

OWNERS MANUAL

MANUAL NO. 01

REV. DATE: 2/2008



Zen Mini Torii SE Amplifier
Single Ended Dual Mono 6V6 amplifier

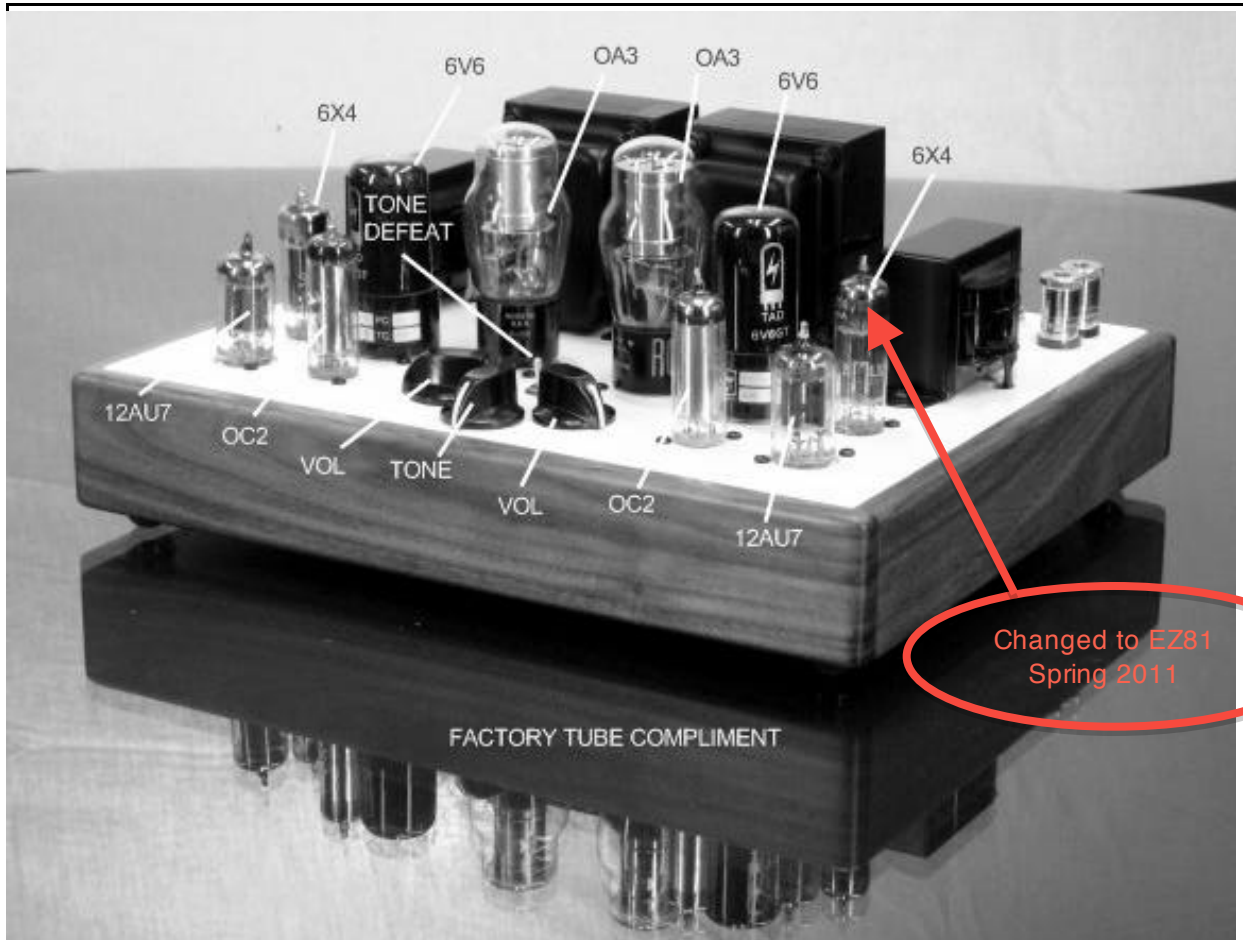
