

GRANDCHILD

670 500

Series 500 Stereo Varimu Compressor based on the
HERCHILD 670



USER'S MANUAL

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Thank you for choosing the GRANDCHILD 670/500. After having shocked and impressed the audio industry with the HERCHILD Model 670 & Model 660, we decided that it was the right time to honor once again one the reasons Heritage Audio exists and try to make a classic sought after sound, available to everyone.

Not every studio is able to justify the cost of a HERCHILD so we have taken an unprecedented engineering effort to combine all the knowledge of years of developing the HERCHILD Models plus the years of manufacturing top tier 500 series modules to create something extremely rare... An analog stereo Variable Mu tube compressor in a two-space 500 series module!

Peter Rodriguez

CEO

Heritage Audio - Madrid, Spain

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The GRANDCHILD 670/500 is stuffed with 4 6BA6 (5749) NOS tubes, three exclusively designed transformers (one per channel & and one for the Sidechain) and the necessary select components and circuitry to capture that elusive sound. For the first time ever it is possible to achieve that sought after tone and response in such an affordable package.

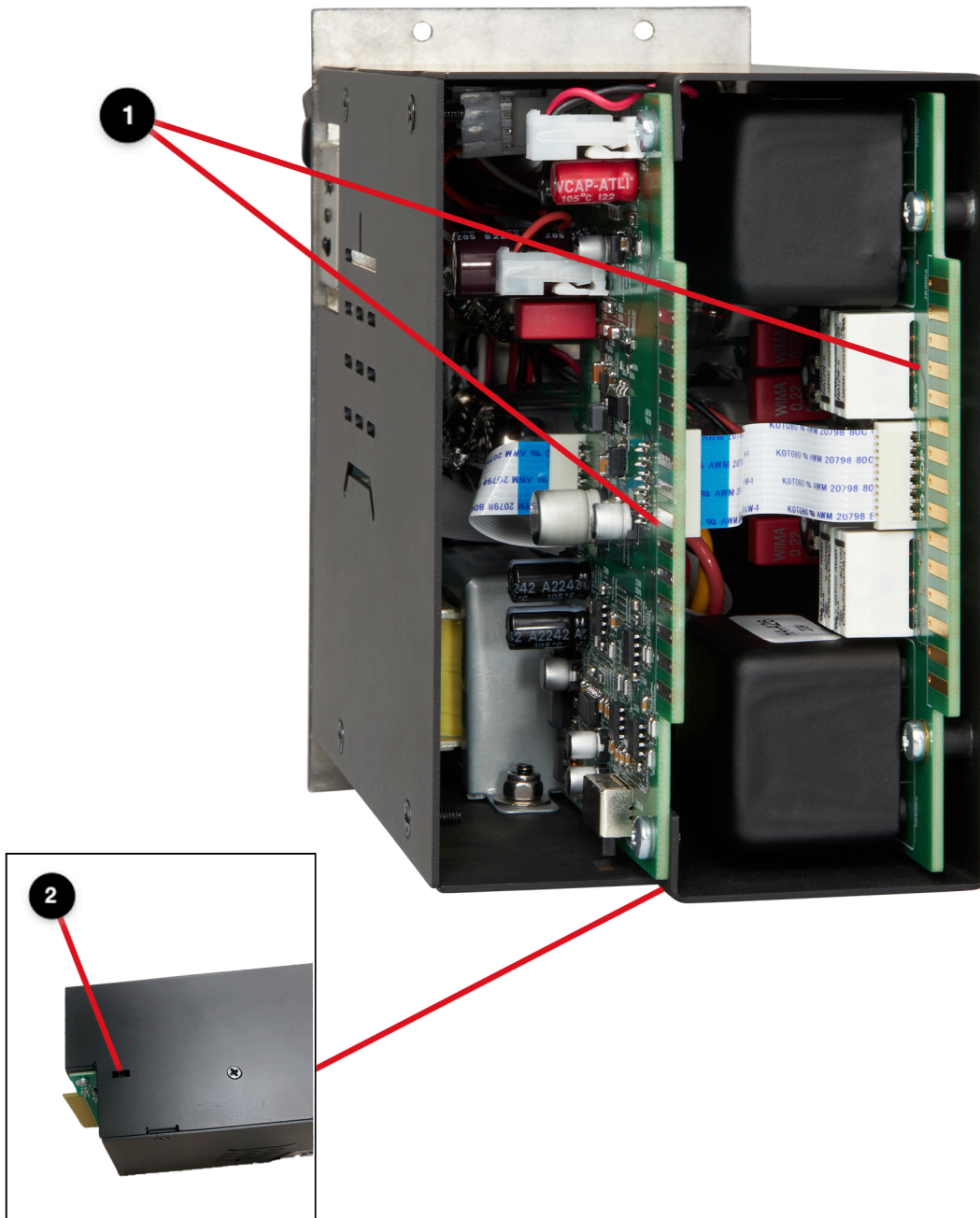
In common with its big brother, there is an INPUT GAIN control with an adjustable range of 20dB, the AC Threshold, 5 Attack and Release selectable times, the DC Threshold which gives access to the progressive ratio, which is a unique curve adjustment combining control of the ratio and knee, soft stepped from hard limiting to a very smooth and transparent, light compression. There is also a 3 position high-pass Sidechain filter to reduce the lower frequency's influence on the detection circuit, a must have nowadays for current productions.

