

# GENZ·BENZ

SHENANDOAH®  
COMPAK  
300

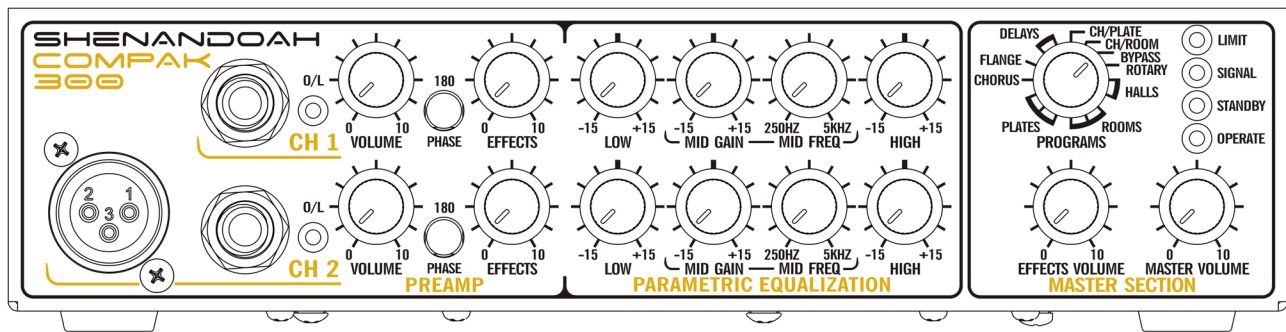
## Owner's Manual



### FEATURES:

- Ultra Lightweight Compact Designs
- Two Pre Amp Channels w/Active EQ
- Input Phase Reverse Switch
- Phantom Power for Condenser Mics
- SMPS/Class D Power Amplification Technology
- Neodymium Loudspeaker and Compression Tweeter
- 24-Bit Studio Quality Digital Effects
- Bottom-mounted Tilt Foot

**PRODUCT DESCRIPTION** – The Shenandoah® Compak 300 series of acoustic amps delivers warm, rich tone and phenomenal output in surprisingly compact, lightweight cabinets. Each model produces 175 watts as a combo and 300 watts with an 8 ohm extension cabinet. The amplifier is configured as a 2 channel – 3 input platform and each channel is equipped with a ¼" unbalanced line input. Channel 2 offers an XLR balanced microphone input (with phantom power) as well. The 2 inputs on Channel 2 are summed (mixed) together at a 1:1 ratio, so they can be used simultaneously. Each channel then passes through independent 3 band equalizers with a sweepable midrange frequency. Equalization centers were carefully selected for use with acoustic instruments. Each channel also contains individual send controls to the on-board 24-bit 15 program digital effects circuit. The back panel contains 3 direct outputs with ground lift switch, an effects loop, auxiliary input, headphone jack, effects cancel jack, and 2-1/4" speaker jacks.



## FRONT PANEL

**INPUTS** – The Shenandoah® Compak 300 is equipped with 2 types of input jacks. The 1/4" input is unbalanced and "line level" with a usable sensitivity from 100 mV to 1.6 volt. The input impedance is 270 k ohms. The 1/4" input will also accept most active balanced line sources, automatically unbalancing them by recognizing the tip portion of the balanced signal. If an instrument offers an unbalanced output it should be connected to the unbalanced input of the Shenandoah® amp. Additionally, the precision input scaling preamp contains a 45 Hz, 12dB/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 XLR input jack is balanced and "microphone level", with a usable sensitivity from -60dBv to -30 dBv. It is not a line level input. It contains a precision full range differential microphone preamp with phantom power. For use with higher-level sources (such as the balanced line level output from a keyboard or other instruments), a balanced pad network will be necessary to use the balanced input. For instance, a Rapco, "Pad Blox", -20 or -30 pad or similar product could be used.

**COMBINING XLR & 1/4" INPUTS** – A unique feature of the Shenandoah® Compak 300 is the ability to mix the XLR balanced and 1/4" unbalanced inputs. In many situations, this effectively makes the amplifier function as a 3 channel amplifier. The most effective way to use this feature is to set the volume on the channel using the XLR microphone input and then adjust the level control on the instrument itself (assuming that it has one) to blend levels between the 2 inputs. Equalization will be common to both inputs on the channel.