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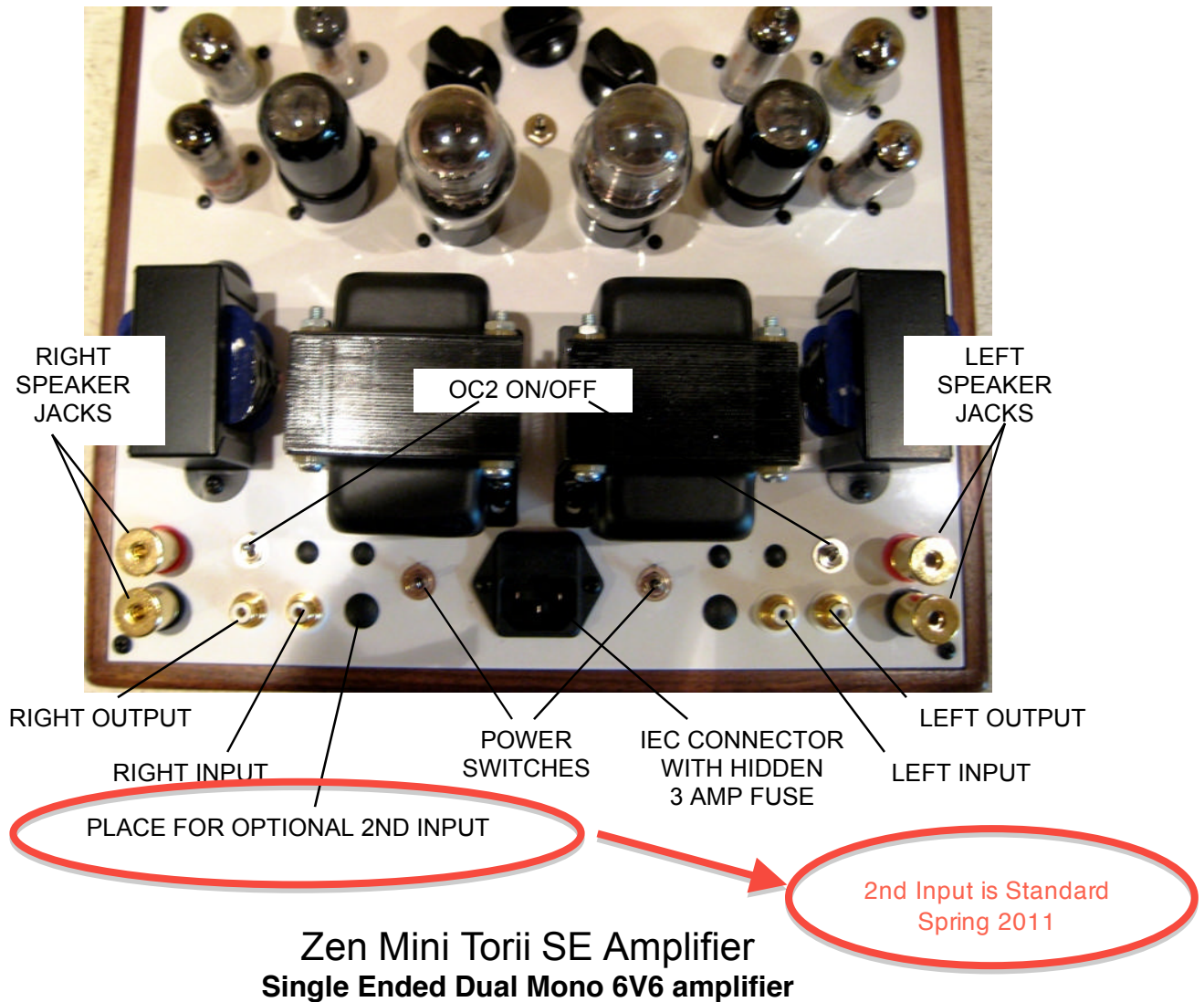
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FIGURE 2



