

OWNERS MANUAL

MANUAL NO. 02

REV. DATE: 2/2024

ZTPRE

v2



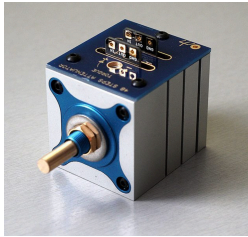
Zen Triode Preamplifier

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INTRODUCTION

The Zen Triode Preamp (ZTPRE) is a fully differential-balanced all tube preamp that was designed 100% for sound quality and therefore has nearly zero features aka bells and whistles. If it were a race car, it would only have one seat and be pretty well stripped the bone for winning races.

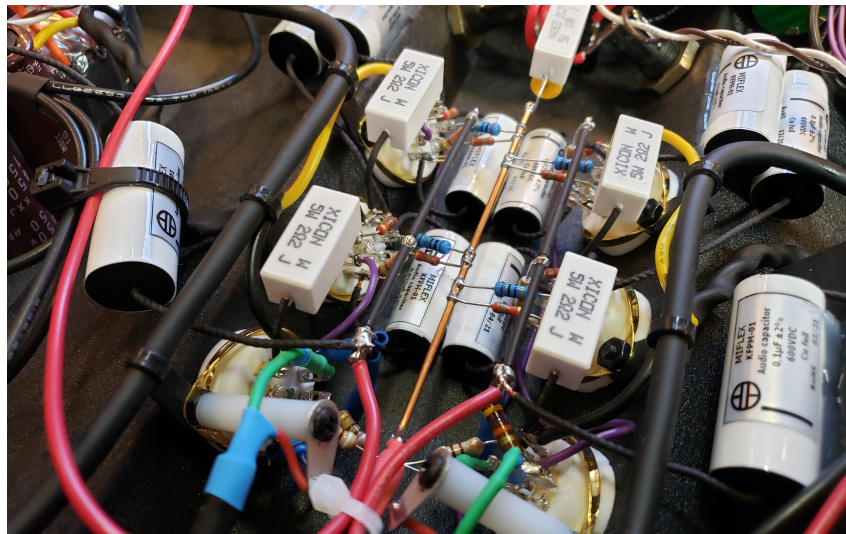
This is not only fully differential balanced but fully dual mono with quad power supplies. Everything inside is hand wired point-to-point with no circuit boards using only the best parts and wires.



NOTE: This is the owner's manual for the 2024 model ZTPREv2. The only functional differences between this and the prior model is the remote control volume has been discontinued. Additionally, we have added upgraded stepped attenuators as an option.

OPERATION

The ZTPRE features a volume control for each channel. Additionally each channel has an output level control that is adjustable with rear mounted attenuators each with 20 steps of adjustment. Simply turn these output level controls all the way down so that no sound is heard and then raise the master volumes to the half way mark. Now slowly raise the output level controls 1 click at a time until your amplifier / speaker combination reaches what you would call your normal listening level.



POINT TO POINT SYMMETRY

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UNBALANCED INPUT OPTIONS

The ZTPRE is available with an optional transformer balanced input option making it possible to convert an unbalanced input to a fully balanced input. When this option is used a single RCA jack is seen instead of a 3 pin XLR jack. The advantage of this is in maintaining a fully balanced system. Using a RCA to XLR adapter jack in place of this option will also work but will unbalanced the entire system which may or may not reduce sound quality.

It is important to understand that most balanced sources will have somewhere between 3.5 and 10.5 volts of signal whereas most unbalanced RCA components will seldom have more than 2 volts. This means, even with the balanced input transformer option, whatever you have plugged into it will still only have 2 volts and thus play much quieter than your balanced sources causing you to have to turn the volume control much higher to reach the same listening level. This is normal, but needs to be understood or else you might think something is wrong.

One nice trick when running a single ended source into the ZTPRE is to put a single tube gain stage on your source to raise the voltage to around 6 volts or so. Decware makes a product that does this called the ZSTAGE.



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INPUT SELECTOR OPTION

The ZTPRE comes with optionally 3 inputs making it possible to select from 3 different source components. The input selector is located on the top side of the unit just behind the face plate.

The input selector switch is a rotary type (obviously) but perhaps not so obvious is that it uses silver contacts to preserve signal integrity.



