



**SYMPH EQ**

STEREO ASYMPTOTIC EQUALIZER

# HA SYMPH QUICK START GUIDE



This is a quick start guide on using the HA SYMPH Stereo Asymptotic Equalizer. For more info on it or more tips on how to use the unit, please check [www.heritageaudio.com](http://www.heritageaudio.com) often, and make sure to follow Heritage Audio on Facebook, Instagram and You Tube.

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## INSTALLING THE SYMPH EQ

Thanks for purchasing the HA SYMPH Stereo Asymptotic equalizer. Please make sure the following items are in the box when you open it.

- This manual or a link to it.
- HA SYMPH main unit.
- Power Supply labelled **HA-PSU03**.
- IEC Cable.

Depending on your system requirements, you will need several XLR cables to hook up your system. Please check your input sources and output destinations and purchase the correct cables. In case you plug the SYMPH into an unbalanced source and/or an unbalanced destination, please make sure those cables have pin 3 attached to ground.

The power supply is of the auto switching type so it works worldwide without adjusting anything. In case your country uses a different mains cable other than the one provided in the box, just get the correct one and you are done.

Basic audio connections are just balanced input and output connections by means of XLR.

The HA SYMPH is able to accept input levels in excess of those that any interface can provide, so the chance that its input is overloaded is rare.

However, it is able to provide output levels in excess of those that most interfaces can accept, so please keep this in mind.

## GENERAL DESCRIPTION

### *70 YEARS AFTER ITS CREATION, THE BAXANDALL EQ GETS A DEFINITIVE UPDATE.*

Baxandall equalizer's topology, introduced to the public by Peter Baxandall in 1952, was a very ingenious way of obtaining high and low shelves with boost and cut option without using expensive rotary switches. This affordable circuit was soon adopted by hi-fi and console manufacturers for its simplicity, where parametric options aren't needed.

Heritage Audio has successfully replaced the Baxandall topology with a functional equivalent — a much more musical one, implemented as a one rack space, master bus/ mastering type unit.

The Stereo Asymptotic Equalizer, affectionately known as Symph EQ, takes its name from the shape obtained by its shelf curves; where the boost or cut amplitude grows up until the asymptotic value is reached, keeping the ultra-highs and sub lows always controlled.

Its sound can only be described as tight, sweet, and natural, and its use of parallel equalizing to obtain the desired response curves makes it to have exceptional low phase deviation and artifacts.

### *SHELVING WITH SURGICAL, BUT MUSICAL PRECISION.*

A smart circuit layout allows for a maximum boost/cut of 10.5 dB in 0.5 dB steps. The main rotary switch sets 1dB steps whilst the 0.5 button adds half a dB to the main reading. The CUT button turns the boost amount into cut. Six strategically selected frequency choices per band are available

(8, 10, 12, 15, 20 and 24 Khz on the high shelf, and 470, 360, 220, 110, 60 and 20 Hz on the low shelf).

### *2-POLE HIGH AND LOW PASS FILTERS*

In order to keep the sub-low and ultra-high frequency content well under control, further high-pass and low-pass filters have been added on dual concentric rotary switches, at 12dB/octave. 5 frequency choices plus OFF are available on each one (10, 12, 18, 22 and 30 Khz on the low-pass, and 160, 82, 47, 20 and 15 Hz on the high-pass).

### *THIS IS WHERE THE MAGIC LIVES.*

The Symph EQ would have been an awesome sculpting tool just as it has been described above, but it turns into a monster piece with the following 3 additions:

- It features the same exclusive Carnhill input transformers made in Oxford found in the Successor.
- Its outputs are driven by 73-type Class-A output amplifiers, built with the same Carnhill St Ives output transformers as the rest of the family.
- Most importantly and, here is where the Symph EQ really shines, it has built in Mid Side (M/S) capabilities.

