

Operating Instructions

Micro Lead Series

A Word from Bob Gallien and Rich Krueger

We want to personally introduce you to our labor of love: The Microamplifier Lead Series. They symbolize our continuing effort to make the musician's life easier and more fulfilling. Everything, from the input stage to the speaker outputs, has been redesigned and refined for one purpose: the ultimate guitar sound.

After getting accustomed to the fact that this little package puts out an unbelievable amount of power, the first thing you'll notice is how quiet the amp is.

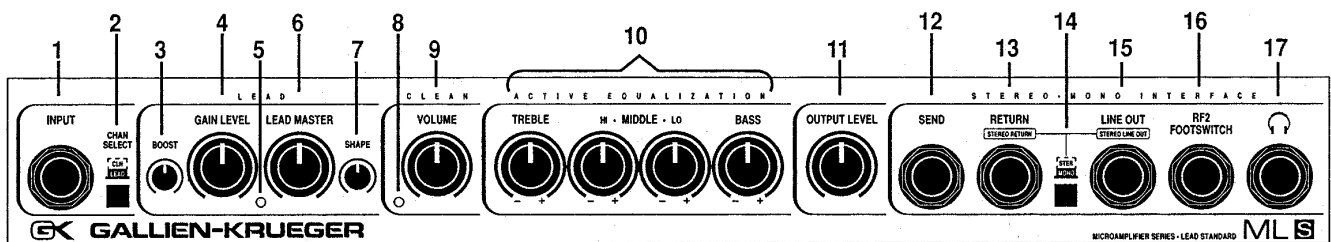
That's due to a newly designed input stage that reduces noise at its most prominent source. And the hum that is normally induced into your guitar pickups from a typical amplifier is gone, thanks to our advanced power supply design.

All this quiet can be instantly transformed into a roar of metal thunder or a smooth singing sustain at your whim. The Lead Channel offers flexibility that surpasses anything we've ever produced with all the balls you could ask for. And the Clean Channel gives a sweet, shimmering clean sound with vintage warmth and character. As you read through this manual, we hope you will gain an understanding of the care that went into the design and manufacture of your new amplifier.

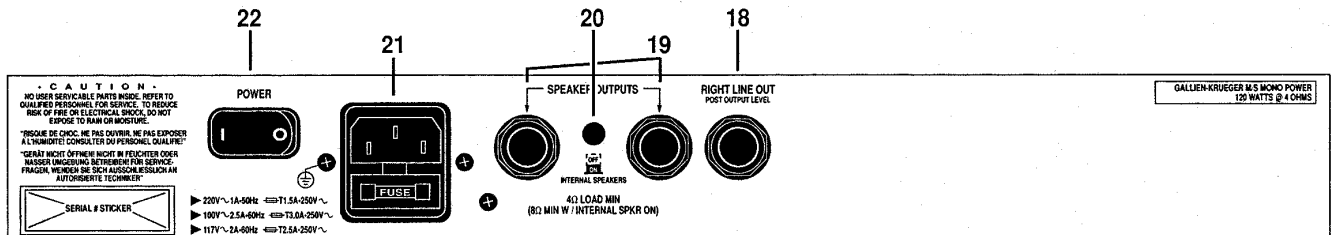
Each feature has been designed to give you as much control over your sound as possible and with a little experimentation you should easily obtain your ultimate sounds.

We are proud of these amplifiers and feel they have passed their final test with your purchase. We hope you enjoy this great guitar instrument and wish you the best in your musical endeavors.