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IEC POWER CORD CONNECTOR / FUSES

The ZTPRE uses a standard high quality IEC connector making it compatible with all after market power cords including our own DHC-1 which is recommended. Unlike so many “hi-end” components in this price range, this is not a 75 cent IEC jack, but instead very high quality worthy of a good power cord. Even many aftermarket ‘audiophile’ power connectors are actually just gold plated 75 cent jacks so don’t be fooled.

The fuses are located on either channel of the ZTPRE and are rated at 2 amps each. Fuse specification is:

250V 2A Slo-Blo A 576-0313002.MXP

Physical Size is:
6.3 mm x 32 mm

The specification shown is available from mouser.com or you can call DECWARE at (309) 822 5255 for replacement. Also you can source your own fuses so long as they are the same physical size and rating. If you use an “audiophile” fuse, make sure it’s not a standard ceramic fuse with a new wrapper or paint job as there are many fake hi-end fuses available for 1000 times more than the actual fuse really costs. Your money would be better spent on cables, or tubes.

NOTE: Installing the wrong size fuse or operating without a fuse could permanently damage your preamp if a tube shorts. This would not be covered under the lifetime warranty and it is easy to know if the fuse specification was exceeded.

The power switch activates both channels at the same time. As you know, the ZTPRE is a fully dual mono amplifier which is why there are two fuses. These fuses cover both power supplies in both channels. Do not use larger than a 2 amp slow blow fuse or your warranty will be void.

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OUTPUT LEVEL CONTROLS

The ZTPRE features an output level control for each channel which sets the output voltage of the ZTPRE to match the amplifier's input sensitivity. It is recommended for DECWARE amplifiers that have input level controls also known as gain controls and also used as volume controls when no preamp is used, to have the output level of the ZTPRE at full and experiment from there, whereas using the ZTPRE with non-DECWARE amplifiers it would be best to follow this set up as your starting point:



Turn your amplifier ON and let it warm up a bit. While it warms up be sure your output level controls are turned all the way down.

Turn on your source and raise the volume controls to the half way point. You will hear no sound yet, because the output level controls are turned all the way down. Slowly raise each control one click at a time until the amps are playing at your normal listening level. The ZTPRE output controls are now set. From this reference point you can experiment with setting the output controls higher or lower and compensating with the master volume controls on the front of the ZTPRE. Just go with whatever sounds the best. You are listening for dynamics, density, and a fullness to the sound when you make these adjustments.

The output level controls come standard with ALL variations of the ZTPRE. They consist of 20 position gold contact stepped attenuators using 1% precision metal film resistors with no leads and no circuit boards. There is no signal degradation as a result of these controls.

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STUDIO OPTIONS

The section on studio options has been deleted from this manual. If you plan to use this in a studio you can call and talk to us about installing cumulative switching or input level controls.

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TUBES

The ZTPRE uses 3 dual-triodes per channel to create a true balanced preamp. So if you look at this preamp and think of it as a V6 race engine as its looks would suggest, it is actually a V12 using 12 triode stages to achieve audio bliss.



ZTPRE is designed for the higher heater current requirements it's factory tube compliment of 6N1P-EB tubes. These are the smoothest and the warmest tubes available making use with digital sources particularly synergistic. Replacement tubes are always available from DECWARE.

One of the unique features of the ZTPRE are the heater circuits. Each channel has it's own AC heater supply which was found to sound better than DC due to the inevitably higher current potential for the dollar, and the ZTPRE took it a step further with a high voltage 18.9 volt supply rather than 6.3 volts. This requires all the heaters of all three tubes on each channel to be wired in series. After extensive testing between AC, DC, it was found AC sounded better. After additional testing between 6.3volts where each tube is wired in parallel vs. 18.9 volts where all three tubes are wired in series saw another market increase in sound quality. It creates an interconnectedness between all the tubes of the various channel and gives it the more transparent single ended sound the ZTPRE is famous for.

This means that if the heater burns out in one tube, all three will go dead just like old fashioned Christmas tree lights! This is very rare of course but helps to know what can happen in rare cases.

The main rule with this type of circuit is that all three tubes should match as far as heater draw. See next page.

