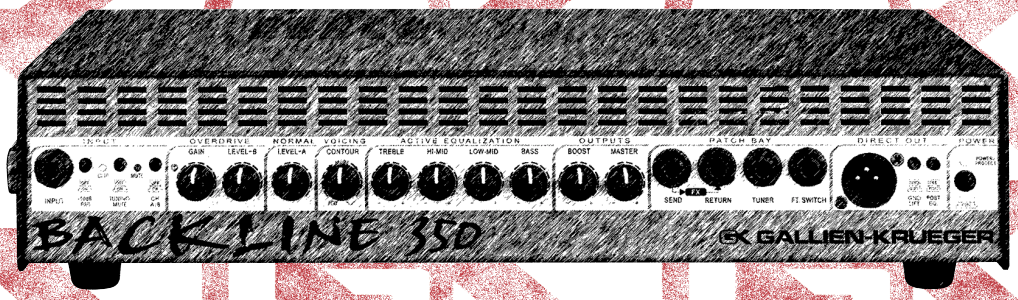
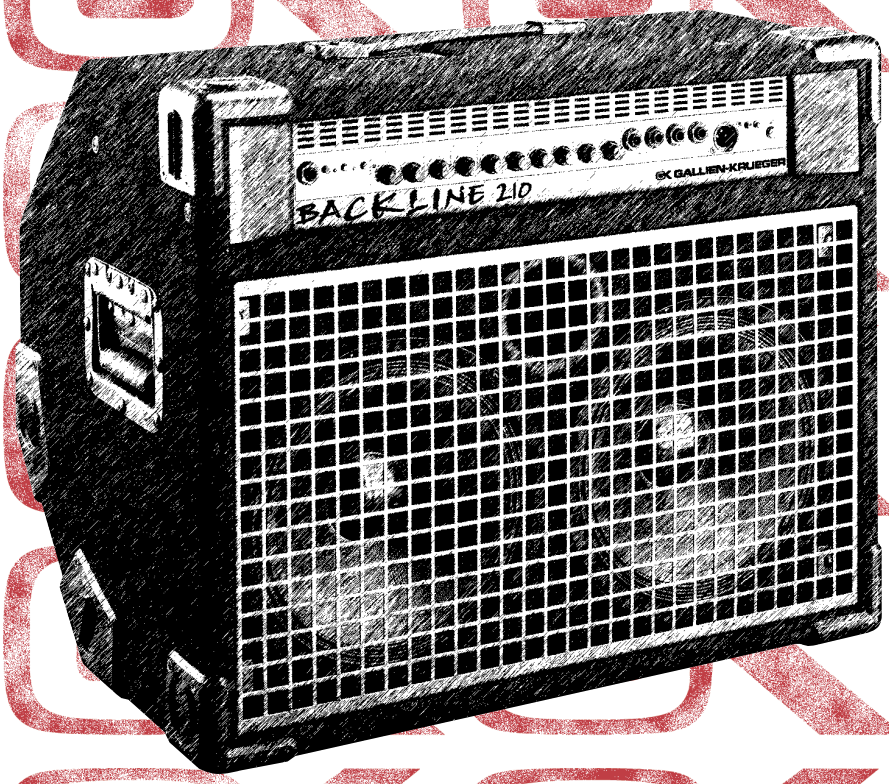
BACKLINE Series

Backline 350 & 210
Owner's Manual



BACKLINE 350



BACKLINE 210

GK GALLIEN-KRUEGER

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**All Features and specifications are subject to change without notice*
***This list is subject to change without notice.*

Please read the Safety Information section on page 5 before continuing.

IMPORTANT SAFETY INSTRUCTIONS.



Gallien-Krueger
2234 Industrial Drive
Stockton, CA 95206
phone: 209-234-7300
fax: 209-234-8420
www.gallien-krueger.com

Congratulations

Your purchase of a new Gallien-Krueger Backline 350/210 product is surely the result of much careful consideration on your part. For our part, we at Gallien-Krueger are pleased that you chose us, and are determined that you will be a satisfied customer. In choosing a Backline 350/210 product, you now own an amplifier with many unique features, which will allow you to create your own distinct sound.

To get the most out of your new purchase please take a few minutes to read through this manual. If you are in a hurry, we suggest you at least read through the Quick Start and Safety Information sections before setting up your new rig. This will help get you started and give you a few quick tips, but is not a substitute for reading the rest of the manual.

Your Backline unit should have come with the following items, please check the contents of the box to ensure that you have everything.

