

Tone King

User's Manual



Tone King Amplifiers
www.toneking.com
mail@toneking.com

Note from the Builder

Thank you for choosing Tone King's "Gremlin" guitar amplifier. The Gremlin is a new design, and a bit different than its predecessors in the Tone King line.

The Gremlin was developed to deliver the big, bold sounds of larger vintage amps, but in a smaller, more manageable package - tweed champs, Supros, old field coil Gibson amps, etc. The goal with this design was to maintain some of the loose, raw sound of smaller amps, but without the raspiness. We also wanted to deliver the strong lows and strident highs of a larger format amplifier.

There were two key factors to achieving this. First, the smaller port cabinet design, coupled with a specially designed Celestion speaker deliver a larger sonic footprint than the cabinet size would imply.

Next, we employed a single-ended output stage loaded stock with a KT66 output tube. It's cathode biased. Which means you can also substitute it successfully for a 6L6 (though that's not the stock sound)

At 5W, the Gremlin was still too loud to be used in a home environment, so we added a custom version of our Ironman II attenuator, with 6 levels of attenuation, to bring the volume down by as much as 35db, all the way to a genuine bedroom volume.

In the end, the Gremlin turned out to have a wonderful variety of genuine old-school tones, and be an absolute blast to play. We thank you for your purchase of the Gremlin, and hope you enjoy playing it as much as we do.

Best Regards,

Tone King Amplifiers

Safety Instructions

Please keep this instruction manual for future reference and for the duration of owning this Tone King Amplifier. Please carefully read and understand the instructions inside this user's manual before attempting to operate your new amp. This instruction manual includes essential safety information regarding the use and maintenance of the amplifier. Take special care to heed all warning symbols and signs inside this manual and those printed on the amplifier itself.



WARNING!

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THE AMPLIFIER TO WATER OR MOISTURE. DO NOT OPERATE NEAR ANY WATER SOURCE



WHAT'S THE MEANING OF THIS?

The lightning flash with an arrow triangular symbol is intended to alert the user to the presence of non-insulated "dangerous voltage" within the products enclosure, and may be of sufficient magnitude to constitute a risk of electric shock



WHAT'S THE MEANING OF THIS?

The exclamation point triangular symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the user manual accompanying this amplifier!

1. Read Instructions – All the safety and operating instructions should be read before this product is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on the amplifier and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Water and Moisture – The amplifier should not be used near water – for example, a bathtub, washbowl, kitchen sink, laundry tub, wet basement, or near a swimming pool, and the like.
6. Carts and Stands – The amplifier should be used only with a cart or stand that is recommended by the manufacturer.
An amplifier and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the amplifier and cart combination to overturn.
7. Wall or Ceiling Mounting
– The product should never be mounted to a wall or ceiling.
8. Heat – Amplifier should be situated away from heat sources such as radiators, heat registers, stoves, or other amplifier (including amplifiers) that produce heat.
9. Power Sources – This product should be operated only from the type of power source indicated on the rating label.

If you are not sure of the type of power supply to your home, consult your product dealer or local power company.

10. Grounding or Polarization

– This product may be equipped with a polarized alternation-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try

reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

11. Power-Cord Protection

– Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to the cord in correspondence of plugs, convenience receptacles, and the point where they exit from the amplifier.

12. Cleaning – The amplifier should be cleaned only as recommended by the manufacturer. Clean by wiping with a cloth slightly damp with water. Avoid getting water inside the amplifier.

14. Non-use Periods – The power cord of the amplifier should be unplugged from the outlet when left unused for a long period of time.

15. Object and Liquid Entry

– Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

16. Damage Requiring Service

– The amplifier should be serviced by qualified service personnel when:

A. The power-supply cord or the plug has been damaged; or

B. Objects have fallen, or liquid has been spilled into the amplifier; or

C. The amplifier has been exposed to rain; or

D. The amplifier does not appear to operate normally or exhibits a marked change in performance; or

E. The amplifier has been dropped, or the enclosure damaged.

F. The amplifier needs tube replacement or biasing

17. Servicing – The user should not attempt any service to the amplifier beyond that described in the operating instructions.

All other servicing should be referred to qualified service personnel.

18. Ventilation – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack.

19. Attachments – do not use attachments not recommended by the product manufacturer as they may cause hazards.

20. Accessories – Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product.

21. Lightning – For added protection for this product before a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power line surges.