As this is a stereo unit, a sum of the two channels will determine the overall dBs of gain reduction for both channels ensuring a stable stereo image. All built into a solid 2 space unit for the popular 500 series format with an attractive age-referencing front panel complete with a beautiful, informative VU meter that not only indicates Gain Reduction metering but also informs the user of the unit's 3-position Active/Bypass /Off switch confirming the status even from a distance.

It's not easy to achieve that classic warm, hugging, intimate sound that just seems to effortlessly glue together a MIX in a musical way, but the GRANDCHILD 670/500 does it perfectly. Having already designed the 19" rack Stereo/M&S/two channel version and the 19" rack Mono version, it was just a question of fitting that ever so familiar sound, into a smaller space. The engineers at Heritage Audio accepted the challenge and responded with determination to achieve that lush, classy, elegant tone. With four 6BA6 (5749) tubes and three transformers you can be sure that your signal will be treated like royalty and whatever you put through the GRANDCHILD 670/500 will come out sounding much better.



- ❶ **VU METER:** Indicates gain reduction.
- ❷ **ON/BYPASS/OFF SWITCH:** 3 Way operation switch.
- ❸ **TIME CONSTANT SWITCH:** Selects the Attack and Release settings.
- ❹ **ON/OFF LED:** Indicates equipment is receiving current, warming the tubes and ready to work, both in BYPASS & ON modes.
- ❺ **INPUT GAIN KNOB:** Attenuates the input up to -20 dB.
- ❻ **AC THRESHOLD KNOB:** Threshold control.
- ❼ **DC THRESHOLD KNOB:** Ratio/Knee/Curve control.



- ❶ GOLD PLATED 500 SERIES EDGE CONNECTORS (2 SLOTS).
- ❷ 3 POSITION SELECTABLE HIGH PASS FILTER FOR SIDCHAIN DETECTION SWITCH
(OFF, -12dB/Oct @ 100Hz, -24dB/Oct @ 100Hz).

The functions on the GRANDCHILD are pretty simple, yet powerful.

The **TIME CONSTANT SWITCH** gives you 5 options for the attack and release timings giving you combinations for fast and slow timings. (Please see the TIME CONSTANT Section for exact timings.).

The **INPUT GAIN** Control knob is used to control the amount of input gain applied. This is actually an attenuator that reduces the the input by up to -20 dB.

The **AC THRESHOLD KNOB** determines when the compression begins. It's used to decide when and how much gain reduction takes place. When in the fully counter-clockwise position, the GRANDCHILD will not compress at all. As the threshold control is turned clockwise, the amount of compression will progressively increase.

