This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT! FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:

WATER AND MOISTURE: Appliance should not be used near water (near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

POWER SOURCES: The product should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

GROUNDING OR POLARIZATION: Precautions should be taken so that the grounding or polarization is not defeated.

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 or adrivest them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

SERVICING: The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

FUSING: If your unit is equipped with a fuse receptacle, replace only with the same type fuse. Refer to replacement text on the unit for correct fuse type.

SAFETY INSTRUCTIONS (EUROPEAN)

The conductors in the AC power cord are colored in accordance with the following code.

GREEN & YELLOW—Earth BLUE—Neutral BROWN—Live

U.K. MAIN PLUG WARNING: A molded main plug that has been cut off from the cord is unsafe. NEVER UNDER ANY CIRCUMSTANCES SHOULD YOU INSERT A DAMAGED OR CUT MAIN PLUG INTO A POWER SOCKET.

LIMITED WARRANTY

Your Carvin product is guaranteed against failure for 1 YEAR unless otherwise stated. Carvin will service and supply all parts at no charge to the customer providing the unit is under warranty. Shipping costs are the responsibility of the customer. CARVIN DOES NOT PAY FOR PARTS OR SERVICING OTHER THAN OUR OWN. A COPY OF THE ORIGINAL INVOICE IS REQUIRED TO VERIFY YOUR WARRANTY. Carvin assumes no responsibility for horn drivers or speakers damaged by this unit. This warranty does not cover, and no liability is assumed, for damage due to: natural disasters, accidents, abuse, loss of parts, lack of reasonable care, incorrect use, or failure to follow instructions. This warranty is in lieu of all other warranties, expressed or implied. No representative or person is authorized to represent or assume for Carvin any liability in connection with the sale or servicing of Carvin products. CARVIN SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

MAINTAINING YOUR EQUIPMENT

Avoid spilling liquids or allowing any other foreign matter inside the unit. The panel of your unit can be wiped with a dry or slightly damp cloth in order to remove dust and bring back the new look. As with all pro gear, avoid prolonged use in caustic environments (salt air). When used in such an environment, be sure the amplifier is adequately protected.

SERVICE

In the USA, please go to www.carvinservice.com

Outside the USA, contact your dealer or go to http://www.carvinworld.com for your nearest service center. Include a written description of the problem with serial number and date of purchase.

CAUTION

RISK OF ELECTRIC SHOCK

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL! THIS UNIT CONTAINS HIGH VOLTAGE INSIDE!

CARVIN ENGINEERING DATA

B2000 BASS AMPLIFIERS OPERATING MANUAL

The **B2000** mono block bass head offers classic natural bass tone with one of the highest powered amps in the industry. The **B2000** delivers 700w at 8Ω, 1300w at 4Ω and 2050w at 2Ω. All this power is housed in a 2U lightweight 14lb chassis.

Class A input stages produce the harmonic basis for the preamp right from the input jack. It begins with a boutique flat response, then we add 6 tone controls for you to carve out your signature sound. Harmonic content increases as you turn up the Drive control producing a growl at maximum settings. A 12AX7 preamp tube yeilds warm tube harmonics, which is switchable in/out of the preamp circuit. Solid design, bullet-proof construction and a list of indispensable features assures **B2000** will be the heart of your rig for years to come.

- Discrete Class A input stages
- 12AX7 preamp tube (in/out switchable)
- Active/Passive input gain switch with input CLIP indicator
- Preamp DRIVE and master VOLUME controls
- Six EQ controls: SUB BASS, BASS, LOW MID, MID, HIGH MID, and TREBLE
- Signal MUTE front panel switch (also controlled by optional FS22 footswitch)
- EFFECT LOOP front panel bypass switch (also controlled by optional FS22 footswitch)
- DIRECT OUT balanced XLR with independent LEVEL control, switchable "Pre-Post" and "Ground Lift", DC isolated
- TUNER output jack independent of MUTE switch
- Internal OPTO (optical isolation) clip-activated power amp limiter with "limiter free" normal operation
- High current combo SPEAKON® connectors with 1/4" speaker inserts
- Metal shaft controls with threaded metal bushings mounted directly to front panel
- 19" 2U aluminum chassis

GETTING STARTED QUICKLY

If you are like most players, you probably want to plug in your new amp and get started playing right away. Before you start, be sure your amp is plugged into the correct AC voltage.