### *M/S EQUALIZING CANNOT BE RIVALED.*

Nothing comes close to M/S equalizing a mix. It allows the user to process the center and the sides independently. The benefits of such

processing are hard to believe. You can brighten your mix without making your vocals sound harsh, or even tighten the stereo-image's bass content without making your bass or kick sound weak! These are just a few examples of the Symp EQ M/S power!

The response of the Side high pass filter has been made elliptical as in the vintage disk cutters for precise frequency response.

### *THIS IS WHAT YOU GET WITH THE SYMPH EQ*

- Custom Carnhill Oxford input transformers, and custom Carnhill St Ives output transformers, both exclusively made for Heritage Audio.
- A high-end, 73-style Class-A output stage.
- All controls use high-quality rotary switches for 0.5dB precision equalizing.
- Mid-side processing allows for precise center bass management and high boosting hard panned sources without affecting center ones such as vocals, snare, etc. Side high-pass filter turns into elliptical type when in M/S, as implemented in vintage disk cutters.
- Stereo and M/S inputs and outputs, all balanced and ground free (unbalanced compatible) on gold plated XLRs. ON, M/S or stereo mode and individual hard BYPASS per channel.
- Fully manufactured in the EU.

## CONNECTION FEATURES

The HA SYMPH has the following connections:

- **LINE INPUT L and R:** Transformer balanced on XLR.
- **LINE OUPUT L and R:** Transformer balanced, 73 type class A amp driven, accessible on an XLR connector.
- **POWER:** Connects the external power supply by means of a 5 pin XLR.

## GETTING STARTED WITH THE UNIT

Please keep in mind that this manual is a brief guide of operation and is not intended to substitute a good old sound engineering course.

With this being said, once you have made the right connections for your application, please POWER ON your unit and press both BYP L and BYP R. Please note that the M/S button does not work when any of the bypasses are active.

You will get an unprocessed signal at the output and, being a relay-based true bypass, the signal will be a mirror of the one applied to the input.

Secondly, Stereo or M/S operation should be chosen. When used in Stereo (M/S button not pressed) left set of controls will process the left side, while the right side of controls will process the right side. When in

M/S mode, left set of controls will process the Mid channel, while right side will process the Side channel.

Best way of operation is firstly setting all boost/cut amounts to zero and filters to OFF, and then disengage the Bypass buttons. This will give you the basic unprocessed sound, with no equalizing, but taking advantage of the warmth and sound of the transformers and internal 73 type class A gain stages.

Right after this, equalizing is a matter of taste and material needs.

## AN APPROACH TO USING THE SYMPH ASYMPTOTIC EQUALIZER

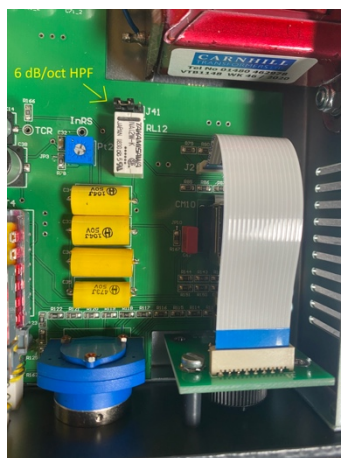
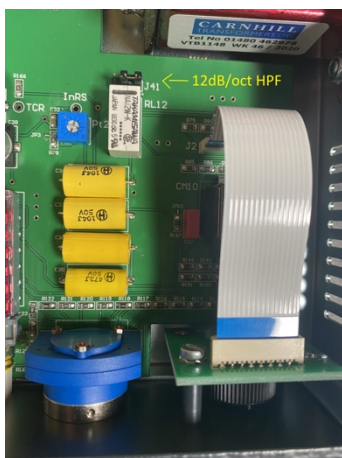
If you are an experienced mixing or mastering engineer, you probably ended up reading this manual some time ago, however here are a few hints on how to use the unit in the easiest, pleasant way possible.

