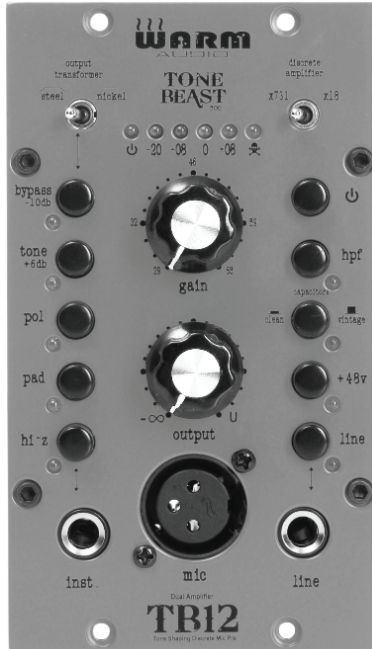


# TB12 500 SERIES "TONE BEAST"

TONE SHAPING MICROPHONE PREAMP



**WARM**<sup>TM</sup>  
AUDIO

# THANK YOU!

## **REGISTER YOUR TB12 500 SERIES**

Before we begin, please take the time to visit [www.warmaudio.com](http://www.warmaudio.com) to register your product. To ensure you receive proper and uninterrupted warranty support for your product, please register your unit within 14 days from purchase.

Thank you for purchasing the Warm Audio TB12 500 Series 500 Series "Tone Beast" tone shaping mic preamp and DI. We feel this product offers the best in terms of the sound, function, and vibe from the classic era of analog recording. We don't cut corners when it comes to what goes into our products, and the TB12 500 Series 500 Series is no exception. The Tone Beast uses the highest quality custom input and output transformers made by Cinemag Transformers USA. The TB12 500 Series 500 Series also features our own custom reproductions of discrete op-amps from the classic recording console era, and features a discrete, class A signal path throughout, with an all through-hole component topology, built by hand. We are confident you will love recording with the TB12 500 Series.

## **Welcome Back To the World Of Analog**

Though digital technology and software have made great strides in their performance in recent years; we still feel that nothing compares to the level of articulation, depth, realism, and responsiveness of a well-built piece of analog gear. When you hear the bottom end presence and top end detail of quality analog gear, the difference can be astounding. The cost of most boutique analog equipment is financially out of reach for many recording artists. Our mission is to change this, and introduce as many people as we can to recording and mixing with real, dedicated hardware. Whether this is the first piece of outboard gear you've ever purchased outside of a recording interface, or merely the first in a long time; we thank you, and welcome you back to the world of analog.

**Bryce Young**

President

Warm Audio

Liberty Hill, Texas USA

# CHAPTER 1: WARRANTY STATEMENT

Warm Audio warranties this product to be free from defect in materials and workmanship for one year from the date of purchase, for the original purchaser to whom this equipment is registered. This warranty is non-transferrable.

This warranty is void in the event of damage incurred from unauthorized service to this unit, or from electrical or mechanical modification to this unit. This warranty does not cover damage resulting from abuse, accidental damage, misuse, improper electrical conditions such as mis-wiring, incorrect voltage or frequency, unstable power, disconnection from earth ground (for products requiring a 3 pin, grounded power cable), or from exposure to hostile environmental conditions such as moisture, humidity, smoke, fire, sand or other debris, and extreme temperatures.

Warm Audio will, at its sole discretion, repair or replace this product in a timely manner. This limited warranty extends only to products determined to be defective and does not cover incidental costs such as equipment rental, loss of revenue, etc. Please visit us at [www.warmaudio.com](http://www.warmaudio.com) for more information on your warranty, or to request warranty service.

This warranty applies to products sold in the United States of America. For warranty information in any other country, please refer to your local Warm Audio distributor. This warranty provides specific legal rights, which may vary from state to state. Depending on the state in which you live, you may have rights in addition to those covered in this statement. Please refer to your state laws or see your local Warm Audio retailer for more information.

