COMP-3A

Vintage Style Compressor / Leveler



INTRODUCTION

Congratulations on choosing the Golden Age Project COMP-3A Compressor / Leveler!

The COMP-3A is a one channel vintage style Compressor / Leveler. The signal path uses only discrete components like resistors, capacitors and transistors. The input and output is transformer balanced, using two different transformers, each one optimized for its purpose. This is the way audio components were built before integrated circuits became available.

Integrated circuits are small and cheap and widely used in most modern designs. The drawback is that audio components built with modern technology doesn´t always provide the best perceived sound quality or the type of character that the modern user desires.
The subjective sound quality delivered by vintage equipment is often prefered over the one delivered by modern units, a situation that is even more obvious now when music is recorded with clean-sounding digital audio equipment.
This is the reason why so many vintage audio components are cloned and produced again and also why the vintage originals are often very expensive on the second hand market.

The circuit used in the COMP-3A is based on a classic design that uses an electro-luminescent panel and a photoelectric cell to control gain. This gives the COMP-3A a unique, program dependent compression characteristics. In addition, the vintage style signal path adds a wonderful and musical character to the sound. The ease of use with only two main controls makes it very simple to achieve the desired sound. These attributes has made the original units a favourite of engineers and musicians worldwide.

This classic sound is now available at a very affordable price point with the COMP-3A.

FEATURES

- Vintage style electronics. No integrated circuits in the signal path.
- Transformer balanced input and output. Can drive almost any load – balanced or unbalanced.
- Selectable output transformer loading resistors by an internal jumper, will affect the high end frequency response.
- Uses a classic T4-style electro-optical attenuator to control gain with program dependent attack and release times.
- Very simple to operate with only two main controls, Gain and Peak Reduction.
- HF control can make the side-chain circuit more sensitive to mid and high frequency content.
- A big meter selectable to show gain reduction or output level at two different reference levels.
- Hardwire bypass switch for easy comparisons.
- XLR and TRS input and output jacks for flexible connections.
- Link jack and switch for connecting to another unit for stereo operation.
- All external controls located on the front panel.
- External power supply to avoid interaction with the audio circuits and transformers.
- Compact 2RU half rack format. Two units can be mounted with our 19-inch rack kit, the UNITE BIG.
- A solid build quality that will last many years of normal use.

CIRCUIT DESCRIPTION

The signal first enters a 20 dB resistive pad and is then fed to the input transformer. The pad can be disconnected if the input sensitivity needs to be increased by moving the 50/30 switch to the 50-position.

The signal is then fed to the T4 attenuator and onwards to the Gain potentiometer and also, through the Peak Reduction potentiometer, to the side-chain section.
The output stage, using only six transistors and some passive components, follows the Gain potentiometer and the output transformer then sends the signal to the output jacks.
The side-chain section uses five transistors and an auto-transformer that drives the electro-luminescent panel in the T4. The higher the voltage the more light is emitted on the photocells, their resistance decreases as the light intensity increases, thereby bringing the audio signal closer to ground in a R1/R2 resistor attenuator resulting in a lower signal level (the photocell is the "R2").
Engaging the HF control increases the side-chain signal level in the mid- and high frequencies which will increase compression of frequencies above 1 kHz.

MODERN VERSUS OLD

It is true that there are some great IC´s available today that achieves very low levels of static and dynamic distortion. The simple circuits that the COMP-3A uses, and even more so the transformers, cannot match the low distortion specifications of modern IC´s.
It is the distortion components that imparts a sound character to the audio signal and, if the distortion components are of the right type, this is a good thing since it makes the recorded voice or instrument sound "better", more musical, more pleasing to the ear. This is one reason why vintage style units are so popular today.
This is not to suggest that modern, transparent sounding audio circuits is a bad thing, sometimes they are prefered over colored ones. It´s all about taste and it depends on the genre. For most modern music styles, color and character is definitely a good thing.

And doesn´t it feel good to use audio components built according to the old, minimalistic approach where one can follow the signal from one discrete component to another?

USING THE COMP-3A

The best way to explore the possibilities of any compressor and how different settings affects the sound of different sound sources is to experiment. You can also find a lot of information on the www helping you to understand how compressors work and how to use them.

To get started with using the COMP-3A:

- Connect the cable from the power adaptor to the 24V AC jack at the back of the unit. Power on the unit with the switch on the front panel.

- Connect your audio source to one of the input jacks at the back panel and one of the output jacks to the next unit in the signal chain. Please note that the TRS and XLR jacks are connected in parallel. Switch the 50/30 switch to 30 if you need to increase the input sensitivity. The standard position is the 50 position.

- The GAIN control sets the output level. A normal setting for an input signal of around + 4 dBu (=1,23V) would be somewhere around 3-5 with no compression applied, ie PEAK REDUCTION set fully CCW.

- Then turn PEAK REDUCTION CW until you get the desired amount of compression, The output level will decrease as compression increases, you can compensate for that by increasing GAIN.

- The approximate amount of gain reduction can be diplayed by selecting GR on the meter switch. The normal reading is 0 VU with no compression applied. You can trim this reading using the ZERO adjustment potentiometer that is accessed through a hole in the front panel.
The output level can be displayed by selecting +4 or +10 on the meter switch. The numbers corresponds to the reference level when the meter shows 0 VU. The +10 position is useful for avoiding the meter needle hitting its end stop at high output levels,

- You can easily check the effect of the processing in the COMP-3A by using the BYPASS switch, the unit is completely removed from the signal path in the IN position.

- Setting the MOD/NORMAL in the MOD position decreases the gain in the output stage by 24dB and the 50/30 switch should then normally be set to the 50 position to compensate for the lower output stage gain.
Having both these switches in the upwards position lowers the noise level in the unit. It also lowers the threshold where compression begins, thereby allowing for a greater amount of overall compression.

- Turning the HF control CW will make the compressor more sensitive to mid and high frequency content.

- Selecting LIMIT will change the I/O curve, resulting in a higher compression when the unit compresses heavily. The COMPRESS position is the standard mode.

- For stereo operation, the side-chain of two COMP-3A units can be linked together through the LINK jack at the back panel, using an unbalanced TRS cable. The MONO adjustment potentiometer can be used to balance the units. Find instructions of the procedure on our web site.

WARRANTY

The COMP-3A is built to last. But as in any electronic device, components can break down.

There is a fuse located inside the unit. If the unit dies, please check this fuse. If it has blown, replace it with a new one. You can also try with another 24V AC adaptor if you have one available.
If this doesn´t help, or if the unit has another problem, it will need repair and you should then contact the reseller where you bought the unit.
The warranty period is decided by the Distributor for your country. The Distributor will support Golden Age Project resellers and end users with repairs and spare parts.

REGISTRATION

You are welcome to register your unit at our website:
www.goldenageproject.com

I would like to thank you for chosing the COMP-3A!
I hope it will serve you well and that it will help you in making many great sounding recordings.

Yours,
Bo Medin

Vintage character for modern ideas!