**INPUT O/L LED** – This red O/L LED senses the input signal to the preamp section and warns of input overload. For the cleanest signal possible, this LED should only flash with the strongest signal peaks. Adjust this sensitivity with the volume control of your instrument and the Shenandoah® Compak 300's channel volume. Adjust the final overall volume with the amps master volume.

**PHASE SWITCH** – Each channel is provided with a phase reverse switch. By reversing the phase of the input signal, feedback tendencies can be reduced if caused by sympathetic vibrations between the speaker and the instrument. Under some conditions, changing the phase can drastically improve the acoustic output from the amplifier and can improve the playability of some instruments.

**ON-BOARD STUDIO QUALITY DIGITAL EFFECTS** – The Shenandoah® Compak 300 contains a studio quality 24-bit, 15 program digital effects processor. Using pro audio industry digital processing hardware, we have achieved realistic, high quality effects algorithms. Level differences are normal when switching between different effects; just adjust the channel send and master level controls accordingly. The effects level control on each channel adjusts the send level to the digital effects processor. The digital effects level in the master section controls the effects return level from the processor. In general, turning up the channel effects send will yield more lush effects.

NAME	DESCRIPTION
Hall 1	Bright hall reverb
Hall 2	Warm hall reverb
Room 1	Hardwood studio reverb
Room 2	Ambient room reverb
Room 3	Warm room reverb for guitars and rhythm instruments
Plate 1	Classic plate reverb for lead vocals and instruments
Plate 2	Sizzling bright plate reverb for vocals
Plate 3	Short "vintage" plate reverb
Chorus	Chorus (Tonal variations in pitch and volume)
Flange	Flanger for jet wash effects
Delay 1	125ms slapjack delay
Delay 2	190ms slapjack delay
Chorus/Plate	Chorus with reverb plate
Chorus/Room	Auto-wah guitar effect with reverb
Bypass	No effect
Pitch Shift Rotary	Rotary speaker emulation

**ACTIVE EQUALIZATION** –The Shenandoah® Compak 300 offers a 3 band (with sweepable mid) active equalizer for each channel. These equalizer networks, similar to those found on professional sound consoles, are very useful tools when used correctly.

### LOW FREQUENCY EQ

The corner frequency of the low frequency section is 125 Hz, shelving curve. This frequency is particularly handy when dealing with low frequency feedback from a big dreadnaught guitar. A combination of volume reduction and turning down the low frequency control will generally get good results. Become familiar with the action of the controls since their effective gain range is quite large. The low frequency control is also handy for adding some "bottom" to a baritone sax and "chunk" to a mandolin or mando-cello.

### HIGH FREQUENCY EQ

The corner frequency of the high frequency section is 8 kHz, shelving curve. This frequency is especially useful for taming the bright harshness of some mandolins, violins, brass, and reeds. It can also be used to help acoustic guitars, cellos, and flutes cut through other players in loud club situations.