1. With POWER off, connect a speaker cabinet to one of the rear SPEAKER OUTPUTs.
2. Set the VOLUME and DRIVE to "0" and set the ACTIVE INPUT switch for your type of bass.
3. Set all tone controls to their center "5" position. This is the "FLAT" setting for the amp.
4. Now, turn the amp ON. Turn the output level of the bass guitar fully up. Gradually increase the amp VOLUME control to the desired level. If no sound is heard, turn down the VOLUME control and check the MUTE and PROTECT LEDs.
5. Increasing the DRIVE control will add harmonic richness to your sound. Turning up the DRIVE also increases volume. Re-adjust the VOLUME after adjusting the DRIVE.
6. Adjust the tone controls to your liking. Keep in mind that turning up a tone control isn't always the answer. Sometimes turning down one of the MID controls will get you the sound you want. Depending on your speakers you may get more volume and clearer bass from your cabinet by lowering the SUB BASS control and increasing the BASS or LO MID control.
7. Need more volume? There is a limit to the amount of volume a speaker can produce and driving a speaker beyond it's limit can damage it. Even though the B2000 is a powerful amp, adding more speakers is the only way for substantially more output. Every time you double your speakers, you increase your acoustic output by a factor of four.

DESIGNED FOR THE RIGORS OF TOURING

The **B2000** is constructed using a heavy-duty aluminum chassis. All internal cabling is securely tied and harnessed. Every circuit card is MIL SPEC, double-sided, through-hole plated, fire retardant FR-4 glass epoxy.

RECEIVING INSPECTION—read before getting started

INSPECT YOUR UNIT FOR ANY DAMAGE which may have occurred during shipping. If any damage is found, please notify the shipping company and CARVIN immediately.

SAVE THE CARTON & ALL PACKING MATERIALS. In the event you have to re-ship your unit, always use the original carton and packing material. This will provide the best possible protection during shipment. CARVIN and the shipping company are not liable for any damage caused by improper packing.

SAVE YOUR INVOICE. It will be required for warranty service if needed in the future.

SHIPMENT SHORTAGE. If you find items missing, they may have been shipped separately. Please allow several days for the rest of your order to arrive before inquiring.

RECORD THE SERIAL NUMBER on the enclosed warranty card for your records. Keep your portion of the card and return the portion with your name and comments to us.

USA customers register online at: **www.carvin.com/registration**
All other countries register online at: **www.carvinworld.com/registration**

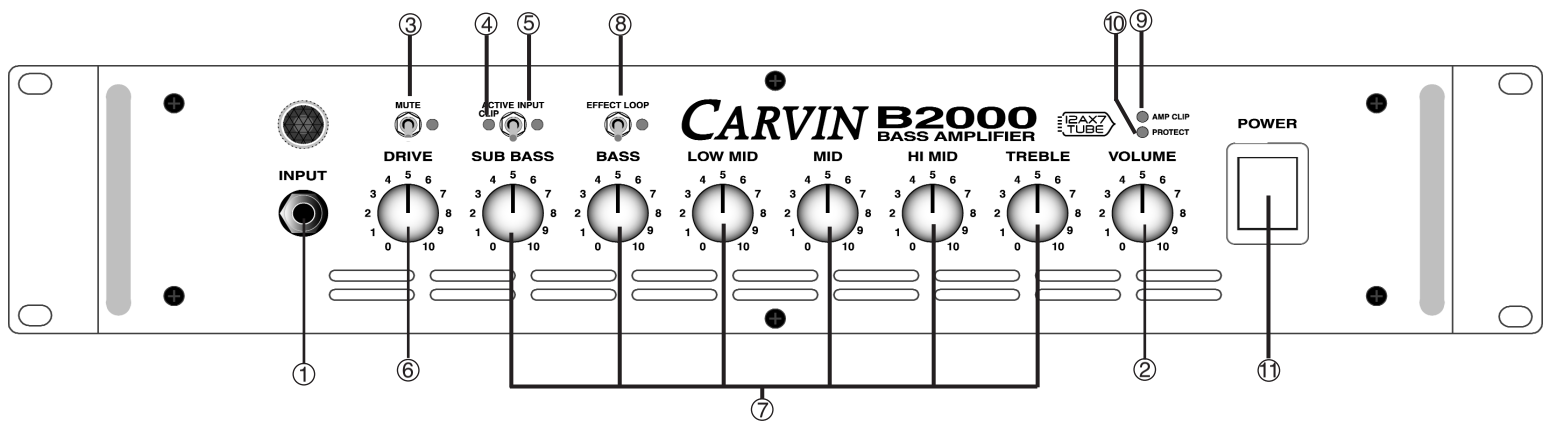
B2000 SPECIFICATIONS:

Output Power		
8Ω,	THD <1.0%	700w
4Ω,	THD <1.0%	1300w
2Ω,	THD <1.0%	2050w
Input Impedance:		>200K
Tone Controls:		±12dB @ 40, 100, 400, 800, 2k, 6k (Hz)
Drive Control:		Varies input gain and harmonic content
AC Requirements:		Auto switches 120VAC 60 Hz/240VAC 50 Hz
Power Requirements:		B2000: 1900VA @ full power
Dimensions (no cabinet):		(2U) 3.5"H x 19"W x 10.5"D
Weight :		14 Lbs
Warranty:		One year parts and labor

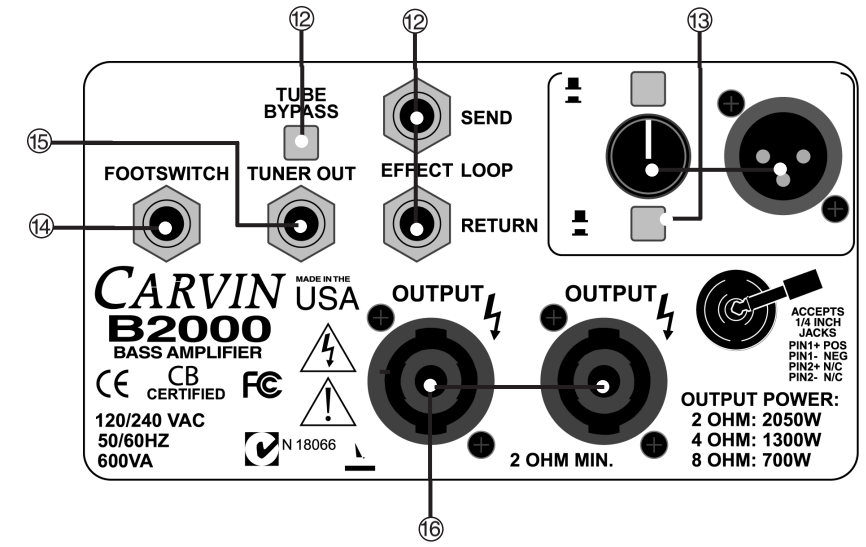
CARVIN

76-41500B 012604

FRONT PANEL CONTROLS



REAR PANEL CONTROLS



1. INPUT JACK
The 1/4" **INPUT** jack accommodates both passive and active instruments. The high impedance *Class A* input stage offers enough headroom to perform without clipping even when used with high output active basses. Input gain is adjusted with the **DRIVE** control (**6**) and the **ACTIVE INPUT** switch (**5**).

2. VOLUME CONTROL
The **VOLUME** control adjusts the output level to the speakers. Adjusting the **DRIVE** control will also change your output level.

3. MUTE SWITCH/LED
The **MUTE** switch will stop all output signals with the exception of the **TUNER** and **EFFECT SEND** signals. The **MUTE** function can also be remotely controlled from the rear **FOOTSWITCH** jack using the optional **FS22** footswitch. The blue LED next to the **MUTE** switch will light whenever the amp is muted. The footswitch will have no effect if the front panel **MUTE** switch is on in the UP position.

4. CLIP LED
The red **CLIP** LED indicates that the input is near clipping. Since the preamp is designed with several *Class A* input gain stages and the ability to be overdriven, the **CLIP** LED monitors only the first input stage and will not indicate when the **DRIVE** control is set to overdrive the preamp. To avoid input clipping, reduce the bass level or reduce the output level of devices placed between the bass and the input jack.

5. ACTIVE INPUT SWITCH / LED
The **ACTIVE INPUT** switch is used to match the input gain of the amp to instruments that contain active electronics. If the preamp is being prematurely overdriven, flip the **ACTIVE INPUT** switch to the ON position. If the output of your bass is low and you are not getting enough volume from the speakers, be sure the **ACTIVE INPUT** switch is OFF and increase the **DRIVE** control. The blue LED indicates that the ACTIVE INPUT mode is ON.

