



Professional Series Bass Speaker Enclosures

USER GUIDE

includes:

BIG BEN

BIG BERTHA

GOLIATH III

GOLIATH JUNIOR III

GOLIATH SENIOR

HENRY THE 8X8

MEGOLIATH

SON OF BERTHA

TRIAD I



SWR PROFESSIONAL SERIES BASS SPEAKER ENCLOSURE USER GUIDE

INTRODUCTION

Congratulations on your purchase of an SWR Professional Series bass speaker enclosure. By placing an SWR cabinet in your bass amplification system you have made a *sound* decision that could very well be the best of your life!

Just a little humor there, but true nonetheless. For over 15 years we here at SWR have been putting everything we know about bass into our Professional Series bass cabinets. We've earned a reputation for designing and manufacturing gear that has changed the way bassists hear themselves. That's why you'll find our bass amps, cabinets, and combos on stages and in recording studios all over the world, and why you'll hear SWR on countless recordings, spanning all genres of music.

Inside this User Guide you'll find specifications, features, and usage suggestions for every Professional Series bass enclosure we make. New SWR user and seasoned user alike will benefit from reading through this brief but informative manual. You can learn all about your current cabinet AND check out your SWR extension options, too.

Thanks for making SWR a part of your bass amplification system.

Sincerely,

SWR



SWR PROFESSIONAL SERIES BASS SPEAKER ENCLOSURE USER GUIDE

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Connection

Only one amplifier at a time can be connected to your SWR speaker enclosure. DO NOT plug two amplifiers into one speaker enclosure, as it will not work and may damage your system. Always complete your amplifier-to-speaker and speaker-to-speaker connections before powering up your system.

Speaker Cable

Only SPEAKER CABLE of 18 gauge or heavier (the heavier the cable, the lower the gauge) should be used to connect your amplifier to your SWR speaker enclosure. *Do not use shielded instrument cable* to connect your amplifier to your speakers, as this can result in intermittent power loss, cause your amp to oscillate and damage itself and/or your speakers, and render the cable useless for any purpose.

Speakon Jacks

Whenever possible, use of the Speakon® jacks is recommended (unavailable on Big Ben). Speakon jacks and connectors offer the best possible connection and are far superior to banana or 1/4" phone jacks in that they not only lock in place (preventing accidental disconnection), but also offer a greater and more stable connection surface. This solid connection provides a more effective transfer of power to your speakers, particularly from high-powered amplifiers.

Tweeter Protection Circuit

The tweeter protection circuit for SWR Professional Series speaker enclosures includes a size 3AG, 3 amp, 250 volt, fast-blo fuse. Do not replace this with a fuse of a higher rating as it will void your warranty. A sudden burst of feedback or a heavily clipped waveform can cause the fuse to open, resulting in loss of output from the tweeter.

Shock Mounted Steel Grill

The custom-manufactured steel grill is mounted on the top and sides with hard rubber standoffs and is installed to protect your SWR speaker enclosure's components from puncture or other physical damage. The standoffs act as "shock absorbers" when the grill is bumped, and are also intended to prevent the grill from rattling during use. Prior to shipping, the grill mounting screws are tightened to a point where the standoff barely compresses. This keeps the height of the grill far enough off the speaker and prevents the grill from rattling on the head of the screw. Should the screws loosen, some rattling may occur. If this happens, simply tighten the screws until they become snug. Do not over-tighten the screws, as this could bring the grill too close to your speaker(s) and cause interference with the speaker cone.

Cleaning and Maintenance

A soft, dry cloth can be used to remove smudges or fingerprints from the chrome grill. A stiff brush (such as those available in the cleaning section of most supermarkets) can be used to keep the cabinet's carpeting free of lint, pet hair and dust. Should you encounter a problem with the carpet collecting odor (from smokey clubs, etc.) a common carpet cleaner can be used. It is recommended that, prior to spraying down the entire covering, you test whichever cleaner you choose on a small, inconspicuous area on the underside of the enclosure. This will prevent any accidental discoloration from being in view. All screws on the baffle and input panel should be checked periodically for tightness, so as not to become loose (causing rattles or air leaks) or lost.

Tilt-Back Design

SWR's Megoliath, Goliath Senior, Big Bertha and Henry The 8X8 feature a tilt-back design for easy transportation. To take advantage of this feature, firmly grasp the bar or handle (depending on the model) found on the top rear surface of the enclosure. Carefully pull the top of the cabinet toward you so that the enclosure balances on its heavy-duty caster wheels. When a comfortable balance is achieved, push forward in the direction you want to move the enclosure.

