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### **IMPORTANT SAFETY INSTRUCTIONS**



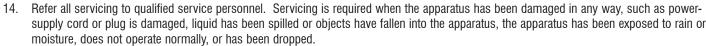
The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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.

- Read these instructions. 1.
- 2. Keep these instructions.
- Heed all warnings. 3.
- Follow all instructions. 4.
- Do not use this apparatus near water. 5.
- Clean only with dry cloth. 6.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. 7.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 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.
- Only use attachments/accessories specified by the manufacturer.
- 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.





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 shipping costs one way (usually the return portion) during the first three years of warranty coverage.

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: P.O. 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 E-mail: cdnser@brvston.com BRYSTON SERVICE in the USA:

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

PHONE: 802-334-1201 802-334-6658 FAX:

E-mail: usaser@bryston.com BRYSTON SERVICE outside Canada and the USA:

contact your local distributor or

CHECK OUR WEB SITE: www.bryston.com E-MAIL BRYSTON DIRECTLY: cdnser@bryston.com FAX BRYSTON DIRECTLY: 01-705-742-0882 PHONE BRYSTON DIRECTLY: 01-705-742-5325



# INTRODUCTION

Thank you for purchasing a Bryston BP16 Preamplifier. We are confident it will provide you with many years of musical enjoyment. We would welcome any suggestions or comments you may have regarding the operation of your Bryston amplifier.

In the unlikely event that your amplifier may require service Bryston recommends that you retain the original shipping box and packaging material for future use if required.

# SETUP RECOMMENDATIONS

You may place your BP16 Preamplifier in any convenient location. Make sure you position the amplifier to maintain a direct line-of-sight between the hand-held remote and the remote sensor eye located on the front panel. If plugged in the BP16 will remain in standby indicated by the RED power LED on the front panel.

The amplifier is powered up by engaging the power button located on the front panel of the BP16 or by depressing the *POWER* button on the hand held remote control unit. The BP16 will power-up momentarily with mute engaged, indicated by the mute LED turning red on the front panel; it will then turn off within a few seconds. The *POWER* LED will stay lit green indicating normal operation.

### CONNECTIONS

### **ANALOG AUDIO INPUTS:**

The Bryston BP16 Preamplifier comes equipped with 8 pairs of gold plated analog RCA input connectors: TV, CD, AUX-1/PHONO, AUX-2/SPDIF, VIDEO, TUNER, RECORD IN and POWER AMP IN. All have and input impedance of 50K ohms

- POWER AMP IN is normally connected, internally, to PRE AMP OUT via the CONNECTED/SEPARATE slide switch located on the rear panel. When this switch is in the SEPARATE position, however, any line level audio input can be used at the POWER AMP INPUT jacks to drive the amplifier.
- In BP16-DA models the AUX2 (D1/D2) input jacks accept only SPDIF PCM bit streams. They do NOT accept analog audio input signals.
- In BP16-P models, which are equipped with a moving-magnet phono equalization module, the inputs labeled AUX1/PHONO accept moving magnet phono cartridge inputs. These inputs are NOT line level inputs in the BP16-P and cannot be used as such.

### **ANALOG AUDIO OUTPUTS:**

The Bryston BP16 Preamplifier comes equipped with 3 pairs of gold plated analog RCA jacks for outputs: 2 pairs of *PREAMP OUT* jacks and 1 pair of *RECORD OUT* jacks.

- PREAMP OUT is normally connected, internally, via the CONNECTED/SEPARATE switch, to POWER AMP IN
- RECORD OUT output is not affected by volume, balance or mute controls.

### **HEADPHONE JACK:**

There is a quarter inch headphone output jack available on the front panel of the Bryston BP16 Preamplifier. Inserting the headphone jack mutes *PREAMP OUT* automatically. You can adjust the volume setting of the headphones by using the volume control on the front of the BP16 Preamplifier. You may also utilize the remote control unit to adjust headphone volume. The headphones cannot be muted with the remote control unit or the front panel Mute. Only headphones with impedances of greater than 50 ohms should be used.

### **DIGITAL AUDIO INPUTS:**

In the BP16-DA model, which contains a stereo D/A converter module, there are 4 digital audio inputs available.

Two **TOSLINK** optical inputs are selected by pressing the **D3** (TOSLINK-1) or **D4** (TOSLINK-2) buttons on the front panel (when in digital mode) or on the handheld remote.

Two **SPDIF** coaxial inputs can be connected to the BP16-DA using the RCA input jacks labeled *D1* and *D2*. To select these inputs first place the unit in digital mode by pressing the *DIGITAL* • *Select* button on the front panel (or the *A/D* button on the handheld remote) and then press the *D1* or *D2* button on the front panel or on the remote). When the green LED above the font panel *DIGITAL* • *SELECT* switch button in ON concurrently with either the *D1* (CD), *D2* (TUNER), *D3* (TV) or *D4* (VIDEO) LEDs, then digital mode is engaged.

