



# **2B-LP**

## **POWER AMPLIFIER**

### **OWNER'S MANUAL**

**UPDATED 2007-07-11**

## IMPORTANT SAFETY INSTRUCTIONS



The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage " within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



**WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.**

**DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, ARE PLACED ON THE EQUIPMENT.**

**TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE.**

**THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE.**

## BRYSTON LIMITED WARRANTY

Bryston analog audio circuits are warranted to be free from manufacturing defects for twenty (20) years from the original date of manufacture. The warranty includes parts and labour.

Bryston Digital circuits and cables are warranted for five years from the original date of manufacture. The warranty includes parts and labour.

Bryston products having motorized moving parts, excluding motorized volume controls, are warranted for three years from the original date of manufacture. The warranty includes parts and labour.

Bryston will remedy the problem by repair or replacement, as we deem necessary, to restore the product to full performance. Bryston will pay only return shipping costs for the full length of the specific product's warranty.

In the event of a defect or malfunction, contact Bryston's repair centers for return authorization. Products must be returned using original packaging material only. Packing material may be purchased from Bryston if necessary. This warranty is considered void if the defect, malfunction or failure of the product or any component part was caused by damage (not resulting from a defect or malfunction) or abuse while in the possession of the customer. Tampering by persons other than factory authorized service personnel or failure to fully comply with Bryston operating instructions voids the warranty. This warranty gives you specific legal rights and you may also have other rights which may vary from province to province and country to country.

As of 2006-02-22 Bryston will only warranty Bryston products purchased through authorized Bryston dealers. Bryston products with a date code of 0608 or higher (date code format is "yyww", where "yy" is the two least significant digits of the year and "ww" is the week of the year) must be accompanied by a copy of the bill-of-sale from a Bryston authorized dealer to qualify for warranty service. The warranty is transferable from the original owner to a subsequent owner as long as a copy of the bill-of-sale from the original authorized Bryston dealer accompanies the re-sale. The copy of the bill of sale to any subsequent owner need ONLY include the Name of the Bryston Authorized Dealer and the Model and Serial number of the Bryston product. The warranty will only be honored in the country of the original purchase unless otherwise pre-authorized by Bryston.

### **BRYSTON SERVICE in CANADA:**

Postal address: **PO. BOX 2170, Stn. Main  
PETERBOROUGH, ONTARIO  
CANADA K9J 7Y4**

Courier address: **677 NEAL DRIVE  
PETERBOROUGH, ONTARIO  
CANADA K9J 6X7**

PHONE: 705-742-5325  
FAX: 705-742-0882

### **BRYSTON SERVICE in the USA:**

**79 COVENTRY ST., Suite 5  
NEWPORT, VERMONT  
U.S.A. 05855-2100**

PHONE: 802-334-1201  
FAX: 802-334-6658  
E-mail: [usaser@bryston.ca](mailto:usaser@bryston.ca)

### **BRYSTON SERVICE outside Canada and the USA:**

contact your local distributor or

CHECK OUR WEB SITE:  
E-MAIL BRYSTON DIRECTLY:  
FAX BRYSTON DIRECTLY:  
PHONE BRYSTON DIRECTLY:

[www.bryston.ca](http://www.bryston.ca)  
[cdnser@bryston.ca](mailto:cdnser@bryston.ca)  
01-705-742-0882  
01-705-742-5325

## GENERAL DESCRIPTION

Bryston's 2B-LP stereo power amplifier consists of two amplifier modules, each with its own power supply, which can be operated independently or combined (MONO mode) to form a single 200 watt amplifier (8Ω load) in a 1 rack height chassis. Operated independently (DUAL mode) each channel can deliver 60 watts into 8Ω (or 100 watts into 4Ω). Each of the two amplifier modules use 2 of Bryston's custom power transistors for a total of 4 output devices per 2B-LP.

## POWER CONSIDERATIONS

In general, if your preamp has a three prong grounded line cord you can avoid local ground loops which could cause hum or noise in the system by plugging the preamp's line cord into the same wall outlet next to the power amp.

## CLIPPING INDICATORS

The 2B-LP amplifier uses a pair of 2 colour LEDs with green indicating power on and red indicating actual overload or distortion.

## SPEAKER POWER HANDLING & FUSE PROTECTION

Most speakers will safely absorb an undistorted musical signal up to the full power capability of even large amplifiers like the 2B-LP (DUAL mode). However, once the signal starts to be clipped the distortion by-products generated by the overdriven signal can result in very high power levels fed to the smallest and most fragile of the speaker's components. It should be noted that an amplifier is quite capable of distorted power levels of twice the undistorted rating and that all the excess power goes to the high frequency driver. It is also quite possible to damage the woofer by causing it to exceed its excursion limits and impact against the back of the magnet by doing such things as turning up the bass control on a preamp and playing music quite loud. This is especially true with amplifiers which can develop full undistorted power down to extremely low frequencies as all Bryston amplifiers can. Many speaker manufacturers recommend series fuses to protect the drivers in case overload. If you wish to use fuses follow the manufacturers recommendations since even small increases in current ratings of a fuse will result in large increases in power allowed. Example: A 3A fuse will allow about 70 watts to pass, a 4A fuse 130 watts and a 5A fuse nearly 200 continuous watts.

It should be emphasised that almost any amplifier is capable of inflicting damage on almost any speaker if used in a thoughtless or abusive manner and that Bryston cannot be responsible for speaker damage caused in this way.

