind you, I am not saying this to question the concept of the Tone Beast at all! I simply would like to encourage you to listen closely and keep in mind that when it comes to saturation artifacts, less can sometimes be more...

The core sound of the Tone Beast is a very present tone with a pronounced upper mid-range. This is not untypical for a preamp from the extended API family. The 312 might not be the thickest, richest-sounding preamp on earth, but it is capable of delivering very tight and solid signals which can cut through any mix, and the TB12 certainly navigates in these waters, too. The contrast between the cleaner configuration (x18 op-amp and nickel transformer) and its more coloured counterpart (x731 op-amp and steel transformer) doesn't sound like two entirely different units (not that I would have expected this!), but like two different sides of the same coin. One of them has a more open, sometimes even slightly harsh top end, while the other is noticeably softer and rounder, and there are plenty of shades in between these two poles.

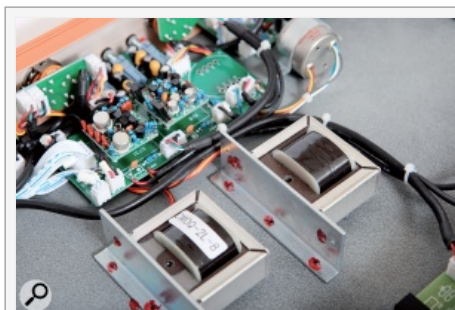
No matter how you look at it, the Tone Beast offers many means to fine-tune the result and to adapt the character of the preamp to the nature of the source being fed into its circuits. For instance, some of these features may be used with good results to round off the edges of an overly bright capacitor microphone.



Flexible input section: the Tone Beast offers all standard features of a microphone preamp, including a -20 dB pad, a hi-z instrument input and a high pass filter



The tone control section boasts plenty of tone-shaping options, such as the selection of alternative op-amps, capacitors and output transformers.



Quality components: the circuit employs three Cinemag transformers and two discrete op-amps (classic API 2500 six-pin layout).

there a catch?

#### Dave Hill Designs Europa 1 Microphone Preamp

This novel preamp design features a variable impedance and slew rate — which opens up a whole new world of possibilities from your mic locker...

#### MC AudioLab TP1tp Valve Microphone Preamp

Can Sicilian manufacturers MC AudioLab bring a touch of Mediterranean magic to your recordings with their new boutique preamp?

#### Manley MicMAID Mic & Preamp Switcher

The patchbay remains the cornerstone of most commercial studios, but using one to patch mics into different preamps can be risky — which is where the MicMAID comes in...

#### T-Rex SpinDoctor Valve Preamp

Is a high-quality valve preamp in a programmable pedal just what the SpinDoctor ordered?

#### BAE 1073 MPF Dual Solid-state Preamp

There are now several Neve 1073-inspired preamps available — but they're not always 100 percent faithful to the original design. How close does this new contender from BAE come?

#### Focusrite Octopre MkII & MkIII

#### Dynamic Eight-channel Microphone Preamps

With upgraded mic amps and A-D conversion in their MkII versions, do Focusrite's latest eight-channel preamps still lead the way at this price point?

#### Empirical Labs EL9 Mike-E

#### Microphone Preamp & Compressor

Empirical Labs, purveyors of some of the most versatile compressors around, apply their dynamics expertise to a mic preamp.

#### Benchmark MPA1 Dual-channel Microphone Preamp

Benchmark strive to make their products exactly that: something against which the competition should be judged. So how does their new preamp measure up?

#### AEA RPQ Dual-channel Microphone Preamp

AEA have tweaked the design of their TRP ribbon-mic preamp, already something of a favourite, to create a device that's much more versatile — and without compromising on quality.

The feature that I liked the most isn't even the most sophisticated of all these options — but it certainly is the most powerful, capable of turning this microphone preamp into a hefty distortion box. The vast range of the output pot (which essentially goes all the way from off to unity gain) ensures that there are no gain-staging limitations at all. Not only do the saturation and distortion effects of the TB12 sound great in their own right, as mentioned before, the tonal changes of the other options become more apparent when the unit is being driven further into the realm of non-linear amplification. Listen to the Minimoog example from the audio files accompanying this article, and you'll hear how meaty and thick the Tone Beast can sound, highlighting the sonic impact of the output transformers. When they are bypassed, the signal sounds rather hollow, with a spectrum that reminds me more of a square wave. With the transformers engaged, by contrast, the signal gets noticeably thicker, sweeter and more valve-like, adding further to the massive tone of this classic synth bass line.