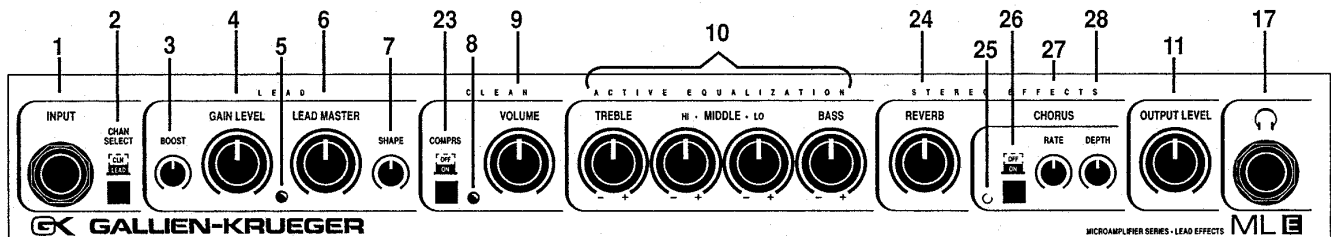
Bob Gallien & Rich Krueger



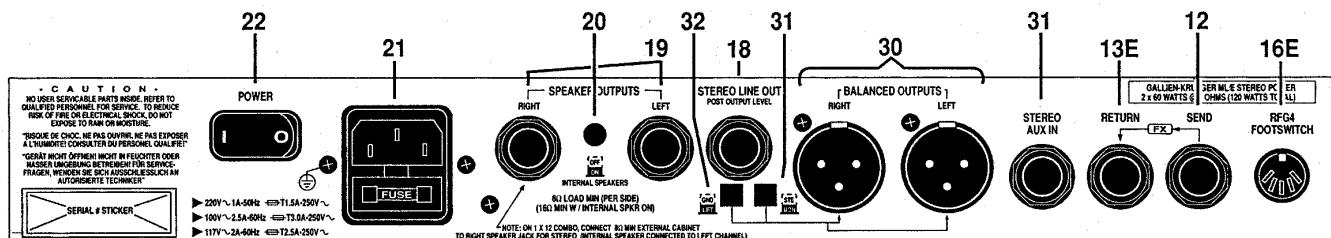
ML/S FRONT PANEL



ML/S REAR PANEL (MONO)



ML/E FRONT PANEL



ML/E REAR PANEL (STEREO)

Front Panel Features

(1) Input Jack

Accepts a 1/4" phone plug and can be driven by a variety of instruments; however, the internal electronics have been optimized for use with an electric guitar.

(2) Channel Select Switch

Allows you to switch between the Lead and Clean channels. The RF2 Foot Controller (on the ML/S) or the RFG4 Foot controller (on the ML/E) will switch channels when this switch is in the "in" position and the footswitch is plugged in.

(3) Boost Control

This unique feature works like a third footswitchable channel. It controls the amount of gain before the first overdrive stage. Turning clockwise increases the gain level. It is footswitchable with the RF2 Foot Controller (on the ML/S) or the RFG4 Foot Controller (on the ML/E). You can achieve two different, footswitchable lead sounds by setting the Gain Level control first for your low overdrive sound, then setting the Boost control for your extreme overdrive sound. The Boost can then be taken in and out of the circuit with the footswitch.

The Boost has no effect when the Gain Level(4) is set all the way up (clockwise).

(4) Gain Level

Controls the gain of the first and second overdrive stages using a dual potentiometer. Turning clockwise will increase the amount of "saturation" in the gain stages, producing fuller harmonics and increased sustain. The gain of the first overdrive stage will be increased when the Boost control is used.

(5) Lead Channel Indicator LED

When lit, the Lead channel is activated.

(6) Lead Master

Controls the volume of the lead channel. It affects the Send (12), Headphones(17), and Balanced Outputs(30).

(7) Shape Control

This is a passive midrange control (post overdrive). It effectively varies the midrange frequencies in the Lead channel, allowing a variety of lead voicings to be attained easily. Rotating clockwise boosts the midrange.

(8) Clean Channel Indicator LED

When lit, the Clean channel is activated.

(9) Clean Channel Volume Control

Controls the volume of the Clean channel. It affects the Send(12), Headphones(17), and Balanced Outputs(30).

(10) 4-Band Active Equalizer

Provides boost and cut over four different frequency bands. Each band has a specially selected Q and center point optimizing it for a particular guitar spectrum.

(11) Output Level Control

Adjusts the level of the signal being sent to the internal power amplifier(s) and headphones, affecting the Speaker Outputs(19) and the Headphone Output(17). The Balanced Outputs(30) are not affected.

(12,13,13E) Effects Loop

Provides a means of adding in-line effects. The Send(12) can drive most standard foot and rack mountable effects. (see Sample Hookups)

The Return(13) on the ML/S is switchable, allowing you to return a regular mono signal with a standard 1/4" phone plug or a stereo signal using a stereo 1/4" stereo phone plug. The Stereo/Mono Switch(14) must be in the appropriate position to take advantage of the return's mono/stereo capability.

If the send signal should overdrive the outboard effects (causing unwanted distortion), keeping the Output Level greater than the 1 o'clock position will usually solve the problem.

The Effects Loop comes after the Channel (1-9,23) and Equalization (10) stages and before Output Level (11) and line outputs (15&18) on the ML/S and ML/E. The internal effects (24-28) and Balanced Outputs are also post effects Loop on the ML/E (see Block Diagram).

(14) Return and Line Out Stereo/Mono Switch (ML/S only)

Affects the Return(13) and Line Out (15). In the "Mono" position, the Return and Line Out accept a standard 1/4" phone plug and accept (Return) or provide(Line Out) a mono signal. In the "Stereo" position, the Return and Line Out accept a stereo 1/4" phone plug and accept (Return) or provide(Line Out) a stereo signal when using outboard stereo effects through the Effects Loop.

