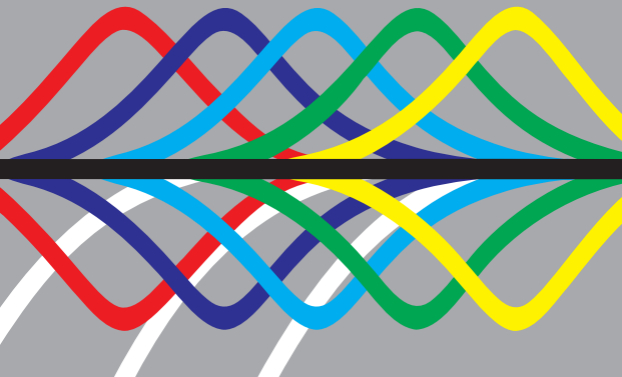




**TIPTONE  
AUDIO  
DEVICES**

**OP-12 DISCRETE OP AMP PREAMPLIFIER**

**OPERATOR'S GUIDE**



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**THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.**



# GENERAL

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The **OP-12** is a preamplifier and tone-shaper utilizing a discrete operational amplifier (opamp) design. At its heart is the TT10: a custom ten-transistor discrete opamp. It features a gain control which can be driven to saturate the transformer-coupled output, a variable high-pass filter (HPF), and an equalization (EQ) section with adjustable level and frequency settings. This preamplifier is versatile, capable of output levels suitable for direct line-level recording into an audio interface or recorder, while also serving as an effective tone-shaping tool when integrated into an instrument-level pedal system.

# SPECIFICATIONS

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POWER SUPPLY	9VDC center negative
CURRENT DRAW	175mA
INPUT IMPEDANCE	1 M $\Omega$
OUTPUT IMPEDANCE	<200 $\Omega$
FREQUENCY RESPONSE	30Hz-20kHz
GAIN	40 dB (approx.)



# SETUP

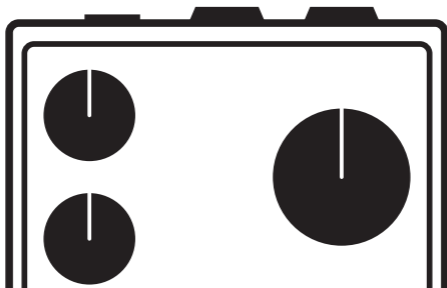
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## POWER : 9VDC

The **OP-12** requires a 9VDC center-negative power supply with at least 200mA of current. Internally, the voltage is boosted to  $\pm 15V$ , which provides the headroom required to output line-level signals.

## INPUT/OUTPUT

The unit is equipped with two TRS 1/4" jacks. The preamplifier is mono and unbalanced. However, the unit will pass balanced signals in bypass mode if TRS cables are used.



# CONTROLS

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## GAIN

Controls the gain of the discrete op amp preamplifier circuit, ranging from +5 to 40dB. More signal level will lead to more transformer saturation/harmonic distortion, and with enough gain can be driven to clipping.

## HPF

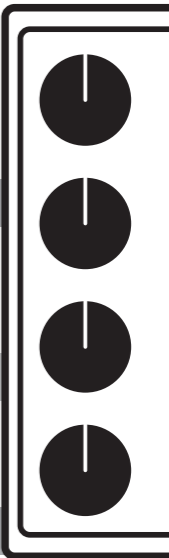
A variable two-pole high-pass filter located before the main preamp circuit. The dial controls the cutoff frequency ranging from **20Hz to 2.5kHz**.

## EQ LEVEL

A semi-parametric mid-frequency equalizer that provides 12dB of boost or cut at the specified frequency.

## EQ FREQUENCY

Controls the center frequency of the equalizer circuit ranging from **150Hz to 7kHz**



# CONTROLS

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## FADER

Controls the overall output level of the preamplifier. It is located after the output transformer in order to maintain any desired saturation/distortion effects.

## METER

The 4-LED meter tracks the output level of the final amplifier stage. The brightness of each LED is modulated for increased resolution. Each fully-lit LED represents a 10dB change in signal level. When all LEDs are lit, this indicates that clipping is occurring.

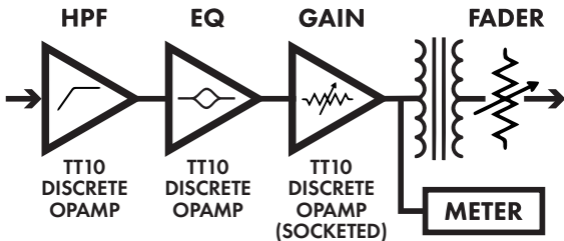
## BYPASS

Relay-controlled true bypass with a soft-touch switch. The LED is illuminated when the effect is engaged.



# OPERATION

## BLOCK DIAGRAM



## FREQUENCY RESPONSE