**Note:** Whatever digital input was previously selected in *Digital Mode* will be automatically reselected upon re-entering *Digital Mode* (from *Analog Mode*). Similarly, when re-entering *Analog Mode* from *Digital Mode* the previously selected analog input will be automatically reselected.

See also the *DIGITAL-to-ANALOG CONVERTER OPTION* section for more information.



# **CONNECTIONS** contd.

# WIRED (SERIAL DATA) REMOTE CONTROL:

There is one RS-232, one AUX IR input and two 12 volt trigger output connections as well. The RS-232 is bi-directional and allows for future software downloads from the Bryston website. It also interfaces with control systems such as Crestron and AMX.

### **CHASSIS GROUND:**

A chassis ground thumb screw terminal is provided on the rear panel.

### **12 VOLT TRIGGER CONNECTOR:**

These 12Vdc control outputs allow the BP16 to exert on/off control over compatible equipment. See "REMOTE POWER CONTROL" for more information.

### **AUXILIARY IR INPUT:**

This mono 1/8" (3mm) phone jack allows a direct connection to equipment whose remote control system provides an output from their infra-red LED drive circuit. The signal connected to this jack, which is expected to be a 5 volt logic level, should be  $\geq$ 2.5Vdc and  $\leq$ 10Vdc. The *tip* of the phone jack is positive (+) and the *ring* is negative (-).

# **LED STATUS INDICATORS**

**CLIPPING:** This LED (light emitting diode) will flash

RED when the output waveform is clipped thus indicating an overload condition.

MUTE: Lights RED to indicate the outputs are

muted..

**POWER**: GREEN indicates normal operation

**RED** indicates Standby

Blinking RED/GREEN a fault or thermal

overload problem in the unit.

### ANALOG ➤ Aux2 / DIGITAL ➤ Select:

In BP16-DA models: when this LED is illuminated green concurrently with either *D1*, *D2*, *D3* or *D4* LEDs, it indicates that the digital inputs *D1* (SPDIF), *D2* (SPDIF), *D3* (TOSLINK) or *D4* (TOSLINK) have been selected.

In BP16 & BP16-P models: when illuminated green this LED indicates that the line level analog audio input *AUX-2* has been selected.

# AUX1, CD, TUNER, TV/SAT VIDEO & RECORD:

One of these input source LEDs will light green to Indicate the active input. In digi-

tal mode these LEDs will light RED if the bit stream is either absent or unacceptable.

### BALANCE

When the left/right signal balance is being shifted one of these LEDs will light to indicate which channel is being attenuated. Balance can be adjusted in 1dB increments to up to -6dB in either direction. Stepping past -6dB in either direction will mute that channel fully and the LED for that channel will turn red. When both LEDs are on (red), PASS

When both LEDs are on (red), PASS
THROUGH mode is indicated. (See "Pass
Through Mode" on page 4)

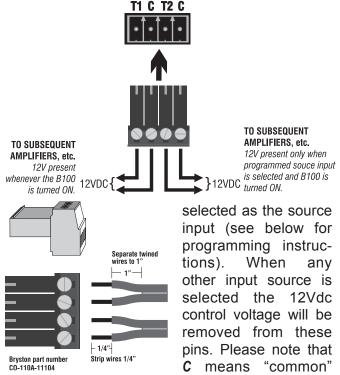
# REMOTE POWER CONTROL

12 VOLT TRIGGER CONNECTOR:

Two trigger outputs are provided. A 12Vdc signal is placed across the *T1* and *C* pins (either "C" pin can be used) of the *12V TRIGGERS* connector whenever the unit is fully powered up. When the unit goes into standby this voltage is removed.

A 12Vdc signal will be placed across the other pair of 12V TRIGGER output pins (T2 and either "C" pin) whenever a certain user programmed input is

B100-SST Power Amplifier REMOTE TRIGGER IN/OUT CONNECTOR



here and both **C** pins are electrically connected and identical.

# **PROGRAMMING the 12v TRIGGER**

By default the **72** triggered output is inactive. To program this output to become active, whereupon a control voltage of 12Vdc will appear across **72** & **C** terminals whenever a specific source is selected, use the handheld remote control as follows:

- Select the source that you want to coincide with 72 going active.
- While pointing the remote control at the BP16, press the *CODE* button, followed by the three digit code "247" using the keys numbered 1 through 0 in the illustration at the left. On your remote control these keys, or buttons, are labeled *AUX/PH* (2), *TUNER* (4), *D1* (7).
- The three digit code should be entered within a few seconds of pressing CODE button or the unit will automatically return to normal operation.
- To clear the T2 trigger output, press the CODE button followed by the 3 digit code "248": AUX/PH
   (2), TUNER (4), D2 (8).