If the Effects Loop and Line Out are not being used. The position of this switch is not important.

(15) Line Out (stereo/mono) (ML/S only)

Provides a line level signal that is switchable mono/stereo to take advantage of the stereo capability of the Effects Loop Return. When used in the "Mono" mode, it accepts a standard 1/4" phone plug. When used in the "Stereo" mode, it accepts a stereo 1/4" phone plug. Unless you are using stereo outboard effects through the Effects Loop and the Stereo/Mono Switch(14) is in the "Stereo" position, only a mono signal will be present.

(16,16E) RF2 and RFG4 Foot Controller Jacks

Provides a means to hook-up the optional footswitch for your amplifier. The ML/S accepts the RF2 two-button Foot Controller, allowing remote Channel Switching(Lead/Clean) and Boost On/Off. The RF2 requires any standard 1/4" stereo phone cord for operation (available from GK (Part #304-2500-0)). The ML/E accepts the RFG4 four-button Foot Controller, allowing remote Channel Switching (Lead/Clean), Boost On/Off (when in the Lead channel) or Compressor On/Off (when in the Clean channel), Reverb On/Off, and Chorus On/Off. The RFG4 requires any standard 5-pin DIN(MIDI) cable for operation. Please make sure that the 5-pin DIN cable has all five wires, not two or three.

(17) Stereo Headphone Output

Accepts a stereo 1/4" phone plug, delivering a stereo signal for use with any standard headphones. Headphone Output level is controlled by the Output Level(11).

Rear Panel Features

(18) Right/Stereo Line Out

Provides a line level signal (post Output Level)for interfacing with outboard power amplifiers: Right Line Out for mono internal power units. Stereo Line Out for stereo internal power units. (see Sample Hookups)

....on Mono Power Units:

Plugging into the Right Line Out splits the preamp signal; "left" going to the internal 130 watt power amplifier and "right" going to the Right Line Out. By connecting this line out signal to an external power amplifier (in this case the GK ML/P), you have created a 130 watt per channel stereo guitar system. A standard 1/4" phone plug is required for hook up. A slight volume loss in the internal channel is normal.

...on Stereo Power Units:

A stereo signal is provided for connecting to an external stereo power amplifier or two external mono power amplifiers (the GK 265ML/P or 130ML/P are recommended for these applications). Any standard stereo 1/4" plug is required for hookup.

(19) External Speaker Outputs

Allows external speakers to be driven by the internal power amplifier(s). For optimum performance and to avoid damaging your amplifier, use the following minimum external speaker impedance:

HEADS:

ML/S & ML/E Mono Heads :

4Ω Minimum impedance Total
(1x4Ω speaker, 2x8Ω speakers. Or 4x16Ω speakers)

ML/S & ML/E Stereo Heads:

8Ω Minimum Impedance Per Side
(1x8Ω speaker, or 2x16Ω speakers per side)

COMBOS:

206 & 208 Mono Power Combos:

- With Internal Speakers "on" : 8Ω Minimum Total External Impedance
- With Internal Speakers "off" : 4Ω Minimum Total External Impedance

206 & 208 Stereo Power Combos:

- With Internal Speakers "on" : 16Ω Minimum External Impedance Per Side
- With Internal Speakers "off" : 8Ω Minimum External Impedance Per Side

112 Mono Power Combos :

- With Internal Speaker "on" : 8Ω Minimum Total External Impedance
- With Internal Speaker "off" : 4Ω Minimum Total External Impedance

112 Stereo Power Combos :

- With Internal speaker "on" : 8Ω Minimum Impedance plugged into "Right" Side Jack Only!!!
Note : DO NOT plug external speaker into the "Left" Side Jack on the 112 Stereo Power Combos when the internal speaker is "on"!!!
- With Internal speaker "off" : 8Ω Minimum External Impedance Per Side

IMPORTANT :

Warning : Under no conditions should the two speaker outputs of a stereo power unit be connected together in any way!!! This will damage the amplifier and void your warranty, so please be careful in setting up your speaker configurations!

Auto Amplifier Shutdown : To protect against failure, the ML/S and ML/E heads and combos are equipped with an Auto Shutdown feature that is enabled when the Speaker Outputs are overloaded or when the temperature of the unit exceeds safe operation. The power dissipation in the outputs is actually computed to determine if it is within safe operating conditions and automatically shutdown when limits are exceeded. When shutdown occurs, the unit will appear to be on and all functions and LED's will work; however, there will be no power output to speakers. To reset the amplifier, turn the power switch off, wait 3 seconds, remove or lower the input signal, and turn the amplifier back on. If you experience more shutdowns, even after correcting the cause of the initial shutdown, check all speakers and cables. If further action is necessary, please call your local GK Service Center.