- **Use the 0.5dB button only to make finer adjusts:** It is better to leave the 0.5dB button not engaged and use it after the right amount of boost/cut is decided in between of 2 values. Let's say you are boosting at 5dB and seems like too much and 4dB is too little, set the main switch to 4dB and press the 0.5 button, you'll be just right there.

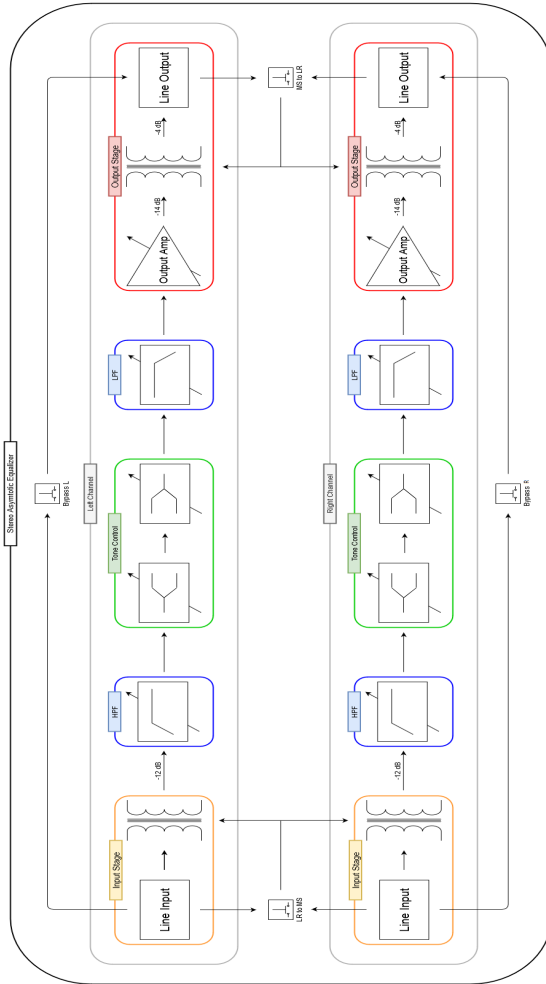
- **Find the frequency you want to CUT at boost mode:** It is easier to find a molesting frequency with boost at full and, when found, switch to CUT and adjust level to taste.
- **Use the high/low pass filters when moderate to high boosting of low/high frequencies happen:** Sub low frequencies are not heard but eat up your headroom. Ultra-high frequencies do not eat your headroom that much, but make your converters work unnecessarily, especially at the higher resolution frequencies. Get rid of the info that you do not need in the analog domain; your converters will love it.
- **Use the low pass filter to simulate tape high frequency “roll-off”:** Analog filtering will pretty much have the same effect in high frequency roll-off than recording to tape. A more severe filtering will emulate slower tape speeds and vice versa.

## CONFIGURING THE SIDE HIGH PASS FILTER

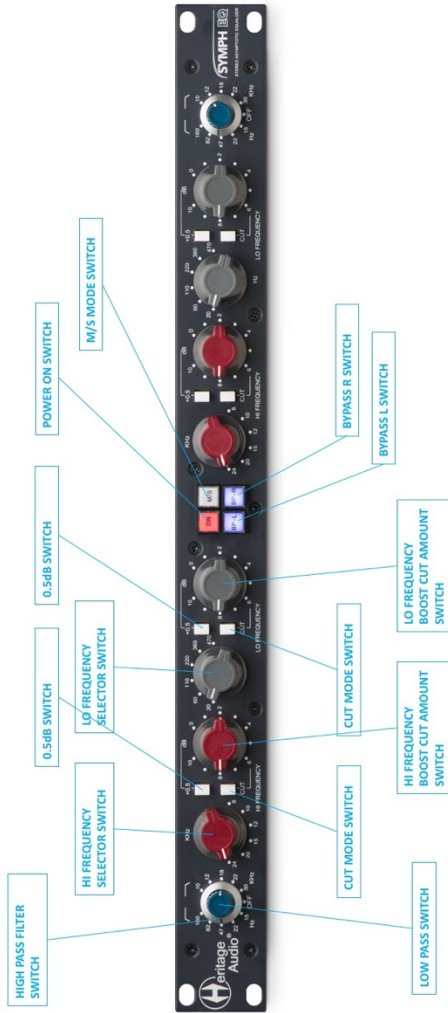
In order to comply with the old disk cutter's practice, the high pass filter has the ability to automatically turn into elliptical response when in M/S mode. This way, the Mid HPF stays at 12dB/oct while the Side HPF switches to 6dB/octave. This makes the most natural way of "monoing" the bass content as was intended in the vinyl mastering. However, if you prefer to keep the response of the Side HPF at the steeper 12dB/octave, this can be configured with a jumper inside the unit as seen in the pictures below. All units leave the factory with the pre-configured "Elliptical" option.