# OPTIONAL IR REMOTE CONTROL



The Bryston model BR2 hand-helf infra-red remote control is avialable for use with the BP16. The BR2 can also control many other Bryston preamps and power amps. It features a solid machined aluminum enclusure and push-buttons and a back-lit button panel that will turn both ON (motion triggered) and OFF (inactivivity timeout) automatically.

When used with the BP16 the BR2 remote allows selection of all sources, volume up or down (the volume control is a motor-driven design), mute, left/right balance, power on/ off and discrete code entry.

We recommend maintaining a direct line-of-sight between the hand held remote unit and the front of the BP16 to ensure the most efficient operation of the remote features.

# PROGRAMMING the BR2 REMOTE

The automatic motion-sensing backlight function in the optional BR2 handheld infra-red remote control unit can be disabled by entering the 3 digit code "792" as follows:

- 1) Press and hold the **CODE** button for 5 seconds. Release when the LED flashes red.
- 2) After the LED stops flashing, enter the 3 digit code "792" by pressing the buttons *D1*, *D3* then *AUX/PH*
- 3) To re-enable the motion-sensing backlight function, repeat steps 1 and 2 above

To completely disable the backlight, enter the 3 digit code "797" as follows:

- Press and hold the *CODE* button for 5 seconds.
   Release when the LED flashes red.
- 2) After the LED stops flashing, enter the 3 digit code "797" by pressing the buttons *D1*, *D3* then *D1*
- 3) To re-enable the backlight repeat steps 1 and 2 above

# **SENDING CODES to the BP16 via the BR2 REMOTE CONTROL:**

Press the CODE button on the remote control (the red LED will light) and then enter the 3 digt code, as listed in the "Wired RS-232 Remote Control" section" below. The LED will flash to confirm transmission and then extinguish.

# **WIRED RS-232 REMOTE CONTROL**

Using the DB9 female connector at the rear of the unit, the BP16 can receive commands via a null modem cable at 9600 baud, 8 data bits, no parity and 1 stop bit (9600,8,N,1). Valid commands will return the ">" character indicating that the unit is ready to receive a new command. An invalid command will return the "!" character. These serial data commands are as follows:

000: power off 001: select analog source 1 (A/D)	058: mute on 059: mute off
002: select analog source 2 (AUX/PH)	061: record monitor toggle
003: select analog source 3 (CD)	062: record monitor on
004: select analog source 4 (TUNER)	063: record monitor off
005: select analog source 5 (TV)	081 - select digital source 1 (D1)
006: select analog source 6 (VIDEO)	082: select digital source 2 (D2)
007: volume up	083: select digital source 3 (D3)
015: power on/off toggle	084: select digital source 4 (D4)
008: volume down	245: set/reset Pass Through mode
019: balance left	247: Set Trigger 2 for current source
020: balance right	248: Clear Trigger 2 for current source
029: power on	255: System reset; restore defaults

# PASS THROUGH MODE

PASS THROUGH mode sets the pre-amp gain to 1 (unity gain) and locks out the volume & balance controls for any single analog audio source. For example, if the Front Left and Front Right outputs of a home theater sur-



round sound processer were connected to the TV input of the BP16, and then **PASS THROUGH** was engaged then wherever TV input is selected the volume and balance controls would be locked at unity gain. If other inputs were subsequently selected, volume and balance controls return to normal operation for those other input sources. Only the TV inputs would be locked at unity gain. PASS THROUGH mode, therefore, can only be assigned to one input at a time, but that input can be any one of the analog audio inputs. The power amplifier stage is not affected by PASS THROUGH mode. PASS THROUGH mode can only be set (or reset) by sending the 3 digit code "245" to the BP16 either from the handheld IR remote control or via the RS-232 serial data input. See "Sending Codes to the BP16 via the IR Handheld Remote Control" & "Wired RS-232 Remote Control". To reassign PASS THROUGH mode to a different input source simply select the desired input and re-send the "245" code to the BP16. To turn the deactivate PASS THROUGH mode, select the current *Pass Through* input and then send the "245" code to the BP16. The "245" toggles PASS THROUGH mode on and off.

# D/A CONVERTER OPTION

The BP16-DA comes equipped with stereo Digital-to-Analog converter (D/A or DAC) module. This module is also retrofittable to standard BP16 units.

A unique feature of the BP16-DA is its ability to utilize up to four independent digital sources (two SPDIF and two TOSLINK). These four digital inputs can be accessed by selecting **D1**, **D2**, **D3** and **D4** sources with the DAC feature enabled (by pressing the **DIGITAL** > **Select** button on the left end of the front panel).