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(20) Internal Speaker On/Off Switch

(Combos only)

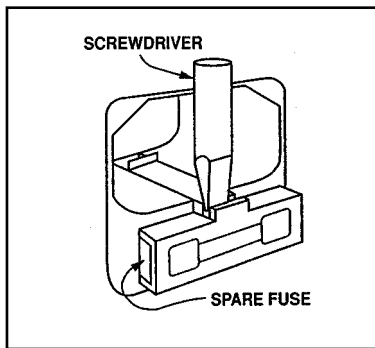
Turns the internal speaker(s) on and off. In the "off" position, full power can be taken from the internal power amplifier(s) to drive external speakers(see Minimum External Speaker Impedances above).

(21) AC Receptacle and Fuse Holder

This combination grounded AC jack and fuse holder is designed to accept a detachable power cord. If a replacement is needed, it should be UL rated at 10amps/125vac or 5amps/240vac.

The fuse (and spare are located as indicated in the drawing below. Never operate this amplifier with any other than the recommended fuse type : 5mm / 20mm, slow blow, 250V with ampere ratings as follows:

Line Voltage	Fuse Rating	Fuse#
117VAC	2.5 Amps	T2.5A • 250V
220VAC	2.5 Amps	T2.5A • 250V
100VAC	3 Amps	T3.0 • 250V



The fuse can be easily removed with a screwdriver as shown on the right. A spare fuse is located in a sliding compartment.

Warning : The Ground Pin on your power cord is for your protection. Do not remove it!!!!

(22) Power Switch

Turns the unit on (1) and off(0). Unplug the unit if it is not being used for an extended period.

ML/E ONLY :

(23) Compressor Switch

Turns the Clean Channel's Compressor on and off. The compressor boosts low level signals while decreasing high level signals to add sustain. It is preset to an overall general purpose 2:1 compression ratio, ideal for most applications.

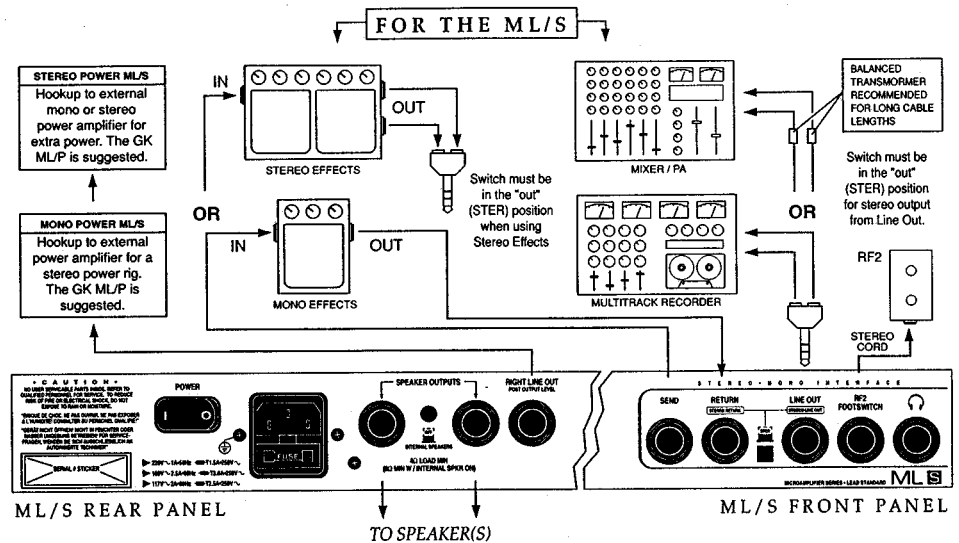
The Compressor can be turned on and off with the RFG4 Foot Controller only when this switch is in the "on" position and the RFG4 is plugged in.