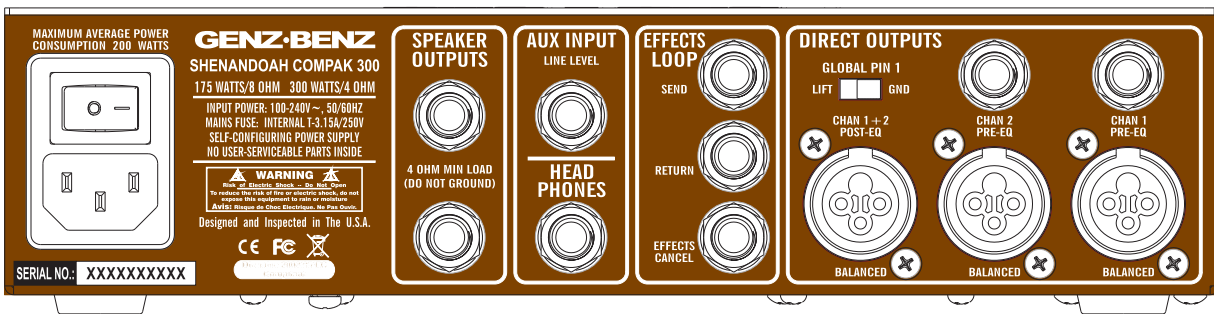
### MID FREQUENCY EQ

The "sweepable mid" section features 15 dB of cut or boost with a bandwidth approximately 1 octave wide. The center frequency of this filter is continuously user adjustable from 250 Hz to 5 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. Removing only the minimum amount necessary will yield the most acoustically rewarding results. The easiest and most repeatable way to determine the offending frequency range is to boost the mid level somewhat (but not to the point of feedback) and then while playing, sweep the frequency control slowly across its range. You may need a third hand until it becomes second nature, but soon you will find out just how quick it can be. You will hear a clear and obvious accentuation of the ugliness you want to remove. The ear is a most sensitive and discriminating piece of test equipment when used in this manner, another good reason to protect them! This is the way many touring sound engineers equalize, since it is quick, accurate and repeatable. Occasionally, you will find need to use the mid section in "boost" mode, particularly common when adding higher mids (bite) to an otherwise dull instrument, or adding low mid "body" to an otherwise thin sound. Spend some time experimenting so that the process becomes creative as well as corrective.

It may be helpful to know - The 9 O'Clock position is 300Hz, the 12 O'Clock position is 1.25KHz and the 3 O'Clock position is 3KHz.

**EFFECTS VOLUME** – This control adjusts the amount of the effects signal return. Adjust this in conjunction with the channel effects level control.

**MASTER VOLUME** – The master volume control adjusts the overall volume of channel 1, channel 2 and the effects return (either on-board or out-board). Typically, best results are obtained when this control is operated between the 9:00 o'clock and 2:00 o'clock positions.



## BACK PANEL

**DIRECT OUTPUTS** –The Shenandoah® Compak 300 contains the most comprehensive direct output section available on any acoustic instrument amplifier. Both XLR balanced and 1/4" unbalanced outputs make “real world sense” when connecting with other equipment. The 1/4" unbalanced outputs are true professional line level (+4 dBv) with an output impedance of 1k ohm, and can drive virtually any line level input, including power amplifiers. The XLR balanced output is “hot” mic level, rated at –30 dBv. This configuration allows the Shenandoah® Compak 300 to drive very long cable lengths (250+ feet) without problems or added noise. The XLR balanced direct outputs can be “ground lifted” with the global ground lift switch. This switch lifts pin 1 on all of the XLR balanced outputs to break any ground loops between the Shenandoah® Compak 300 and a PA system. Separate Channel 1 and Channel 2 outputs are post channel volume/pre effects (to take advantage of the dual inputs on each channel) while the Channel 1+2 output is post master volume/post eq/post effects to aid in sending a “finished” mixed signal to a PA system or external power amplifier.

Note: The design of the Shenandoah® Compak 300 also allows it's use as a preamp/direct box. It is okay to use the amplifier without speakers attached.

**EFFECTS LOOP**—A series effects loop is provided so an out-board effects processor can be used with or in place of the on-board Digital Effects unit. The return level from an external processor into the 1/4" effects return jack should be adjusted using the controls of the external processor. A 1/4" EFFECTS CANCEL jack is provided on the back panel to mute both internal and external effects via footswitch. Any standard single button latching footswitch (with shielded cable) may be used. Signal is muted when the switch is closed. The on-board effects can be turned off by using the program selection labeled “bypass”. All other on-board effects on the Shenandoah® Compak 300 can be used in conjunction with an out-board effects unit plugged into the effects loop.

**AUX INPUT** – A 1/4" unbalanced line level aux input is provided that sums directly to the main output bus, controlled by the master volume control. This input is ideal for practicing with recorded tracks from a CD player, IPOD, or MP-3 player. It is recommended to use a cable with left & right signals connected to a “Y” jack, summing the signal into the aux. input jack. Adjust the level of the playback source to balance with the guitar's volume.

**HEADPHONE OUT** – A 1/4" TRS jack is provided for connection to headphones. Do not connect this output to anything but headphones. For silent practicing just unplug the speaker. There is no harm using the amplifier without a speaker attached.

**SPEAKER OUTPUT JACKS** –The Shenandoah® Compak 300 provides 2 parallel 1/4" speaker output jacks. Minimum total load is 4 ohms (Two 8 ohm speaker cabinets). The Shenandoah® Compak 300 combos are factory equipped with a specially designed 8 ohm Neodymium speaker and a compression tweeter.

**POWER AMPLIFIER** – The power amplifier used in the Shenandoah® Compak 300 is a super-efficient class D pulse width modulation amplifier, powered by a state of the art switch-mode power supply (SMPS) which produces almost no waste heat. This ultra lightweight amplifier technology offers unparalleled performance and power and is the heart of this lightweight design.