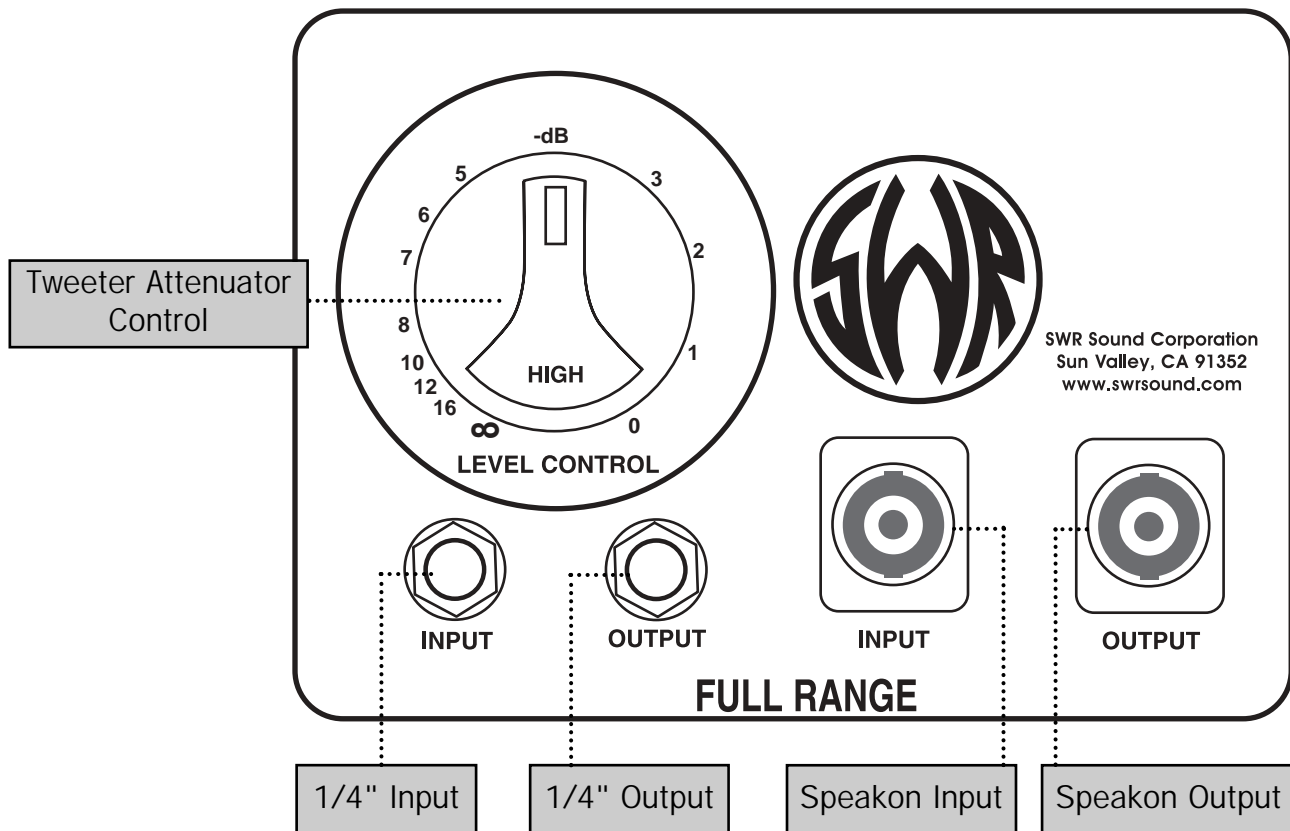
Removable Caster Wheels

Goliath III is shipped with a set of four, heavy-duty, removable caster wheels. SWR uses only closed shaft sockets so as to prevent air leaks or unwanted noise when the enclosure is in use. To install the caster wheels on your Goliath III, carefully turn the enclosure upside down (or on its side) so that the caster base/sockets are visible. Insert the shaft of each caster wheel into a socket on the underside of the Goliath III. When all four wheels are firmly in place, return the Goliath III to its upright position and you're ready to roll. You can leave the casters in place during performance, but it's recommended that they be removed prior to setting up your amplification system. This will allow your cabinet to couple to the floor, which can be helpful in extending your system's bass response. Please note that the ball bearing type caster wheels provided with your Goliath III may require periodic replacement depending on usage and care. Replacement caster wheels can be purchased from the SWR Service Department.

INPUT PANEL DIAGRAMS

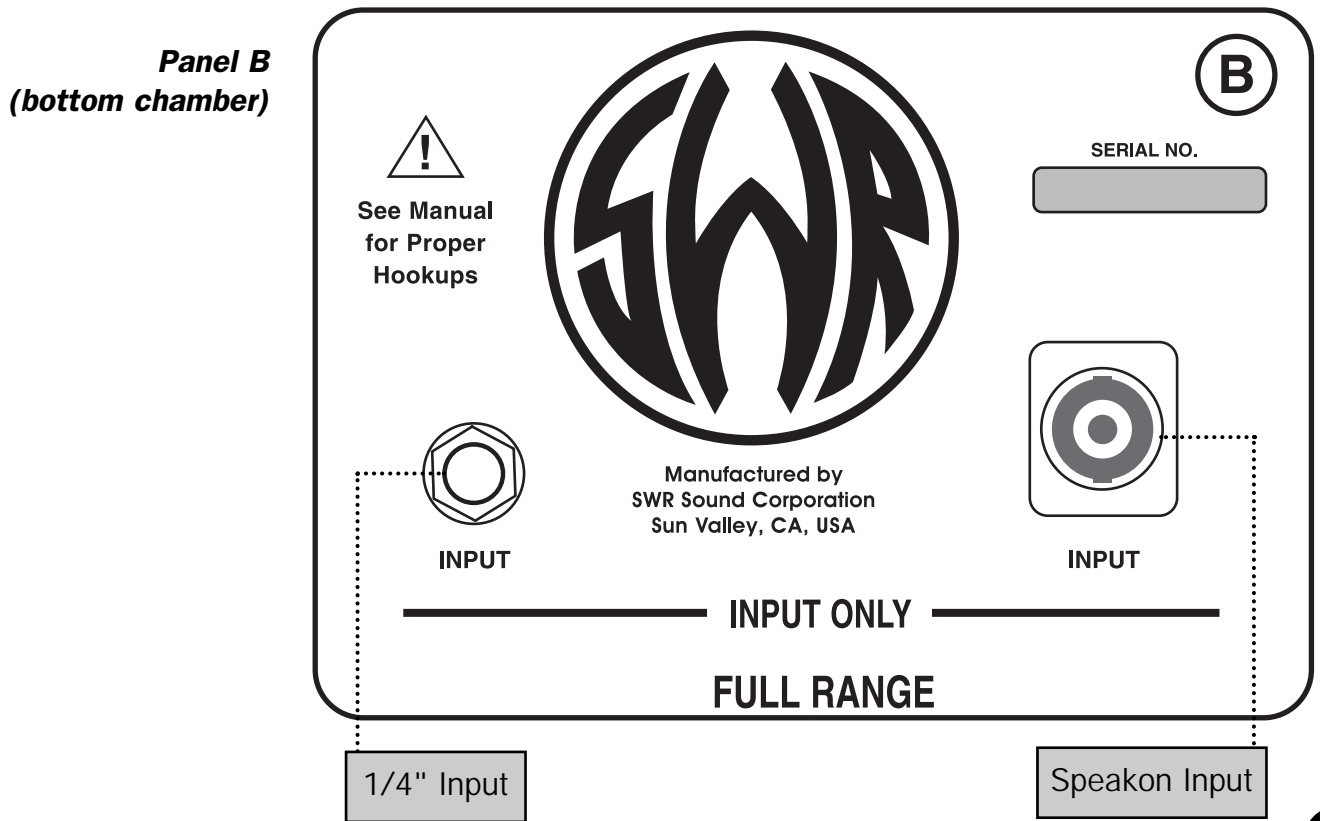
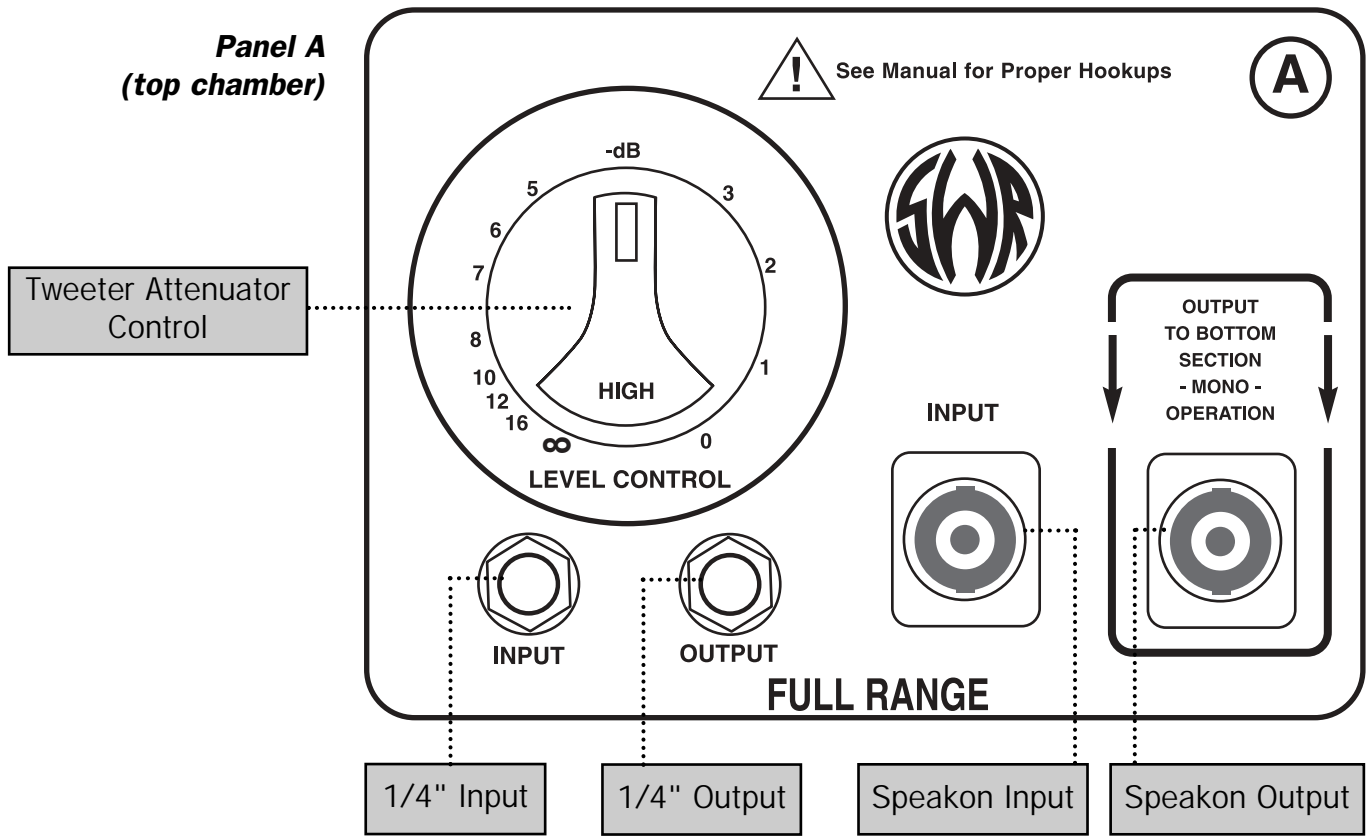
All Models (except Big Ben* and Megoliath)