(24) Stereo Reverb Control

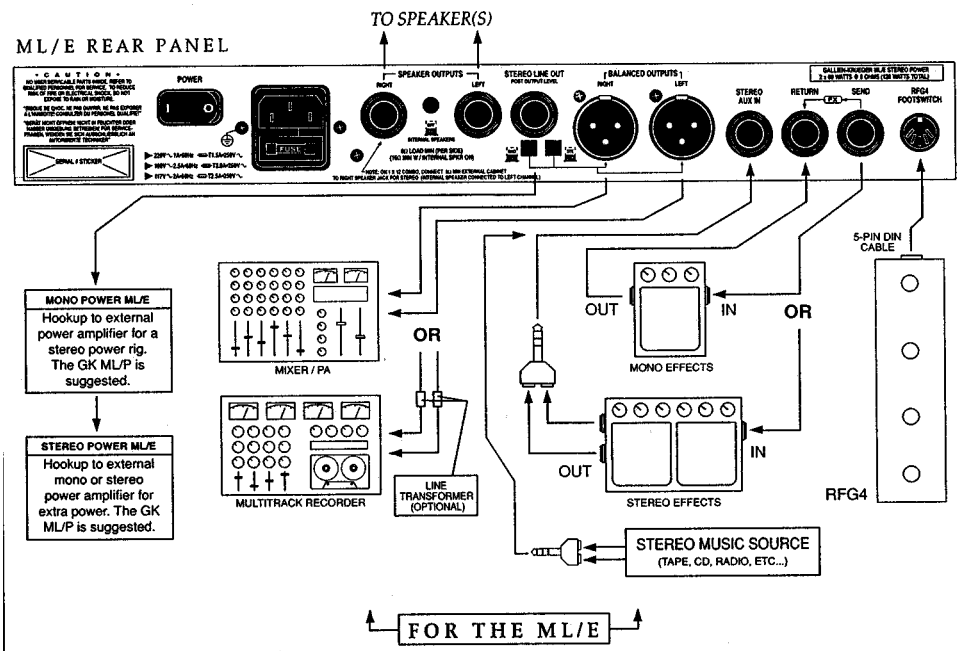
Controls the amount of delayed signal mixed with the main signal from the internal reverb. Clockwise rotation of this control increases the amount of reverberation effect in the signal. The Reverb can be turned on and off using the RFG4 Foot Controller.

(25) Stereo Chorus On/Off Indicator LED

When lit, the Stereo Chorus effect is activated.



SEE "SUGGESTED SYSTEMS" BELOW



(26) Stereo Chorus On/Off Switch

Turns the Stereo Chorus on and off. The Chorus can be turned on and off with the RFG4 Foot Controller only when this switch is in the "on" position and the RFG4 is plugged in.

(27) Stereo Chorus Rate and Depth Controls

Allows for variation of the internal chorus effect from a very subtle "doubling" to a more dramatic "spatial" effect. Only the higher frequencies are chorused, allowing the lower frequencies to be unaffected and thereby eliminating the detuning problems found in some chorusing units. The Rate varies the speed of the effect and the Depth its intensity.

(29) Stereo Aux Input

Accepts a stereo 1/4" phone plug to allow a stereo signal to be mixed with the internal preamp signal (post internal effects, pre Output Level). This input can be used in place of the Return when using stereo outboard effects through the Effects Loop. It can also accept a stereo signal from sources such as tape machines, recorders, stereo receivers, etc., for

playing along with prerecorded music (see Sample Hookups).

(30) Stereo Balanced Outputs

These are standard XLR low impedance jacks providing a means of hooking your ML/E directly to a mixing console or recording equipment, in both live and studio settings (see Sample Hookups). It is suggested you use the GK VCV™ Recording Compensation Module when using these outputs. The Stereo Balanced Outputs are post internal effects and are not affected by the Output Level Control and can be switched to stereo or mono.

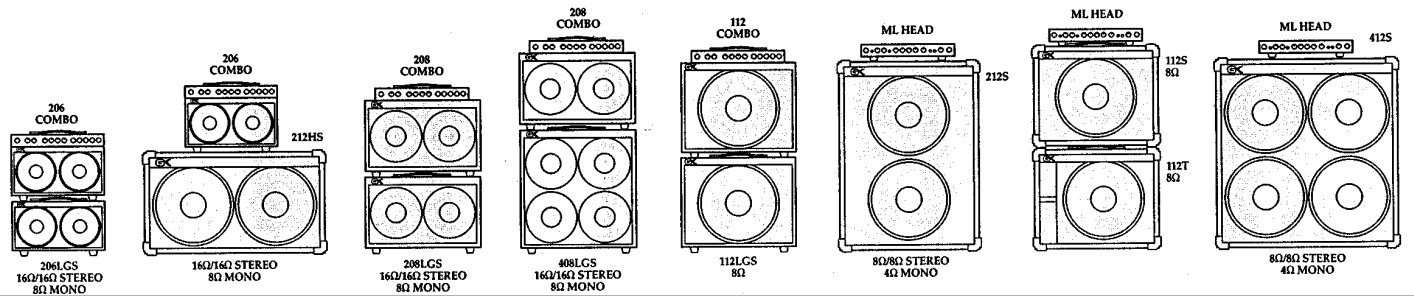
(31) Balanced Outputs Stereo/Mono Switch
In the mono mode, both outputs are providing identical signals. In the stereo mode, you have true stereo left and right output signals.