**POWER INPUT** – The Shenandoah® Compak 300 is shipped from the factory with a standard IEC type power inlet connector and the appropriate detachable power cable for the market the amplifier was shipped to. The power input section of the Shenandoah® Compak 300 is auto-configuring and will adapt to any input voltage from 100 – 240 volts without any adjustment by the user. The AC mains fuse is internal and not user changeable.

The power supply inside the chassis of the Shenandoah® Compak 300 is a highly sophisticated auto-sensing, auto-configuring switch mode power supply. This class of supply does the energy conversion through a very efficient process, which contributes to the lightweight design. The power supply itself is internally protected and fused against catastrophic faults.

**PHANTOM POWER** –An internal phantom power source (12 volts) is provided for use with condenser mics. This power source is on at all times and does not affect the standard operation of the amp, even when a condenser mic is not used. We use the DIN 45-596-P12 volt standard, which will operate virtually all of the live sound reinforcement condenser microphones on the market. Some “boutique” externally biased condenser mics will not be compatible and will require 48 volt phantom power. We suggest live sound condenser mics by: AKG, Audio Technica, CAD, Shure and Crown.

**TWEETER LEVEL CONTROL** – The “rocker switch” tweeter level control provides three positions for additional acoustic flexibility. The positions are: On, Off and –6db. The –6db position of the tweeter is about half as loud as the full On position.

**CABINET DESIGN – REMOVABLE CHASSIS FEATURE**—A unique element of the Shenandoah® Compak 300 combo models is the ability to easily remove the amp “head” from the cabinet. This allows the player to extract the amplifier and use it with larger speaker cabinets in larger venues. The amp head can be easily transported in the pocket of a guitar gig bag. In fact, for some applications the Shenandoah® Compak 300 could even function as a glorified state of the art direct box!

Removal of the chassis is simple. We recommend first unplugging the speaker cable from the back of the chassis.

**Step One:**

- Unscrew the large thumbscrews on both sides of the cabinet.
- It is recommended to screw these back into the chassis after the amp is removed, so as not to lose them.

**Step Two:**

- After the thumbscrews are removed, gently slide the chassis forward using both hands to move it forward.

**Step Three:**

- As the chassis appears from within the cabinet, grab it from the front end and remove it completely from the cabinet.



**USING THE SHENANDOAH® COMPAK 300 CHASSIS ONLY** – After removing the amplifier chassis there are a variety of uses possible. Silent recording as a preamp/direct box, practicing by using the headphone jack and aux input for an MP3 or CD player, using the amplifier as a small mixer/amp with 2 PA speakers or using the head with a much larger speaker cabinet for large venues.

**BOTTOM-MOUNTED TILT FOOT** – This tilt foot allows the cabinet to be tilted up towards the performer enhancing the projection of the speaker.

## **SHENANDOAH® COMPAK 300 COMBOS**

### **SHEN-CPK-8T**

This micro amp produces astonishingly high output, warm natural tone with pristine clarity. This combo uses our Neodymium 8" woofer and soft dome tweeter. The unique cabinet is designed so that the chassis controls point up towards the performer.

### **SHEN-CPK-10T**

This larger model is still surprisingly small with a larger output and tonal footprint. This combo uses our Neodymium 10" woofer and soft dome tweeter. The unique cabinet is designed so that the chassis controls point up towards the performer.



## **SPECIFICATIONS:**

SHEN-CPK-H (head)  
Rated Power:  
175W/8ohms; 300W/4ohms  
Dimensions:  
3.5"H x 10"W x 10.25"D  
Weight:  
3.5 LBS

SHEN-CPK-8T  
Rated Power:  
175W/8ohms; 300W/4ohms  
Dimensions:  
13.25"H x 11.25"W x 11.365"D  
Weight:  
16.5 LBS

SHEN-CPK-10T  
Rated Power:  
175W/8ohms; 300W/4ohms  
Dimensions:  
16.625"H x 12"W x 11.365"D  
Weight:  
19 LBS

