

**K T G 2 1**

**OWNER'S MANUAL**

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## CAUTION

To prevent electrical shock, do not operate this unit in wet or moist areas. There are no user serviceable parts inside. (See, "Maintenance" and \*"Tube Chart" sections for user maintenance procedures.)

# INTRODUCTION

Congratulations on the purchase of a Seymour Duncan KTG-2100 guitar power amplifier. The KTG-2100 was conceived and designed to meet the tone and power needs of today's professional guitarist. In the modern rack-mount guitar amplification system, the power amp is a key element in defining the tone of the entire system, but is often disregarded. The clipping characteristics of the power amp are just as important in shaping the overall overdrive sound, but power amps often take second billing to preamps for providing "tone". Having selected the KTG-2100, you no doubt have experimented with several power amps and found that even the most highly acclaimed professional preamp sounds weak and undefined through some power amps. Some "guitar" power amps in the market today are basically PA system power amps disguised to be used for guitar. On the other hand, the KTG-2100 was designed from the start to be used primarily for the electric guitar. Its all-tube design provides the warm power-tube clip for generating that "King Tone."

The KTG-2100 uses 4 KT-88 tubes to provide two channels of 100 Watt all-tube power in just two rack spaces. The KT-88's are driven by two 12AX7's and two 12AU7's. An internal fan cools the tubes. The KTG-2100 provides the user with three controls for each channel: **VOLUME**, **PRESENCE**, and **DYNAMICS** to tailor the power amp to the needs of the particular playing situation.

## INSTALLATION

In rack-mounting the KTG-2100, care should be taken to make sure the vent holes around the tubes are not blocked. Remember that heat rises from the unit, and some manufacturers of rack-mount gear do not recommend placing their units above power amps.

## CONNECTIONS

All input and output connections to the KTG-2100 are made in the rear of the unit. We recommend professional shielded 1/4" audio cables for the input into the power amp, and unshielded speaker cables for the output.

### Input

There are two parallel inputs into each channel. It is designed to take a line-level signal from a guitar preamp or an effects processor. The input impedance into the KTG-2100 is 100k ohms. When there is no input jack plugged into a channel, the input is grounded.

### Output

There are three speaker outputs per channel to provide the greatest flexibility in speaker configurations. Each channel has 4, 8 and 16-ohm speaker outputs so that you can select the output which matches the impedance of the speaker

cabinet used. If two cabinets are connected to a single channel, care must be taken to calculate the total impedance of the two cabinets.

Calculating the total speaker load (impedance) is important for two reasons: for determining which speaker output jack to use, and to make sure you're not overloading the amplifier. The thing to remember with speaker impedances is that the lower the number (in ohms), the more loaded the amplifier is. If the total speaker impedance drops below 3 ohms, the amplifier is in danger of blowing a fuse or overheating.\*

The following is a handy reference chart, which gives the total impedance for any two cabinets hooked up to a single channel:

Cabinet 1	Cabinet 2	Total	Impedance
4 ohms	4 ohms		2.0 ohms
4		8	2.67
4		16	3.2
8		8	4.0
8		16	5.33
16		16	8.0

**Note 1:** For those of you who are curious, you can calculate the total impedance of any two cabinets by calculating:

$R1 \times R2$  (where R1 is the impedance of cabinet 1  
 $R1 + R2$  and R2 is the impedance of cabinet 2).

Note 2: If you use a cab with higher impedance than the output (8 ohm cab with the 4 ohm output), you'll get a higher damping factor for a tighter sound, and it's perfectly safe for the amp.