(32) Balanced Outputs Ground Lift
Disconnects the ground from the Balanced Outputs. There may be situations where a ground loop occurs when using the Balanced Outputs, resulting in a noticeable hum. By disconnecting the ground, the hum may be reduced or eliminated.

SUGGESTED GALLIEN-KRUEGER SYSTEMS

Putting together the right system is as important to your final sound as choosing the right amplifier or the right guitar. Here are our favorite systems, each designed to use all the power from the MicroLead, running at a total of 8 ohms per side stereo, or 4 ohms mono.

Combo systems are on the right, systems incorporating heads on the left. The size of your final system will depend largely on the portability you require.



Setting up your Sound

The ML/S and ML/E are capable of producing a wide range of great guitar sounds. Below you will find the basic procedures needed to get started. We have also provided several sample settings that can be used as starting points for various guitar voicings.

Getting Started

LEAD CHANNEL

- 1) Set Channel select Switch (2) to "Lead".
- 2) Turn the volume and any tone controls on your guitar to "10" before making adjustments on the ML/S or ML/E. These will be fine tuned later.
- 3) Set the Output Level (11) at the 2 o'clock position, the Gain Level (4) at the 10 o'clock position, the EQ at the 12 o'clock position, and the Boost off (counter-clockwise). While playing, set the Lead Master (4) to desired level.
- 4) Try the Shape (7) control to get a feel for how it alters the voicing of the Lead channel. Set to achieve the desired starting sound.
- 5) You will find that the Equalization (10) is quite responsive and takes some trial and error to get to know. From the flat (12 o'clock) position, take each control one at a time and turn it all the way up and all the way off while laying your guitar trough the unit. After you have become familiar with each one, set to the desired position.
- 6) Before setting up any effects, adjust the Gain Level and set to the desired amount of gain. The Gain Level will add saturation to the overdrive sound and should be set before engaging any effects.
- 7) For the ML/E only : With your tone roughly set, familiarize yourself with both the Reverb (24) and the Stereo Chorus (25-28) the same way as with the tone controls. If you choose to use the effects, set to desired levels.
- 8) Try adjusting the Boost (3) in conjunction with the Gain Level. If you have the footswitch hooked up, try footswitching the Boost on and off to explore the two separate gain levels that can be achieved.
- 9) The final adjustment on the amplifier is the volume level. Turn up the Lead Master (6) to your desired playing level.
- 10) Finally, fine tune your level and tone with adjustments on your guitar.

CLEAN CHANNEL

- 11) Set Channel Select Switch (2) to "CLN".
- 12) Repeat Step 2.
- 13) Set the Output Level (11) at the 2 o'clock position. Then while laying, set the Volume (9) to desired playing level.
- 14) Repeat Step 5.
- 15) Repeat Step 7.
- 16) Try playing with the Compressor (23) on and off to hear the effect it creates.
- 17) The final adjustment on the amplifier is the volume level. Turn up the Volume (9) to your desired playing level.
- 18) Finally, fine tune your level and tone with the adjustments on your guitar.

Note : Generally, keeping the Output Level greater than the 1 o'clock position will avoid the problem of overdriving outboard effects.

Final note : Once the levels of each channel (Lead Master (6) and Volume(9)) have been set, use the Output Level (11) to control your overall stage level.

SAMPLE SETTINGS

- Controls shown in black are active or in the "in" position.
- Lead Master, Volume, and Output Level settings are dependant on speaker configuration, desired volume level, and outboard effects.
- Basic channel parameter settings on the ML/E shown below are intended to be used with the ML/S as well.

LEAD

CRUNCHING METAL OVERDRIVE (Bridge pickup)

DRIVING RHYTHM OVERDRIVE (Bridge pickup)

R & B FAT — Slight Overdrive + Reverb(Neck pickup)

SUSTAINING LEAD — w/Reverb & Chorus(Bridge pickup)

CLEAN

COUNTRY CLEAN (Center or Bridge pickup)

DRIVING CLEAN RHYTHM (Center or Bridge pickup)

PUNCHY BLUES — w/Reverb (Center pickup)

BRIGHT CHORUS CLEAN (Center pickup)

Accessories

There are a variety of accessories for the ML/S and ML/E Heads and Combos, each designed to blend perfectly with the Microamplifier Series.