## BRIDGED OPERATION (MONO mode)

When operated in BRIDGED (MONO) mode the two internal amplifier sections are operated out of phase and the load is connected between the two HOT (RED binding post) terminals with no connection to ground. The two amplifier sections operate together to form a single push-pull amplifier with double the normal output voltage. In this mode the amplifier can generate output voltages of greater than 42v(rms) into loads as low as 8 ohms thus producing output power levels exceeding 200 watts (rms). (N.B. Only the left channel input is used in MONO mode.)

## INPUT CONNECTORS

The 2B-LP is supplied with one pair of input connectors; either unbalanced RCA/phono connectors on the home audio version or 3 pin balanced XLR jacks (pin 1 is ground, pin 2 is positive & pin 3 is negative) with fully discrete active input circuitry on PRO units. PRO models also come equipped with independent, front mounted level controls.

All input connectors are gold plated and should be used only with quality gold plated input cable connectors as a poorly plated connector will eventually corrode through the gold flash. Bryston makes cables with appropriately heavily plated, high quality connectors, available through your dealer.

## OUTPUT CONNECTORS

The 2B-LP is equipped with four binding post terminals (2 red, 2 black) which can accept either standard banana plugs or bare wire. Refer to the rear panel hook-up diagram and to the descriptions of DUAL (stereo) and MONO operation for details on how to connect speakers to these terminals. Since the binding posts are gold-plated we recommend gold-plated banana plugs be used for the lowest distortion.

**N.B.** Do not attempt to remove the red or black connector nuts from the binding post connectors. They are not removable and attempting to force them off may break the connector or strip the threads.

## OUTPUT CABLES

For some time there have been available on the market special speaker cables constructed for extra high current and low loss and distortion. These cables will cause no difficulty or instability with any Bryston amplifier. In fact, we recommend that low inductance cables be used for the smallest loss of signal between amplifier & speaker.

## GROUNDING and the GROUND SWITCH

The left most switch on the rear panel is a GROUND LIFT switch. It is connected between the chassis ground (including the third prong on the power line cord) and the signal ground. This switch is normally left in the connected (closed) position. Occasionally a multi-amplifier rack installation, or an unusual grounding situation with a preamp using a three wire power line cord, will cause a ground loop between the signal ground and the chassis ground. This switch will allow the elimination of the resulting hum in such cases without resorting to a "cheater" plug by switching to the separated (open) position. Note that this switch does not disconnect

## REMOTE ON/OFF CONTROL (optional)

Some 2B-LP models come equipped with a remote on/off control feature. This feature allows the amplifier to be turned on and off by application of a control voltage of 12V (AC or DC) at 5mA. The control voltage is connected via the dual spring loaded terminal block located beside the "Remote/Local" toggle switch. To insert wires press a small (1/8" wide maximum) blade screwdriver into the small rectangular orange slotted levers located at the top of the terminal blocks. While pressing in against the lever, insert the control voltage wires into the circular openings, then release the lever. The terminal blocks can accept stranded wire gauges between 18 to 26 AWG. To bypass the remote on/off control, place the toggle switch in the "LOCAL" position. To turn the power amplifier off, place the toggle switch in the centre position. Only when the toggle switch is in the "REMOTE" position will the 2B respond to a remote control voltage. Please note that some 2B-LP models may contain a mechanical push-button power switch located on the front panel. This mechanical power switch is in series with the remote electronic power switch, and must therefore be in the ON (pressed in) position to enable the amplifier. If the front power switch is in the OFF (out) position, then the amplifier will be off regardless of the position of the rear mounted "Remote ON/OFF" switch or the presence or absence of a dc control voltage. The control voltage must be 12V at 5mA, but it can be either AC or DC due to an internal rectifier circuit. If a DC control voltage is used, it does not matter which terminal is connected to positive and which is connected to negative.

## CSA ADVISORY:

This amplifier will deliver full undistorted power at 4 ohms without current limiting and will deliver a dynamic musical signal to a 4 ohm load without overheating. However, Canadian Standards Association (CSA) procedures call for testing at 33.3% of full measured undistorted power into 4 ohms continuously which is an extreme condition insofar as internal amplifier heat dissipation and causes cycling on the heat-sink-mounted thermal circuit breakers. CSA testing procedures call for these thermal breakers to be artificially bypassed whereupon an additional resetting thermal protection mechanism, internal to the power transformers, will come into play and will cycle to protect the amplifier from damage. CSA does not consider this "normal operation", however, and therefore considers this model "unacceptable" for 4 ohms loading.

## SPECIFICATIONS

Output power: 60 watts/ch @ 8Ω  
100 watts/ch @ 4Ω  
200 watts bridged @ 8Ω  
THD: <.01%, 20Hz to 20KHz  
NOISE: 100dB below full output  
Crosstalk: below noise, 20Hz to 20KHz at 50 watts  
Slew rate: >60v/μsec  
Damping factor: >500@20Hz, ref. 8Ω  
Power BW: .5Hz to >500KHz  
Input sensitivity: .775v for 60W @ 8Ω  
Input impedance: 50KΩ unbalanced  
10KΩ balanced  
Power Consumption & Heat Load:  
1. Idle Current 58W  
2. Stereo 8 Ohms (50W ea.) 286W  
3. Stereo 4 Ohms (100W ea.) 498W  
4. Bridged 8 Ohms (200W) 504W  
5. Max. Wattage 504W  
6. Max. Heat Dissipation 304W / 1037 Btu/Hr

## 2B-LP EXTERNAL DIMENSIONS

