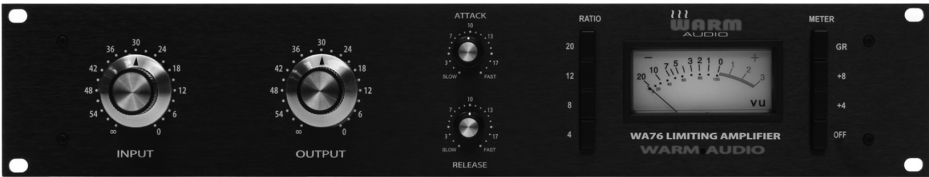


# WA76

DISCRETE COMPRESSOR

Revision 1.1



# THANK YOU!

## REGISTER YOUR WA76

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 WA76 compressor. 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 WA76 is no exception. The WA76 uses the highest quality custom input and output transformers made by Cinemag Transformers USA. The WA76 also 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 and mixing with the WA76.

## 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

# 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.

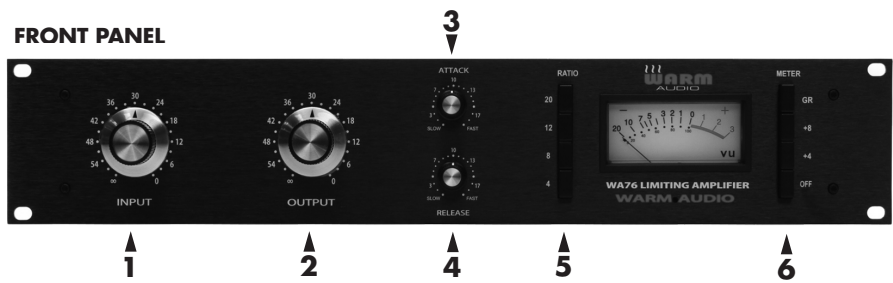
With the proper care, your Warm Audio gear should last a lifetime and provide a lifetime of enjoyment. We believe the best advertisement we can have is a properly working unit being put to great use. Let's work together to make it happen.

# CHAPTER 2: NOW LET’S GET STARTED!

## Introduction

The classic ‘76 style compressor is possibly the most iconic, widely known, and widely used compressor in history. We have faithfully reproduced the circuitry of the revision D, generally considered one of the best and most popular among the different versions made over the years. Our goal was to make a compressor of this pedigree affordable for the first time, without compromising the quality and design parameters that make this type of compressor so desirable. We’ve used all discrete, through-hole components, high quality Cinemag input and output transformers, and a class A circuit that stays true to the legacy design. The WA76 can deliver the same crisp, punchy drum tracks, vocal tracks, bass tracks, and much more. For those who have worked with the classic gear, the WA76 delivers the same professional results that experienced engineers have come to expect and to love. We’ve even made sure that the WA76 can reproduce the legendary ‘All Buttons In’ mode, for which no ‘76 style compressor would be complete without.

# CHAPTER 3: TECHNICAL SPECS



## 1. Input Knob

This determines the level of the signal entering the WA76, as well as the compression threshold. Higher settings will result in increased amounts of limiting or compression.

## 2. Output Knob

This determines the final output level of signal leaving the WA76. Once the desired amount of limiting or compression is achieved with the use of the Input control, the Output control can be used to make up any gain lost from the gain reduction.

## 3. Attack Knob

This sets the amount of time it takes the WA76 to respond to an incoming signal and begin compressing. Having too fast of an attack time can sometimes cause a recording to sound less “life-like” or “open.” The WA76 attack time is adjustable from 20 microseconds to 800 microseconds. Even set to it’s slowest attack, the WA76 will have a faster attack than some other types of compressors, such as optical and variable mu.

# CHAPTER 3: TECHNICAL SPECS

## 4. Release Knob

This sets the amount of time it takes the WA76 to return to its initial (uncompressed) level. The WA76's release time is adjustable from 50 milliseconds to 1100 milliseconds (1.1 seconds). If the release time is too fast, "pumping" and "breathing" can occur due to the rapid rise of background noise during gain restoration. On the flip-side, if the release time is too slow, a loud section of the recording may cause compression to occur and continue through a soft section of the recording (where it is un-needed), making the soft section quiet and difficult to hear.

## 5. Ratio

These four buttons determine the severity of the gain reduction. (A ratio of 4:1, for example, means that whenever there is an increase of up to 4 decibels in the loudness of the input signal, there will only be a 1 dB increase in output level. A ratio of 8:1 means that any time there is an increase of up to 8 dB in the input signal, there will still only be a 1 dB increase in output level.) Also, true to the classic design, higher ratio settings will also set the compression threshold at a higher level. This means that, for instance, at a ratio of 20:1, more of the 'body' of a signal will be left uncompressed, but transients above it's higher fixed threshold will be more drastically compressed. When higher ratios (12:1 or 20:1) are selected, the WA76 is essentially acting more as a limiter than as a compressor.

