

# KNIF V804 PRE

## HIGH-END VACUUM TUBE PREAMPLIFIER



## USER'S MANUAL

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## 1 OVERVIEW

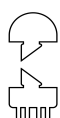
Knif V804 Pre is a high-end vacuum tube microphone preamplifier available in two and four channel versions. The preamplifier pays homage to German engineering from the 1950's while utilizing modern components and construction techniques. The front end is based around the Telefunken EF804S, a very special and sought after pentode, combined with a high step-up ratio Lundahl input transformer. The most distinctive feature from the classic 1950's designs was the use of pentodes in the first stage of sensitive electronics.

Thanks to the special front end, the self noise of V804 Pre is very low, fully comparable to the best solid state rivals, and the maximum gain is also very high. The latter of the two tube stages in the amplifier also features a SQ pentode, the E180F. This stage is also coupled to the outside world through a Lundahl transformer. The core of this transformer is silicon iron, which adds a hint of thickness and smoothness to the top register.

The gain of V804 Pre is adjusted in 4 dB increments via an Elma® rotary switch that features an automated -20 dB pad for the lowest gain settings. There are no electrolytic capacitors in the signal path.

The V804 Pre is also available with optional DI inputs, boasting a capacitance of only 15 pF; which is roughly equivalent to a foot of the best cables available and greatly helps in delivering the last bits of treble available from Hi-Z sources such as guitars.

The performance of the V804 Pre is flawless. 72 dB of gain from tube preamplifier, especially one with only two stages, is rare and requires a perfect symbiosis between the components. It is even more difficult to approach while retaining superb linearity, high output levels, and even frequency response. There are no other tube microphone preamplifiers on the market with such degree of sophistication and minimalism.

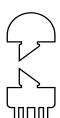


## 2 FRONT PANEL



Figure 2. V804 Pre front panel.

- 1 **Gain** adjustment selects the gain of the channel. The Mic / Line input has got a -20 dB pad which is automatically engaged in positions 0 dB through to 16 dB. The optional DI input passes the transformer input, thus is not affected by the pad circuit. Therefore positions 0 dB to 16 dB are the same as positions 20 dB to 36 dB.
- 2 **Φ** reverses the phase of the Mic/Line input. This does not affect the DI input.
- 3 **48** engages phantom power feed to the Min / Line. The blue led indicates that phantom power is switched on.
- 4 **DI** input (optional)
- 5 **DI** input selector.
- 6 **Bias trimmers** and **indicator leds** for adjusting the bias currents of the output tubes. For adjustment instructions, refer to chapter 7.
- 7 **Power switch** and **Indicator**



### 3 REAR PANEL



**Figure 3. V804 Pre rear panel.**

- 1 **Audio connections.** The Mic / Line input is floating and the output is “not quite floating”. This is due to an issue with “ingenious” line receivers (for example in Dangerous gear). These chips, manufactured by THAT corporation may indeed be “ingenious” but they have one fundamental issue as a consequence to the indefinite common mode impedance. They do not function well with floating tube amp outputs, and can even self-destruct. This is why we have built our gear for many years with resistors from output transformer secondaries and signal output to ground.
- 2 **Mains power.** CAUTION! V804S PRE has a mains voltage selector for use with either 115 VAC or 230 VAC mains voltage.

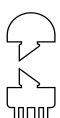
**Before connecting mains power, always make sure that the voltage selector switch is set to the appropriate voltage and the fuse is selected accordingly!**

**115 VAC and 800 mA (T) / 230 VAC and 400 mA (T)**

In case the mains fuse blows, only replace it with a slow blow fuse of the correct value.

### 4 RACK MOUNTING

The V804 Pre dissipates a lot of heat. Care should be taken to provide sufficient means of ventilation. At least one half rack unit of empty space is required above the device and placing other hot-running gear right below the unit is not recommended. If the front panel or sides of the device are uncomfortable to touch (above 50 °C or 120 °F), further actions are required.