Footswitches

For the ML/S

With the addition of the RF2 Foot Control, you can take control of Channel Switching(Lead/Clean) and Boost (On/Off) with a tap of your toe. A standard 1/4" phone stereo cord is included for hookup to the ML/S.

For the ML/E

The RFG4 Foot Control is designed to gives you control over five functions in the ML/E. Channel Switching (Lead/Clean), Boost(On/Off) or Compressor (On/Off), Reverb(On/Off), and Chorus (On/Off). A standard 5-pin DIN(MIDI) cable is included for hookup to the ML/E.

VCV™ Recording Compensation Module

For recording directly from your Microamplifier, simply plug in the VCV(Vintage Cabinet Voicing) Module. It fits easily into the Effects Loop and has two switchable settings. The Line Outs, Headphones, Speaker Outputs, and Stereo Balanced Outputs (ML/E) are affected by the VCV.

It is also recommended for use with small speakers and when using headphones.

Rack Mounting Kits

All ML/S and ML/E Heads and Combos can be rack mounted with the addition of our optional rack mounting kits.

- All Heads : GK Part #304-1005-0 (2 rack spaces)
- 112 Combos : GK Part #304-1065-A (10 rack spaces)
- 208 Combos : GK Part #304-1025-0 (8 rack spaces)
- 206 Combos : GK Part #304-1077-0 (7 rack spaces)

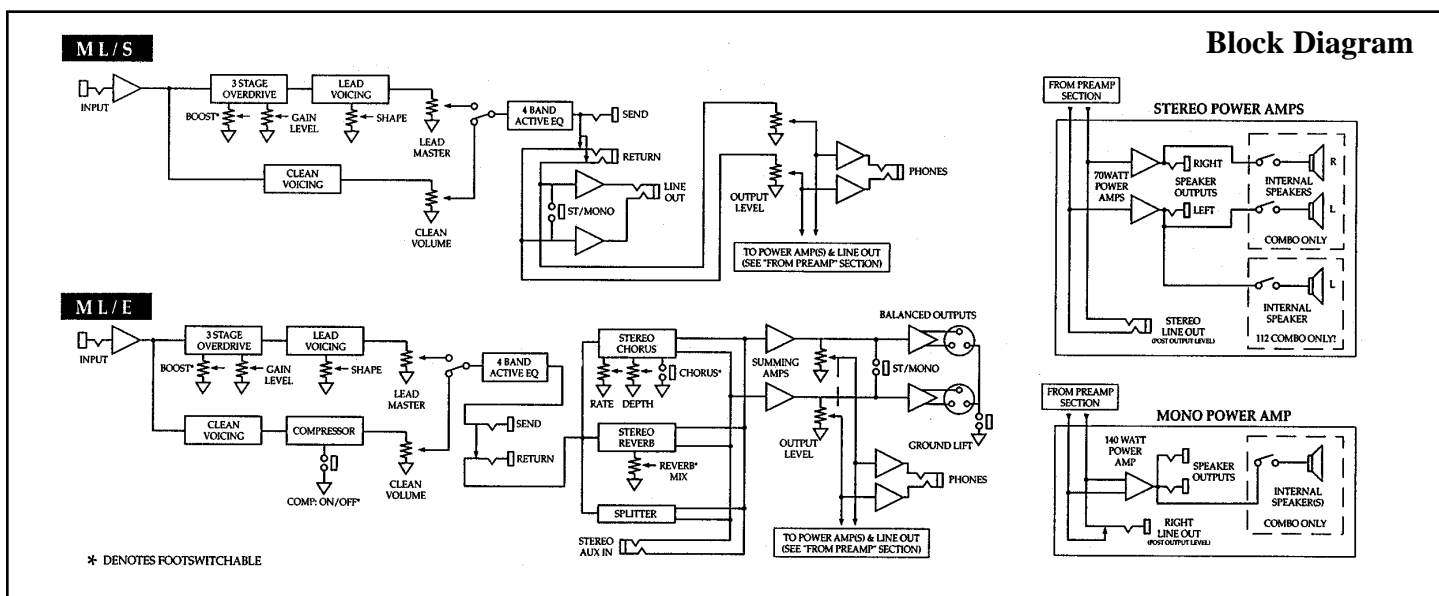
Mic Stand Kit

The 206 combo can be mounted on a standard mic stand with the addition of a Mic Stand Mounting Kit. (Order GK Part #304-1080-0)

Road Bags

To keep your amp looking it's best, we offer custom fitted Road Bags for every model. They feature a fully padded lined interior with a shell made of Cordura Nylon. Cordura is waterproof, colorfast, self-healing and grease resistant. There is also a front zipper pocket for your cords and footswitches. An adjustable shoulder strap lets you carry your amp and instrument together easily. They are recommended for unracked traveling protection.

