

GENZ·BENZ

NEO-PAK 3.5

ULTRA LIGHT DESIGN

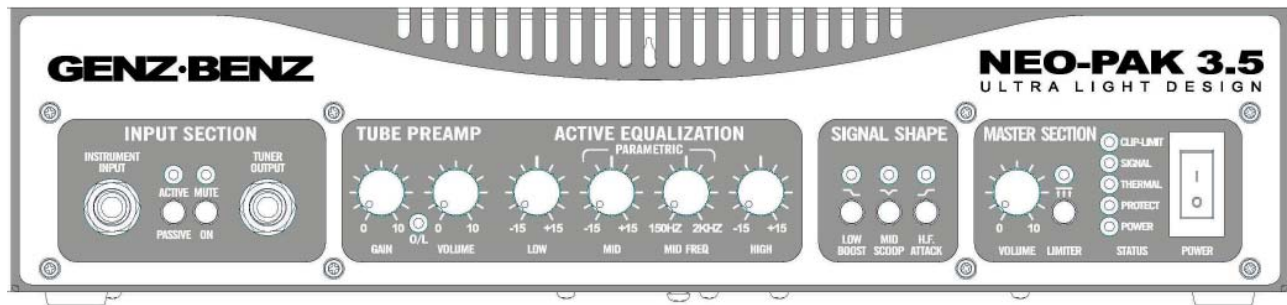
OWNER'S MANUAL



PRODUCT DESCRIPTION – The **NEO-PAK 3.5** bass amplifier has been designed with our unique ULTRA LIGHT unified design process, yielding a 350 watt professional duty high powered tour-class bass guitar amplifier weighing only 8-1/2 pounds! This compact design blends the best of analog and digital platforms to produce the ultimate in warmth, punch and power.

The signal path utilizes a 12AX7 tube preamp with our acclaimed Active EQ and responsive Signal Shape circuitry. The power amp section is our classic class A/B topology with exceptional power and tone characteristics. The power supply is state-of-the-art digital Switch Mode Power Supply (SMPS), which does away with the weight of a traditional power transformer. The SMPS provides an exceptionally light yet stout power source that is the heart of the NEO-PAK's dynamic, quick response.

It is equipped with a 1/4" unbalanced Instrument Input, Active/Passive switch with LED indicator, Mute switch with LED indicator, 12AX7 Tube Preamp with variable Input Gain, 3 switched Signal Shape filters with LED indicators, 3 band Active equalization with parametric midrange, Master Volume control, switched Limiter w/ LED indicator, 1/4" Tuner Output, Effects Loop, balanced Direct Out with ground lift/pre-post/mic-line switches, and a heavy duty discrete output stage power amplifier with two 1/4" speaker jacks and two Neutrik NL-4 "Speak-On"™ speaker jacks.



FRONT PANEL

INPUT – The NEO-PAK 3.5 is equipped with a standard ¼” unbalanced input. Input sensitivity can be switched from approximately 300 mV to 1.25 volt. The input impedance is 500k ohms. The precision input scaling preamp contains a 36 Hz, 12 dB/octave high pass filter (more effective and less intrusive than the more common 6 dB filters) and an “RFI” filter (radio frequency interference) to eliminate unwanted noise. The input gain stage consists of a feedback type circuit that provides continuously variable gain with minimal noise. The input preamp contains 12AX7 tube circuitry based on our highly regarded GBE series touring amplifiers.

PASSIVE/ACTIVE SWITCH – The NEO-PAK 3.5 input stage is equipped with a “passive-active” switch that optimizes the gain for different pickup types. The active switch engages a -10db pad to the input signal. If your bass uses a battery then it is an active type pick-up and will yield best performance with the switch in the Active position.

INPUT SIGNAL MUTE SWITCH – With this mute switch, you can place the amplifier (and Direct Output) in standby mode between sets, without having to change any of your amp settings. This feature can also be used for silent tuning since the Tuner Out stays active when the mute is engaged. A red LED indicates when the Mute is active.

PREAMP GAIN CONTROL – This control sets the input sensitivity gain of the preamp to the output of your bass. The volume of the signal is then controlled by the Tube Preamp Volume control and also the Master Volume control. If the red overload “OL” LED flashes, the tube preamp stage is being overdriven. To retain a clean tone, increase the Preamp and or Master Volume controls and reduce the Preamp Gain control to eliminate input preamp overload. Note that overdriving the input tube gain stage may be a desirable tonal characteristic of your playing style. This control, in conjunction with the Preamp/Master Volume controls, allows you to set the amount of tube overdrive your amp produces. The gain control should be set so that the O/L LED flashes with the hardest notes played.