## 5 TECHNICAL SPECIFICATIONS

### MIC / LINE INPUT

Impedance	1 k $\Omega$
Maximum Level	+26 dBu
Gain	0 dB ... 72 dB
Connectors	XLR female, Neutrik, 3-pin, gold-plated

### DI INPUT(optional)

Impedance	2 M $\Omega$ , 15 pF
Gain	0 dB ... 52 dB
Connectors	Neutrik 6.35 mm jack, locking

### OUTPUT

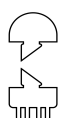
Impedance	< 200 $\Omega$
Maximum Level	<i>into 10 k<math>\Omega</math></i> +32 dBu <i>into 600 <math>\Omega</math></i> +25 dBu
Connectors	XLR male, Neutrik, 3-pin, gold-plated

### PERFORMANCE

Frequency Response, Gain 20 ... 60 dB	$\pm 0.5$ dB, Ref. 1 kHz, 50 $\Omega$ source $\pm 0.5$ dB, Ref. 1 kHz, 150 $\Omega$ source	10 Hz ... 40 kHz 15 Hz ... 22 kHz
High frequency cutoff, max gain	-1.0 dB, Ref 1 kHz	20 kHz
THD+N, 20 dBu out	10 k $\Omega$ load, 0 ... 64 dB gain, 30 ... 20 kHz 600 $\Omega$ load, any gain, 30 ... 20 kHz	0.4% <0.6%
Channel Balance	Any gain	better than 0.1 dB
Noise (EIN), 60 dB gain, 50 $\Omega$ source	A-weighting	-133 dBu
Crosstalk, Gain 0 ... 60 dB	100 Hz 1 kHz 10 kHz	-90 dB -95 dB -68 dB
Crosstalk, Gain 72 dB	100 Hz 1 kHz 10 kHz	-80 dB -80 dB -55 dB

### MAINS

Mains Voltage	115 / 230 VAC, selectable
Mains Frequency	50 / 60 Hz
Power Consumption	2ch version 27 W
Connector	IEC, C13



### TUBES

EF804S	2 pcs
E180F	2 pcs

### GENERAL

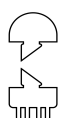
Dimensions	$w \times l \times h$	430 × 352 × 88 mm (2U)
Weight		8.1 kg

### CONTENT

V804 Pre	1 pcs
Spare tubes (E180F, 2 pcs)	1 set

### WARRANTY

2 years (Refer to chapter 10 for terms and conditions)
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## 6 V804 PRE IN USE

Input impedance is a comfortable 1 kOhm, so there should be no problems interfacing the pre with anything in your studio, including line level gear. The pad is automatically switched on for the 0-20 dB gain positions. You can also use the amp to give a nice character to previously recorded tracks or use it in passive summing. Experiment – whatever you decide to do, you can not damage it.

## 7 BIAS ADJUSTMENT

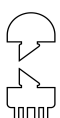
When the output tubes age, the bias will have to be adjusted. The adjustment should be performed with no audio input and gain set to medium range. The tubes must be allowed to heat for at least 10 minutes before adjusting the bias. It is normal that there is no light during the warmup time.

The monitoring reacts really slowly to any adjustments so approach gently and patiently. Turning the trimmer clockwise increases the bias current. Let the monitoring settle for at least five seconds after any adjustment. The trimmer should be turned clockwise until the red light turns on and then backed off until it turns back to green.

If there is no more bias range to turn on the green light, it's time to replace the output tubes. Due to the fine microscopic structure of the output tube E180F, there's some variation between individual specimens and not all tubes will bias normally. Therefore V804 Pre is shipped with an additional pair of tested output tubes.

Note! The bias leds will react to audio. If the preamp is overdriven, the bias will change, and if a led state is changed the recovery will take about ten seconds. No harm is done, but overdriving while recording should be avoided.

color	condition
no light	bias too low
green	all is well
red	bias too high



### 8 WARRANTY TERMS AND CONDITIONS

- Each Knif Product is covered by a two (2) year limited warranty from the original date of purchase, covering faulty workmanship and defective materials. The warranty is assigned to the first buyer and backed by the original invoice.
- During the warranty period, Knif Audio and/or their appointed resellers, will repair or replace, at Knif's discretion, any defective part that fails to meet factory specifications.
- Warranty related shipping charges will be split equally between Knif Audio and the buyer.
- The Knif Audio warranty is provided only to the first user/buyer of the product, and cannot be passed on to a third party. Knif Audio has no warranty obligation to users that have not purchased the product from an authorized Knif Audio dealer or Knif Audio directly.
- Any warranty claim should be submitted to the selling dealer or distributor, and if this situation is not possible, to Knif Audio directly.
- The warranty does not apply in case of defects caused by the following events:
  - accident, flood, fire, or other acts of nature.
  - normal wear and tear.
  - abuse, misuse, negligence or failure to observe the instructions contained in the user's manual obtained at the time of purchase.
  - the product has been altered or repaired by anyone other than Knif authorized service facility.
- In the continued effort to improve products, Knif Audio reserves the right to make improvements without notice. Specifications are subject to change without notice.
- No other written or oral warranty applies.