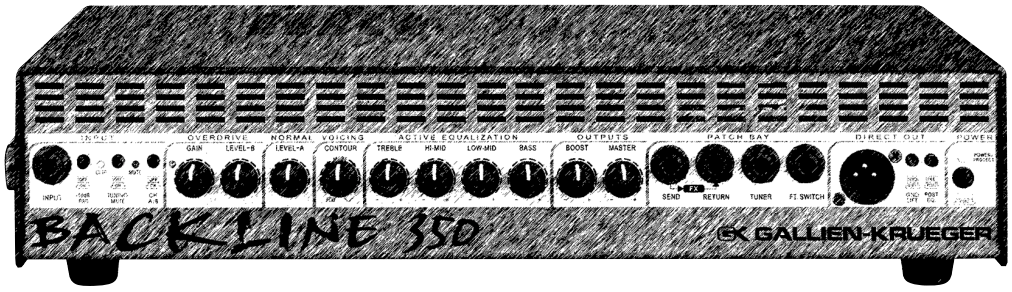
Included with your Backline 350 Head:	
Backline 350	1
Rack mount ears with hardware	2
Power cord	1
Owner's manual	1
Warranty card	1
Safety instructions sheet	1

Included with your Backline 210 Combo:	
Backline 210	1
Power Cord	1
Owner's Manual	1
Warranty Card	1
Safety Instructions Sheet	1

If your Backline 350/210 did not come with all the items listed, or if you encounter problems while setting up your new equipment, please contact your local dealer, or us as soon as possible at:

Gallien-Krueger, Inc.
2234 Industrial Drive
Stockton, CA 95206
phone: (209) 234-7300
fax: (209) 234-8420
Internet: www.gallien-krueger.com
Email: sales@gallien.com

We wish you a lifetime of good playing and remember to always have fun!



GK Philosophy

I have never seen the point in doing things the way others have done them. I also have not been very interested in following the latest fad. I am a Stanford educated engineer who worked his way through school as a musician. Like all musicians, I have lugged amplifiers up stairways and into car trunks, always wondering why these things had to be so heavy, bulky, and hard to handle.

As I am the principal innovator at GK, our products reflect my attitudes and life experiences. I don't model my designs after other manufacturer's products (as some of our competitors are proud of reciting). Instead, I believe new and old problems are best solved with new solutions. Having taken our own path, GK products enjoy a unique, unmatched sound, allowing the artist using them every opportunity to make an original statement.

Having supported my products for over thirty years, I have learned from the story they tell. Gallien-Krueger is a reflection of that story, and has a commitment to support that legacy. Just as the products I created thirty years ago are still telling their story, the products we create today will be talking to us tomorrow. We'll be listening,



Robert Gallien

Founder & President

Safety Information

Verify Line Voltage and Amperage Before Use:

Your new Backline unit has been factory configured for use with:

- 120 Volt/60Hz 15 Amp circuit for USA & Canada.
- 230 Volt/50Hz 10 Amp circuit for Europe & Australia.
- 100 Volt/50Hz 15 Amp circuit for Japan.

Proper AC circuit for all other countries.

Connecting the amplifier to a line with specifications other than indicated above can create a safety and fire hazard, and may damage the amplifier. If you have any questions about the voltage requirements for your specific model, or about the line voltage in your area, contact your dealer before plugging the unit into a wall outlet.

Verify AC Circuit Capacity Before Use:

The high power output of your amplifier may require heavy current draw under Full-Load conditions. To insure proper performance and avoid potential safety hazards, we recommend connection to line circuits with Amperage specified "as above". Connecting multiple amplifiers to the same circuit, or connecting the amplifier to the same circuit used by other heavy-power devices, such as high-wattage lights, may cause circuit breakers to trip. It is always a good idea to avoid using any audio equipment on the same AC circuit as equipment with motors, such as air conditioners or refrigerators. This will lessen to possibility of power variation and electrical start-up noise affecting your sound.

Warning: Do not disconnect or plug in the instrument/speaker cable with the amplifier power on. Be sure the amplifier unit is turned off before connecting anything to it.

Do Not Use Extension Cords:

To avoid safety hazards, use only the power cord supplied with your unit. If a replacement cord is used, make certain that it is of consistent quality and gauge as the original. We do not recommend using extension cords with this product. As with all electrical devices, do not run power cords under rugs or carpets or place heavy objects on them. Damaged power cords should be replaced immediately with cords meeting factory specifications.

Handle The AC Power Cord Gently:

When disconnecting the power cord from an AC outlet, always pull the plug, never pull the cord. If you do not intend to use the amplifier for a considerable length of time, disconnect the plug from the AC outlet.