“O/L” LED – This “Over-load” LED shows the operating status of the preamp stage. When this LED flashes, overdriving of the input gain stages is occurring. Adjusting the Preamp Gain and Volume controls will affect the over-load condition.

PREAMP VOLUME CONTROL – This control sets the volume of the preamp after the Input and Tube Gain stages and before the Master Volume control. Use this control in conjunction with the Gain Control.

SETTING YOUR INPUT SIGNAL – Use the following guidelines to set your amplifier input stage for the type of bass used and your personal playing style.

- 1) Select either Active or Passive input gain depending upon the bass used.
- 2) Set your instruments controls (volume and tone) where you normally prefer to run them.
- 3) With the Channel Gain setting at “0” and your amplifier EQ positions centered at 12 o’clock, begin turning the gain control up to a level in which the O/L LED is illuminating with your hardest notes played. It is okay for the RED LED to flash consistently BUT it should not be on constantly. Now set your channel volume and master volume settings for the desired output level (loudness) that you wish to produce.
- 4) Now, turn your attention to the EQ section and make the adjustments for the desired tone. Because this is an active EQ network any large settings of cut or boost will affect the gain level of the preamp and the O/L lights at the input stage.
- 5) After setting your EQ it may be necessary to go back and adjust your input gain level accordingly. It should be noted that the Global Signal Shape circuits will not affect the input gain BUT will affect the Master output level and clip indicator if used with extreme settings.

TUNER OUTPUT – The NEO-PAK 3.5 is equipped with a fully isolated Tuner Output. This jack is located after the front end scaling preamplifier, but is pre-signal shape and pre-EQ. This output may also be used to drive a separate

direct box or high-impedance recording device.

SIGNAL SHAPE – The NEO-PAK 3.5 is equipped with 3 Signal Shape circuits. The LOW BOOST adds low frequency peaking gain in the 38-67 HZ band. This filter is especially effective when used with a 5 string bass. The MID SCOOP switch generates midrange cut at approx. 800-1KHz, the SIGNAL ATTACK adds a peaking high frequency boost in the 2.25-8kHz band. LED indicators are provided to visually show when each filter is engaged.

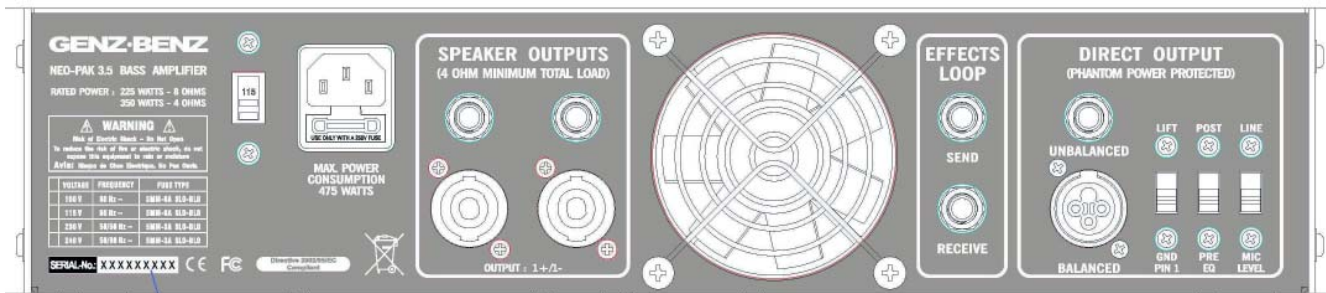
ACTIVE EQUALIZATION – The NEO-PAK 3.5 contains an active 3 band equalizer with sweepable parametric midrange control. This equalizer, similar to those found on professional sound consoles, is a very useful tool. The low frequency EQ section is an 80 Hz shelving curve with 15dB of cut or boost. The high frequency EQ section is a 3.5 kHz shelving curve with 15dB of cut or boost. The parametric sweepable-mid section features 12 dB of cut or boost with a bandwidth approximately 1 octave wide. The center frequency of this filter is continuously user adjustable from 150 Hz to 2 kHz with a single control. This filter is typically (but not always) used to reduce or remove offending frequencies in the instrument’s pick-up response, or boosting response to achieve a particular voicing. Spend some time experimenting so that the process becomes creative as well as corrective.