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TUBE HEATER CURRENT



The three tubes of each channel have the heaters wired in series which means that ideally you want all three tubes to match. It definitely means that where the factory tube compliment of 6N1P-EB tubes are concerned, you either have to run all 6N1P-EB's or NONE at all. In other words, you can run 6922's, good strong 6DJ8's, or 7DJ8's. Some Russian 6N23P's may also work well so long as they are relatively matched.

To be clear, you can NOT mix 6N1P's with 6DJ8 or 6922 or 7DJ8 or any other compatible tube at the same time without side effects. The reason for this is that the 6N1P has a higher current draw on its heaters than all of the other tubes mentioned. Running tubes with miss-matched current draws like this can have effects like having your 6N1P prematurely fail, or having one or both of the other tubes run with starved heaters causing higher harmonic distortion which some people would actually like.

Also, when it comes time to change tubes if you notice one tube that has grown darker in appearance than the others it is an indication that it was a weaker tube or had a heater that drew more current causing it to run hotter or both. This is not a real sonic issue, but deserves explanation in so much that if you want all your tubes to balance out perfectly and last the same amount of time aka wear evenly, then make sure they all match. Match the sections of each tube and then match the tubes themselves. This will have little sonic benefit except over time, in that you'll get longer periods of time between tube changes.

The factory tube compliment of 6N1P-EB tubes have a rated life of 6000 hours.

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TUBE HEAT IN GENERAL

Due to the design of the ZTPRE's tube layout, even if configured without a selector and completely covered by a metal plate (worse case scenario) there would still be adequate ventilation for the tubes out the back so no worries about overheating the ZTPRE however whatever was set on it would no doubt be overheated.

WARM UP

The ZTPRE has no unique requirements other than the typical warm up time associated with tube gear. After the unit is turned on, the tubes will begin to warm up and glow and begin to pass signal after approx 30 seconds or so. The best sound quality, as with all tube gear, will come some time after the 20 minute mark.

MAXIMUM ON TIME

There is no time limit or suggested maximum amount of time the ZTPRE can be left on. If left on indefinitely it will have to be turned off for tube replacement every 6000 hours.

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OUTPUT JACKS



The ZTPRE has two XLR fully balanced outputs, one per channel that are directly connected to the output level controls previously discussed.

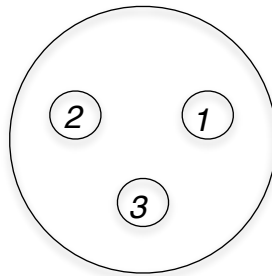
These balanced outputs have an impedance sufficient to drive cables up to 40 feet without issues.