* Because Big Ben has only a single 1/4" input jack, it is not pictured in this user guide. We trust you'll understand how to use it (or you can turn to page 6 for instructions).



INPUT PANEL DIAGRAMS

Megoliath



BIG BEN

Specifications

Power Handling: 400 watts RMS

Impedance: 8 Ohms

Frequency Response and SPL: 100 dB SPL @ 2W1M
(-6dB @ 25 Hz and 3 kHz)

Speaker Complement: (1) 18" Woofer

Spring Loaded Rubber Grip Handles, Rear Tube Port

Dimensions: 23"W x 30.5"H x 18.5"D

Weight: 73 lbs.



Description

Big Ben is an extremely fast, 1x18 sub woofer. It can be used as a stand-alone speaker enclosure, as part of a bi-amp system, or as the low end component for any large, multi-speaker bass rig. It's a must-have for any true bottom dweller.

Connection and Operation

Big Ben can be connected to any musical instrument amplifier that is capable of driving an 8 ohm load. To connect your amplifier to Big Ben, run a high quality speaker cable (18 gauge or heavier) from your amplifier's speaker output to the 1/4" input jack on Big Ben's input panel.

Power Handling

The power output rating for any amplifier connected to Big Ben should not exceed the enclosure's 400 watt RMS power handling capacity. Please be aware that exceeding Big Ben's power handling capacity can void the SWR warranty if any damage occurs to the 18" woofer due to overpowering.

Full Range Input Jack

Big Ben features one full range 1/4" input jack on the rear of the enclosure.

BIG BERTHA

Specifications

Description: 2x15" + Tweeter Speaker Enclosure

Power Handling: 700 Watts RMS

Impedance: 4 ohms

Frequency Response & SPL: 100 dB SPL @ 1W1M
(-6dB @ 40 Hz and 15 kHz)

Speaker Complement: (2) 15" P.A.S Drivers, (1) Foster Horn

Heavy-Duty Casters, Spring Loaded Rubber Grip Handles, Front Slot Port, Top Handle and Tilt Back Design for easy transportation.

Dimensions: 23.25"W x 36.5"H x 18.5"D

Weight: 98 lbs.



Connection and Operation

Big Bertha can be connected to any musical instrument amplifier that is capable of driving a 4 ohm load. To connect your amplifier to Big Bertha, run a high quality speaker cable (18 gauge or heavier) from your amplifier's speaker output to one of the designated speaker inputs (Speakon or 1/4") on Big Bertha's input panel.

Power Handling

The power output rating for any amplifier connected to Big Bertha should not exceed the enclosure's 700 watt RMS power handling capacity. Please be aware that exceeding Big Bertha's power handling capacity can void the SWR warranty if any damage occurs to your loudspeakers due to overpowering.

Full Range Input and Output Jacks

Big Bertha features four, full range input/output jacks (two standard 1/4" and two Speakon) wired in parallel. If you are running two speaker enclosures in parallel, connect the speaker cable from your amplifier to either jack labeled "IN," and a second speaker cable from either jack labeled "OUT" to the input of the second speaker enclosure.

Tweeter Attenuator Control

The large dial found on the input panel of the cabinet is the Tweeter Attenuator. This control is used to adjust the level of high frequency signal present at the tweeter. A normal setting for this control is straight up or "twelve o'clock." Turning the dial fully counter-clockwise removes the tweeter from the circuit. As you turn the dial clockwise from this position, the high frequency content is increased.

Internal Crossover

Big Bertha's internal (passive) crossover divides the incoming signal into two frequency bands. The crossover point is 5 kHz (frequencies above 5 kHz are sent to the tweeter, frequencies below 5 kHz are sent to the 15" speakers).