\*\* Here is a sample set-up. If you're using two speaker cabinets, each at 8 ohms, the total impedance is 4 ohms, so you would use the 4-ohm output and connect the speakers in the following way:

## SWITCHES AND FUSES

While all input and output connections are made in the rear of the unit, the controls are within easy reach of the guitarist on the front panel. Below is an explanation of all the controls and features:

### Switches

The three switches on the front panel are, from left to right, STANDBY CHANNEL 1, STANDBY CHANNEL 2, and ON/OFF. The purpose and function of the standby switch is like those of any tube combo amp. Standby allows you to warm up the tubes while you're powering up or between sets, but you will not get any sound coming from the amplifier. The ON/OFF status can be verified, even on a dark stage, by the illuminated SEYMOUR DUNCAN logo on the front panel.

### Fuses & Pilot Lamp

The main power fuse is located in the rear by the power cord. The two output protection fuses (one for each channel) are located in the front under the switches for quick and easy changes. The main power fuse is a 5 Amp Slow-Blow (2.5 Amp Slow-Blow for 220V and 240V units), and the output protection fuses are 1 Amp FastBlows. The output

protection fuses blow when there is too much current flowing through the output tubes (i.e. when an output tube or the speaker cable is shorted). The output fuses are more likely to blow than the main line fuse, so we have included two spares in the front fuse holders. These square fuse holders are accessed by simply pushing down on the top until they pop open, then pulling the fuse holder assembly out. The fuse farther inside the fuse holder is the active fuse, and the one just inside the fuse holder cover is the spare.

The pilot lamp in the KTG-2100 is made by Archer and is sold at Radio Shack (Cat. No. **272-1137**).

## CONTROLS

The six knobs on the front panel provide the guitarist with independent control over the two channels. The three functions are described in detail below:

### Volume

This knob controls the input level into the power amp. It allows the full signal to enter the power amp when the knob is turned fully clockwise. Turning the knob down attenuates the input signal proportionally.

### Presence

This knob controls the amount of brilliance, articulation and shimmer in the tone. Unlike passive tone controls, which simply attenuate certain frequencies, this control gives you up to 10 dB of "all-tube" boost for frequencies above 6kHz. You can tailor the KTG-2100's high frequency response to get back some of the clarity missing in your rig, or reduce the amount of highs for a warmer tone.

### Dynamics

This control influences the dynamic range of the power amp and determines how responsive the amp is to your playing. Turning this knob down results in a tighter, compressed sound. Turning it up makes the sound more open and alive. This is an excellent control to tailor the sound of your rig given the acoustics of the room. For a bouncy room, you may want a tighter sound. For a "dead", insulated room, you may want more of a vibrant, lively tone.

## TROUBLESHOOTING

This troubleshooting guide is provided for you in case you experience problems with your power amp. Most cases of impaired amplifier performance are due to minor problems or irregularities, which can be corrected by the user. A good start to troubleshooting the KTG-2100 is to verify whether the symptoms occur in one channel or both channels. However, if you are unable to isolate the problem, have questions, or find your amplifier in need of repair, call your nearest authorized Seymour Duncan Service Center, or call us at the factory at **(805) 964-9610**. We can answer your questions and give you a Return Authorization number, or the locations of the Seymour Duncan Service Centers in your area.

Symptom	Remedy
Amplifier does not turn on.	1) Ensure power cord is plugged in.
	2) Check main line fuse; replace.
	3) Verify AC outlet with something that you know works.
	4) Call dealer or factory for assistance.
No audio output (in one channel)	1) Check the volume knob for that channel.
	2) Check/replace output protection fuse on the front panel for that channel.
	3) Check the standby switch for that channel.
	4) Check/replace driver and/or output tubes for that channel (12AX7, 12AU7 & two KT-88's).
No audio output (both channels)	1) Check volume knob settings on the power amp, preamp, effect processor, or guitar.
	2) Check both standby switches.
	3) Verify that the guitar, preamp, effect processor, guitar cable, and speaker cable all work.
	4) Verify the speakers work.
	5) Check/replace driver and/or output tubes.
Amplifier has loud hum.	1) Make sure all connecting cables are grounded (plugged all the way in).
	2) Eliminate ground loops between preamp, effect and power amp by "floating" the ground on every piece of gear except the power amp.
	3) Replace KT-88 power tubes for the channel with hum.
Amplifier blows main fuse.	1) Check/replace shorted speaker cable.
	2) Replace shorted KT-88 power tube.
	3) Call dealer or factory for assistance.
Excessive distortion at low volumes	1) Check/replace intermittent audio cables.
	2) Check/replace worn 12AX7 or 12AU7 driver tubes.
Excessive distortion at high volumes	1) Check/replace intermittent audio cables.
	2) Check/replace worn KT-88 output tubes.
* Note on <b>KT-88</b> tubes: If just one of your KT-88 power tubes should short out, we can sell you a single KT-88 with the same matched grouping as the pair you have, so that you don't have to buy another pair.	