## NON-WARRANTY SERVICE

If you have a defective unit that is outside of our warranty period or conditions; we are still here for you and can get your unit working again for a modest service fee. Please visit us at [www.warmaudio.com](http://www.warmaudio.com) to contact us about setting up a repair or for more information.

With the proper care, your Warm Audio gear should last a lifetime and provide a lifetime of enjoyment. We believe the best advertisement we can have is a properly working unit being put to great use. Let's work together to make it happen.

# CHAPTER 2: NOW LET'S GET STARTED!

The Warm Audio TB12 500 Series is one of the highest quality microphone preamplifiers on the market in its price range. It uses quality USA made components found in preamplifiers with much higher price tags. In addition to its unparalleled quality and price, the Tone Beast has unique tone-shaping features that give users flexibility usually only found by acquiring an assortment of different preamps. Home-based musicians and professional studios alike will find the Tone Beast to be an extremely powerful, versatile and fully professional piece of gear that is capable of warming and shaping both input signals and mixes in a way that is very pleasing to the ear.

The information contained in this manual is written to help you get quickly started with using your TB12 500 Series. Because of the endless combinations of DAWs and Microphones, we encourage you to read through this manual then experiment with your unit until you find the settings you like.

# CHAPTER 3: TECHNICAL SPECS

## HARDWARE CONTROLS - FRONT PANEL

### Microphone level input (XLR)

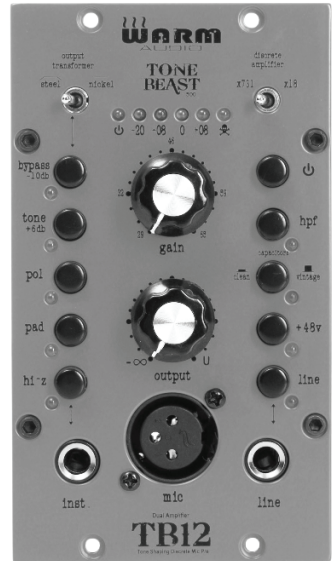
This input is designed for dynamic, condenser and ribbon microphones. Other instruments or devices that put out a low level microphone signal can also be plugged into this input. The input impedance can be set to either 600 or 150 ohms, via the tone button (more on this later).

### Hi-Z Instrument input

The front panel 1/4" input sends the instrument's signal through the entire preamp circuit including the input transformer, discrete op amp (operational amplifier) and output transformer. The thorough layout of the Hi-Z's signal path ensures that instruments are subject to the same robust pre-amplification as microphones. You can connect a variety of instruments via the Hi-Z input on the front panel of the Tone Beast including: acoustic and electric guitars, bass guitar, keyboards, synths, drum machines, etc...

### Line input

The front panel 1/4" TRS line input accepts a balanced +4db line level input.



# CHAPTER 3: TECHNICAL SPECS

ENGLISH

WARRANTY

NOW LET'S GET STARTED

TECHNICAL SPECS

HOOKUP DIAGRAMS

RECALL SHEETS

## HARDWARE CONTROLS - FRONT PANEL

### Power Switch

The power switch is used to power the unit on and off. To extend the life of the electronics please turn the Tone Beast off when not in use.

### Hi-Z switch

This feature engages the front panel 1/4" input and turns off both XLR inputs. Line Input Switch. This feature engages the TRS line input on the back of the Tone Beast and disconnects the XLR microphone inputs.

### +48V Switch

The 48 volts feature provides power for condenser mics and any other devices requiring continuous phantom power through the XLR input. This power is supplied at a constant level to prevent any degradation of audio quality.

### -20db Pad Switch

Engaging this feature applies -20db to the incoming signal. This is a very useful feature for reducing the level coming into the Tone Beast and thus preventing the signal from clipping or distorting. This may occur due to high output level from a microphone or other device. Padding the input serves to provide increased "headroom" for the operator while lessening the likelihood of signal overload.

### Polarity Switch

This feature inverts the polarity of the signal. Use the polarity switch when recording with more than one open microphone to combat phase cancellation between microphones. Hi-Pass Filter Removes unwanted low frequencies from your source signal below 80hz.