HENRY THE 8X8

Specifications

Description: 8x8 + Tweeter Speaker Enclosure

Power Handling: 480 watts RMS

Impedance: 4 ohms

Frequency Response & SPL: 96 dB SPL @ 1W1M
(-6 db @ 35 Hz and 18 KHz)

Speaker Complement: (8) custom 8" SWR drivers,
(1) Le-Son Piezo Tweeter

*Heavy-Duty Casters, Spring Loaded Rubber Grip Handles, 2 Front Tube
Ports, Top Handle and Tilt Back Design for easy transportation.*

Dimensions: 23"W x 36"H x 18.5"D

Weight: 100 lbs.



Connection and Operation

Henry The 8X8 can be connected to any musical instrument amplifier capable of driving a 4 ohm load. To connect your amplifier to Henry

The 8X8, run a high quality speaker cable (18 gauge or heavier) from your amplifier's speaker output to one of the designated speaker inputs (Speakon or 1/4") on Henry The 8X8's input panel.

Power Handling

The power output rating for any amplifier connected to Henry The 8X8 should not exceed the enclosure's 480 watt RMS power handling capacity. Please be aware that exceeding Henry The 8X8's power handling capacity can void the SWR warranty if any damage occurs to your loudspeakers due to overpowering.

Full Range Input and Output Jacks

Henry The 8X8 features four, full range input/output jacks (two standard 1/4" and two Speakon) wired in parallel. If you are running two speaker enclosures in parallel, connect the speaker cable from your amplifier to either jack labeled "IN," and a second speaker cable from either jack labeled "OUT" to the input of the second speaker enclosure.

Tweeter Attenuator Control

The large dial found on the input panel of the cabinet is the Tweeter Attenuator. This control is used to adjust the level of high frequency signal present at the tweeter. A normal setting for this control is straight up or "twelve o'clock." Turning the dial fully counter-clockwise removes the tweeter from the circuit. As you turn the dial clockwise from this position, the high frequency content is increased.

Internal Crossover

Henry The 8X8's internal (passive) crossover divides the incoming signal into two frequency bands. The crossover point is 5 kHz (frequencies above 5 kHz are sent to the tweeter, frequencies below 5 kHz are sent to the 8" speakers).

Specifications

Description: 4x10 + Tweeter Speaker Enclosure

Power Handling: 700 Watts RMS

Impedance: 8 Ohms

Frequency Response & SPL: 105 dB SPL @ 1W1M
(-3dB @ 40 Hz and 15 kHz)

Speaker Complement: (4) 10" P.A.S Drivers, (1) Foster Horn

*Removable Casters, Spring Loaded Rubber Grip Handles,
Bottom Slot Port*

Dimensions: 23"W x 25.25"H x 18.375"D

Weight: 89 lbs.



P.A.S. 10" Speaker Specifications

Free Air Resonance: 47 Hz

Individual Impedance: 8 Ohms (each)

Power Rating: 175 Watts RMS (each)

Connection and Operation

Goliath III can be connected to any musical instrument amplifier capable of driving an 8 ohm load. To connect your amplifier to Goliath III, run a high quality speaker cable (18 gauge or heavier) from your amplifier's speaker output to one of the designated speaker inputs (Speakon or 1/4") on Goliath III's input panel.

Power Handling

The power output rating for any amplifier connected to Goliath III should not exceed the enclosure's 700 watt RMS power handling capacity. Please be aware that exceeding Goliath III's power handling capacity can void the SWR warranty if any damage occurs to your loudspeakers due to overpowering.

Full Range Input and Output Jacks

Goliath III features four, full range input/output jacks (two standard 1/4" and two Speakon) wired in parallel. If you are running two speaker enclosures in parallel, connect the speaker cable from your amplifier to either jack labeled "IN," and a second speaker cable from either jack labeled "OUT" to the input of the second speaker enclosure.

Tweeter Attenuator Control

The large dial found on the input panel of the cabinet is the Tweeter Attenuator. This control is used to adjust the level of high frequency signal present at the tweeter. A normal setting for this control is straight up or "twelve o'clock." Turning the dial fully counter-clockwise removes the tweeter from the circuit. As you turn the dial clockwise from this position, the high frequency content is increased.

Internal Crossover

Goliath III's internal (passive) crossover divides the incoming signal into two frequency bands. The crossover point is 5 kHz (frequencies above 5 kHz are sent to the tweeter, frequencies below 5 kHz are sent to the 10" speakers).

Specifications

Description: 2x10 + Tweeter Speaker Enclosure

Power Handling: 350 watts RMS

Impedance: 4 or 8 ohms available

Frequency Response & SPL: 105 dB SPL @ 1W1M
(-3 db @ 45 Hz and 12 kHz)

Speaker Complement: (2) 10" PAS Drivers, (1) Foster Horn

Porting: Front Slot Port

Dimensions: 23"W x 15.75"H x 16.5"D

Weight: 55 lbs.



P.A.S. 10" Speaker Specifications

Free Air Resonance: 47Hz

Individual Impedance: 8 Ohms (each)

Power Rating: 175 Watts RMS (each)

Connection and Operation

The SWR Goliath Junior III can be connected to any musical instrument amplifier capable of driving a 4 or 8 ohm load. To connect your amplifier to Goliath Junior III, run a high quality speaker cable (18 gauge or heavier) from your amplifier's speaker output to one of the designated speaker inputs (Speakon or 1/4") on Goliath Junior III's input panel.

Power Handling

The power output rating for any amplifier that is connected to Goliath Junior III should not exceed the enclosure's 350 watt RMS power handling capacity. Please be aware that exceeding Goliath Junior III's power handling capacity can void the SWR warranty if any damage occurs to your loudspeakers due to overpowering.

Full Range Input and Output Jacks

Goliath Junior III features four, full range input/output jacks (two standard 1/4" and two Speakon) wired in parallel. If you are running two speaker enclosures in parallel, connect the speaker cable from your amplifier to either jack labeled "IN," and a second speaker cable from either jack labeled "OUT" to the input of the second speaker enclosure.

Tweeter Attenuator Control

The large dial found on the input panel of the cabinet is the Tweeter Attenuator. This control is used to adjust the level of high frequency signal present at the tweeter. A normal setting for this control is straight up or "twelve o'clock." Turning the dial fully counter-clockwise removes the tweeter from the circuit. As you turn the dial clockwise from this position, the high frequency content is increased.

Internal Crossover

Goliath Junior III's internal (passive) crossover divides the incoming signal into two frequency bands. The crossover point is 5 kHz (frequencies above 5 kHz are sent to the tweeter, frequencies below 5 kHz are sent to the 10" speakers).

Specifications

Description: 6x10 + Tweeter Speaker Enclosure

Power Handling: 1000 watts RMS

Impedance: 4 Ohms

Frequency Response & SPL: 110 dB SPL @ 1W1M
(-3 dB @ 55 Hz and 14 KHz)

Speaker Complement: (6) 10" P.A.S Drivers, (1) Foster Horn

Heavy-Duty Casters, Spring Loaded Rubber Grip Handles, Bottom Slot Port, Top Handle and Tilt Back Design for easy transportation.

