

The warning section of the manual. Boring, but hey we care about your hearing and health.

WARNING

USING THIS PRODUCT AT EXCESSIVE VOLUMES CAN CAUSE PERMANENT HEARING DAMAGE.

USE AS LOW A VOLUME AS POSSIBLE

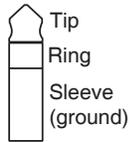
In order to use this system safely, avoid prolonged listening at excessive sound pressure levels. Please use the following guidelines established by the Occupational Safety Health Administration (OSHA) on maximum time exposure to sound pressure levels before hearing damage occurs.



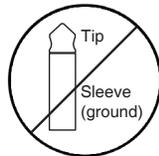
90 dB SPL at 8 hours
95 dB SPL at 4 hours
100 dB SPL at 2 hours
105 dB SPL at 1 hour
110 dB SPL at 1/2 hour
115 dB SPL at 15 minutes
120 dB SPL - avoid or damage may occur

CAUTION: Plugging a mono 1/4" or 1/8" TS plug into the Headphone Outputs on the HA540 will cause permanent damage to the unit because one side would be shorted to ground. **Never plug a mono plug into any of the Headphone Outputs THE HA540 WILL BE PERMANENTLY DAMAGED**

This is a TRS or stereo jack that is compatible with the HA540 Headphone Outputs.



This is a MONO jack and should never be plugged into the Headphone Output of a HA540.



WARNING: THE MINIMUM HEADPHONE IMPEDANCE FOR THE HA540 IS 8 OHMS. THE MAXIMUM HEADPHONE IMPEDANCE IS 2000 OHMS.

DO NOT OPEN THE HA540. REMOVING THE UNITS COVER COULD POTENTIALLY DAMAGE THE UNIT OR CAUSE HARM TO UNQUALIFIED PERSONS. THE UNIT OPERATES AT +150 VOLTS INSIDE. HIGH VOLTAGES EXIST INSIDE THE UNIT EVEN WHEN THE UNIT IS NOT POWERED ON. ALL WARRANTIES ARE VOID IF ANY INTERNAL COMPONENTS ARE DAMAGED DUE TO USER ERROR.

Bellari

CE

Salt Lake City, UT
12/18

Bellari

HA540 MK2 Headphone Amp



SPECIFICATIONS

Input Impedance:	47K ohms
Max Output Gain:	19.6 dB
THD:	0.04%, 20Hz-20KHz, at 1V RMS
S/N Ratio:	85 db, unweighted
Indicator:	1 Power LED
Max Output Power:	332 mW/side, 664 mW/Channel (30 Ohms)
Frequency Response:	6 Hz - 51 KHz +/- 3 db
Phase Shift (In to Out):	0 Deg.
Crosstalk:	-75 dB
Headphone impedance:	8 Ohms to 2000 Ohms
Input Connectors:	CH 1: RCA, 1/8" (3.5mm)Stereo; CH 2: RCA
Outputs:	1: 1/4" TRS Stereo jack 1: 1/8" (3.5 mm) TRS Stereo jack
PWR:	15 VDC 500mA
Size:	6"w x 2.5"h x 5.4"d
Weight:	2 lb.

Connection guide

Thank you for purchasing the HA540. We spent a considerable amount of time designing and developing the HA540. Hundreds of hours listening and improving the design. We hope you enjoy using the HA540, and that it makes listening to your music collection rewarding. We sincerely appreciate the opportunity to build a product for you and participate in your love of quality music and sound. We love what we do and we're happy to help. All Bellari products are hand built in Salt Lake City, Utah by people who care about high quality music.

The HA540 uses one 12AX7 tube running at 150 volts. The input signal is connected directly to the grid of the tube and almost all of the gain of the HA540 is from the tube. The output section is a pair of MOSFET's to drive headphones. This is called a "hybrid circuit". The HA540 has no feedback circuit or Integrated Circuits in the audio path, it is all analog.

CONNECTION:

- 1 - Connect your source to the HA540's "in" RCA jack or 1/8" stereo jack.
- 2 - Connect the supplied PS27s adapter to the jack labeled "POWER." Do not use any other adapter, or the unit might not be happy and you would need some repair work done. Reversed polarity adapters will cause damage.
- 3 - Connect your headphones to the jack, marked "head- phone". You can use either the 1/8" or 1/4" jack or both at the same time.
- 4 - Enjoy your music.