6. DRIVE CONTROL
The **DRIVE** control adjusts the input gain to the preamp and the level of harmonics in the signal. With the **DRIVE** control set low, both input gain and harmonics are at a minimum for clean output. Increasing the **DRIVE** control causes the Class A gain stages to introduce more harmonics resulting in a rich sound typical of vintage tube amps. With the **DRIVE** control set near maximum, overdrive sounds can be produced. The **DRIVE** control can be used with the **ACTIVE INPUT** switch to get the sound you want. To reduce preamp overdrive while retaining the harmonics of a high **DRIVE** level setting, turn the **ACTIVE INPUT** switch ON or reduce the level on the bass guitar. Turning the **ACTIVE INPUT** switch OFF will make the preamp overdrive easier.

7. TONE CONTROLS
The six TONE CONTROLS are designed with the center frequencies most requested by professional bass players. To start, set each control at its center flat position (no tones are cut or boosted). Raise or reduce each control to get your desired tone.

	Center Frequencies
SUB BASS	40Hz
BASS	100Hz
LO MID	400Hz
MID	800Hz
HI MID	2kHz
TREBLE	6kHz

8. EFFECT LOOP SWITCH/LED
The **EFFECT LOOP** switch engages the rear effects loop connections. The effects loop can be turned on with the **EFFECT LOOP** switch on the front panel or by using the optional **FS22** footswitch. When the front panel switch is in the UP position, the loop is engaged regardless of the footswitch. The status of the effects loop is indicated on the front panel by the BLUE LED next to the **EFFECT LOOP** switch.
See EFFECT LOOP SEND/RETURN JACKS #12.

9. AMP CLIP LED
The **AMP CLIP** LED indicates that the power amp is being driven too hard. Reduce the volume level.

10. PROTECT LED
The **PROTECT** LED indicates that the power amp has gone into one of it's protect modes.

11. POWER SWITCH/(PROTECT RESET)
Push the upper portion of the POWER SWITCH to turn the amplifier on. If the large blue power indicator is on but no sound is coming out of the speakers, the amp may have gone into one of its protection modes. To reset the amp, turn the power off for 30 seconds and then turn the amp back on. If the problem persists, check for; a) The speaker impedance is too low for the amp, b) bad speaker cable, c) damaged speaker or, d) blocked rear fan intake.

HELPFUL HINTS

1) NO SOUND FROM AMP: The MUTE function has been inadvertently engaged, speakers have been improperly connected or Effect Loop has been improperly connected.
2) NO HIGH FREQUENCIES: Tweeters or midrange drivers have been damaged from too much power.
3) WEAK BASS: The speaker systems are wired out of phase to each other. To correct, reverse the wires on one of the speaker connectors.
4) DIR XLR HUM: Try switching the rear GND LIFT switch IN or OUT. Check for noise from external effects or bad cabling.

5) PROTECT MODE: The RED PROTECT LED provides the operator with information about the status of the amplifier. The PROTECT LED can come on under 3 different conditions (when this happens, speaker relays disconnect the speakers);
1) During power-up, the amplifier stays in a muted state for approx. 3 sec until it determines that everything is functioning normally (no output shorts or over temp conditions).
2) The RED PROTECT LED will illuminate when the output load draws excessive current or a direct short is detected caused by a shorted speaker cable or speaker system. Reset this condition by turning the amp off for two seconds and then on again. Check for shorted cables and that the total speaker impedance is not below 2 ohms.
3) Overheating is usually determined when the amp stops in the middle of a performance and the RED PROTECT LED comes on. If this is the cause, leave the amp on for the fan to cool the amp down. The amp will automatically reset within 3 minutes. The PROTECT LED will turn off when ready. Check for the following conditions; a) The rear intake air is not restricted, b) The intake air is not extremely warm, c) The front exhaust vents are not restricted, or d) No excessive speaker load (try other speakers or remove speakers if you have more than one connected to each channel).
Power supply protections are not indicated by the protection LED, but by the power turning off completely. If the protected state is a thermal power supply issue or an over current power supply issue, the power supply with reset it self and go through the same turn on cycle as when first turned on.