Dimensions: 23.25"W x 36.5"H x 18.5"D

Weight: 115 lbs.



P.A.S 10" Speaker Specifications

Free Air Resonance: 47Hz

Individual Impedance: 8 Ohms (each)

Power Rating: 175 Watts RMS (each)

Connection and Operation

Goliath Senior can be connected to any musical instrument amplifier capable of driving a 4 ohm load. To connect your amplifier to Goliath Senior, run a high quality speaker cable (18 gauge or heavier) from your amplifier's speaker output to one of the designated speaker inputs (Speakon or 1/4") on Goliath Senior's input panel.

Power Handling

The power output rating for any amplifier connected to Goliath Senior should not exceed the enclosure's 1000 watt RMS power handling capacity. Please be aware that exceeding Goliath Senior's power handling capacity can void the SWR warranty if any damage occurs to your loudspeakers due to overpowering.

Full Range Input and Output Jacks

Goliath Senior features four, full range input/output jacks (two standard 1/4" and two Speakon) wired in parallel. If you are running two speaker enclosures in parallel, connect the speaker cable from your amplifier to either jack labeled "IN," and a second speaker cable from either jack labeled "OUT" to the input of the second speaker enclosure.

Tweeter Attenuator Control

The large dial found on the input panel of the cabinet is the Tweeter Attenuator. This control is used to adjust the level of high frequency signal present at the tweeter. A normal setting for this control is straight up or "twelve o'clock." Turning the dial fully counter-clockwise removes the tweeter from the circuit. As you turn the dial clockwise from this position, the high frequency content is increased.

Internal Crossover

Goliath Senior's internal (passive) crossover divides the incoming signal into two frequency bands. The crossover point is 5 kHz (frequencies above 5 kHz are sent to the tweeter, frequencies below 5 kHz are sent to the 10" speakers).

Specifications

Description: 8x10 + Tweeter, Dual Chamber Speaker Enclosure

Power Handling:

Mono Cabinet Mode: 1200 Watts

Dual Cabinet Mode: 600 Watts (each chamber)

Impedance: Inputs for stereo (2 x 8 ohm) or mono (1 x 4 ohm) operation

Frequency Response & SPL: 100 dB SPL @ 1W1M
(-3dB @ 37 Hz & 13 kHz)

Speaker Complement: (8) 10" Custom SWR Drivers, (1) Foster Horn

Porting: Unique front and rear porting system

Dimensions: 26.5"W x 20.25"D x 48.5"H

Weight: 154 Lbs.

Additional Features

Two independent speaker compartments, Input panel with Tweeter Attenuator, 1/4" and Speakon Input jacks, Heavy Duty Inset Casters, Heavy Duty Grab Bars and Skid rails, Bottom mounted handles for safe lifting, Chrome Grill.

Overview

Megoliath was designed to be the ultimate professional speaker cabinet in both power-handling and application flexibility. To achieve maximum performance for your preferred setup, please read the following instructions carefully and thoroughly.

Megoliath is basically two independent 4x10 enclosures that can be run separately from two different sources, or as one mono 8x10 enclosure by chaining the top and bottom enclosures together using the high-quality Speakon speaker cable provided. Each independent 4x10 enclosure has its own input panel: "A" for the top and "B" for the bottom.

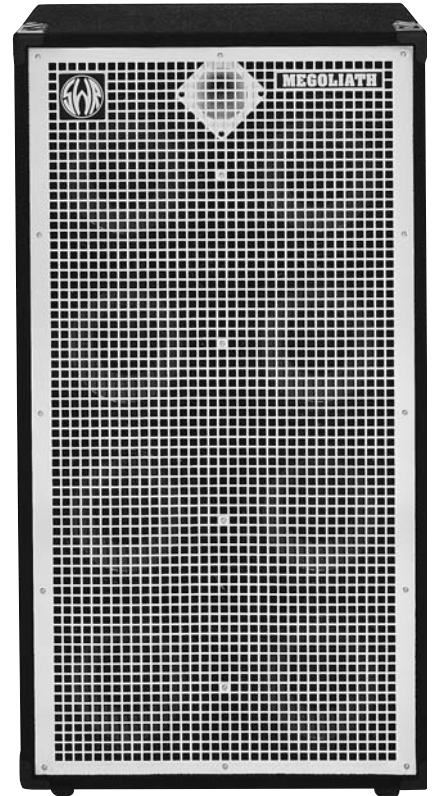
Connection and Operation

All of the jacks (both Speakon and 1/4") on input panels "A" and "B" are wired in parallel. All jacks run full range and any one per panel can be used as an input jack. However, we have marked the jacks with "in" and "out" labels for your wiring convenience.

Mono Operation

When using Megoliath as a mono 8x10 cabinet (one amplified source), simply connect the Speakon-to-Speakon speaker cable from the "Output To Bottom Section—Mono Operation" jack on panel "A" to the "Input" Speakon jack on panel "B." Then connect your amplifier's speaker output to one of the inputs (either 1/4" or Speakon) on panel "A". When using Megoliath in mono mode, SWR strongly recommends a high quality (14 gauge or better) Speakon-to-Speakon connection from your amplifier to the panel "A" input, as the Speakon jack offers a superior connection and maximum transference of power. This is why we have provided the Speakon cable and clearly marked the "Output" Speakon jack on panel "A." However, 1/4" jacks are available on both top and bottom panels for use with amplifiers that are not equipped with Speakon output jacks.

(continued)



Stereo Operation

When using Megoliath as a stereo cabinet (different sources for top and bottom sections), simply connect your desired sources (left and right of a stereo amp, or perhaps two completely different amplifiers) into either the 1/4" or Speakon jack marked "In." When choosing two distinct sources to route to either panel "A" (top) or "B" (bottom), you may want to take into account that Megoliath's top 4x10 section has a tweeter and the bottom does not. Perhaps you have an affected signal and a clean signal, both independently powered. Maybe you want the clean signal to have that "classic SWR" sound, in which case you'd want to utilize the tweeter in the top compartment. Or maybe you have a wild effect that needs a tweeter and you prefer the clean signal on the bottom for better coupling with the floor. The decision is yours.

Tweeter Attenuator Control

The large dial found on input panel "A" (top chamber) of Megoliath is the Tweeter Attenuator. This control is used to adjust the level of high frequency signal present at the horn/tweeter. A normal setting for this control is straight up or "twelve o'clock." Turning the dial fully counter-clockwise removes the tweeter from the circuit. As you turn the dial clockwise from this position, the high frequency content is increased.