## SPECIFICATIONS

<b>Power Output @ 5% THD</b>	100 Watts RMS into 4, 8, or 16 ohms
<b>Total Harmonic Distortion</b> @ 1 Vout @ 10 Vout @ Onset of clip	<.03% <.5% < 1%
<b>IMD SMPTE</b> (60Hz/7KHz in 4:1 ratio) @ 1 Vout @10 Vout @ Onset of clip	<.05% < 1% < 2%
<b>Signal/Noise Ratio</b>	>100 dB referred to rated output
<b>Damping Factor</b>	2.3 (Dynamics control @ max) 10
<b>Dynamic Headroom</b>	1.5 dB
<b>Crosstalk</b>	-88dB
<b>Frequency Response</b>	10Hz - 65KHz (-3dB, +0dB)
<b>Power Bandwidth</b>	40Hz - 65KHz (-3dB, +0dB)
<b>Input Impedance</b>	100K Ohms
<b>Input Sensitivity</b>	.40 Volts (Dynamics control @ max) 1.10 Volts (Dynamics control @ min)
<b>Protection</b>	Front panel accessible cathode fuses providing over current protection to the output stage.
<b>Output type</b>	Push-pull vacuum tube, using KT-88's.
<b>Cooling</b>	Forced air and optimized natural convection.
<b>Dimensions</b>	Faceplate 3.5" x 19" x .125" Main Chassis 3.51, x 16.9" x 15.06"
<b>Weight</b>	30 Lbs

# SEYMOUR DUNCAN LIMITED WARRANTY

**Please read carefully:**

Seymour Duncan amplifiers (hereinafter referred to as the Product) are warranted against defects in workmanship and materials, excluding tubes covered separately, for a period of one year from date of purchase to the original purchaser. Tubes are warranted for 90 days from date of purchase. This warranty is transferable.

Defective parts will be repaired or replaced without charge if the product is returned to the Seymour Duncan factory, at the address below, or to a Seymour Duncan Authorized Service Center. In the event a product is to be returned to the Seymour Duncan factory for repairs, **A RETURN AUTHORIZATION MUST BE OBTAINED PRIOR TO SHIPPING BY CALLING OR WRITING THE COMPANY FOR THE RETURN AUTHORIZATION NUMBER.**

When returning your amplifier, make certain to include a copy of the bill of sale. Any product shipped must be returned in the **ORIGINAL SHIPPING CONTAINER WITH ORIGINAL PACKING MATERIAL** and freight prepaid. Transportation charges involved in warranty service are the sole responsibility of the purchaser.

This warranty does not apply to damage caused by misuse, mishandling, negligence in use or maintenance or storage, and is voided if repairs or adjustments are made after the purchase by anyone other than the Seymour Duncan factory or a Seymour Duncan Authorized Service Center. Seymour Duncan reserves the right to be the sole judge as to the misuse or abuse of the product.

The company assumes no liability for incidental or consequential damages which may result from the failure of this product. Any warranties implied by law are limited to the duration of this express limited warranty.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation on incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

Please return the enclosed warranty card so that we can give you the best warranty service possible.