Mains Disconnect:

If the AC mains has to be completly disconnected, the plug/power cord is used as the mains disconnect device and shall remain readily operable.

Do Not Open The Amplifier Enclosure:

There are no user-serviceable components inside this product. Opening the amplifier enclosure may present a shock hazard, and modification to the product will void your warranty. If liquid enters the unit, or any metal object such as a paper clip, wire, or staple accidentally falls inside the enclosure, disconnect the unit from the AC power source immediately and consult an authorized service station.

Unpacking:

The carton and packing materials used in shipping your new amplifier were specially designed to cushion it from the shocks and vibration that occur during transport. We suggest that you save the carton and packing materials for use in shipping, in the event you move, or the amplifier needs repair.

Quick Start

Your Backline unit is designed to be simple to operate. All controls have a well defined purpose and are well behaved. These directions will take you through the basics and give you a good start for setting up your sound.

1.
Set the power switch to Off and connect the supplied power cord from the amplifier AC receptacle to an AC power outlet of proper voltage and power rating (see safety information on page 5 for details).

2. (Backline 350 Only)
Connect your speaker cabinet to the amplifier output marked 175W. Be sure not to exceed the recommended speaker load listed below.

Maximum Recommended Speaker Load:
One 4 0hm or two 8 ohm cabinets. One 8 ohm cabinet is okay.

If you are using an RBH/SBX series cabinet, set the crossover switch to full range.

3.
Set all EQ controls and the Boost control to 12 o'clock. The Voicing Filter should be turned all the way down (or switched off) to get a flat response. Set the Gain, Level-A, Level-B and Master Volumes at 0. Set the A/B switch to off (Channel A).

4.
Using an instrument cable, connect your bass to the Input jack and turn the power switch on, set the master control to 3 o'clock, slowly bring the Level-A volume up and play. If the clip LED flashes excessively, push the button marked -10db in. Occasional clip light flashes while playing very hard is okay. Do not turn the volume control in the input section past 1 o'clock unless you want an overdrive effect. If you have a bass with passive electronics make sure the controls are all the way up. If you have a bass with active electronics, turn all of the EQ controls on the bass to the middle or flat position.

At This Point:
You should be hearing your bass quite well. You can use the volume and Master to achieve a comfortable sound level.

5.
Now you are ready to check out the overdrive feature (Channel-B). Push in the Level A/B button. The overdrive LED should light. Set the Gain control to 9 o'clock as a starting point. Slowly raise the Level-B volume to the desired sound level. This will give a slightly distorted sound. Raising the gain will add more distortion and sustain. (See Sound Tips for more detail).

Characteristics of the Backline 350/210:
The Backline Series is a flexible, user-friendly state-of-the-art bass series, designed to deliver maximum performance. This is accomplished through these important features:

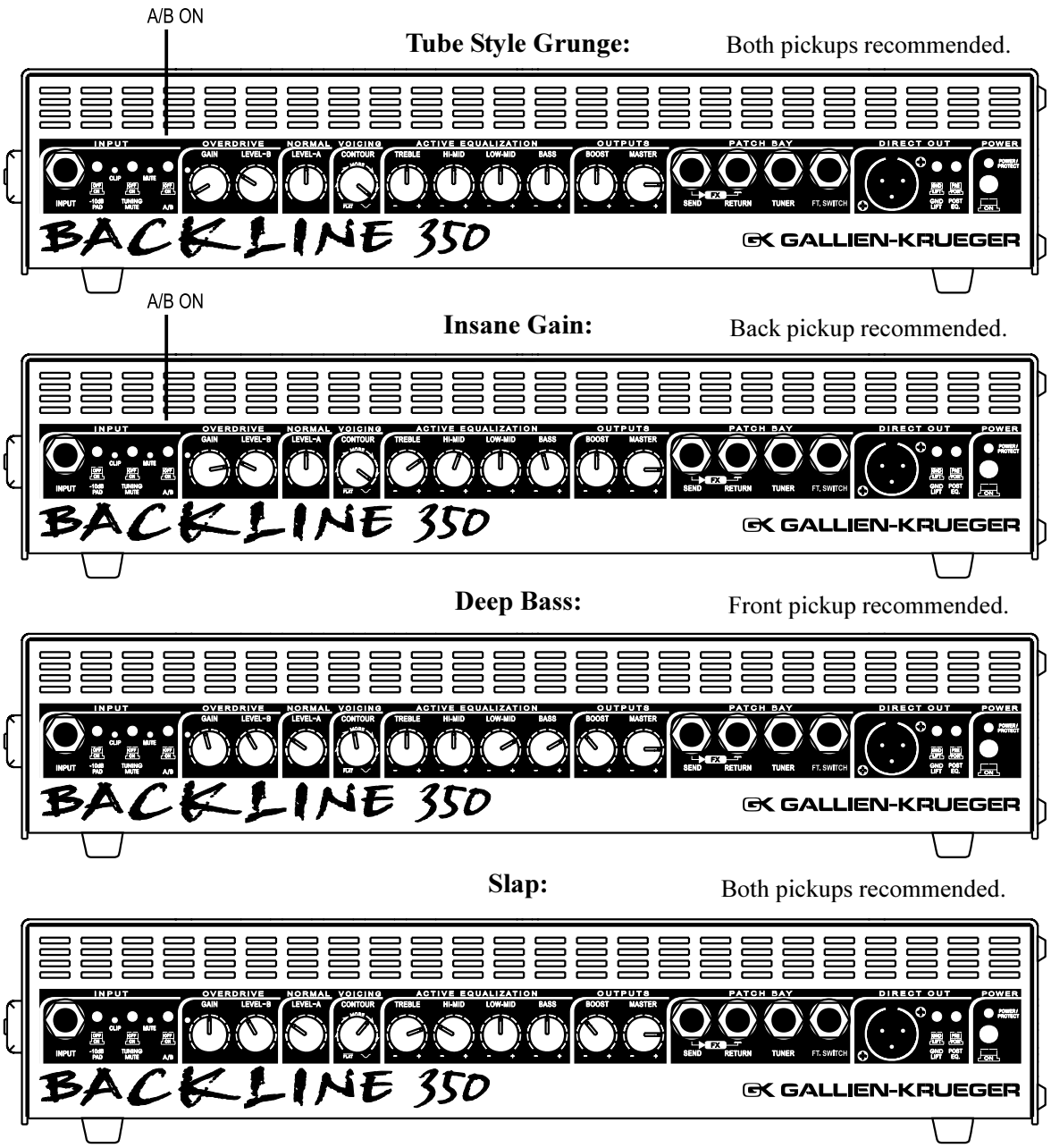
- Extremely high current power supply and power amp circuitry, gets the sound out of your head.
- Four bass specific bands of active equalization for precise tone control.
- An adjustable voicing filter for shaping and customizing your sound.
- Balanced direct output eliminates the need for a direct box.
- Bass specific overdrive channel for all modern sounds.

Settings and Sounds

The Backline 350/210 is versatile in its sound and tone. Below are a few suggested amp settings that can be used as starting points to define your own sound.

Note: the Gain/Overdrive settings will vary according to the output of your bass.

* Contour note:
At higher playing levels the contour should be set lower for mid-range clarity. To get the 800RB contour voicing, the contour should be set to 0 or 10 only.



Sound Tips

The Backline Series has several unique features which, if used properly, will obtain that sound you have been searching for.

The Equalizer:

The Equalizer is used to fine tune your sound. When adjusting it, do it a little at a time. These are active circuits, and small changes can make a big difference in your sound. With a little experimentation you will find that this equalizer is very easy to use, never sounds weird and provides you with a large variety of great sounds, unique to GK.

Contour:

Increasing the Contour level will scoop out mid-range frequencies while boosting the highs and lows. The sound, once again, is unique to GK and unavailable on any other Bass amp. Lower contour settings are recommended for midrange clarity at higher playing levels. For 800RB voicing, set the contour control either on 0 or 10 (Off, On on 800RB).

Overdrive:

The Overdrive channel allows you to create entirely new bass sounds. Modern bass players are just beginning to experiment with distortion and now you can too. Turning the gain control within its range will give you everything from a funky blues sound all the way to full saturation and sustain.

Boost/Master:

Turning up the Boost control, will add a little growl to your tone. This is an unmistakable GK trademark sound, that you will grow to appreciate. Raising the Boost while lowering the Master will add more growl while keeping the sound level the same. Growl is actually a small amount of even order harmonic distortion, that sounds great through a woofer. For most playing situations, the Master is set between 12 & 3 o'clock. The cleanest sound is obtained by setting the Master at 12 o'clock, and going above 3 o'clock for maximum power situations.