Internal Crossover

The internal (passive) crossover divides the incoming signal to Megoliath's top chamber into two frequency bands. The crossover point is 5 kHz (frequencies above 5 kHz are sent to the tweeter, frequencies below 5 kHz are sent to the 10" speakers).

Transporting the Megoliath

For level transport, simply place your foot on the kick plate near the bottom of the rear, pull back on the dual grab bars, and wheel Megoliath on the heavy-duty casters to your desired location. For lifting up stairs, first ask someone to help you. Then lay the enclosure on its back. On the bottom you will notice two handles. One person takes the grab bars, one person takes the bottom handles, and up you go.

For lifting into cars and onto stages, we have mounted two hard plastic skid rails onto the back of the cabinet. Once the cabinet is off the ground and leaning on a surface—say, the edge of a stage, or the back of a car or pickup truck—just push and slide the cabinet forward.

Specifications

Description: 1x15" + Tweeter Speaker Enclosure

Power Handling: 350 Watts RMS

Impedance: 8 ohms

Frequency Response & SPL: 102 dB SPL @1W1M
(-3dB @ 45 Hz and 15 KHz)

Speaker Complement: (1) 15" P.A.S Driver, (1) Foster Horn

Spring Loaded Rubber Grip Handles, Front Slot Port

Dimensions: 23.25"W x 20.25"H x 18.5"D

Weight: 60 lbs.



Connection and Operation

Son Of Bertha can be connected to any musical instrument amplifier capable of driving an 8 ohm load. To connect your amplifier to Son Of Bertha, run a high quality speaker cable (18 gauge or heavier) from your amplifier's speaker output to one of the designated speaker inputs (Speakon or 1/4") on Son Of Bertha's input panel.

Power Handling

The power output rating for any amplifier connected to Son Of Bertha should not exceed the enclosure's 350 watt RMS power handling capacity. Please be aware that exceeding Son Of Bertha's power handling capacity can void the SWR warranty if any damage occurs to your loudspeakers due to overpowering.

Full Range Input and Output Jacks

Son Of Bertha features four, full range input/output jacks (two standard 1/4" and two Speakon) wired in parallel. If you are running two speaker enclosures in parallel, connect the speaker cable from your amplifier to either jack labeled "IN," and a second speaker cable from either jack labeled "OUT" to the input of the second speaker enclosure.

Tweeter Attenuator Control

The large dial found on the input panel of the cabinet is the Tweeter Attenuator. This control is used to adjust the level of high frequency signal present at the tweeter. A normal setting for this control is straight up or "twelve o'clock." Turning the dial fully counter-clockwise removes the tweeter from the circuit. As you turn the dial clockwise from this position, the high frequency content is increased.

Internal Crossover

Son Of Bertha's internal (passive) crossover divides the incoming signal into two frequency bands. The crossover point is 5 kHz (frequencies above 5 kHz are sent to the tweeter, frequencies below 5 kHz are sent to the 15" speakers).

Specifications

Power Handling: 400 watts RMS

Impedance: 4 Ohms @ 1 kHz

Frequency Response and SPL: 98 dB SPL @ 1W1M
(-6 db @ 37 Hz and 16 KHz)

Speaker Complement: (1) 15" PAS driver, (1) 10" PAS driver,
(1) Foster Horn

*Removable Casters, Spring Loaded Rubber Grip Handles,
Bottom Slot Port*

Dimensions: 23"W x 27"H x 18.5"D

Weight: 80 lbs.



Description

Triad is a full-range, 3-way speaker system that utilizes a single 15" woofer, a 10" mid-range driver, and a high frequency horn tweeter. Each component is housed in its own sealed chamber to maximize efficiency and eliminate any interaction between components.

Connection and Operation

Triad can be connected to any musical instrument amplifier capable of driving a 4 ohm load. To connect your amplifier to Triad, run a high quality speaker cable (18 gauge or heavier) from your amplifier's speaker output to one of the designated speaker inputs (Speakon or 1/4") on Triad's input panel.

Power Handling

The power output rating for any amplifier connected to Triad should not exceed the enclosure's 400 watt RMS power handling capacity. Please be aware that exceeding Triad's power handling capacity can void the SWR warranty if any damage occurs to your loudspeakers due to overpowering.

Full Range Input and Output Jacks

Triad features four, full range input/output jacks (two standard 1/4" and two Speakon) wired in parallel. If you are running two speaker enclosures in parallel, connect the speaker cable from your amplifier to either jack labeled "IN," and a second speaker cable from either jack labeled "OUT" to the input of the second speaker enclosure.

Tweeter Attenuator Control

The large dial found on the input panel of the cabinet is the Tweeter Attenuator. This control is used to adjust the level of high frequency signal present at the tweeter. A normal setting for this control is straight up or "twelve o'clock." Turning the dial fully counter-clockwise removes the tweeter from the circuit. As you turn the dial clockwise from this position, the high frequency content is increased.

Internal Crossover

Triad's internal (passive) crossover divides the incoming signal into three frequency bands. The crossover points for the Triad are 5 kHz and 100 Hz. Frequencies above 5 kHz go to the Tweeter, frequencies between 5 kHz and 100 Hz go to the 10" driver. The woofer is a full-range driver.

IMPEDANCE: A GENERAL OVERVIEW

The following terms will be helpful in understanding the information in this section:

Impedance: The resistance of a device to the flow of alternating current. Often used to rate the resistance of a speaker's voice coil.

Ohm: A unit of electrical resistance equal to that of a conductor in which a current of one ampere is produced by a potential of one volt across its terminals.

Parallel Operation: The connection of two or more power sources of the same output voltage to obtain a higher output current.

There are three questions you should ask yourself prior to connecting multiple speaker enclosures to your amplifier:

1. What is the impedance of each enclosure?
2. What will the total combined impedance be?
3. Is the total combined impedance a safe load for your amplifier?

When multiple speakers are connected to an amplification system, they are generally connected in a parallel configuration. This is the case when you use the speaker output jacks on any SWR amplifier, or the in/out jacks on the input panel of your SWR enclosure. When you add speakers in parallel, the total impedance the amplifier "sees" becomes less.

Note: *As parallel operation is most common, the following information will focus on this type of configuration. "Series" operation will not be discussed.*

To figure out the total impedance of two or more cabinets of equal value connected in parallel, divide the impedance of one enclosure by the number of enclosures:

$$\text{impedance of one enclosure} / \text{number of enclosures} = \text{total impedance}$$

Let's say for instance that you want to connect two 8 ohm SWR enclosures to one SWR amplifier configured for mono operation. The formula is: 8 divided by 2 = 4 (ohms), so the total impedance will be 4 ohms. Likewise, if you have four 8 ohm enclosures, the total impedance will be 2 ohms (8 divided by 4 = 2).