Note : Accessories are subject to availability. Ask your Gallien-Krueger dealer about specific items.



Specifications

- Max Input :** 1.4Vrms
- Output :** 70W into 8Ω per channel (stereo)
140W into 4Ω (mono)
@ less than 1% THD
- Headphones :** 1.4Vrms max into 8Ω (.25watt)
- Signal to Noise Ratio:** >74dB (Clean Channel referenced to max input; EQ flat)
- Input Sensitivity :** (Clean Channel) 1.8m Vrms @1KHz
- Return Sensitivity :** .46Vrms@1KHz
- Active Equalization :** ±15dB @ 80Hz
±18dB @ 800Hz
±16dB @ 4.0kHz
±12dB @ 10kHz
Cut @ 560Hz (up to -14dB)
- Shape :** Cut @ 560Hz (up to -14dB)
- Input Impedances :** Input.....1MΩ
Return (ML/S).....12KΩ
Return (ML/E).....22KΩ
Stereo Aux Input (ML/E).....12KΩ

- Output Impedances :** Send.....470Ω
Line Out1KΩ
- Compressor (ML/E) :** 2:1 Compression Ratio w/margin of 3
- Chorus (ML/E) :** Crossover Filter : 6dB/oct @ 340Hz
Modulation Rate : .35Hz-2.4Hz
Maximum Width (delay time) : 17.5ms - 22.5ms
- Reverb (ML/E) :** Electronic Analog Type with Stereo Outputs (multi-tap bucket brigade)
- Dimensions :** Heads:13.75"W x 1.9"H x 7"D (7.2lbs)
206 combo: 13.75"W x 10.25"H x 7.75"D (23lbs)
208 Combo: 17.20"W x 14"H x 10.50"D (36lbs)
112 Combo: 17.20"W x 16"H x 10.50"D (32lbs : Celestion™ / 40lbs : EV™)
- Footswitch :** ML/S: GK model RF2 and standard 3-conductor stereo cord (1/4"plugs)
ML/E:GK model RFG4 and standard 5-conductor cord with 5-pin DIN connectors (MIDI type)

Specifications

Your new amp, if kept in a well constructed rack, road case, or GK Road Bag and handled with care, should give you trouble-free performance. If operated with care our only maintenance should be occasional external cleaning.

Often when an electrical component provides poor, erratic, or no performance, it is due to minor problems or irregularities which may be corrected easily by someone knowing very little about electronics.

We have provided the accompanying chart for your reference. If you have any problems at all, please check this first. If your problem is major and there is definitely something wrong with the unit, please refer to the list of Service Centers included with the paperwork in the packing box. If necessary, call your local GK Dealer for your nearest Authorized GK Service Center. You may also call our Service Department at (408) 441-7970 For reference to your nearest Authorized GK Service Center.

PROBLEMS:	PROBABLE CAUSES/SOLUTIONS:
LEDs light but no signal from Speaker Outputs, Headphones, Line Outputs, or Balanced Outputs.	Be sure all tone controls and volumes are turned up at least part way.
LEDs light, tone and volumes turned up but no sound.	Auto Amplifier Shutdown may have tripped. Reset by turning the Power Switch(22)off, wait 3seconds, then turn the Power switch back on. If the condition still exists, check interconnections with speakers.
LEDs light, tone and volumes up, external speakers OK, but no signal from output.	Reset amplifier with Power Switch as described above. If condition still exists, check guitar volume, pick-ups, cord, and repair or replace if necessary.
LEDs light, tone and volumes up, external speakers OK, guitar cord OK, guitar volume up and still no sound.	Call your Authorized GK Service Center.
Channel Switching, Boost, Compressor, Chorus or Reverb not functioning with footswitch plugged in and appropriate LED indicators "on".	Be sure the effect parameters are up and front panel ON/OFF buttons are "in". Check footswitch cable.
External effects hooked up through Effects Loop are distorting.	Effects Loop Send too "hot", overdriving the effect. Keeping the Output Level(11) above the 1 o'clock position will, in most cases, solve the problem.
Loud hum.	Check grounding of the unit and any effects going through the effects loop. Proper grounding is mandatory.
Excessive noise.	Repair or replace guitar cord. Make sure external effects are patched into the Effects Loop and not before the Input. Test guitar pick-ups.
No LEDs on front panel are lit and no signal from Speaker Outputs, Headphones, Line Outputs, or Balanced Outputs.	Check power cord, AC outlet and fuse. If all are OK or fuse is blown, call your local Authorized GK Service Center. Note :Be sure the correct fuse is being used.



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