## GAIN & SATURATION CONTROL

### Gain Knob

The gain control is variable and adjusts the Tone Beast's gain from +29db to +65db or from +35db to +71db when the "Tone" switch is engaged. The "Pad" feature lowers the minimum and maximum ranges by -20db when engaged.

### Output Control Knob

This knob controls the signal exiting the Tone Beast. It ensures that the amplified signal doesn't exit the TB12 500 Series too loud and overload the inputs on the user's interface or the next device in the signal chain. It also gives the user greater ability to drive the gain of the preamp harder resulting in greater colorization and tone shaping within the various settings.

# CHAPTER 3: TECHNICAL SPECS

## TONE CONTROL

### Discrete Op Amp Switch

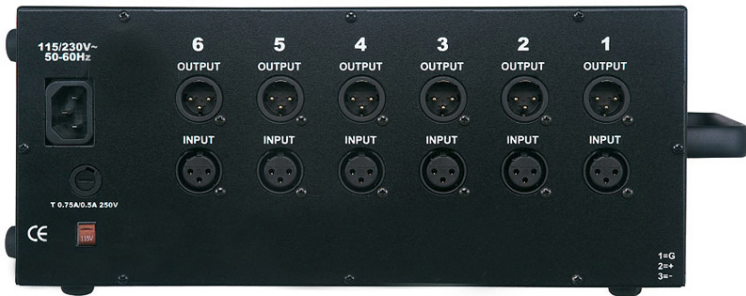
This switch allows you to choose between 2 completely different discrete analog operational amplifiers. One of the op-amps we provide is built to the schematic of the classic Melcor 1731 style discrete op-amp, a predecessor, if you will, to the popular 2520-style op-amp. The other socket houses a reproduction of the Jensen 918, a more modern and linear type of op-amp. The 1731 has a more noticeably vintage tone with an earlier and more characterful breakup when overdriven; while the 918 is more linear and transparent at any setting, though it can be driven into saturation as well. Both op amps are socketed and use the classic 2520 6 pin footprint. This allows users to remove the op amps easily (without soldering), and replace them with their own op amp(s) of choice. There are a plethora of available discrete (and even non-discrete or hybridized) op-amps on the market, in a variety of flavors, from the extremely clean and high performance to the very rich and characterful. As long as the op-amp conforms to the standard 2520 pin-out configuration and can operate at the standard  $\pm 16\text{v}$ , then it should do well in the TB12 500 Series. Visit our website for a partial list of recommended discrete op-amps to try. It's also worth noting that our discrete TB12 500 Series reproductions are quite good. You should never feel that you need to 'upgrade' the TB12 500 Series. Changing op-amps is more about experimenting with different tonal options or perceived levels of realism.

### Tone Switch

The control switches the input transformer configuration from a 1:4 (step up) turns ratio to a steeper 1:8 (step up) turns ratio, drawing out a greater degree of coloration and impact from both the input transformer as well as the discrete op-amp. When engaged, the input impedance of the Tone Beast is 150 ohms. When disengaged, the input impedance of the Tone Beast is 600 ohms. The 150 ohm (switched-in) setting will increase the gain of the Tone Beast by +6db, changing the maximum gain from +65 to +71 db. This feature will make a noticeable tone change to most microphones and instruments. The Microphone, Line and Hi-Z inputs are all altered by this feature; as every input source ultimately will pass through the affected components. The 600 ohms impedance setting is recommended for condenser and dynamic microphones, and 150 ohms is recommended for ribbons. This switch is labeled "Tone" for a reason though; most listeners will find the normal setting to be more open and natural, with the engaged setting to be more punchy, aggressive, or thick. The engaged setting is very much akin to how vintage console preamps such as those that inspired the TB12 500 Series have always been wired; however the disengaged setting is more akin to how most other types of solid-state preamps are normally wired. We strongly suggest you experiment with both settings on all sources to find the best possible tone for your recordings. As with all things, let your ear be the final judge on which setting to use for any given situation.