Direct Out:

The Backline 350/210 provides a low noise, high quality balanced direct out for connection to PA and recording consoles. With the Pre/Post EQ switch set to "Pre" (Out), the direct output signal is fed directly from our low noise, high headroom, FET input stage providing a low noise output superior to external direct boxes and impedance transformers. The Direct Output signal is only effected by the -10dB Pad, and Tuning Mute controls. This allows you to adjust your tone and volume on stage without changing the Direct Out signal level and confusing your sound man.

Changing the Pre/Post EQ switch to "Post" (In), sends the "GK sound" and preamp response to the Direct Out jack. This gives you complete control over the Direct Out's tone and volume. In addition, a Ground (Gnd) Lift switch is included to remove hum and buzz when connecting to equipment powered by a different ground system.

Front Panel Controls

1-Input:
A standard ¼" input jack and input attenuator button. The button is generally left out, except in rare cases when the clip LED flashes or distortion occurs at low volume settings.

2-Tuning Mute Button:
Set this switch to "On" when tuning up. No signal will be sent to the speakers, or the P.A. system.

3-Gain:
Controls the amount of overdrive in the "B" channel. At low settings it provides a smooth distorted sound. At high levels it will provide full saturation with long sustain.

4-Level-B:
Adjusts the output level of the Overdrive channel.

5-Level-A:
Sets preamp gain after the input stage. It is used in conjunction with the input pad, to optimize the amplifier's headroom.

6-Contour:
Drops the mid-range frequencies while boosting lows & highs.

Active Equalization:

7-Treble:
Boost and cut at 7kHz±14dB shelving type. Add or remove edge and definition.

8-High Mid:
Boost and cut at 1 kHz +6dB -10dB, "Q Optimized," band pass type. Works on lower string harmonics, and effects the punch of your sound.

9-Low Mid:
Boost and cut at 250Hz +6dB -10dB, "Q Optimized," band pass type. Works on the main body of your sound.

10-Bass:
Boost and cut at 60Hz ±10dB, shelving type. Controls low end push.

Outputs:

11-Boost:
A post EQ gain stage using GIVE technology which adds "growl" as it is turned up.

12-Master:
Controls output level of the amplifier.

13-Effects Loop:
Send and return jacks provided for the insertion of effects after the EQ, but before the boost section. Some effect units have gain, turning the BOOST down, will compensate for this.

14-Tuner Output:
Output to tuner.

15-Footswitch /A/B:
¼" jack for a standard single pole latching foot switch. It Switches from channel "A" to "B". The "A/B" switch must be out for this function to operate.

16-Balanced Direct Out:
An electronically balanced output, that you can run to your P.A. system.

17-Pre/Post EQ Button:
Selects the direct out signal from before or after the EQ.

18-Power/Protect LED:
The LED turns red at turn-on for five seconds while the amp powers up. The LED turns green when the amp is ready. Should the amp experience a fault (over heat, over current) the amp will mute and this LED will go red until the condition is corrected.

19-Power Switch:
Turns the amplifier on or off. Should a problem occur during operation press this switch out first. This turns the amp off, but does not completely disconnect the power from the AC mains. The power LED should be off at this point.

20-Mid:
Boost and cut at 250Hz +6dB -10dB.

21-Mix:
Stereo line input for playing with music from CD, etc..

Rear Panel Controls

1- AC Receptacle:
The power cord is detachable and plugs in here.

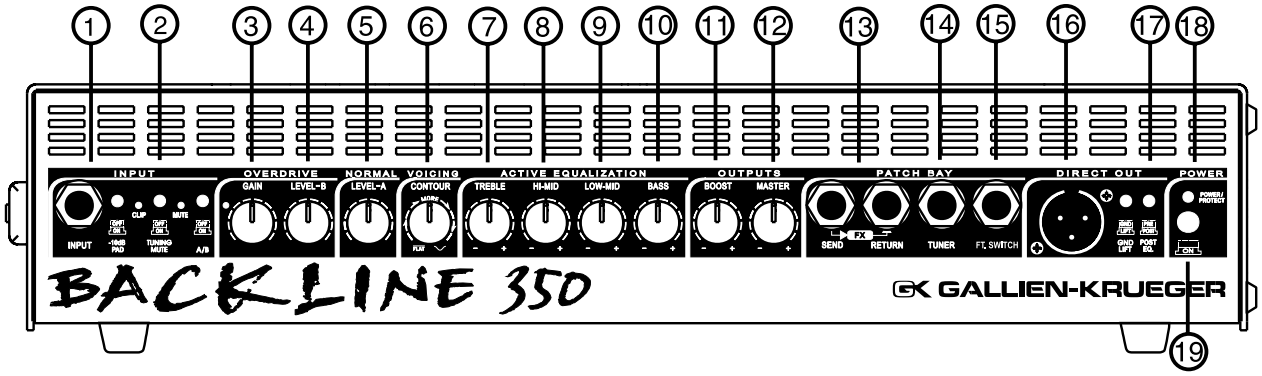
2- Speaker Out:
175W power amp output. It delivers 175 watts into 4 Ohms, 115 watts into 8 Ohms.