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START UP

After unpacking your amp refer to figure 1 to install the supplied tubes.

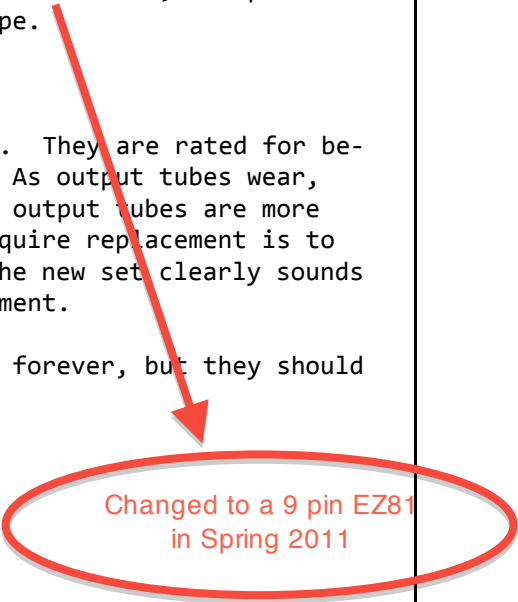
ABOUT THE TUBES

Your amp is configured as a single ended pentode with a single output tube per channel. The output tubes are 6V6 or any pin compatible equivalent. The input tube is a single 12AU7 for each channel. You can also use 12AT7's and compatible equivalents. The remaining tubes are supporting tubes such as the larger 8 pin OA3 regulation tubes (one per side) and the smaller 7 pin OC2 regulation tubes. These regulate the high voltage for both the output tubes and input tubes respectively. The last two tubes are also 7 pin, and are 6X4 rectifiers, one per channel. These should not be substituted with any other type.

TUBE LIFE

The output tubes are the only ones that really wear out. They are rated for between 3000~5000 hours depending on which ones you use. As output tubes wear, they become less powerful and softer sounding. If your output tubes are more than a couple years old the best way to tell if they require replacement is to install a new set and listen for any differences. If the new set clearly sounds better, then you know the old ones are ready for retirement.

Rectifiers and input tubes can last for what seems like forever, but they should be checked every few years using the same procedure.



Changed to a 9 pin EZ81
in Spring 2011

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THE FOLLOWING ARE COMPATIBLE N.O.S. OUTPUT TUBES THAT YOU CAN USE IN THIS AMP:

1944 RCA gray glass 6y6g
1949 aytheon 6V6GT
1951 national union 6V6GT
1950 ylvaniagrayglass 6y6G
1950 nationalUnion 6V6GT
1944 RCA Gray Glass 6Y6G
1949 Raytheon 6V6GT
1951 National Union 6V6GT
1950 Sylvania Gray Glass 6Y6G
1950 National Union 6V6GT
1955 sylvania JAN-CHS-6V6GTY
1959 tung-sol 6L6WGB
1960 canada GE 6L6-GB
1961 raytheon 6V6GT
1962 ken-rad 6V6GT
1955 Sylvania JAN-CHS-6V6GTY
1959 Tung-Sol 6L6WGB
1960 Canada G.E. 6L6-GB
1961 Raytheon 6V6GT
1962 Ken-Rad 6V6GT
1964 Sylvania 6V6GT
1970 sylvania 6L6
1972 RCAAmperex 5881
1979 philips JAN-6L6-WGB
1961cbs-hytron 6L6WGB
1964 Sylvania 6V6GT
1970 Sylvania 6L6G
1972 RCA / Amperex 5881
1979 Philips JAN-6L6-WGB
1961 CBS-Hytron 6L6WGB
CEI 6L6GB 5881
International 6V6GTA
ken-rad 6Y6G
sylvania black 6y6G
Westinghouse 6v6GTA
CEI 6L6GB5881
International 6V6GTA
Ken-Rad Black Top 6Y6G
Sylvania Gray Glass 6Y6G
Westinghouse 6V6GTA
tungsol type41 6K6
Rca 6k6gt
ge 6k6gt
1940 rca type41 6k6
6f6gt sylvania
Tung-Sol Type41 6K6
RCA 6K6GT
G.E. 6K6GT
1940 RCAType 41 6K6

RCA-Tung-Sol 6L6
Amperex EL37-6L6
Ken-Rad 6L6 Metal
USSR 6L6
GE 6L6 GB 1957 black plate HP.jpg
GE 6L6GC double o getr.jpg
Tungsol 6L6.jpg
GE5881.jpg
Sylvania jan chs 5932 chrome top black plate 6L6.jpg
1957 G.E. Black Plate 6L6-HP
G.E. Double "00" Getter 6L6GC
Tung-Sol6L6
G.E.5881
Sylvania JAN-CHS 5932 Black Plate

Of course any current production 6V6 will sound very nice in this amp.

All of the output tubes can be used with OA3 regulator tube. Many will also work with OB3, OC3, OD3. Each different regulator tube will change the voltage on the grid of the output tube, thus changing it's signature somewhat. You are welcome to experiment with these alternate voltage regulator tubes.

OB3 GLOW DISCHARGE TUBE



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START UP CONTINUED

Now that you have the tubes installed and know what each one is for, hook your speakers and source up to the amplifier and turn it on. Be sure to have the volume controls all the way down. After the tubes slowly light up and begin to work (about 20 seconds) you can slowly start to raise the volume. If you hear distortion it means the amp is still warming up. 60 seconds is the official warm up period before music will play without distortion.