XLR BALANCED OUTPUT

PIN 1 is AUDIO GROUND

PIN 2 is SIGNAL

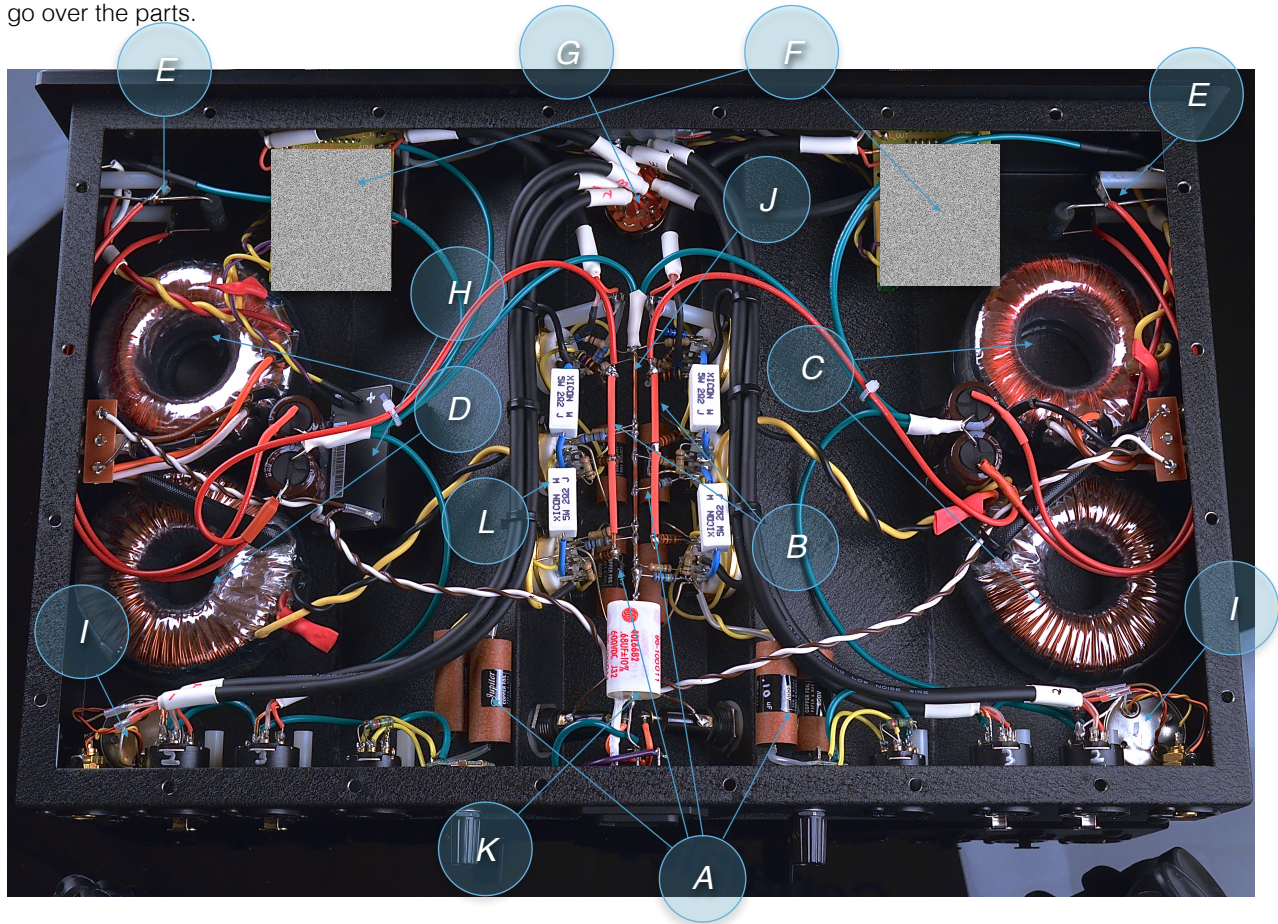
PIN 3 is SIGNAL



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INTERNAL COMPONENTS

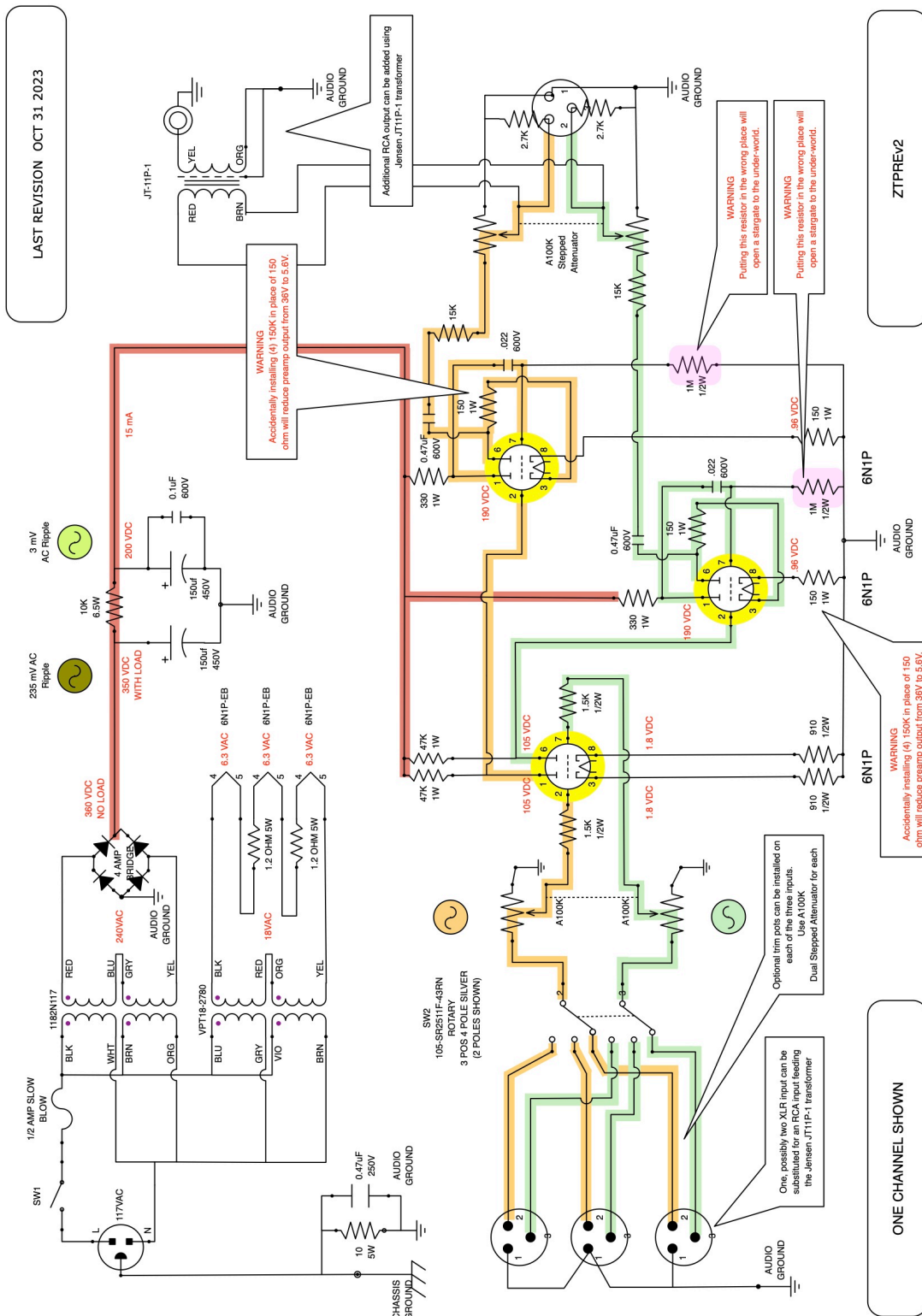
There are no user serviceable parts inside the ZTPRE, but there is a risk of high voltage shock of potentially 300VDC which can be stored by the capacitors inside. To keep curious hands out, we can look inside here and go over the parts.



The ZTPRE chassis is steel with powder coat finish. Transformers are floating on silicon to minimize coupling while at the same time adding mass. The shape of the chassis makes it incredibly stiff and vibration resistant. The following is a description of the internal parts shown above.

- A) There are four coupling capacitors per channel for a total of eight. Shown are copper foil caps. Standard coupling caps are polypropylene film and foil caps like "K" shown above.
- B) These red lines are actually the copper power supply rails, one per channel.
- C) High Voltage and Low voltage transformers for left channel. The low voltage powers the tube heaters.
- D) High Voltage and Low voltage transformers for right channel. The low voltage powers the tube heaters.
- E) Ultra Fast Recovery high current bridge rectifier for each channel.
- F) Volume controls or 48 position stepped attenuators.
- G) Input selector switch.
- H) Regulated supply for front mounted LED.
- I) Jensen wide bandwidth balanced input transformer.
- J) Copper Ground Buss of only three inches.
- K) Anti-Ground Loop circuit.
- L) Tube heater dropping resistors between each series tube heater. Two per channel.

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WARRANTY

Your preamplifier comes with a lifetime warranty to the original buyer. It covers defects in parts or labor. If you sell your preamp for some reason, the buyer can return it to us for inspection and any updates at which point we can offer to transfer the lifetime warranty to him or her for a reasonable fee.

If your preamp needs to return to the mothership, please call us first or at least e-mail with a description of the problem. Statistically 30% of what is sent here for repair has nothing wrong with it. We can often head this off at the pass by consulting you over the phone and helping you to troubleshoot the problem. Decware amps are built to outlast you.

Returns should be sent to our main office. Please use the Return Form on our web site for the correct address and required information.

FINAL NOTE

We want this to be the best sounding preamplifier you've owned and since these products are like our children we have a vested interest in their continued success. Please call us any time you have questions or need advice on how to improve your sound, or room acoustics. We want you to love this thing as much as we do, and will bend over backwards to make sure you do.

-Steve Deckert / DECWARE