12. EFFECT LOOP SEND/RETURN JACKS
The **EFFFECT LOOP - SEND** and **RETURN** jacks are used to connect external effects into the signal chain. The loop is inserted after the DRIVE and TONE CONTROLS but before the VOLUME control. To use the effects loop, connect the **SEND** jack to the input of the effects unit and connect the **RETURN** jack to the output of the effects unit. The effects loop can be turned on with the **EFFECT LOOP** switch on the front panel or by using the optional **FS22** footswitch. When the front panel switch is in the UP position, the loop is engaged regardless of the footswitch. The status of the effects loop is indicated on the front panel by the BLUE LED "on" next to the **EFFECT LOOP** switch.

13. DIRECT OUT XLR
The **DIRECT OUT** XLR is a balanced output that can be configured in a number of different ways. The **PRE / POST** switch is used to select a pre or post preamp feed. In the **"PRE"** (OUT) position, a direct feed is taken off of the **INPUT** jack and is similar to using a direct input box at the bass guitar output. In the **"POST"** (IN) position, the feed is post the preamp section and contains all of the signal that is sent to the power amp and speakers. To set the output, use the **DIRECT OUT LEVEL** control. A **GND/LIFT** switch is also available for the **DIRECT OUT** XLR jack. Set this switch for the lowest noise when using this output. When the **GND/LIFT** switch is depressed, the signal ground is lifted from this jack thus eliminating any ground loops between the direct out and the gear it is feeding.

14. FOOTSWITCH
Connect the optional **FS22** footswitch to remotely control the MUTE function and the EFFECTS LOOP bypass. The first button on the **FS22** turns the MUTE on and off and the second button turns the EFFECTS LOOP on and off. Any standard footswitch with a stereo plug will work.

15. TUNER LINE OUT JACK (UNMUTED)
The **TUNER LINE OUT** jack is provided as a place to hook up a tuner. This output is unaffected by the MUTE function so that you may tune your bass quietly.

16. SPEAKER OUTPUTS
The **B2000** contains two **1/4"/SPEAKON®** combo speaker output connectors. Multiple speakers can be attached to either the 1/4" or SPEAKON® jacks so long as the total impedance is not below 2Ω. See SPEAKER COMBINATIONS AND OHMS chart.

17. TUBE BYPASS
The preamp 12AX7 Tube can be routed in or out of the preamp circuit using the bypass switch. Set the switch IN to send your bass signal through the tube. Set the switch in the OUT position to bypass the tube.

FOR MAXIMUM OUTPUT:

A. To get more output, use multiple speakers or enclosures. Every time you double your speakers, your acoustic output goes up by a factor of four. Load the amplifier down to its lowest minimum impedance for maximum RMS power.
B. To get the highest output from your **B2000** bass amp use two 4 ohm speakers. Plug two SPEAKON® cables into the rear SPEAKER OUTPUT connectors or daisy-chain another SPEAKON® from speaker to speaker. Two 4 ohm speakers will give you a total impedance of 2 ohms, which is the maximum power from your amp. If you use more than two 4 ohm speakers, your amp will shut off and go into the "protect" mode. To reset, turn your amp off and connect only two 4 ohm speakers.
C. SPEAKON® cables are recommended for your bass rig because of their high current capacity. While standard 1/4" speaker cables will work, the CARVIN 12 GA SPEAKON® cables will allow higher currents to pass through the cable to extract every watt from your amp.

SPEAKER COMBINATIONS and OHMS (Ω):

Four x 8Ω cabinets = 2Ω	(OK)
Three x 8Ω = 2.66Ω	(OK)
Two x 8Ω = 4Ω	(OK)
Two x 4Ω = 2Ω	(OK)
One 8Ω and One 4Ω cabinet = 2.66Ω	(OK)
Two 8Ω and One 4Ω = 2Ω	(OK)
One 2.66Ω and One 8Ω = 2Ω	(OK)
Two x 2Ω = 1Ω	(no)
Three x 4Ω = 1.33Ω	(no)
Two x 4Ω and One 8Ω = 1.6Ω	(no)

The **B2000** is a powerful amplifier. As with any amplifier, make sure your speakers are suitable for the available wattage. Driving speakers with too much wattage will cause them to distort and eventually fail. If distorted sound is coming from the speakers, reduce the volume until the distortion stops.