What's in the box?

- 1 - Made in USA HA540
- 1 - 15V power supply PN PS27s
- 1 - This owners manual
- 1 - Love for great audio

FAQ:

Q:What is a N.O.S. tube?

A: N.O.S. refers to (new old stock) it is a tube that was manufactured long ago and never used. These tubes are very sought after. They may or may not sound any better, but it is generally thought that most N.O.S. tubes are better in many ways over new foreign manufactured tubes.

Q: What kind of tubes can I use in the HA540?

A: Tubes that can be used in the HA540 are:

12AX7 - The industry standard for preamp tubes.

12AX7A - Same as a 12AX7 but generally has a slightly higher output.

7025 - This is the Military part number for a 12AX7.

ECC83 - This is the same as a 12AX7 it is the European part number.

12AX7WA - This is a 12AX7 with slightly lower output.

5751 - This is a Military part number for a 12AX7WA.

There are many other tubes that can be used, but you get where this is going they are essentially the same tube with different part numbers doing almost exactly the same thing.

Q: What is the best sounding tube I can get for the HA540?

A: This is an unanswerable question. Everyone has different tastes. It is up to the individual to decide as all tubes sound slightly different. For me the best tube I have ever heard in a HA540 was a N.O.S. 5751 Telefunken tube.

Q: Does the tube need time to warm up before use?

A: Yes, it will be usable in about 30 seconds. Longer warm up times are not needed, there is no benefit to warming the tube up longer than 30 seconds. Warm up simply means powering the unit on.

Q: Do tubes have a burn in time?

A: Yes, in our testing new tubes need 30 to 50 hours to burn in. The sound difference is very slight, but we recommend giving the tube a few hours from the time it is new

Q: What tube comes with my HA540?

A: The tube that came with your HA540 is a RUBY 12AX7 AKA Chinese Grey Plate. They have very good bass response and overall are a great tube for a warm, comfortable listening experience. We use this tube for obvious reasons, if we used NOS tubes we would have to charge considerably more for the HA540. In all honesty I do like the factory tube. It has very good bass response that you will miss with some NOS tubes. Changing tubes is fun and kind of adds to the allure of why you would use a tube in the first place. If you get tired of your gear rather than purchasing new gear you can buy a different tube and get a different sound experience from the same equipment.

Q: Does the power supply for the HA540 need to be upgraded?

A: No. The PS27s that is included is the best power supply available for the HA540. It does not need to be changed.

Q: What is the life expectancy of the vacuum tube in the HA540?

A: 10 to 50 years (longer if you do not use the unit very often) if you use it more often it will have a shorter life, like a light bulb. Less than 10 years if you have the unit on 24/7. 15 years if you use the unit once a day. 25 years if you use the unit a couple times a week. More than 40 years if you use the unit a few times a month. I do not recommend leaving tube equipment on all the time. It creates a lot of heat that is not beneficial to other electronic components.

BUZZING:

Your HA540 will buzz when you listen to headphones with nothing plugged into the input selected. The unit needs something to be plugged into the input that is selected to complete the tube circuit. Without a device connected to the selected input the HA540 WILL BUZZ AND GENERATE A VERY UNPLEASANT SOUND THRU THE HEADPHONES. IT IS RECOMMENDED THAT YOU CONNECT ALL THE INPUTS AND OUTPUT BEFORE POWERING ON THE UNIT. AGAIN IT IS NORMAL OPERATION TO BUZZ WITHOUT AN INPUT!

TUBE TEMP:

The tube will get up to around 140 degrees fahrenheit, it will be warm to the touch. The top chassis will also get warm from the tube's heat. This will not be an issue as the chassis will only get 20 degrees warmer than room temp. The entire top of the chassis will seem hot after the HA540 has been on for a few hours, this is normal and nothing to be concerned about. Some tubes do run hotter than others. In our testing the hottest tube we have seen was a NOS RCA 5751 made in Canada it ran at 147 degrees, and did make the top of the HA540 very warm to the touch after being on for a few hours. This is normal and is not a cause for concern.