22. Replacement Parts – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

23. Safety Check – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

24. FUSES – Always use the correct rating and type of fuse as indicated on the rear panel. Note the proper rating fuse is determined by the AC line voltage in the country this unit is being operated.

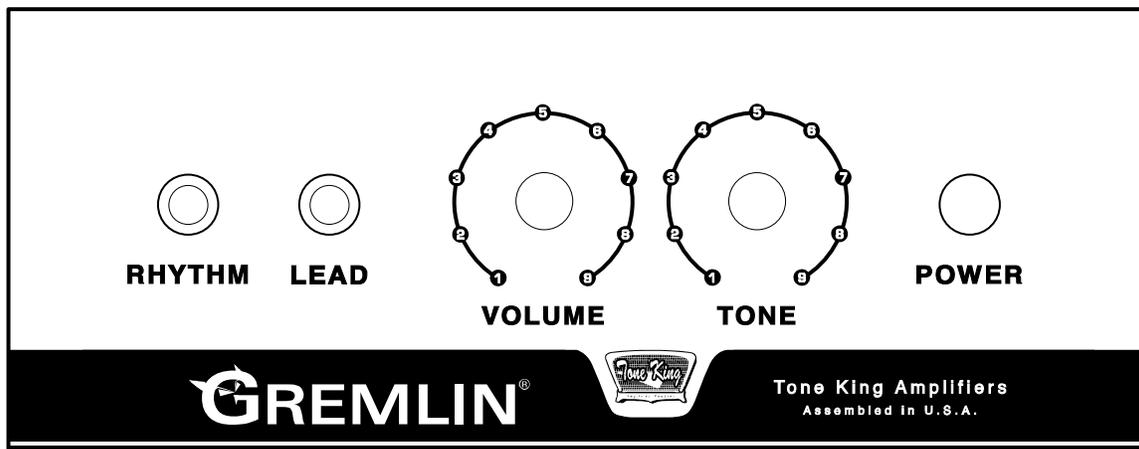
25. AC SELECT SWITCH: This switch must be set to match the AC line voltage in the country this unit is being operated.

To change the setting, loosen (do not remove) the two screws above and below the slide switch. Temporarily move the protective cover strip and slide the actuator to match the voltage in your country. Place the protective cover strip back over the switch and tighten the two screws.

Contents

1. Top Panel Controls	4
Rhythm and Lead Inputs	4
Volume and Tone Controls	4
2. Dialing In Your Sound	5
Rhythm Voicing	5
Lead Voicing	5
3. Back Panel Controls	6
AC Power	6
Fuse	6
Power Switch	6
Speaker Jack	6
Direct Out Jack	6
Attenuation Controls	7
Notes on Using the Attenuator	7
4. Tube Installation and Replacement	8
Choice of Tube Types and Brands	8
Important Note Regarding V2	8
12AX7 Tubes	9
KT66 Tubes	9
Alternate Tube Choices	9
Installing Tubes	10
Replacing Output Tubes	10
Tube Quality	10
5. Warranty	11

1. Top Panel Controls



Rhythm and Lead Inputs

Two input jacks are provided, each with a different tone and level of gain. The Rhythm input has a lower level of gain than the Lead input. This is where you determine the “channel” of the amplifier. You can plug the cable into either of the two inputs. Or, using an A/B or A/B/Y switch you can select between them, or jump them together for a sound that combines the two channels for additional character.

Volume & Tone Controls

... of the Gremlin’s preamplifier is very similar to a vintage tweed deluxe amplifier. Because of this, the volume and tone controls are highly interactive. This means that changing the volume control will have some effect on the tone (balance of treble-to-midrange-to-bass), and changing the tone control will have some effect on the volume of the amp. Although this seems like an inconvenient setup, it actually provides a much wider range of available tones. If you are not familiar with using interactive Volume and Tone controls, it may take some experimenting to become familiar with how best to use it.

2. Dialing In Your Sound

The Gremlin is capable of a surprisingly wide range of tones, between the two inputs. Each channel is intended for a specific use, and it’s important to know the intention of each voicing in order to get the most out of the Gremlin.