If you were to connect one 8 ohm enclosure and one 4 ohm enclosure in parallel, you can simply think of the 4 ohm enclosure as two 8 ohm enclosures (we know this is true from the first example), so you now have, in effect, three 8 ohm enclosures. The formula would be: 8 divided by 3 = 2.67 (ohms).

The owner's manual that came with your amplifier should state the lowest (or minimum) impedance your amplifier is designed to drive. This may also be indicated next to your amplifier's speaker output jacks. If the total impedance of the cabinets you want to use is 4 ohms, your amp must have a minimum load rating of 4 ohms or less.

Before purchasing a second enclosure to add to your system, you should make a list of all the items pertinent to your additional enclosure, including: impedance, power-handling capacity and function. If your amplifier's owner's manual says that the amp's minimum load is 4 ohms, and you already own

IMPEDANCE *(continued)*

one 8 ohm enclosure, you know you can add one more 8 ohm speaker safely (8 divided by 2 = 4). Although much less common, you could also add one, or even two, 16 ohm cabinets: two 16 ohm cabinets in parallel have the same total impedance as one 8 ohm speaker.

To get the most efficiency out of your system with the fewest cabinets, your best choice would be to connect two 8 ohm enclosures. Since you would be driving two cabinets of equal impedance, each will receive half the power your amp can deliver. If your amplifier delivers 200 watts RMS at 4 ohms, then each cabinet will receive 100 watts RMS maximum under clipping. (Clipping is the point where the power amplifier runs out of headroom and begins to distort.) If you had four 16 ohm enclosures, each one would receive a maximum of 50 watts RMS under clipping.

Continuous clipping is very harmful to speakers, especially in a bass system: the lower the note, the longer the duration of DC content in the clipped signal. To understand what happens under this condition, remember the example of what speakers do when a 9 volt battery is applied to them. Now imagine what 20 or even 50 volts would do at the rate of 40 times per second! The results can be overheating, disfiguring of the voice coil, overall fatigue, and—eventually—complete failure.

TROUBLESHOOTING GUIDE

“I’m hearing unwanted distortion through my cabinet.”

This could be for a variety of reasons, but is probably being caused by one of the following three sources: 1) the amplifier, 2) the cabinet’s woofer(s), and 3) the cabinet’s tweeter.

The best way to figure it out is to try and isolate “the big three.” If you have access to another (working) bass cabinet, hook your amp up to it. If things are still distorting, it’s probably your amp. Consult your amplifier owner’s manual for troubleshooting that piece of gear.

To determine whether the distortion’s coming from the tweeter or the woofers, first put your ear up to the cabinet, play some notes, and see if you can hear where it’s emanating from. If you can’t quite narrow it down, try turning the Tweeter Attenuator control all the way down (counter-clockwise). When this control is all the way down, the tweeter is effectively “off.” Play some notes—if you hear distortion, you know it’s not the tweeter (*see next paragraph...*). If you don’t hear any distortion with the tweeter off, try turning up the Tweeter Attenuator. It may be that you just need to find the optimum tweeter level for your bass, amp, or style of playing. If the tweeter distorts no matter what level the Tweeter Attenuator control is set to, it’s probably best to call FMIC’s Consumer Relations Dept. for advice. The number is (480) 596-7195.

If the tweeter’s off AND the amp’s okay, and you’re *still* hearing distortion, there may be a problem with your woofer(s) and/or the cabinet’s internal workings. Inspect your woofers’ cones for folded edges. There’s a very slight chance you have a defective woofer. Or, you may have blown one or all of them by driving them too hard. Speakers that have been overdriven are easy to detect, and generally do not fall under a manufacturer’s warranty. You should call FMIC’s Consumer Relation’s Dept. to determine your next move. The number is (480) 596-7195.

“I hear intermittent distortion and/or crackling coming from the cabinet.”

This could be due to a bad speaker cable, or a bad speaker cable connection. First, make sure the cable is securely connected to both the cabinet and the amp (or other cabinet). If you’re using more

than one cabinet, check all cable connections in the chain. If you then suspect that the problem may be a bad cable, you can use a 9 volt battery as a cable-tester. To do so, plug one end of the questionable cable into your speaker cabinet, and then touch the phone plug on the other end to the two terminals (+ and -) of the battery, contacting the tip and sleeve. When you connect the battery to the phone plug, a good cable will pass the voltage to the speakers, which will be indicated by both an audible noise and the physical reaction of your speakers—the cones will move out. Disconnect the battery, and the cones will move back in. (Reverse the battery, and the speakers will move in when connected.) If you don't hear anything and your speakers don't move, then the cable is faulty and should be repaired or replaced.

You can test for an intermittent cable by keeping the battery on the phone plug while swinging the wire like a jump rope. If the cable is good, the speaker will remain in its battery activated position and not make any noise. This test can be especially handy after making new cables or repairing old ones, and it can also be used to check speaker phasing.

Note: *Holding a battery on a phone plug continuously will drain the battery quickly, so don't overdo it. Conversely, this test will tell you if you have a dead 9 volt battery; if you know the cable is good but the speakers don't move, toss the battery.*

Before reconnecting your system and turning the amplifier on, make one last check to be sure all of your cables are connected properly—especially your speaker cables. If a loose speaker cable is plugged in while you're playing, it could cause your AC or speaker fuse to blow. For this reason we recommended keeping several spare fuses on hand.

"I hear a tinny/hollow/lifeless sound."

"The sound has no 'body' to it."

"It just sounds bad."

This could be because your enclosures are out of phase. Basically, this means that while the speaker cones of one cabinet are moving out, the cones of the second cabinet are moving in. The net result is that little or no sound is produced. To verify this situation, you can use a 9 volt battery. Turn off your amplifier and unplug the speaker cable from the amp, leaving the other end still connected to the enclosure. Touch the plus (+) side of the battery to the tip of the phone plug and the minus (-) side of the battery to the sleeve of the phone plug. When you do this, the cone(s) in the cabinet should move outward. When the battery is disconnected, the cone(s) will go back to their original position. Next, repeat the procedure with the second enclosure; chances are the cone(s) will move in the opposite direction (inward). If this is the case, the speakers are wired out of phase.

Take your battery and recheck the phasing of both speakers, using your speaker cable. If they check out okay, then your speaker cable is miswired—that is, plus and minus have been reversed. You will need to purchase a replacement speaker cable or have the cable rewired.

Note: *Whenever you replace a speaker or have one replaced, use this test to make sure it has been properly installed in the enclosure. You should also check all new or repaired cables the same way.*

If none of the above suggestions help, it's time to call your friendly FMIC Consumer Relations Dept. at: (480) 596-7195.