POWER OUTPUT

Your amplifier will drive almost a dead short meaning a 4 ohm speaker wouldn't bother it a bit. Because of this unique ability for a single ended amplifier it is able to drive every speaker with a good frequency balance. The issue is never going to be the amplifiers ability to drive a given speaker but rather how loud it will get and if that volume is satisfactory. Complex, low efficiency speakers typically have busy crossover networks which convert some of the initial 1st watt of power into heat before it ever reaches the drivers. With only a couple watts, you don't want to waste any power into heat if you don't have to. Ideal speakers are generally simpler designs with higher efficiencies.

INPUT SENSITIVITY

This is the amount of signal required to get full output from the amplifier and with the stock 12AU7 input tube, the Mini Torii has an input sensitivity of 1 volt. That means that with a typical CD player, the volume controls will be at the half way point when the amp reaches full power. Turning them well past this point may result in distortion. On the other hand, if you run your IPOD or similar portable device as a source you may find the extra range on the volume control most helpful since these devices often put out less than the 2 volts.

TREBLE CONTROL

The center control between the volumes ~~is~~ ^{is} a treble control designed to roll off the top end as much or little as you like. The switch behind it is a defeat switch that will allow you to remove the treble circuit completely. When the treble circuit is engaged, it is only a shunt to ground meaning it is not in the signal path.

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OC2 REGULATION on INPUT TUBE

The OC2 regulator tube that feeds the 12AU7 input tube is on a switch that allows you to use it or not use it. This might be handy if you didn't have an OC2 and still wanted to listen to your amp, but mainly it was done just to amuse you by letting you hear the difference tube regulation makes. The OC2 is lit when in use and off when not in use.

OUTPUT TRANSFORMERS and IMPEDANCE

The Mini Torii amp uses proprietary output transformers. Its output transformers are wound on grain oriented silicon steel & nickel cores. They are the results of years of R&D and are one of the substantial secrets behind the success of our amplifiers.

The standard configuration for the Mini Torii runs speakers between 4 and 16 ohms without adjustment. However, if you have a lower impedance than 4 ohms or a particularly hard to drive speaker we can build the amp with our low impedance transformers making the amp able to drive almost a dead short. And speaking of shorts...

Unlike a solid state amplifier, it is OK to short the speaker wires together accidentally or on purpose. If for some reason the amplifier was on with the volume all the way up and the CD player on with no speakers attached, having the speaker outputs shorted together will actually protect the amp from possible damage to the output transformers. With most tube amps, this scenario would immediately damage the output transformers making shorting of the outputs mandatory when a speaker is not connected. But once again, the Zen amp is overbuilt and 2 watts is not enough to damage its transformers under any condition.

I don't know about you, but in my years as an audio nut, I've blown up a thing or two by accident... It's nice to know that it is impossible to blow up your speakers with this amp and impossible to blow up this amplifier with your speakers!

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START UP CONTINUED

BREAK IN

During the first few hours or days with your amplifier you will no doubt wonder about break-in, if for no other reason than hearing about it constantly every time you read about amplifiers.

If you're new to tube gear the amp will sound so good right out of the box that you will have a hard time worrying about break-in, so don't.

If you've been around the block once or twice, then the fastest way to break in the amp to a point where the sound stage and focus doesn't change back and forth from good to bad is this:

5 hours on and playing music at a normal level followed by 5 hours off. Repeat this 5 times. This process will speed the seating of the dielectric in the coupling caps and you can then expect the amp to bloom in the very near future.

Beyond this, the amplifier will continue to improve and become more refined over the next 200 hours or so. After that the output transformers season with age, like fine wine, so as the years go by your amplifier continues to sound sweeter and sweeter.

WEAK LINKS

Please, if even only for an evening, lift some of the handicaps you've placed on your new amplifier so you can hear more of it's inner magic. The fidelity of your amplifier is limited by the weakest link in your system. The quality of your source component and interconnect cables is of paramount importance because you now have an amplifier so good it will never become the weak link. You can't spend enough money on a source to hear how good the amplifier actually is, so each time you upgrade your source the amp will blow your mind.

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START UP CONTINUED

WEAK LINKS CONTINUED

Make sure you pull your speakers well out into the room set up in a triangle with the listening chair. In this arrangement you will be able to hear the music go holographic with outrageous depth and width and amuse yourself with how well your speakers disappear.

Statistically most owners of Zen amps have never heard the real potential and inner magic the amp is capable of. Because it sounds better than what they had, they stop exploring. Room acoustics are what create the boundary between potentials with this amplifier. Even with a 17,000.00 DAC as your source, you will not get to the magic place I'm talking about in an untreated room unless by sheer luck.