# CHAPTER 3: TECHNICAL SPECS

## BACK PANEL (VIA LUNCHBOX STYLE ENCLOSURE)



### Microphone level input (XLR)

This input is designed for dynamic, condenser and ribbon microphones. Other instruments or devices that put out a low level microphone signal can also be plugged into this input. The input impedance can be set to either 600 or 150 ohms, via the tone button (more on this later).

### Balanced Output (XLR)

+4db XLR balanced output is provided by the lunchbox style enclosure.

# CHAPTER 3: TECHNICAL SPECS

## **Capacitor Switch**

This switch changes 2 capacitors in the circuit from tantalum to electrolytic. The “vintage” setting is for tantalum capacitors, the “clean” setting is for electrolytic. Of all the tone features provided in the Tone Beast this option is the most subtle but still noticeable to many ears depending on the source being treated. Recording a bass DI or bass instrument such as kick drum is perhaps one of the easier ways to hear the effect that different capacitors have on the source signal.

## **Output Transformer Bypass Switch**

This feature removes both the nickel and steel core transformers from the circuit, in favor of an electronically balanced output. Use this option when seeking less character or a more surgically transparent signal output. The signal will experience a loss of about -8db when this switch is engaged. This is due to the 1:3 (step-up) turns ratio shared by both output transformers. The transformerless output is only buffered to operate at 1:1.

## **Output Transformer Selector Switch**

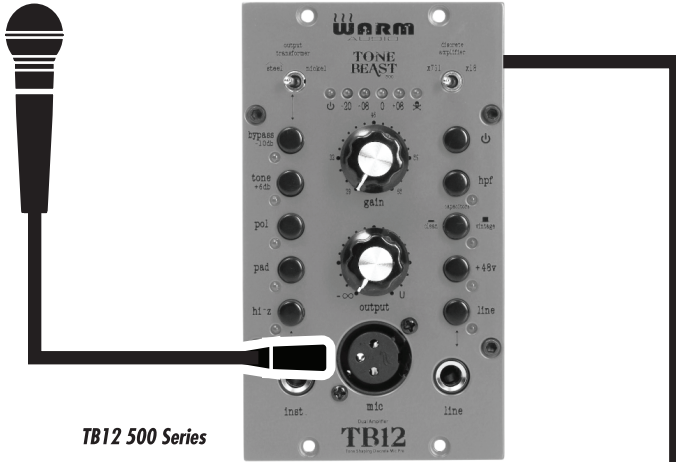
This feature allows the user to switch between 2 CineMag output transformers of different tone/make. The steel core transformer sounds more “vintage” with a fairly “mid-forward” tone. The 50% nickel core transformer has a “cleaner” tone than the steel and was custom designed by CineMag specifically for the Tone Beast. The nickel version uses a unique lamination order that gives the signal a more linear response than the steel option, but still treats the signal with a slight sheen or polish, and gives it a smoothness that’s hard not to fall in love with.



# CHAPTER 4: HOOKUP DIAGRAMS

ENGLISH

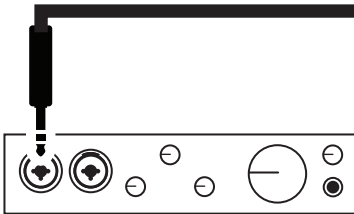
WARRANTY  
NOW LET'S GET STARTED  
TECHNICAL SPECS  
HOOKUP DIAGRAMS  
RECALL SHEETS