MASTER VOLUME – The master volume control adjusts the overall volume of the amplifier and the effects return. Typically, best results are obtained when this control is operated between the 9:00 and 3:00 positions.

OUTPUT LIMITER -- This switch engages or bypasses the internal power amplifier’s “Soft Clip” Limiter. This Limiter allows simulation of the output stage saturation as the amplifier nears it maximum power. The limiting action is particularly musical sounding, even when driven hard. A bright blue LED located above the switch indicates when this feature is active.

MASTER SECTION STATUS INDICATORS –

- The “POWER” light indicates that the amplifier is ON and the low voltage power supplies are active.
- The red “PROTECT” LED indicates that the amp is in “protect” mode and the output relay is de-energized. This led will illuminate for approximately 3 seconds during power turn-on and turn-off. It is normal for this LED to glow while continuing to monitor the internal conditions for a few seconds after the protection relay has closed. It will also illuminate during any internal fault condition. If this happens, turn the amp off and consult a repair technician.
- The red “THERMAL” LED indicates that the amplifier has over-heated, engaged the protection circuit and shut down. This circuit is self-resetting when the offending condition is corrected, i.e., blocked fan vents, stuck fan, etc.
- The blue “SIGNAL” LED indicates that the power amplifier is received signal (over several watts output) and is performing properly.
- The red “CLIP/LIMIT” indicates that the power amp has reached maximum power and/or the limiter threshold has been crossed. Driving approx. 6db beyond this point with the “Output Limiter” engaged will cause the amplifier to gradually begin to clip.



REAR PANEL

DIRECT OUTPUT – The NEO-PAK 3.5 is equipped with a high quality balanced Direct Output with ground lift switch for pin 1. The output level is switchable between nominal mic and line levels. There is also a switch available for selecting between a pre-EQ and post-EQ signal. The output is configured pin 2 hot, and the output impedance is 600 ohm. The Direct Output is fully protected from mixers providing phantom power up to 48 volts.

EFFECTS LOOP – The NEO-PAK 3.5 is equipped with an Effects Loop, allowing commonly used “series” type effects (such as compression/limiting units) or parallel effects (such as chorus or flange units that contain an on-board “mix” control). The location of the Effects Loop is post signal shape and pre-equalization. The signal is routed

through the loop automatically if an effects unit is not plugged in. An additional feature of the effects loop is that the effects send jack can be used as a post-signal shape, pre-EQ line output. Plugging into the effects return jack will break the signal path and provides for a pre-EQ line input.

FAN COOLING – A rear-mounted continuously variable-speed 80 mm fan is utilized, allowing for quiet operation at low output levels and greater cooling capacity when playing at high output levels or under high ambient temperature conditions. Be aware not to block the fan intake area. For this reason, do not operate the NEO-PAK3.5 in its optional carry bag.

POWER AMPLIFIER – The NEO-PAK 3.5 features a heavy duty, fully protected, all discrete power amplifier that uses 8 robust bipolar output transistors mounted on a stout aluminum heatsink. This allows for full power into real-world reactive loads without activating the amp's internal protection circuitry or artificially limiting output power. Output is rated at 350 watts into 4 ohms and 225 watts into 8 ohms with excellent overload recovery characteristics. Driving speaker loads below the amplifiers rated minimum load (4 ohms) will result in intermittent operation as the protection circuits are activated.

SPEAKER OUTPUTS – The NEO-PAK 3.5 provides both ¼" and Neutrik Speak-On™ connectors (wired 1+/1-). All speaker jacks are paralleled. The minimum speaker load is 4 ohms.

POWER SUPPLY – The NEO-PAK 3.5 uses a custom designed ULTRA LIGHT Switch-Mode Power Supply (SMPS) featuring our unique linear transformer emulation technology to give the same feel to the amplifier under overdrive conditions as a traditional heavy transformer does. Combined with our tube preamp stage, the result is uncompromising transient feel and playability. Switch-mode power supplies convert the AC line directly to high voltage DC, then the precision PWM inverter creates a new AC power signal at a frequency approximately 1000 times higher than the original wall frequency of 50/60Hz. This new high voltage, high frequency power signal is then fed into a custom high frequency transformer that steps the voltage back down, a high frequency rectifier and high ESR filter capacitors finish the process off by converting the high frequency AC signal back to the DC voltages that the amplifier's internal circuitry uses. One advantage of this conversion process is that the DC power supply rails are refreshed 1000 times more often than in traditional linear supplies, thus reducing annoying hum in the audio signal. The power supply is externally switchable between 115 and 230 volts, especially convenient for our touring customers. Please be sure the voltage selector switch is set in the correct position BEFORE connecting the amplifier to AC mains power!