Lower impedances should not be used. Higher impedances such as 16 Ohms or No Load are acceptable. No damage will result from operating the amplifier with the speakers disconnected.

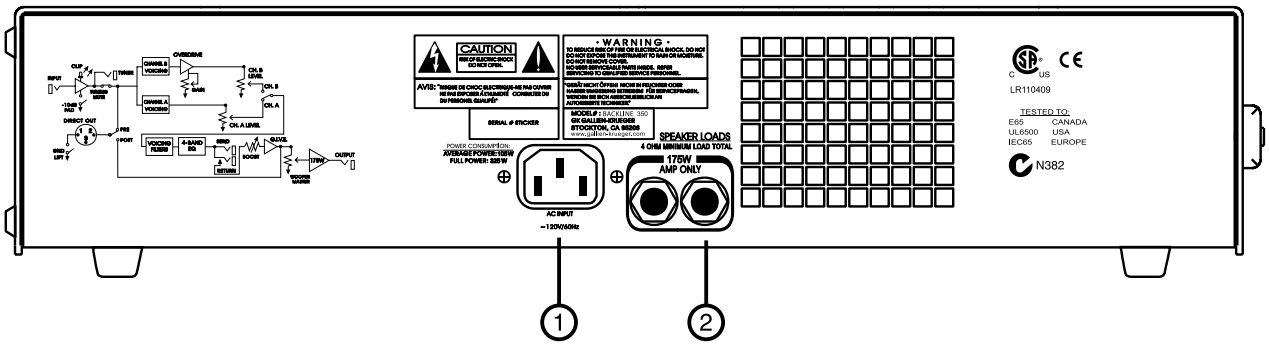
The Backline 210 internal speakers are running at a 4 ohm load. DO NOT use an external speaker cabinet with the Backline 210 with the internal speakers connected.

Front & Rear Panel Controls

Front Panel



Rear Panel



Installation and Maintenance

Installation:

- To insure proper operation and to avoid potential safety hazards, place the unit on a firm, level surface. When installing the unit in a rack, be sure the mounting hardware can support the amplifier's weight. To save space in your rack, the Backline's feet can be removed using a Philips head screwdriver.
- Make certain that proper space is provided for ventilation(at least one inch above). If the amplifier will be installed in a rack or other enclosed area, make sure that there is sufficient air movement within the enclosure to allow proper cooling. Consult your dealer for more information.
- For combos, make sure there is three feet of clearance around the sides, top, back and front, of the unit for maximum ventalation.
- Avoid installation in extremely hot or cold locations, and areas that are exposed to direct sunlight, or near heating equipment.
- Avoid moist or humid locations.
- Remember, power amplifiers generate heat.
- The heat sink fins and ventilation slots that form part of the enclosure are specially designed to remove this heat. Placing other electronic equipment near these heat-dissipation systems may possibly affect the long-term reliability of both your amplifier and the other equipment.

Positioning:

The Backline combo series should always be used as a floor standing unit. These combos are not intended for stacking or table-top placement.

Moving the Unit:

Before moving the unit, be certain to disconnect any interconnection cords with other components, and make sure that you disconnect the unit from the AC outlet.

Cleaning:

When the unit gets dirty, clean only with a dry cloth. Never use benzene, thinner, alcohol, or other volatile cleaning agents. Do not use abrasive cleaners, as they may damage the finish of metal parts. Avoid spraying insecticides near the unit.

Maintenance:

Your new amplifier is rugged. It was built to give you years of trouble-free operation, if it is operated in accordance with the instructions contained in this manual. The only maintenance required is cleaning. If you are going to move your amplifier around frequently, we recommend a road case to protect it from scratches and road wear.