The **DC THRESHOLD KNOB** lets you decide what kind of curve will be applied to the compression. It is similar to a knee and ratio effect combined. So at the most counter-clockwise position the GRANDCHILD responds like a limiter with immediate and aggressive action happening as soon as the AC THRESHOLD is passed. While as you turn it clockwise more of gradual, progressive effect occurs until you have a very slight compression happening at all times.

Finally, on the bottom of the unit, the 3 position selectable **HIGH PASS FILTER FOR SIDECHAIN DETECTION SWITCH** (OFF, -12dB/Oct @ 100Hz, -24dB/Oct @ 100Hz) allows you to determine how much the low frequency content will influence the compression so it can be either more or less sensitive to the low end material. The unit comes factory set at -12 dB/Oct @ 100 Hz.

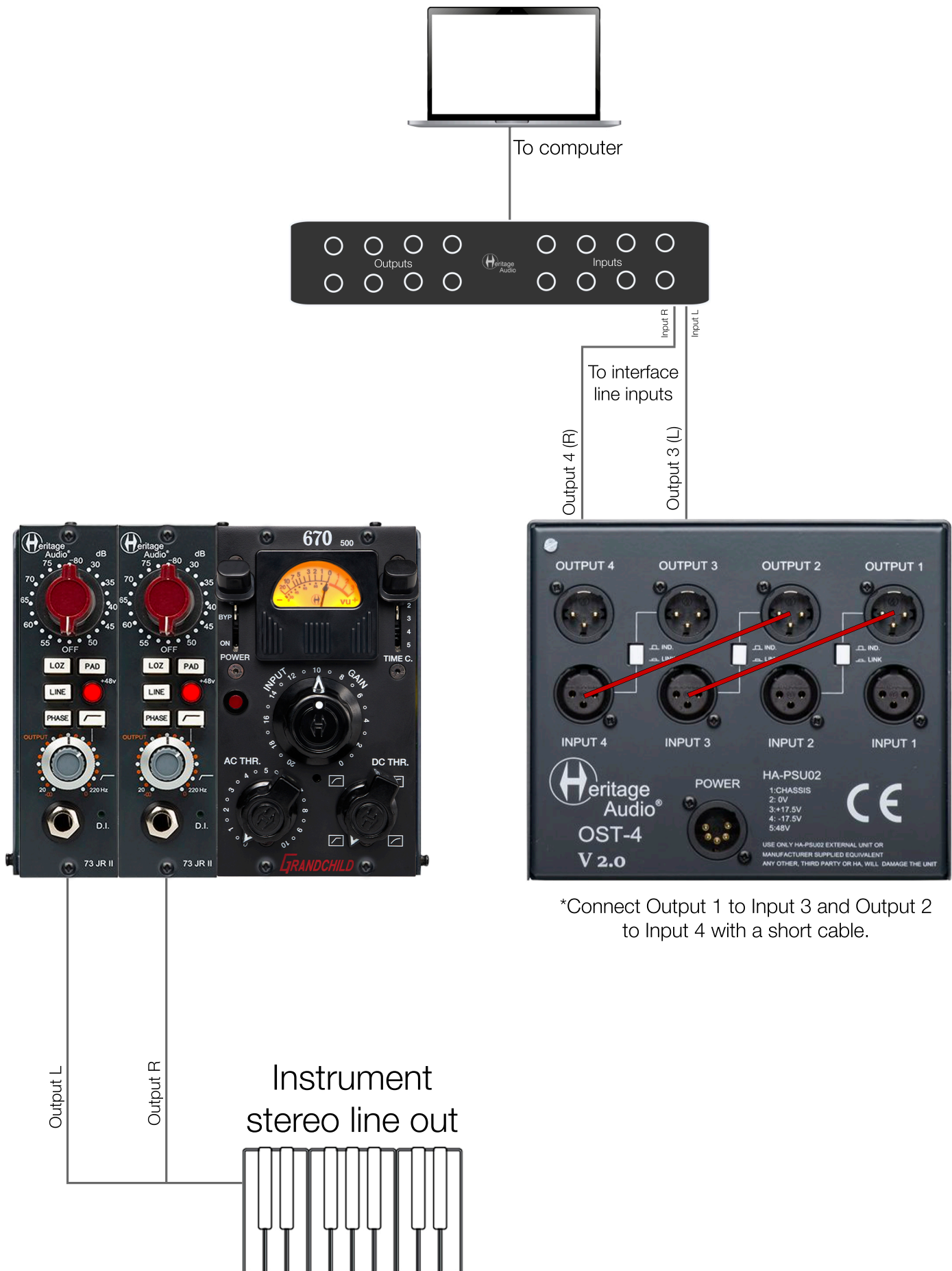






	ATTACK	RELEASE	MOD
1	0.1 mS	125 mS	The ARDENT mod
2	0.2 mS	300 mS	Original 670 pos 1
3	0.2 mS	600 mS	Original 670 pos 2
4	0.6 mS	700 mS	Enhanced 670 pos 3
5	1 mS	2 sec	Enhanced 670 pos 4

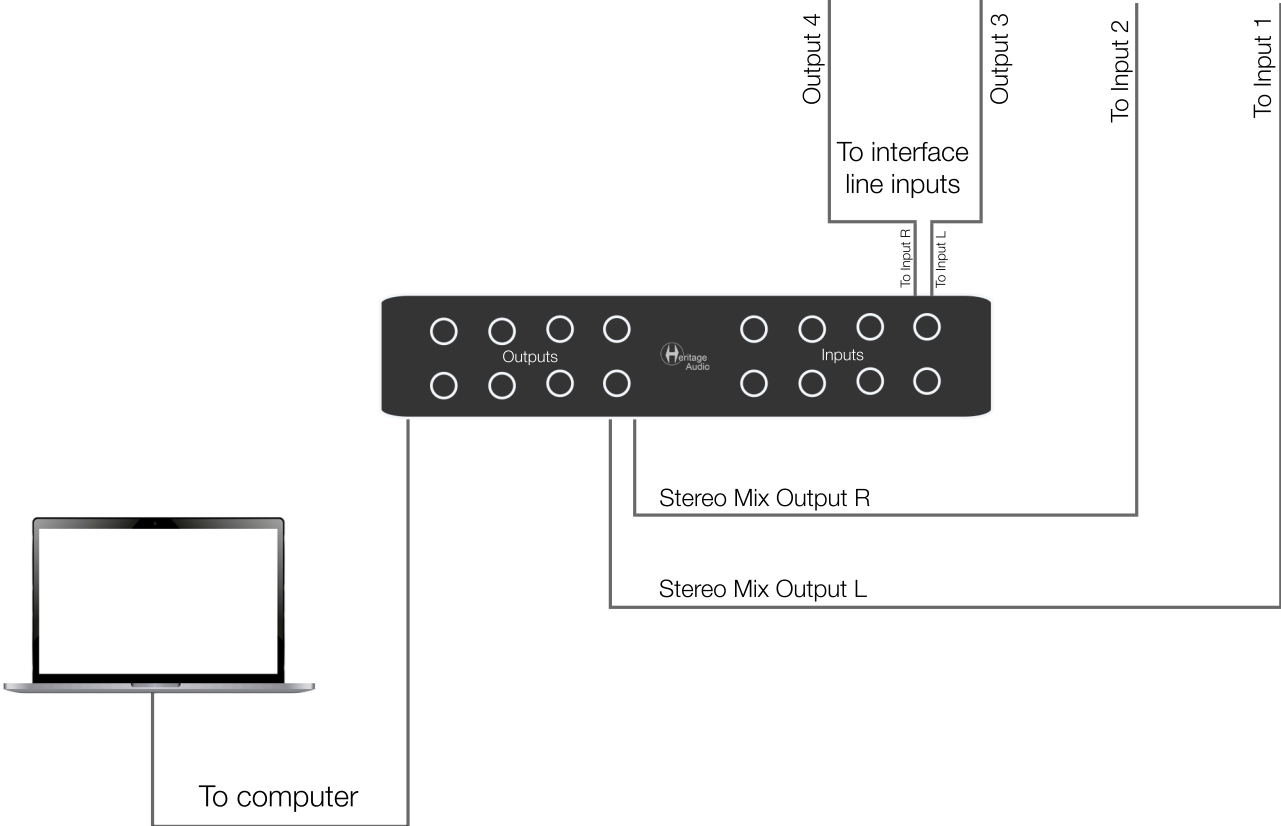
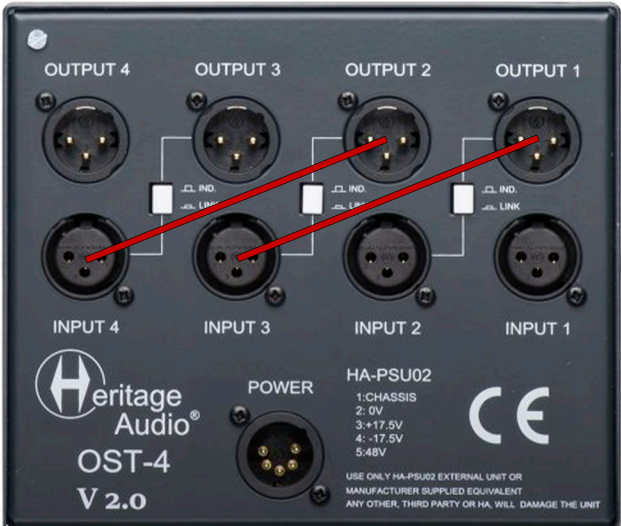
INSTRUMENT RECORDING