**OPTIONAL EXTENSION CABINETS** - We offer identical extension cabinet designs to mate with the combo versions.

**SHEN-CPK-EXT8** - When matched with the 8" combo, this small rig will deliver 300 watts total output.

**SHEN-CPK-EXT10** - When matched with the 10" combo, this small rig will deliver 300 watts total output



We offer optional thick padded carry bags for our Shenandoah® Compak 300 combos

Amp-Sac-Sm - Fits our Shen-CPK-8T

Amp-Sac-Lg - Fits our Shen-CPK-10T



# Shenandoah® Compak 300

## ENGINEERING SPECIFICATIONS

### INPUTS

XLR Balanced input impedance:	2.2 k ohms
XLR Balanced input sensitivity:	-60 to -30 dBV
1/4" Unbalanced input impedance:	270 k ohms
1/4" Unbalanced input sensitivity:	-20 to +4 dBV

### AMPLIFIER OUTPUT

Power at 8 ohm load:	175 watts RMS
Power at 4 ohm load:	300 watts RMS
THD + N (preamp):	<0.02%
THD + N (power amp):	<0.05%
Frequency response:	20 Hz – 20 kHz +/- 1dB

### CHANNEL EQUALIZATION

Low frequency:	125 Hz shelving, +/-15dB
Mid frequency (sweep):	250 Hz – 5 kHz , peaking, +/-15dB
High frequency:	8 kHz shelving, +/-15dB

### DIRECT OUTPUTS

XLR balanced output level:	-30 dBV nominal
XLR balanced output impedance:	150 ohms
1/4" unbalanced output level:	+4 dBV nominal
1/4" unbalanced output impedance:	1 k ohm

### EFFECTS LOOP

1/4" unbalanced output level:	-10 dBV
1/4" unbalanced output impedance:	1 k ohm
1/4" unbalanced input level:	-10 dBV
1/4" unbalanced input impedance:	47 k ohm
1/4" effects cancel jack:	short T-S cancels return

### DIGITAL EFFECTS

Processor type:	WaveFront™ DSP engine
Internal processing:	24 bit
A/D converter:	24 bit – 64X oversampling
D/A converter:	24 bit – 128X oversampling
Dynamic Range:	80 dB
THD + N (1 kHz):	<0.01%
Sampling rate:	48 kHz

**SAFE OPERATING REQUIREMENTS:**

- Never set an amplifier on anything that will tip over or collapse under its weight.
- Provide a minimum distance of 25.4 mm (1 inch) around all sides of the amplifier for sufficient ventilation. The ventilation should not be impeded by covering the amplifier's vent openings with items such as newspapers, table-cloths, curtains, etc.
- No naked flame sources, such as lighted candles, should be placed on the Shenandoah® Compak 300 amplifier.
- This amplifier should not be exposed to dripping or splashing and no objects filled with liquids, such as vases or drinks, shall be placed on this product.
- The Shenandoah® Compak 300 amplifier should be connected to a mains socket outlet (power receptacle) with a protective earth (ground) connection at all times.
- The amplifier's mains plug (power plug) is considered the disconnect device and the connection must remain accessible at all times.
- This amplifier is capable of producing sound pressure levels that may cause hearing loss.
- There are no user serviceable parts and hazardous operating voltages are present 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 its use. Only persons familiar with the operation of high-powered professional audio equipment should attempt to operate this device.
- In addition, by use of this device, the user agrees to hold Genz Benz and its 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 warrants the model Shenandoah® Compak 300 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.
- This warranty is valid for the US & Canada only. For all products sold outside the USA, warranty is handled through our international distributor for each country. For more information visit our website [www.genzbenz.com](http://www.genzbenz.com)

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

**Manufacturer's Name:** Genz Benz, A Division of KMC Music  
**Manufacturer's Address:** 7811 East Pierce Street  
Scottsdale, AZ 85287, U.S.A.

**Product Type:** Audio Amplifier  
**Model Number:** Shenandoah® Compak 300 (all versions)  
**Operating Power Condition:** 100/115/230/240 V, 50/60 Hz  
**Effective Date:** 01-01-2009

**Conforms to the Following Standards:**

- ☒ EN 55013: 2001 + A1: 2003
- ☒ EN 55020: 2002 + A1: 2003
- ☒ EN 60065: 2001 + A1
- ☒ IEC 61000-3.2: 2000
- ☒ IEC 61000-3.3: 1994 + A1: 2001
- ☒ IEC 61000-4.2
- ☒ IEC 61000-4.3
- ☒ IEC 61000-4.4
- ☒ FCC 15.107 and 15.109
- ☒ RoHS Directive 2002/95/EC
- ☒ WEEE Directive 2002/96/EC
- ☒ CE Mark LV Directive 73/23 EEC

## **GENZ·BENZ**

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