Backline Combos

Speaker Configurations:

Backline 210: Two 8 Ohm 10" speaker

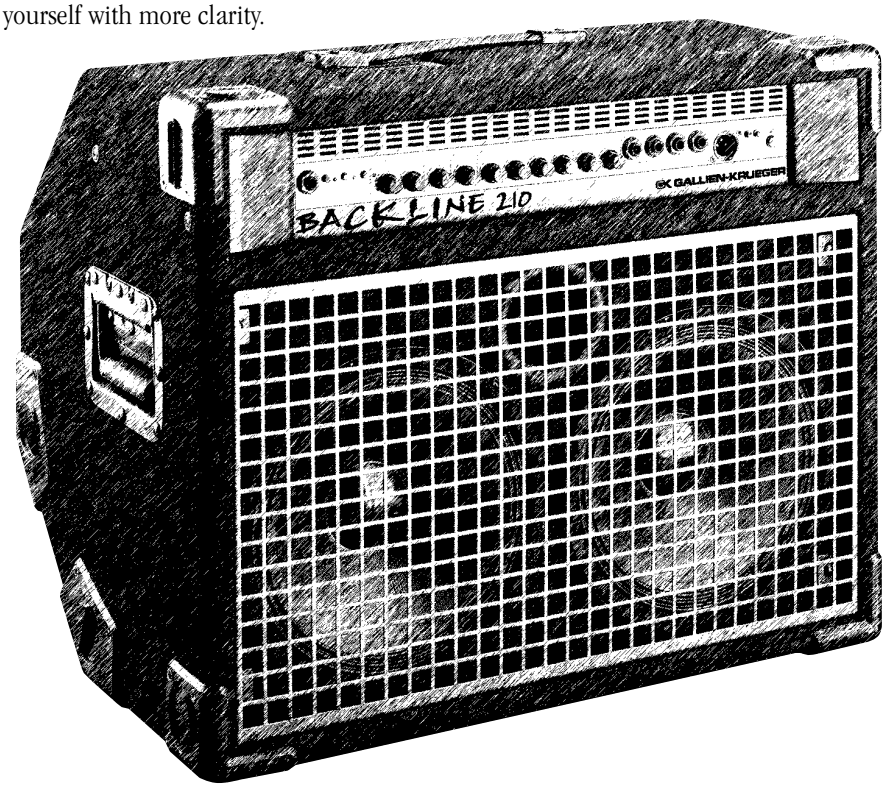
The Backline 210 combo electronics are identical to the Backline 350 head and are rated for the same maximum power output and speaker load (175W into 4 Ohms). To drive an external cabinet, the combo's internal speaker can be disconnected by unplugging the speaker cable connected to the combo's back panel.

Maximum load with the internal speaker disconnected:

Backline 210: One 4 Ohm cabinet, or two 8 ohm cabinets

Rock Back Feature:

The Backline combos are designed to operate in the upright or rock back position. This offers maximum flexibility for all playing situations. On tight stages or practice room situations, being able to rock the unit back allows you to hear yourself with more clarity.



Tech Talk

Current Output & Bass Response:

When a power amplifier is pushing several speaker cones and a high-power transient, like when a string slap comes along, the amp has to tap into a large power reserve to maintain cone control. If the amplifier doesn't have this ability, the sound is unresponsive and less out front. The amp loses it's punch and feel at higher playing levels. Instead of responding to your every command, the amplifier simply cuts those transients off, leaving you with the feeling that something is missing in your sound.

Since most amplifiers have limited output current capacity, they need "current limiting circuits" to protect against self-destruction. High-power transients trigger these circuits, which rob the amplifier of it's ability to control speaker cones. This creates a mushy, unresponsive feel to your sound.

The Backline 350/210 has an extremely high current capacity, over fifty amps, so it doesn't need current limiting circuits for overload protection.

There is nothing in the Backline 350/210 power amps to come between you and your sound except faithful, raw power.

Equalization:

Standard tone controls and graphic equalizers give you plenty of variation, but they don't provide what the instrument really needs. The fact is, graphic equalizers are intended for room equalization. The equalization in Gallien-Krueger amplifiers reflects 30 years of continuous development and refinement. The GK equalizer is unique to the industry, it's not just a normal four band equalizer, each section is a special circuit optimized to perform a Bass specific job in its range of operation. These sections are wired in series, so they add to one another creating a tremendously flexible equalizer, that doesn't sound weird at any setting. Now it is possible to obtain the sound you desire.

Contour:

Contour is used to completely revoice the amplifier. The Contour control tunes between two different shaping circuits, with greatly different response. With the control all the way up, the low end is slightly boosted, the mids are dropped and the high end is pushed up. This is only found in GK amplifiers.

"G.I.V.E." Technology:

As in all GK pre-amps, the Backline 350/210 pre-amp incorporates what we call G.I.V.E (Gate Induced Valve Effect) Technology. We use field effect devices with the gate biased in a way that emphasizes the optimum harmonic content of the signal.