*Connect Output 1 to Input 3 and Output 2 to Input 4 with a short cable.

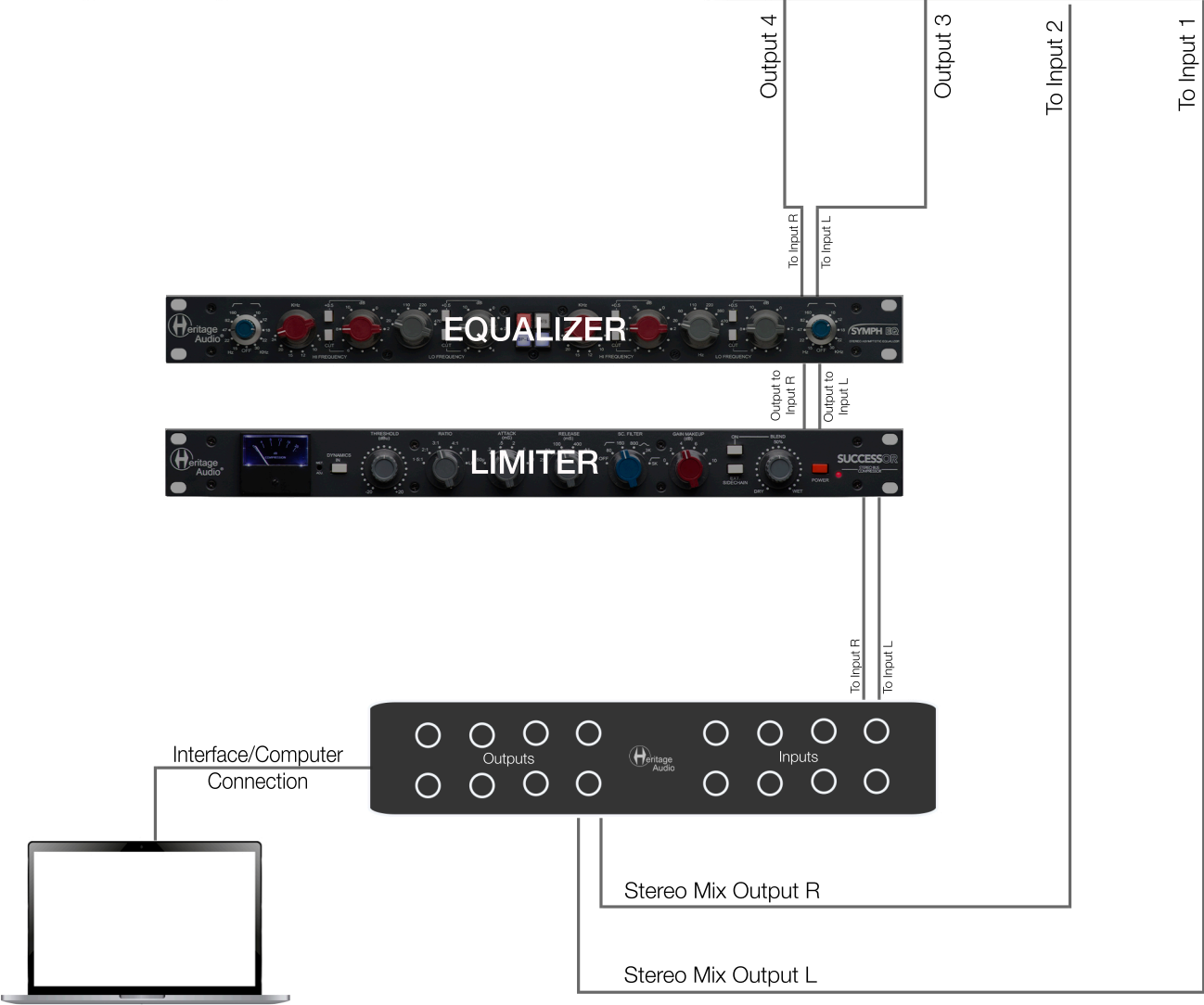
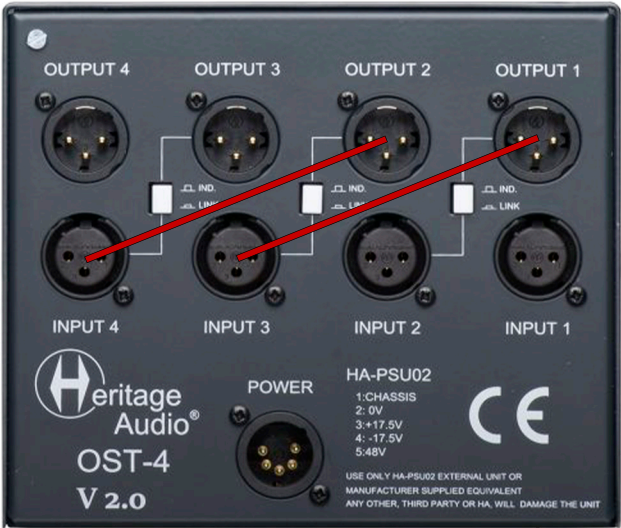
MIX - STEREO BUS INSERT