TB12 500 Series



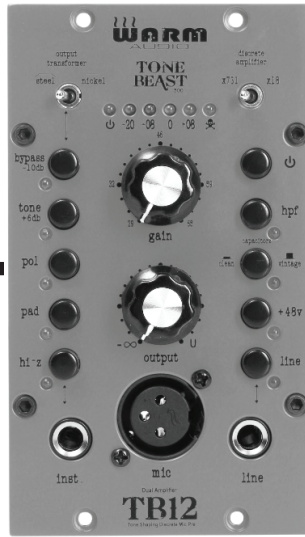
WA-2A



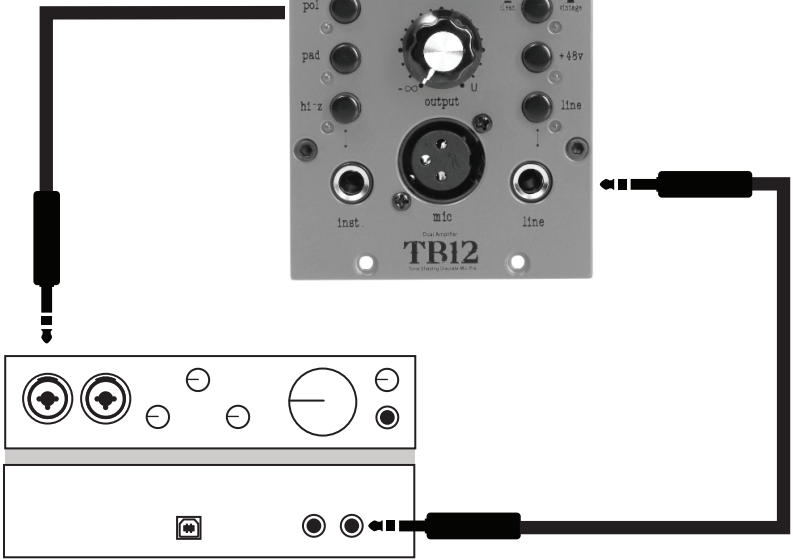
Recording interface

In this example, a microphone is feeding into a TB12 500 Series, which feeds in to the WA-2A via a balanced XLR patch cable, which feeds in the LINE LEVEL input of your recording interface/recorder.

**Note: it is important to use a line level input on your recording device as opposed to a microphone or instrument level input.**



**TB12 500 Series**

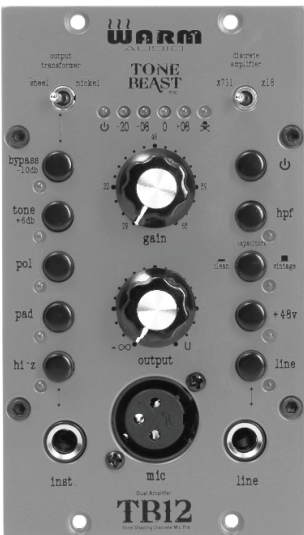
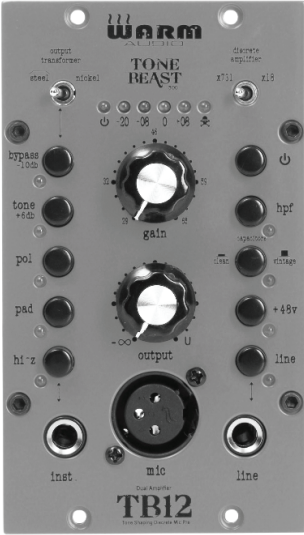


**Recording interface**

In this example, the TB12 500 Series is being routed as an insert into a recording device. This is useful for using the TB12 500 Series as an “analog plug-in” or insert for mix-down. The recording device is feeding the TB12 500 Series with a balanced 1/4” cable via a line output. Then, the recording device is capturing the TB12 500 Series via a LINE LEVEL input.

The TB12 500 Series may be used as a line level processor to ‘warm up’, saturate, or intentionally distort a line level signal creatively. It may also be used after any other line level device or another preamp for a similar effect.

# CHAPTER 5: RECALL SHEETS



Session: \_\_\_\_\_ Track: \_\_\_\_\_ Notes: \_\_\_\_\_  
Date: \_\_\_\_\_ Instrument: \_\_\_\_\_ Notes: \_\_\_\_\_

Session: \_\_\_\_\_ Track: \_\_\_\_\_ Notes: \_\_\_\_\_  
Date: \_\_\_\_\_ Instrument: \_\_\_\_\_ Notes: \_\_\_\_\_

**WARM**<sup>TM</sup>  
AUDIO

© 2016 **Warm Audio**<sup>TM</sup> LLC.

Liberty Hill, Texas USA | [www.warmaudio.com](http://www.warmaudio.com)