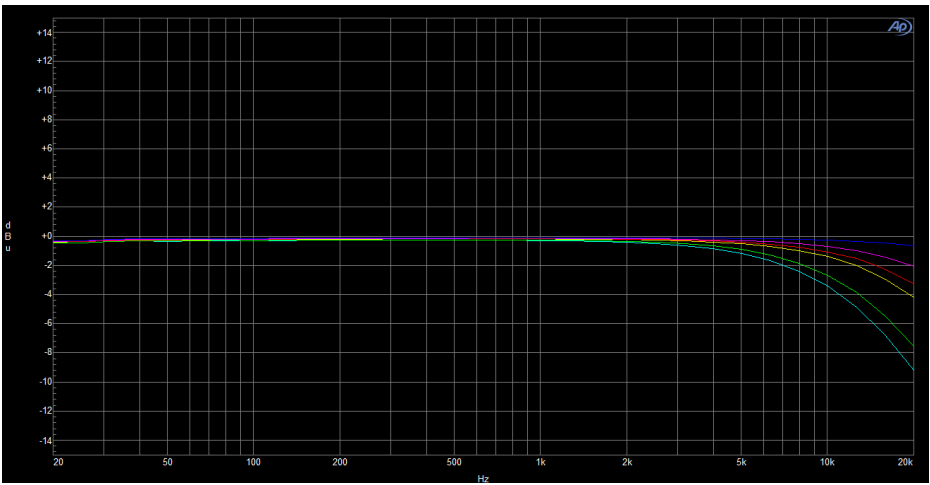
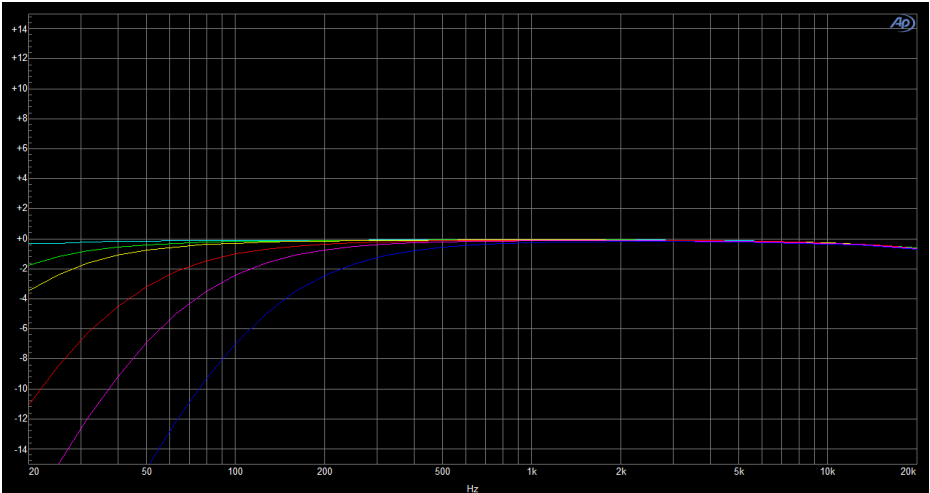
# BLOCK DIAGRAM