It is possible to take a spare bedroom of smallish size and create a dedicated listening space that literally sounds like it's 40 x 100 feet with the performers perfectly rendered in 3D space throughout that dimension as if your walls didn't exist. If people realized this was actually possible I think more would try it and report the rewards exceeded the effort by 10 fold. In this environment it is possible to hear deep into the music through the amplifier and differences between one high dollar amp and another become blatantly apparent while in an untreated room would be missed entirely.

MAINTENANCE

Cleaning should be done with the amplifier at room temperature and of course OFF. Tubes should be removed prior to cleaning. A damp towel with alcohol is ideal for removing smudge marks from the black powder coat finish.

The input jacks can also be cleaned with alcohol on a Q-Tip swab inserted into the jack and rotated. If the Q-Tip comes out with any dark color on it, your jacks were dirty. Jacks can get dirty after only a single insertion of a non-cleaned interconnect cable. Having clean connections is important. Finger oils do not help the sound.

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MAINTENANCE CONTINUED

Products like Caig DeOxit, ProGold and other contact cleaners/enhancers can also be used as part of a regular maintenance program. Basically whenever you unhook your amplifier, you should clean the jacks. If you never unhook your amplifier, you should unhook it at least every 6 months and clean all the jacks.

The amplifier is self biasing so there is no maintenance or adjustments to make after you install new tubes.

POWER CORDS and CONDITIONING

Upgraded power cords can and do make a difference when the overall strength of the audio chain begins to show a stock power cord as a weak link. It should be stated that we've heard as many high dollar power cords do little to improve things as we care to admit. However some are very noticeable. None will justify spending a grand or more unless you've gone off the deep end and wiring your entire breaker box with silver/Teflon and etc.

It makes little sense to invest too much in a power cord if your going to plug it directly into the wall outlet because far more of a problem than the cord itself is the dirty power coming from the outlet. What does make sense is to purchase a simple isolation transformer rated for 500 Watts or so and use that to decouple yourself from the grid and all the nasty harmonics that float in it. Then take a good power cord plugged into the isolation transformer and you will have a result.

TWEAKS

The biggest thing regarding tweaking the amplifier itself is going to be tubes. Every tube, even those sharing the same numbers, will sound slightly different. Rolling tubes, in particular the input tube and output tubes, with other brands and or NOS (New Old Stock) can yield some very synergistic effects. Beyond that the only really thing left would be vibration control. As you can see the amp is built like an army tank of thick steel so it's not prone to resonate like a thin chassis will. Things like tube dampers and high mass stands or spikes in various combinations can further improve focus.

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SERVICE AND REPAIR

Your amp is covered parts and labor for the lifetime of the original owner. Should it ever need repair or you just want it checked contact us or fill out the RA form on our web site and send it to us. We'll call you after it has arrived and let you know what we've found and determine the precise cause to prevent it from happening again. Less the 0.5% of Zen amps sold have required service since the amp was launched in 1996.

GETTING THE MOST FROM YOUR ZEN MINI TORII

Your amplifier comes with a lifetime warranty. Probably the only amplifier in production that has one. Decware is a small enough company to consider these hand built amplifiers more like children so we like to keep tabs on them, make sure they are in use and being enjoyed so they grow up to be great salesman. In that light, no one is going to buy a Zen amp if they come to your house and see it in the closet.

If you're not getting the sound you're after or grow bored with it we already know the 26 reasons that created that condition and would be pleased to offer our sincere problem solving and consulting skills to help you find what your looking for. In some cases it means helping your sell your amp and getting something else. In other cases it's speakers or tips on how to better set up your room without upsetting your spouse. Bottom line is we want you to enjoy music and stop listening to gear. The low power single ended approach has the potential to far exceed high power counterparts regardless of cost because of simple physics. Lower mass, higher efficiency / better speed, better linearity. You might think you need 500 watts to experience amazing dynamics but in reality, there is over 30 dB of dynamic range in the first watt. When you double that to 2 watts you gain 3 more dB. To gain another 3dB the power is doubled again and for every 3dB after that it doubles. So this is a game of preserving the first watt and being able to hear it. In a high power system, much of the first watt is spent into heat from complicated crossover networks and along with it much of that initial 30dB of dynamic range. We have developed affordable speakers based on this ideal that range in efficiency from 93 to 99 dB with 1 watt and have no crossovers.

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