POWER INPUT – The NEO-PAK 3.5 is shipped from the factory with a standard IEC type power inlet connector and the appropriate power cable for the market the amplifier was shipped to. The SMPS is a universal input (115/230 volt, 50/60 Hz) with a voltage selector switch located above the inlet connector. Be sure that this switch is in the correct position (matching your local power system) BEFORE connecting the NEO-PAK 3.5 to the power source. There is an AC mains fuse (with a spare fuse included) located in the small slide-out tray on the IEC power inlet connector. Always replace with the correct value fuse as indicated on the fuse chart located on the back of the amplifier.

CHASSIS DESIGN – The NEO-PAK 3.5's ULTRA LIGHT DESIGN utilizes the highest quality aircraft grade, computer machined aluminum chassis. To clean the amplifier, nothing more than a damp cloth and a little bit of glass cleaner (like Windex™) should be used. The silver faceplate is a solid piece of 3 mm machined aluminum.

RACK MOUNTING – The NEO-PAK 3.5 is designed to be rack mounted in a standard EIA style 19" equipment rack or tour-case. Optional rack mounting ears are available from your dealer

GIG-BAG – A custom padded carry bag with shoulder strap is available as an optional accessory from your dealer. This padded bag is ideal for convenient carrying of the amplifier. Do not operate the amplifier inside the carry bag, as the cooling fan is obstructed and overheating will occur.

Specifications

Rated Power: 225W/8ohms; 350W/4ohms

Dimensions: 3.5"H X 15.5"W X 10.75"D

Weight: 8.5 LBS

CAUTION!

- Never set an amplifier on anything that will tip over or collapse under its weight.
- These amplifiers are capable of producing sound pressure levels that may cause hearing loss.
- There are no user serviceable parts and hazardous operating voltages inside this unit. Always consult a qualified repair facility for service.

WARNING!

- The use and operation of this device constitutes an agreement of full release of any and all liability connected with it's use. Only persons familiar with the operation of high-powered audio equipment should attempt to operate this device.
- In addition, by use of this device, the user agrees to hold Genz Benz Enclosures, Inc. and it's designers, sales agents and all other affiliates and related parties harmless in the event of any accident, injury, damage or loss resulting from such use.
- Manufacturer's sole responsibility is to provide a warranty on the specified performance of the product under normal operating conditions for a period of 3 years.

WARRANTY:

- Genz Benz Enclosures, Inc. warrants the model NEO-PAK 3.5 to be free from defects in materials and workmanship for a period of 3 years from the date of purchase, when purchased from an authorized Genz Benz dealer.
- This warranty does not cover normal wear and tear incurred from the normally designed use of the product.
- This warranty is effective only if a copy of the original sales receipt is presented at the time of warranty service
- This limited warranty is completely transferable to any subsequent buyer as long as the original sales receipt is also transferred to such subsequent buyer.
- All warranty service must be performed by a Genz Benz authorized service center.
- Before returning any unit for service, a returned merchandise authorization number (RMA#) must be obtained by calling 480-941-0705.

Declaration of Conformity (89/336 EEC-EMC Directive)

Manufacturer's Name: Genz Benz, a division of Kaman Music
Manufacturer's Address: 7811 East Pierce Street
Scottsdale, AZ 85257, U.S.A.

Product Type: Audio Amplifier
Model Number: Neo-Pak 3.5 (all versions)
Operating Power Condition: 115/230 V, 50/60 Hz
Effective Date: 11-15-2005

Conforms to the Following Standards:

- EN 55013: 2001 + A1: 2003
- EN 55020: 2002 + A1: 2003
- EN 60065
- IEC 61000-3.3: 1994 + A1: 2001
- IEC 61000-4.2
- IEC 61000-4.3
- IEC 61000-4.4
- FCC 47CFR Part 15-B, Class B
- RoHS Directive 2002/95/EC
- WEEE Directive 2002/96/EC
- CE Mark LV Directive 73/23 EEC

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