The WA76 can reproduce the classic effect known as 'All Buttons In' mode, sometimes also referred to as 'British Mode' or the 'Four Button Trick'. Originally an accident due to the mechanical nature of the interconnected latching switches, this mode is reproduced by pushing in all four ratio buttons simultaneously and getting them to latch. This can take a bit of practice. The resulting compression curve is aggressive and unmistakably unique, and can be heard on the drum tracks of many classic recordings. All-buttons-in compression is typically characterized by having a very aggressive compression ratio, attack and release curves that are more drastic plateaus opposed to gentler slopes, and more audible distortion or 'overdrive' on the signal. Initial transients are more likely to come through loudly, followed by heavy compression curve sometimes described as having a 'sucking' effect as the compressor releases. Because this mode is considered a design accident, faithfully maintained; it is normal for the meter function to 'peg out' and cease providing accurate metering. This will not harm the unit or the meter.

The WA76 must have at least one ratio select button engaged in order to function. With no ratio button engaged, the unit will eventually stop passing audio.

## 6. Meter

The four buttons under the Meter label power the unit on (or off) and determine what the WA76's front panel meter displays. The VU Meter displays either the amount of gain reduction (GR), or the compressor's output level which is either +8 or +4. When "+8" is selected, a meter reading of 0 corresponds to a level of +8 dBm at the rear panel outputs. When "+4" is selected, a meter reading of 0 corresponds to a level of +4 dBm at the rear panel outputs. Engaging the OFF switch powers off the WA76 entirely.

# CHAPTER 3: TECHNICAL SPECS

## BACK PANEL



### 7. Meter Adjust

The WA76 meter can be adjusted via the rear meter adjust control. This requires a jeweler's screwdriver to operate. To calibrate the VU, connect power to the WA76, set all four knobs to 12 o'clock, pad button not engaged, and no audio cables connected in or out. Set ratio select to '4', and meter select to 'GR'. Adjust meter trim pot until needle rests at exactly '0'. The meter is now calibrated. It is not unusual to need to recalibrate the VU after considerable time has passed, or after the unit has been physically moved around or transported. Do not attempt to calibrate the VU meter from the front panel VU assembly.

### 8. Input Pad

This switch sits on the backside of the unit near the inputs. When engaged, it lowers the incoming signal by -23db. In most normal operations, the pad should not be necessary. This feature is handy when using a high gain preamp before the WA76 that does not have output attenuation, or with a source with an extremely loud transient, such as snare drum. When sending a loud line level signal into the WA76 input, this feature will provide greater flexibility to the WA76 input control, allowing you to turn it up higher before compression begins.

### 9. Inputs

2 inputs are provided on the backside of the WA76 for flexibility. One is a balanced TRS connection, the other is a balanced XLR. You can connect many line-level sources directly to the WA76. Preamps such as the Warm Audio WA12 and TB12 are great sources to feed directly into the WA76 input. These inputs can be used simultaneously but note that having both connected at the same time could create unwanted noise if one source is not actively carrying a signal to the WA76. For unbalanced operation, use an unbalanced TS (tip/sleeve) ¼ cable.

### 10. Outputs

2 outputs are provided on the backside of the WA76 for flexibility. One is a balanced TRS connection and the other is a balanced XLR. For unbalanced operation, use an unbalanced TS (tip/sleeve) ¼ cable.

### 11. AC Power

The WA76 is designed to use a 24V AC, .4 amp power transformer. Warm Audio recommends that you use the transformer we provide, included with the unit.