As well as the anticipated inputs and outputs, the Tone Beast also offers insert slots for integrating other processors in its signal path.

### top Conclusion

First appearances can be deceptive, and that's definitely the case here: one should certainly not view the Tone Beast as yet another microphone preamplifier. Rather, it's a sound machine that can be deployed to great effect in many other areas of audio production than the tracking stage. For instance, I can conceive of this being a very useful processor for sound designers, and many people would find the TB12 a useful processor during a mix.

While the Tone Beast cannot compete with high-end devices in every single aspect of its construction, it does a surprisingly good job, and offers a signal path that's far more sophisticated than one would normally expect at this price. Its character as a mic preamp might not be to everyone's tastes (because I can't imagine any preamp being the ultimate solution for all possible uses), but doubling as a saturation generator it offers a vast range of additional applications. These alone will be worth the price of admission to many people. It doesn't matter which way you look at it, then: the Warm Audio Tone Beast offers plenty, considering its rather comfortable price tag.

### Alternatives

Other manufacturers also offer preamps based on API's classic 312A topology. For example, BAE produce the 312A lunchbox module and single/dual-channel rackmount units, and if you don't need all the options of the TB12, then Warm Audio themselves produce the WA12. A few other mic preamps offer switchable circuit topologies and variable gain staging. The Universal Audio 710 Twin Finity preamp is a little more expensive, but it offers blending between valve and transistor amplifiers, and its two gain stages can be driven into distortion. Other preamps well known for their saturation capabilities include the Roll Music Systems RMS5A7 Tubule and Chandler's Germanium and Little Devil.

### Audio Examples

A number of audio files demonstrating the tonal colours that can be achieved using the [Tone Beast can be found here](#).

Published in SOS November 2013

### A-Designs Pacifica Two-channel Microphone Preamplifier



Striking a useful balance between the transparent and the characterful, this high-quality, US-made preamp design brings versatility to the studio and some colour to the rack...

### PreSonus DigiMax D8

#### Eight-channel Mic Pre & A-D Converter



PreSonus combine their respected analogue and digital technology in this affordable ADAT-equipped preamp.

### SPL Rackpack Modular Preamp & Processor System



Sound Performance Lab have developed an enviable reputation for their hardware products, and now you can buy more for less with their modular rack system.

### Audient Mico Dual Microphone Preamplifier



With two channels of mic preamp, a phase-alignment control, digital outputs and clean signal path, the Mico offers you an awful lot of Audient for the money.

### Universal Audio Twin-finity 710 Hybrid Microphone Preamplifier



Which is best, tube or solid state? When it comes to investing in a preamp, that's a question you may no longer need to ask...

### Golden Age Project Pre 73

#### Microphone Preamplifier



This highly affordable device is based on the circuitry used in Neve's legendary 1073. So can you really get a classic vintage preamp sound on a budget?

### Arsenal Audio R20 & R24

#### Microphone Preamplifier & EQ



This new brand by revered high-end equipment manufacturers API is much more affordable than their established lines. So there must be a catch, right?

### Grace Design M201 Microphone Preamplifier

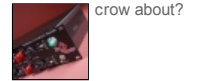


Regular readers will know that our Technical Editor isn't prone to excessive use of hyperbole — so when he calls a product "awesome", "stunning" and "sublime", it's probably time to sit up and take notice...

### Thermionic Culture Rooster

#### Valve Microphone Preamp & EQ

Is this latest addition to the Thermionic Culture flock something for the company to



crow about?

### Focusrite ISA One Mic Preamp



The ISA preamp range has graced professional recording facilities the world over — but this classy single-channel model is within reach of the home and project studio.

### Synchronia Sound Skulptor

#### DIY Mic Preamp System



The DIY approach to audio equipment needn't mean bargain basement, and if you apply this principle to high-end vintage gear it might just save you a small fortune — without compromising on quality.

### Sebatron VMP 2000eVU

#### Valve Mic Preamp



Australian company Sebatron aim to start building their brand in the UK with this 'character' preamp.

**GLOSSARY: technical terms explained**

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