*Connect Output 1 to Input 3 and Output 2 to Input 4 with a short cable.



MASTERING

*Connect Output 1 to Input 3 and Output 2 to Input 4 with a short cable.

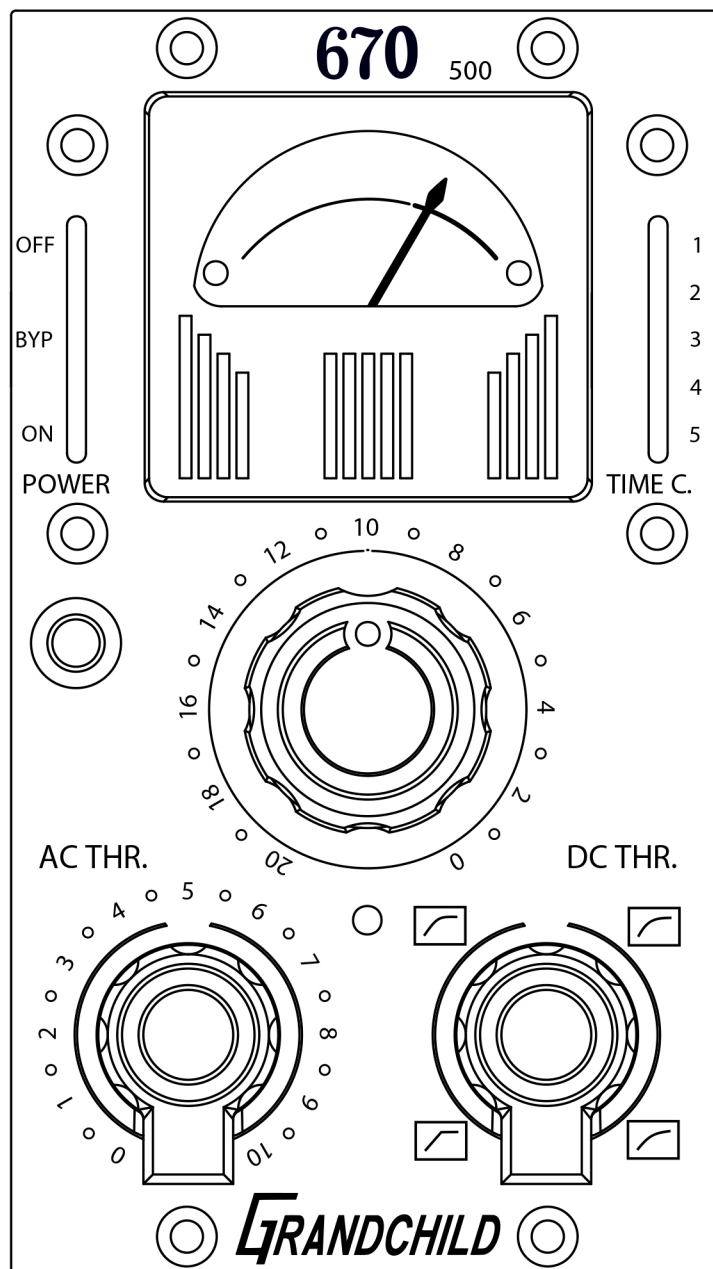


- * Input Impedance: 15 k Ω .
- * Output Impedance: 50 Ω .
- * Output Level: +29 dBu.
- * Frequency Response: 20 Hz to 20 kHz $\pm$ 0.5 dB.
- * Self Noise: Less than -78 dBu.
- * Harmonic Distortion: Less than 0.5 % at any level up to +24 dBu output (no compression).
- * Dimensions (W x H x L): 180 mm x 133 mm x 75 mm.
- * Weight: 1.120 Kg.
- * Consumption: Slightly over 200mA per rail per slot (+16V/-16V).



PROBLEMS	SOLUTIONS
There is way too much compression occurring and it seems dominated by the low frequency content.	Try activating the HPF for the sidechain detection circuit. It is a 3-position switch located on the bottom of the unit.
The GRANDCHILD seem to be reacting way too aggressively, apply too much compression too soon.	Try varying the DC THRESHOLD control as it will change the slope from a more limiting reaction full Counter Clock Wise and a more gentle, progressive slope fully Clock Wise.
Why isn't my VU lighting up?	When the unit is OFF or in BYPASS the VU will not light up. Once it is active the VU will light up. This helps to indicate its status even from afar.
The compression I am getting is still altogether too aggressive for what I am looking for.	Try a different setting on the TIME CONST selector to ease the attack and release controls
There is almost no sound coming from the GRANDCHILD 670/500.	Make sure you have raised the INPUT GAIN to a sufficient level.
There doesn't seem to be any compression taking place.	Make sure you have adjusted the AC THRESHOLD level to a reasonable setting.
I'm getting way too much compression for what I need.	Try lowering the AC THRESHOLD.
The GRANDCHILD 670/500 does not seem to be reacting as it should.	Have you allowed the recommend 30 minutes for the unit to warm up?
The readings on the VU meter don't seem to correspond with what is actually happening.	Sounds like it's time for some calibrating.

For any further doubts or questions please get in contact with us at:
support@heritageaudio.com



Sesion / Title: _____ Track: _____

Connected equipment: _____

Date: _____ Instrument: _____

Notes: _____

High pass filter for sidechain detection switch: Off / -12dB @ 100 Hz / -24dB @ 100 Hz

LIMITED 2 YEAR WARRANTY

Heritage Audio **GRANDCHILD 670/500** is warranted by Heritage Audio S.L. 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.

This warranty is not transferable.

We encourage you to register your new GRANDCHILD 670/500 in our web in order to better manage any warranty related issues at: <https://heritageaudio.com/registration/>

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