



COMP-54 MKIII

Vintage Style Compressor



INTRODUCTION

Congratulations on choosing the Golden Age Project COMP-54 MKIII compressor!

The COMP-54 MKIII is a one-channel vintage style compressor. The signal path uses only discrete components like resistors, capacitors and transistors. The input and output are transformer balanced and the unit also uses a third interstage transformer.

This is the way audio components were built before integrated circuits became available. IC's are small and cheap and are widely used in most modern audio products. It is clear though that audio gear built with modern technology doesn't always provide the sound quality or character that the modern user desires. On the contrary, the subjective sound quality delivered by vintage equipment is often preferred over the one delivered by modern units. This is the reason why so many vintage audio products are cloned and produced again and also why the vintage originals are often very expensive on the second hand market.

The class-A circuit used in the COMP-54 MKIII is similar to the one in the classic 2254 compressor that was designed in 1969. It quickly became a legend due to its totally unique sound character that is warm, smooth, sweet and musical.

These characteristics have been heard on countless recordings through the years and it is a versatile sound that works very well on many sound sources and in many genres. The essence of this sound is now available at a surprisingly low cost, making it available to nearly everyone.

FEATURES

- Vintage style electronics.
- Based on a classic diode bridge design.
- Transformer balanced I/O's.
- Prepared for the Carnhill transformer upgrade.
- Flexible control range for ratio, attack and recovery.
- All controls except the gain make-up one are stepped.
- Three selectable sidechain filter frequencies.
- Separate bypass and compression out switches.
- Insert jack for inserting the EQ-73 or EQ-81 equalizer in the signal path.
- Meter selectable for output and gain reduction.
- Possibility to link two units for stereo operation.
- Separate in- and output XLR and TRS jacks for flexible connections.
- Back panel switch for 600 Ohms termination.
- External power supply to avoid interaction with the audio circuitry and the transformers.
- Great sound that suits most sound sources and genres.
- A solid build quality that will last many years of normal use.



CIRCUIT DESCRIPTION

The signal first enters the input transformer, a damping network and is then passed on to the diode bridge where the actual gain reduction is taking place, it is followed by a balanced FET-transistor stage. Then follows an interstage step-up transformer that feeds the sidechain circuitry and a three transistor gain stage

followed by the insert jack and the gain potentiometer.

The signal then goes to the output stage. This stage again uses only three transistors, the last one in the chain is a hefty 2N3055 power transistor running in class-A mode, driving the output transformer.

So, all in all, the complete signal chain only contains a maximum of ten active elements. Compare that to the big number of transistors that are usually used in one single integrated circuit!

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-54 MKIII 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 sort, 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.

Sometimes, transparent units are preferred over colored ones. It's all about taste and it depends on the genre. For most modern music styles though, color and character is definitely a good thing.

USING THE COMP-54 MKIII

The best way to learn using a compressor is by experimentation. A compressor can be set to do its job, which is to lower the dynamic range of a signal, more or less invisible or it can be used as a creative tool, affecting the sound in a big way. You will find a lot of information about how to use and adjust compressors on the internet.

CONNECTING THE COMP-54 MKIII

Connect the power adaptor to the AC outlet (please note: there are different adaptors used for 115V and 230V) and the 24V AC output to the jack on the back panel.

Connect the audio source to any one of the input jacks, XLR or TRS. They are wired in parallel, the same is true for the output jacks.

The output stage will easily drive two modern units connected at the same time. Since the unit is transformer balanced, it usually doesn't matter if you use balanced or unbalanced units before and after it.

CONTROLS

THRESHOLD: This sets what level the signal must reach before the compressor action kicks in.

RATIO: This sets how much compression is applied in ratio to the dB rise in signal level above the threshold.

ATTACK: This sets how fast the compressor kicks in once the threshold has been reached.

RECOVERY: This sets how fast the compressor lets go, once the input signal has dropped back below the threshold.

SC HP: Adds a high pass filter in the sidechain circuitry. Frequencies below the filter cut off will trigger compression to a lesser degree.

MAKEUP GAIN: This changes the make-up gain from 0 to about 20 dB so that the output level can be adjusted to a suitable level.

LINK: Is used to synchronize the compressor action in two COMP-54 MKIII units working as a stereo pair to prevent image shifting that could occur if each channel is compressed individually and content in one channel is louder than that in the other. Simply connect an unbalanced TS-cable between the LINK jacks on the back panels, press the LINK switches and match the controls on both units.

OUT: Pressing this switch removes the compression action, the signal still passes through the circuitry though so you can compare the sound with and without compression.

METER: Switches the meter to show output level or gain reduction.

BYPASS: This is a hardwire bypass, meaning that the signal is directed from the input jacks directly to the output jacks when this switch is pressed. You can then easily compare the sound with or without the COMP-54 MKIII in the signal chain.

600 OHM TERM: The output transformer is made for having an ideal load of 600 ohms. Most modern equipment have an input impedance of 10 kohm or more. When the COMP-54 MKIII drives a modern unit, the output level will increase, the square wave response will worsen and the higher frequencies will be accentuated.

So, if you connect the COMP-54 MKIII to a modern unit, the switch should usually be engaged. You can always let your ears decide which position works best, the switch can be used as a two position high frequency eq.

- There is an unbalanced insert jack located at the back panel where you can insert equalizers and other external effect units that has an operating level of about -18dBu to -10dBu. Send is on "tip" and return is on "ring". Inserting one of the Golden Age Project equalizers will give you a great comp + eq combination where the eq will be located after the compressor.

LEVELS AND METER CARE

Care must be taken to protect the meter from physical overload when it is set to show output level. If the needle is hitting the end of its travel for prolonged periods, there is a risk that the meter will be damaged. This is not covered by warranty. The unit is calibrated from factory to show 0 VU when the output level is about +4 dBu (or 1,23 volts). This is a common reference level in pro audio but most equipment will be able to handle much higher levels.

Since the COMP-54 MKIII will be used in different setups, it is possible to adjust the meter reference level with the trim potentiometer on the circuit board marked "Meter Out". If the needle hits the end of its travel, you should adjust the trimmer so that the needle stays within its normal travel, you will then have raised the reference level.

If the COMP-54 MKIII is used in a semi-professional -10 dBu environment, you can decrease the VU reference level by adjusting the trimmer the other way. Another way to stop the meter needle from hitting the end of its range is to switch the meter to show gain reduction since the full scale will usually seldom be reached unless you compress very hard. There is a trim potentiometer also for this meter mode marked Meter GR.

WARRANTY

The COMP-54 MKIII come with a parts and labor, limited warranty. It is built to last, but components can break down.

There is a slow blow fuse located inside the unit. If the unit dies, check this fuse. If it has blown, replace with a new 1A slow blow one. If this doesn't help, the unit will need repair and you should then contact the reseller where you bought the unit.

The warranty period and terms are decided by the Distributor for your country. The Distributor will support Golden Age Project resellers and end users with spare parts and repairs.

REGISTRATION

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

I would like to thank you for choosing the COMP-54 MKIII!
I wish you much joy with the unit and I hope that it will help you in making a lot of great sounding music.

Bo Medin

Vintage character for modern ideas!