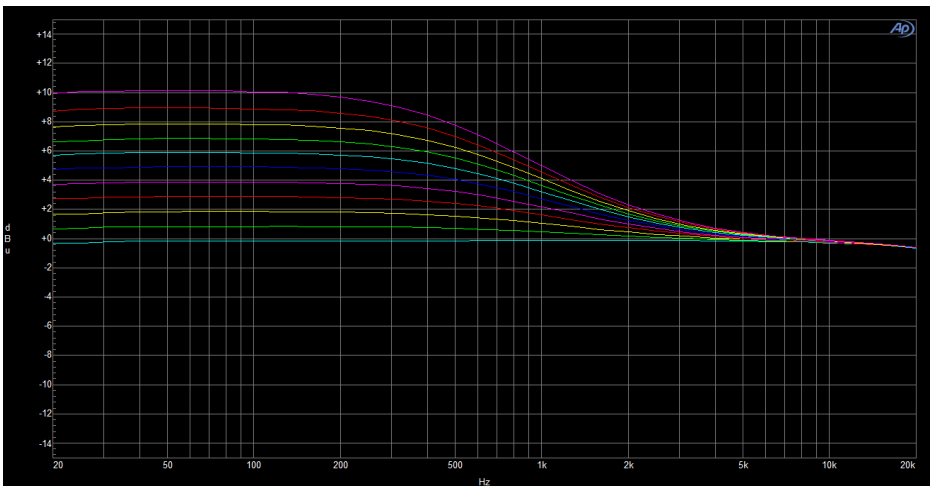
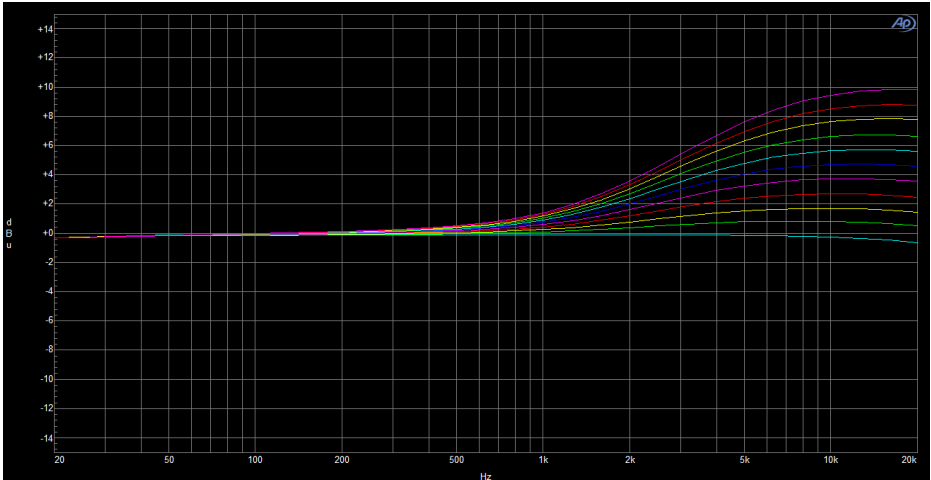
# SUMMARY OF CONTROLS