# CHAPTER 3: TECHNICAL SPECS

## ENGLISH

WARRANTY

NOW LET'S GET STARTED

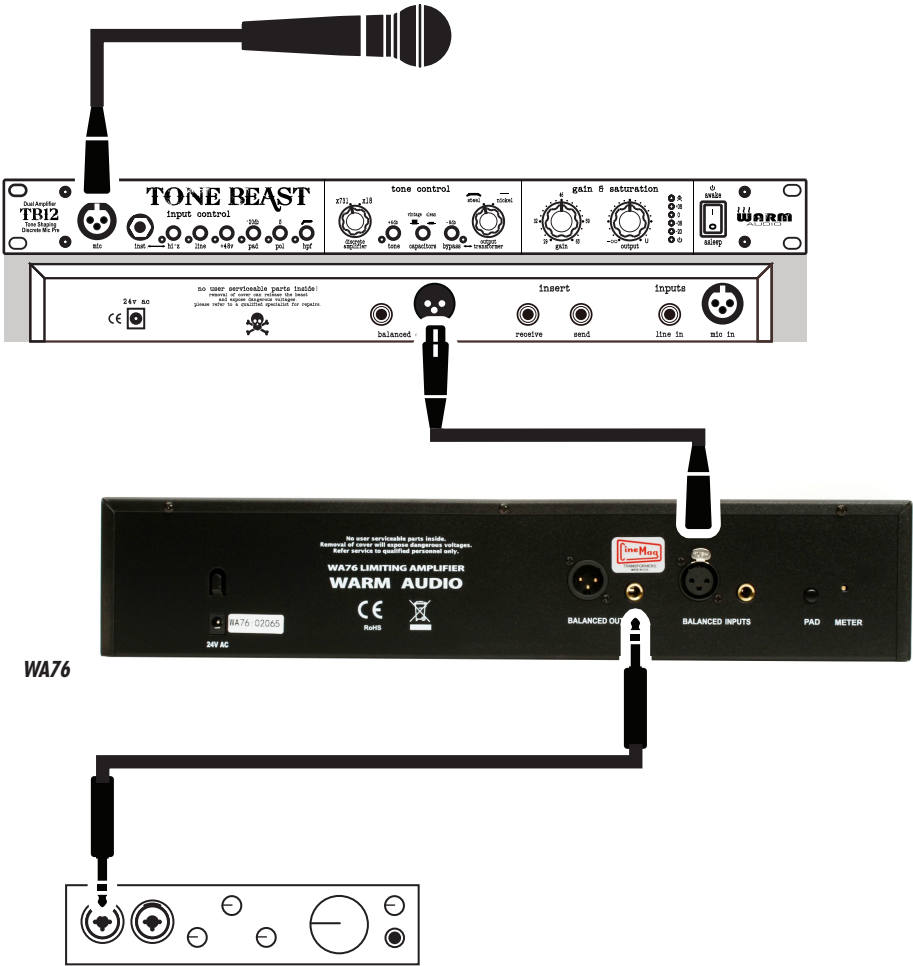
TECHNICAL SPECS

HOOKEUP DIAGRAMS

RECALL SHEETS

<b>Input impedance</b>	600 ohms, bridges-T control (floating)
<b>frequency response</b>	± 1 dB 20 Hz to 20kHz
<b>input</b>	transformer balanced +4db XLR and TRS, wired in parallel
<b>output</b>	transformer balanced +4db XLR and TRS, wired in parallel
<b>input pad</b>	-23dB attenuation to audio input source
<b>maximum makeup gain</b>	55db
<b>THD</b>	Less than 0.4% total harmonic distortion from 50 Hz to 20 kHz with limiting
<b>Signal to noise ratio</b>	greater than 74 dB at +25 dBm, EIN -104.1 dBm
<b>attack time</b>	20 microseconds to 800 microseconds
<b>release time</b>	50 milliseconds to 1 second
<b>meter modes</b>	dB gain reduction, dB output (+4 above meter), dB output (+8 above meter)
<b>PSU</b>	Internal power supply, external 24v AC .4 amp mains transformer
<b>chasis</b>	19" Rackmount chassis, 2u

# CHAPTER 4: HOOKUP DIAGRAMS



Recording interface

In this example, a microphone is feeding into a preamplifier, which feeds into the WA76 via a balanced XLR patch cable, which feeds into 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.**