Overdrive:

The Overdrive channel in your Backline unit provides truly distinct distortion and sustain sounds. It is not a simple clipping circuit but utilizes FET's connected in our exclusive G.I.V.E. configuration. This is an added flexibility unheard of in this class of product.

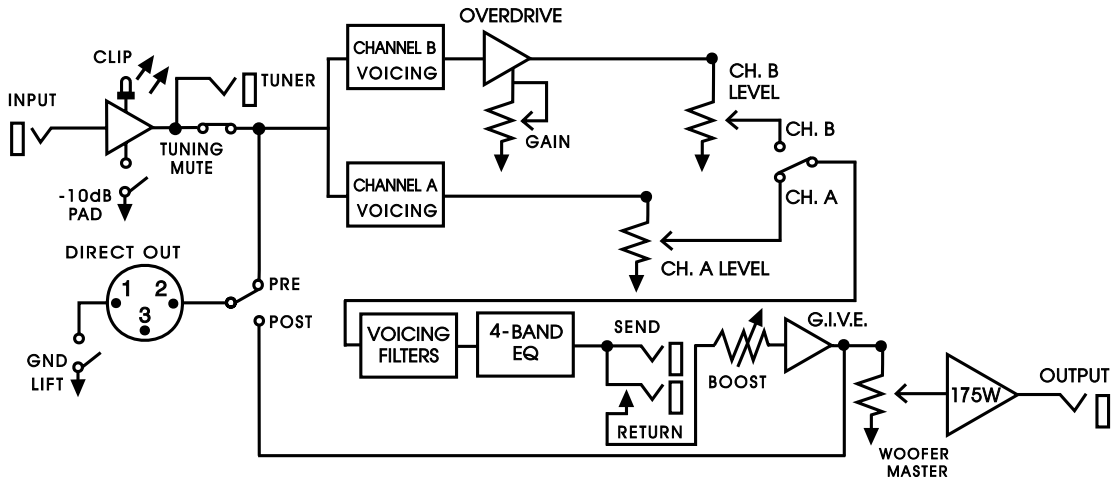
Smart Protection Circuitry:

The Backline 350/210's protection circuitry constantly monitors for unsafe operating conditions such as short circuits, miswired speaker cables, blown speakers, improper ventilation and incorrect speaker configurations. In addition, protection is provided during power up/power down. If the Backline unit senses any unsafe operating conditions, the output signal is immediately muted and the power light changes from Green to Red. The amplifier will remain muted until the fault is removed. If the protection circuit activates while playing, turn the amplifier off and check the amplifier speaker output connections. Be sure that you are not exceeding the maximum recommend load described in this manual. If the problem persists, contact GK directly for technical advice.

In Closing:

You should now have a thorough understanding of how your new Backline unit works and what advantages it can offer you in getting "your" sound. We thank you for reading the Owner's Manual and wish you the best of times! Please send us your comments via www.gallien-krueger.com or email us at sales@gallien.com.

Block Diagram



Backline 350/210 Specifications:

Output Power:	175W @ 4 Ohms 115W @ 8 Ohms
Input Section:	
Maximum Input Level	0.6V Rms
With -10dB pad	1.6V Rms
Input Impedance	1M Ohm
Send output impedance	220 Ohm
Return input impedance	60k Ohm
Tuner Output Impedance	10k Ohm
Direct Output Impedance	1000 Ohms
Equalizer:	
Bass	±10db @ 60Hz
Lo-Mid	+6db/-10dB @ 250Hz
Hi-Mid	+6db/-10dB @ 1kHz
Treble	±14db @ 7kHz
Contour	+2db@50Hz/ -10db@500Hz/ +3db@7kHz
Noise	-90db referenced to 175W, "A" weighted
Amplifier Protection:	Full short circuit, thermal,& RF protection. Stable into reactive and mismatched loads. Five second muted warm-up.

Power Requirements:	
U.S.A./Canada	120V/60Hz 325W (at fullpower) 108W (at average power)
Europe	230V/50Hz 325W (at fullpower) 108W (at average power)
Japan	100V/50Hz 325W (at fullpower) 108W (at average power)
Dimensions(HxWxD):	
Backline 350:	17.5"W x 3.5"H x 8"D (2 Rack Spaces)
Backline 210:	23"W x 19"H x 16"D
Weight:	
Backline 350:	13lbs
Backline 210:	65lbs

Notes



GALLIEN-KRUEGER

Backline 350/210 Owner's Manual
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