“Rhythm” Voicing

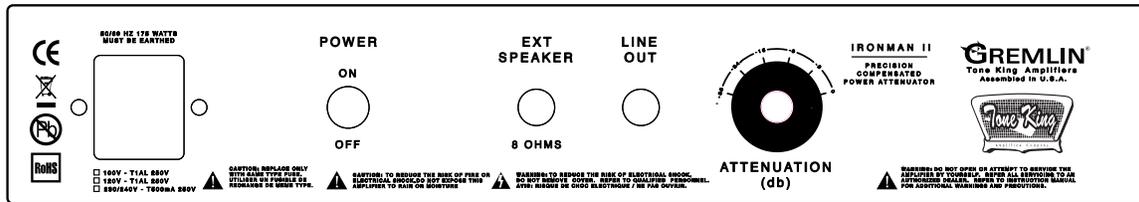
The “rhythm” voicing is intended to give you more or less a blackface Fender sound. Cleaner in lower volume settings, but still with good breakup when cranked, and full saturation when hit with an overdrive.

“Lead” Voicing

The “lead” voicing is intended exclusively for overdriven and distorted tones. It is not intended for clean tones. This is why it has more gain than the other setting, and why it begins to break up at low volume control settings. It may take some experimenting to find the sweet spots that give you the best tones with a particular guitar.

The Gremlin gets much of its overdrive and distortion from the output stage. When you are pushing it hard in the lead setting, it reaches maximum output early on, and simply becomes more saturated as you turn up the volume control. This is how any non-master design works - tweed amps, etc. The Gremlin is designed for rootsy, old-school vintage tone, and this kind of tone is all about power tubes being driven hard and generating their own kind of distortion and compression.

3. Back Panel Controls



AC Power

Always use a grounded AC cord, and make sure that a proper ground connection is supplied to the amp. Never attempt to lift or defeat the ground connection to the amp.

Fuse

A standard 2A slo-blo fuse should be used. The fuse holder is integrated into the AC input.

Power Switch

When powering up the amp, it is recommended that you allow the tubes to warm up for about 1 minute before playing.

Speaker Jack

The speaker jack is located on the back of the chassis, and is labeled “EXT SPEAKER”. This is because whether using it for the internal speaker, or to power an external speaker cabinet, this is the jack to be used. It is a standard ¼” mono jack. The output impedance of the amplifier is 8 Ohms. If you wish to use the Gremlin with an extension cabinet, it’s best to use an 8-ohm cabinet. You can connect it with a standard ¼” mono speaker cable by pulling out the plug from the internal speaker, and plugging the cable into the speaker jack. But you MUST do so with the amplifier OFF.

Line Out

Connect a high quality ¼” guitar cable to send signal to external devices such as additional power amps, FX, etc. This is not speaker emulated.

Attenuation Control

The Gremlin contains a built-in Ironman II precision attenuator. The attenuator allows you to reduce the volume level of the amplifier while allowing its output tube to operate at full output power, for natural power tube overdrive and distortion. This attenuator uses transformer coupling and a precision tuned reactive load to best preserve the natural tone and feel of the amp, even at very low volume. This is the same general approach used in the highly regarded Ironman II standalone attenuators.

There are many different approaches that can be used to generate overdriven and distorted tones as a low volume. For example, master volume circuits, or a power reduction scheme such as London Power Scaling have both been used successfully on various amp models of other brands. However, for the more vintage sounding tones that the Gremlin is designed to achieve, a good quality attenuator such as the built-in Ironman II is the best way to preserve tone and feel at very low volume, because it allows the output stage to operate the same way at any level of attenuation.

The attenuation control determines the amount of power sent to the speaker, but does not affect the operation of the output stage of the amplifier itself. The attenuator absorbs and dissipates any excess power generated by the output tubes that is not sent to the speaker.

The attenuator is internally connected between the amplifier output and the speaker jack – the same way an external attenuator would be connected. However, the input of the attenuator is not accessible, so you cannot use the built-in Ironman attenuator to attenuate the output of some other amplifier.

Notes on using the attenuator

In the 0db position, the attenuator is completely bypassed, and the speaker is connected directly to the output transformer secondary, with no additional circuitry touching the signal path.

Although the Ironman II attenuator does an excellent job of reducing output power without changing the tone of the amp's circuitry, there are other variables in play at lower volume which do result in some apparent tone change. Here are a few factors that you should be aware of -

Speaker breakup and compression is a big part of the tone and feel of the amp when played at high volume. At low power settings, the speaker responds differently, and does not break up and compress as it does at high power.

The ear's natural response curve varies at different volume levels, which changes the way you perceive sounds at different volume levels. Quieter sounds tend to give the impression of having less bass content.