SWR LIMITED WARRANTY

All **SWR Professional Series Speaker Enclosures** are warranted to the original consumer purchaser for TWO (2) YEARS from the date of purchase, against defects in materials and workmanship and provided that it is purchased from an Authorized SWR Dealer. This warranty applies only to products purchased in the USA or Canada. This warranty is VOID if the unit has been damaged due to accident, improper handling, installation operation, shipping damage, abuse or misuse, unauthorized repair or attempted repair, or if the serial number has been defaced or removed.

To receive warranty service, return the complete product to an Authorized FMIC Electronics Service Center, with proof purchase, during the applicable warranty period. Transportation costs are not included in this **Limited Warranty**.

Defective products that qualify for coverage under this warranty will be repaired or replaced, at FMIC's discretion, with a like or comparable product, without charge.

COVERS & REPLACEMENT PARTS

Waterproof covers, made from high-quality black Cordura, are available for most SWR speaker enclosures and may be ordered through your local Authorized SWR Dealer.

Replacement parts (such as fuses, corners, etc.) are also available and may be ordered through your local Authorized SWR Dealer.

SWR

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IMPORTANT SAFETY INSTRUCTIONS

CAUTION: TO REDUCE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER OR BACK. NO USER-SERVICEABLE PARTS INSIDE. PLEASE REFER TO A QUALIFIED SERVICE TECHNICIAN.

A. Read Instructions: All safety and operation instructions should be read before the product is operated.

B. Retain Instructions: The safety and operating instructions should be retained for future reference.

C. Heed Warnings: All of the warnings on this product and in the operating instructions should be adhered to.

D. Follow Instructions: All operating and use instructions should be followed.

E. Cleaning: Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a slightly damp cloth for cleaning.

F. Water and Moisture: Do not use this product near water; for example, near a swimming pool, wet basement, and the like.

G. 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.

H. Ventilation: Slots and openings in the unit are provided for ventilation and to ensure reliable operation of the product, to protect it from overheating, thus these openings must not be blocked or covered. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

I. Grounding: This product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

J. 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 them, paying particular attention to cords at plugs and the point where they exit the product.

K. Lightning: For added protection of this product during 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.

L. Overloading: Do not overload wall outlets or extension cords as this can result in a risk of fire or electric shock.

M. Object and Liquid Entry: Never push objects of any kind into this product through the openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

N. Servicing: Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

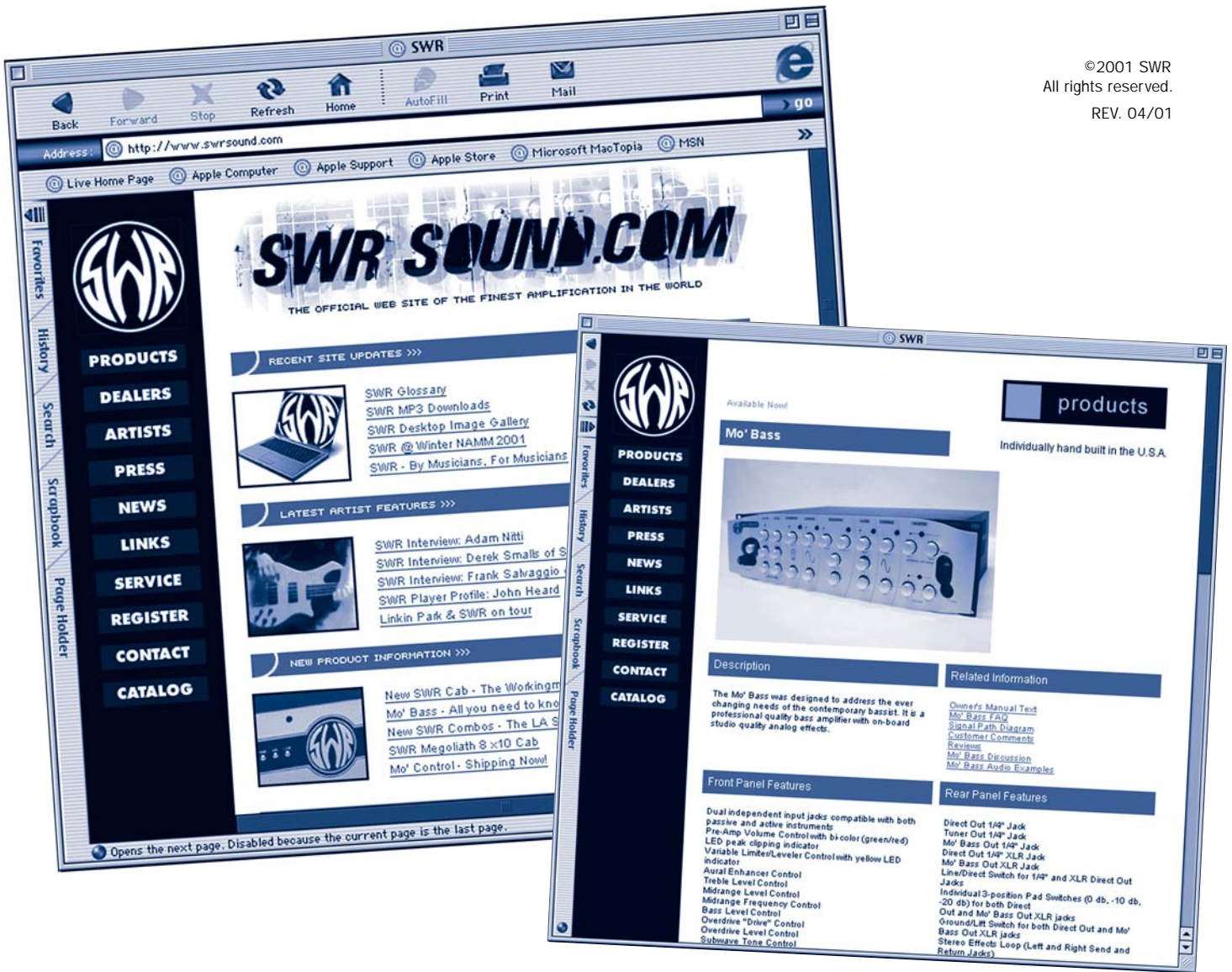
O. Damage Requiring Service: Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- 1) When the power supply cord has been damaged
- 2) If liquid has been spilled or objects have fallen into the product
- 3) If the product has been exposed to rain, water, or other conductive liquids
- 4) If the product does not operate normally by following the operating instructions
- 5) If the product has been dropped or damaged in any way
- 6) When the product exhibits a distinct change in performance.

P. 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.

Q. 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.

R. Heat: The product should be situated away from heat sources such as radiators, heat registers, stoves or other products that produce heat.



Learn more about SWR products and artists
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swrsound.com



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