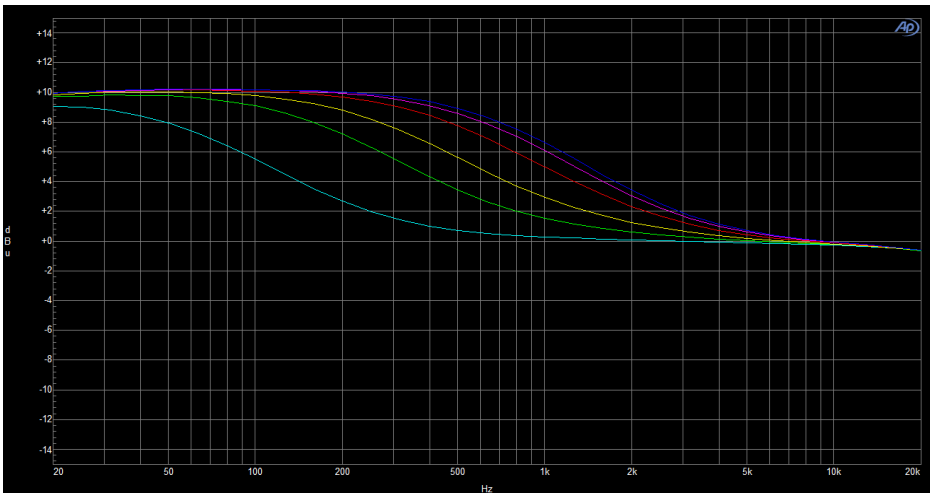
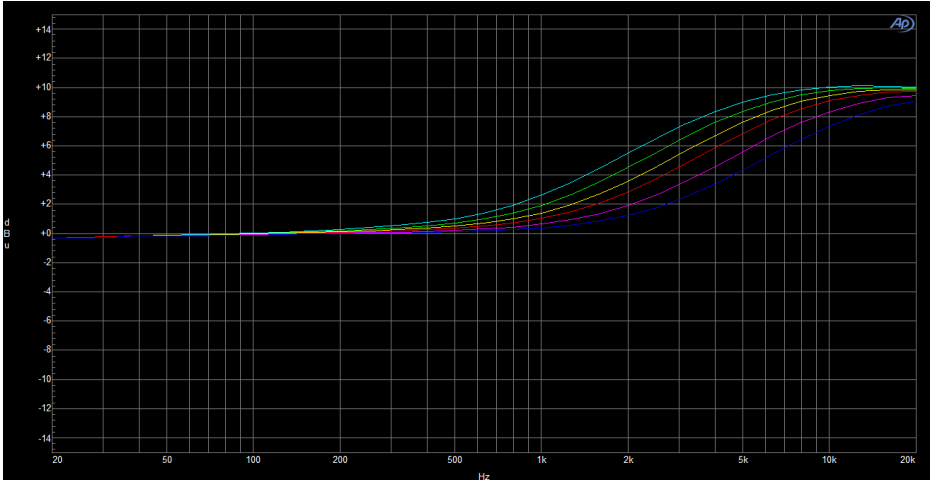


# HPF & LPF FILTER RESPONSE CURVES



# HI & LO SHELF CURVE EXAMPLES





## TECHNICAL SPECIFICATIONS

- Maximum input level: Over +22 dBu
- Maximum output level: Over +26.5 dBu into 600 ohms.
- Self-noise: less than -89 dBu @eq flat.
- THD+N (50Hz- 20Khz): less than 0.07% at +20dBu.
- Frequency response: +- 0.5dB, 15Hz- 30Khz.
- Input impedance: 10Kohms, transformer balanced and floating.
- Output impedance: Less than 75 ohms, transformer balanced and floating, Class A driven.



## LIMITED 2 YEAR WARRANTY

Heritage Audio HA BRITSTRIP is warranted by Heritage Audio SL to be free from defects in materials and workmanship for the period of 2 years to the original purchaser. In the event of such defects, the product will be repaired without charge or, at our option, replaced with a new one if delivered to Heritage Audio prepaid, together with a copy of the sales slip or other proof of purchase date. The warranty excludes problems due to normal wear, abuse, shipping damage or failure to use the product in accordance with the specifications.

Heritage Audio shall not be liable for damages based upon inconvenience, loss of use of the product, loss of time, interrupted operation or commercial loss or any other damages, whether incidental, consequential or otherwise.

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