At lower volume, there is a tendency to hit the guitar strings harder and play more aggressively than you would if the amp were tuned up very loud. It may take some time to get used to maintaining your playing style at reduced volume.

4. Tube Installation and Replacement

Choice of Tube Types

I currently recommend the following tube types:

No.	Function	Brand/Type
V1	1 st Gain Stage either Channel 1&2	TAD 12AX7A-C
V2	2 nd Stage C.F. Channel 1&2, Driver Stage	TAD 12AX7A-C
V3	Output Tube	KT66

The tube brands shown above are our own preferences. You may want to use other brands, to tailor the sound to your own tastes.

Alternate Tube Choices You May Want to Try

Reducing Gain: If you find the preamp too gainy, and you find that you're setting the volume controls down quite low to get sufficient clean headroom, you may want to try swapping in a 5751, 12AT7, 12AY7 or even 12AU7 in the V1 position.

Installing Tubes

When installing tubes, you may find it helpful to lay the amp on its side on a table, and shine a light directly into the back of the amp, to aid in locating the position of each tube. Tubes must be installed in the correct orientation. The smaller, all-glass tubes have a blank space in the ring of pins which must line up with the blank space in the ring of tube pins in the tube socket, located on the chassis. The larger, bakelite-base tubes have a small cylinder with an indexing key in the center of the ring of tube pins, and this indexing key must match up with the corresponding slot in the socket on the chassis.

Replacing Output Tubes

The output stage of the Gremlin is fully cathode biased, and no bias adjustment is necessary when changing output tubes. The design of the Gremlin's output stage allows a fair amount of margin for variation in tube characteristics, so any known brand of KT66 can be installed, and will work properly and be appropriately self-biased. Other popular power amp tubes such as 6V6, 6L6, EL34, 6550 or KT88 or others for example can also be substituted.

Tube Quality

Currently manufactured tubes are built in China, Russia, or the Czech Republic, and are not built to the same quality standards as tubes manufactured by the U.S. manufacturers in the "glory days" of tube manufacturing.

We musicians choose to use vacuum tubes because of their tone, but we need to accept that the tubes available to us these days can be imperfect devices, and are most certainly the least reliable component in the entire amplifier.

It would seem that the obvious solution would be to use new-old-stock tubes that were made back in the "glory days", when tubes were properly made. However, we've lately been finding that much of the available stocks of such "new old stock" tubes are either gassy, noisy, or unreliable – we do believe that we've reached the bottom of the barrel of NOS tubes.

Tube problems generally reveal themselves as a crackling noise or microfonics which can occur continuously, sporadically, in response to mechanical vibration, or – especially in Combo amplifiers - in response to your playing (e.g. a crackling or other type of noise which occurs only when you hit a note).

We subject all tubes to a thorough burn-in and test procedure to ensure that they are fully up to spec and operating perfectly. However, you must be aware that the majority of tube failures occur early in their life, and may come about as a result of the jostling and jarring that an amp can receive in shipping. In spite of the exhaustive testing we perform at the shop, early-life tube problems cannot always be found in such testing. The first two months or so are the most tenuous period for any set of tubes. Most manufacturing defects will be revealed in the first two months of their life, but many are not detectable in initial testing, even after a burn-in period.

If you notice any noises, crackling, humming or any other odd behavior of your amplifier in this period, note that it is most likely to be the result of a defective tube, and should be debugged as such.

TONE KING LIMITED LIFETIME WARRANTY

Thank you for choosing Tone King. Tone King manufactures some of the world's most reliable hand-wired, all-tube amplifiers and speaker cabinets. Tone King takes great pride in an extremely thorough testing procedure which is implemented on each product prior to shipment. In the unlikely event that you have a problem with your amplifier, please refer to warranty below. Tone King stands behind our products like no other and we're here to help you!

AMPLIFIERS: Tone King offers a limited lifetime warranty to the original purchaser that a Tone King amplifier will be free from defects in material and workmanship. A dated sales receipt will establish coverage under this warranty, **PLEASE KEEP YOUR PROOF OF PURCHASE TO USE YOUR WARRANTY.** This warranty does not cover service or parts to repair damage caused by accident, neglect, abuse, normal & wear, disaster, misuse, abuse, over-powering, negligence, inadequate packing or shipping procedures and service, repair or any modifications to the product which have not been authorized or approved by Tone King in writing. **ANY MODIFICATION TO THE AMPLIFIER WILL VOID YOUR WARRANTY.** If this product is defective in materials or workmanship as warranted above, your sole remedy shall be repair or replacement by Tone King as provided below.