# CHAPTER 5: HOOKUP DIAGRAMS

## ENGLISH

WARRANTY

NOW LET'S GET STARTED

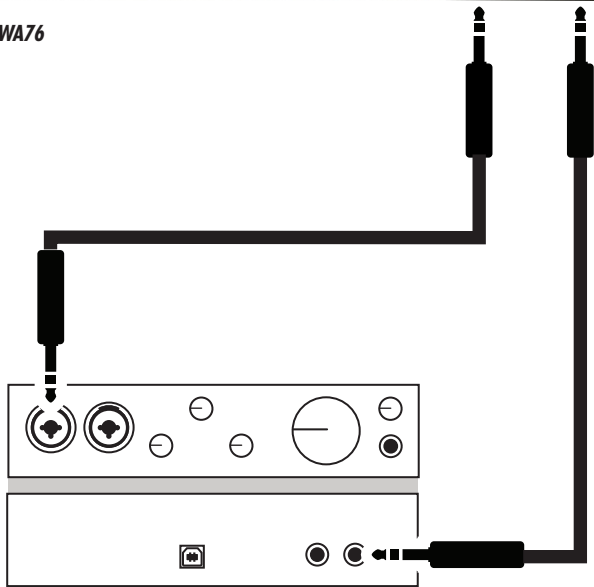
TECHNICAL SPECS

HOOKUP DIAGRAMS

RECALL SHEETS



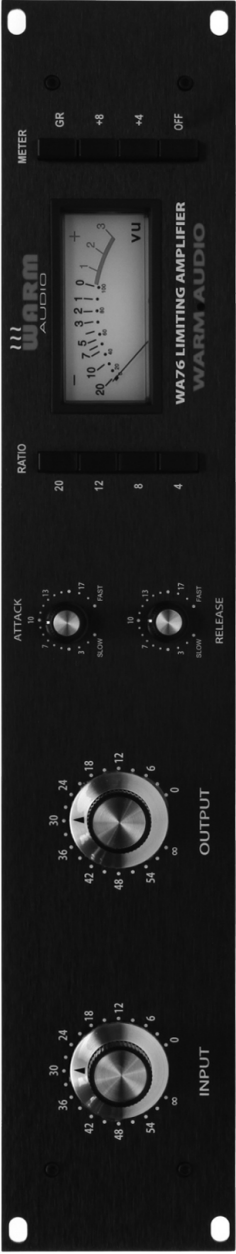
WA76



*Recording interface*

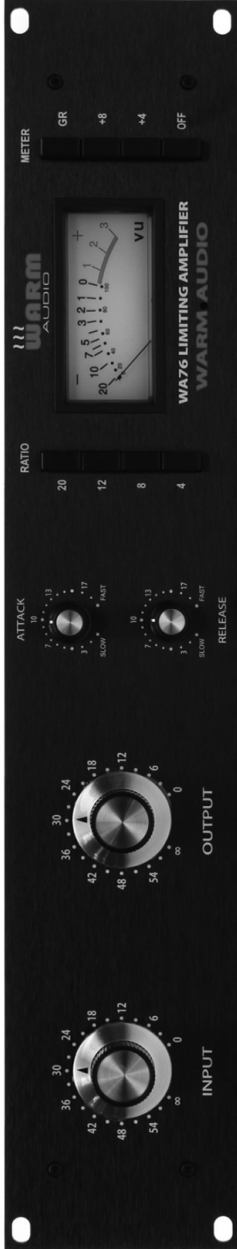
In this example, the WA76 is being routed as an insert into a recording device. This is useful for using the WA76 as an “analog plug-in” or insert for mix-down. The recording device is feeding the WA76 with a balanced 1/4” cable via a line output. Then, the recording device is capturing the WA76 via a LINE LEVEL input.

# CHAPTER 6: RECALL SHEETS



Session: \_\_\_\_\_ Track: \_\_\_\_\_ Notes: \_\_\_\_\_

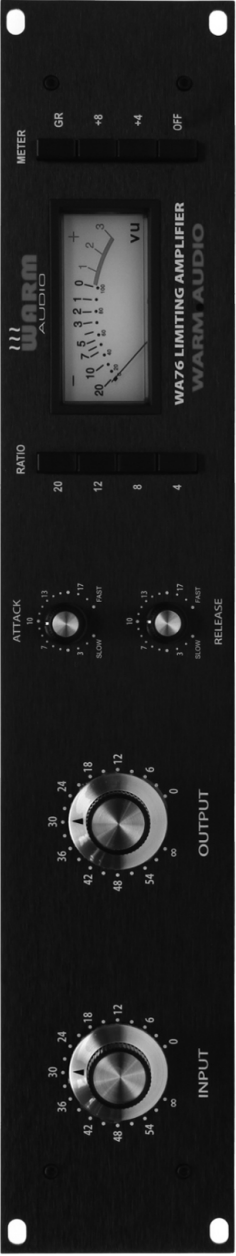
Date: \_\_\_\_\_ Instrument: \_\_\_\_\_ Notes: \_\_\_\_\_



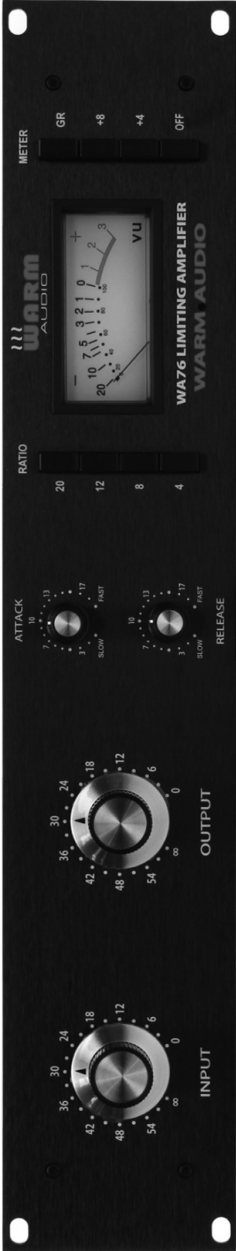
Session: \_\_\_\_\_ Track: \_\_\_\_\_ Notes: \_\_\_\_\_

Date: \_\_\_\_\_ Instrument: \_\_\_\_\_ Notes: \_\_\_\_\_

# CHAPTER 5: RECALL SHEETS



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



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

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