CAUTION: Do NOT attempt to repair, modify or service your amplifier by yourself!!! Please read the instruction manual for all safety notifications, warnings and instructions. Tone King, like all tube amplifiers, have extremely high voltages that can cause serious injury or death. Do not remove the chassis from the amplifier. All repair and service work must be performed by Tone King or an authorized service center of Tone King. **ANY UNAUTHORIZED REPAIRS WILL VOID YOUR WARRANTY.**

TUBES: Tone King warrants the original purchaser that the specific tubes used in Tone King will be free from defects in material and workmanship for a period of 90 days from the original date of purchase. A dated sales receipt will establish coverage under this warranty. This tube warranty will automatically terminate 90 days after the original retail sales date. This tube warranty is in lieu of all other expressed warranties. If tubes fail within the 90 day warranty period your sole remedy shall be replacement of tubes as provided below.

RETURN PROCEDURES: In the unlikely event that a defect occurs please call us at 323-277-4100. In most cases we can help you diagnose the problem over the phone. If a product must be sent to us, please follow the procedure outlined below.

- Defective products must be shipped, together with proof of purchase, freight pre-paid and insured to the Authorized Tone King Service Center or directly to Tone King.
- If a product must be returned to Tone King for warranty replacement/repair, a Return Authorization Number must be obtained from our Customer Service Department prior to shipping the product.
- Please contact Tone King Customer Service Department for the Authorized Tone King Service Center nearest you.
- Products must be shipped in their original packaging or its equivalent; in any case, the risk of loss or damage in transit is to be borne by the purchaser.
- The Return Authorization Number must appear in large print directly below the shipping address.
- Always include a brief description of the defect, along with your correct return address and telephone number.
- When calling to inquire about a returned product, always refer to the Return Authorization Number.

If Tone King determines that the unit was defective in materials or workmanship at any time during the warranty period, Tone King has the option of repairing or replacing the product at no additional charge, except as set forth below.

- All replaced parts become a property of Tone King. Products replaced or repaired under this warranty will be returned via ground shipping within the United States or Canada - freight prepaid.
- Tone King is not responsible for costs associated with expedited shipping, either to Tone King or the return of the product to the customer.

All warranty repairs outside the United States and Canada must be directed to the dealer or distributor from which you purchased the product.

INCIDENTAL OR CONSEQUENTIAL DAMAGE: In no event will Tone King be liable for any incidental or consequential damages arising out of the use or inability to use of any Tone King product, even if a Tone King dealer has been advised of the possibility of such damages, or any other claim by any other party. Some states do not allow the exclusion or limitation of consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

FOR YOUR PROTECTION: Please complete the warranty registration online at www.toneking.com within (10) ten days of the date of purchase so that we may contact you directly in the event a safety notification issued in accordance with the 1972 Consumer Product Safety Act.

CUSTOMER SUPPORT: Our dedicated and friendly staff is ready to help you with any warranty or product questions you may have. Please call us at 323-277-4100 – Monday – Friday 9AM-4PM (Pacific Standard Time)

Thank you again for choosing Tone King and we look forward to a long relationship!

Premier Builders Guild, LLC
201 S. Highland Avenue, Suite 204
Pittsburgh, PA 15206
412-362-0309



DECLARATION OF CONFORMITY
Report #R070212

We, Premier Builders Guild, in coordination with CES Laboratories, declare, taking this declaration under our total responsibility, that the below models are in conformity with the provisions of the following EC Directive(s) when installed in accordance with the installation instructions contained in the product documentation:

2006/95/EEC Low Voltage Directive
2004/108/EEC EMC Directive
2011/65/EEC RoHS-Directive

And that the standards and/or technical specifications have been applied to the following families of products:

Imperial	Metropolitan
Galaxy	Falcon
Sky King	Royalist
Imperial MK II	Falcon Grande
Ironman II Mini	Gremlin

Manufacturer/Importer
Date: 8/25/2015

Signature: *Christopher W. Fleming*

Name and Title: *Christopher W. Fleming*
V.P. PROJECT ENGINEERING

Approved By:
Chandra Garudachar
President
CES LABORATORIES

Prepared By:
Jyotsna Bedi
23361 Cypress Pt
Mission Viejo, CA 92692