Activate the DAC feature by pressing the **DIGITAL** > **Select** (AUX 2) button on the left side of the front panel (or **A/D** on the remote). The LED below the **DIGITAL** > **Select** button will turn Green. Pressing any of the following four buttons will cause their LEDs to light green, as well, to indicate a PCM digital source is present and connected properly.

- SPDIF 1 is accessed by selecting D1 on the front panel or the remote.
- SPDIF 2 is accessed by selecting D2 on the front panel or the remote.
- Optical 1 is accessed by selecting **D3** on the front panel or the remote.
- Optical 2 is accessed by selecting D4 on the front panel or the remote.

The source LED's will turn GREEN when a PCM digital bit stream is present. If there is no bit stream available or an incorrect bit stream (non-PCM) the LED will turn RED.

You may re-select Analog by simply depressing the

**DIGITAL** ► **Select** (AUX 2) button once more and the LED will extinguish.

All of the above functions are available from the hand held remote control as well.

# **MOVING-MAGNET PHONO OPTION:**

The BP16-P contains a *moving magnet* phono stage. The Phono Stage is modular and can be added to the standard BP16 model later if required by your Bryston dealer.

Bryston's MM Phono section features state-of-theart accuracy in equalization, extremely low noise and distortion, and provides headroom margins sufficient to prevent overload from any known phono source. To access the Phono section simply plug your left/right turntable interconnect leads into the left/right *AUX-1/PHONO* inputs on the rear panel of the BP16 and press the *AUX-1/PHONO* button on the front panel. The *AUX-1/PHONO* LED will turn green. If your turntable provides a separate ground lead, system noise may be minimized by connecting it to the ground lug in the center of the rear panel.

# **BP16 SPECIFICATIONS:**

Frequency response: 20Hz to 20KHz, ±.05dB

IMD or THD: <.007%
High Level Sensitivity: 500mV

Noise: 100dB @ 20Hz to 20KHz (ref: 1V input)

**GENERAL:** 

Weight:

**Dimensions:** 17" or 19" wide X 4.55" high x 14" deep

(433mm or 483mm X 116mm X 353mm) with packaging approx. 16 lbs (7.3kg.) without packaging approx. 11 lbs (5kg)

#### INPUT SELECT BUTTONS ~ DIGITAL MODE (BP16-DA only) When the LED above the AUX-2 (DIGITAL > Select) switch is illuminated

green concurrently with either the D1 (CD), D2 (TUNER), D3 (TV) or D4 (VIDEO) LEDs, the unit is in **DIGITAL MODE**. The **D1**, **D2**, **D3** or **D4** buttons are then used to select one of the 4 digital audio inputs.

Press the D1 button: SPDIF1 source is selected Press the D2 button: SPDIF 2 source is selected Press the D3 button: TOSLINK 1 source is selected Press the D4 button: TOSLINK 2 source is selected

#### INPUT SELECT BUTTONS ~ ANALOG MODE

When only one of the source select LEDs is illuminated the unit is in ANALOG MODE. The name under the button is the source selected. Exceptions are as follows:

- In BP16-P models, the AUX-1/PHONO LED indicates that the moving-magnet phono input is selected.

  In BP16 & BP16-DA models the AUX-1/PHONO LED indicates
- that the analog audio AUX-1 input is selected.

### POWER BUTTON & LED

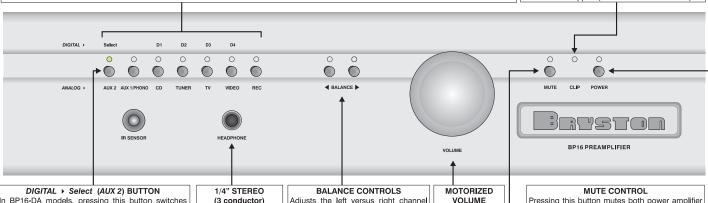
This button toggles the power on & off. The LED indicates the following:

GREEN: normal operation standby

Blinking RED receiving valid data Blinking RED/GREEN: thermal overload or other fault

### CLIPPING LED

When illuminated RED indicates that either or both channels are clipped (overloaded or overdriven)



In BP16-DA models, pressing this button switches between Analog and Digital Input modes. See notes above and in "CONNECTIONS" section of this manual

In BP16 & BP16-P models, this button selects the line level analog audio AUX-2 input.

### (3 conductor) HEADPHONE JACK.

It is recommended that this iack be used only with headphones having >50 ohms impedance. Plugging in a 1/4" phone plug will automatically mute the power amplifier outputs and the MUTE led will illuminate red.

Adjusts the left versus right channel levels. Pressing the left ( ◀ ) or right ( ▶ ) buttons will attenuate that channel by 1 decibel for each press of the button. When either channel is attenuated this way, the LED above the affected channel will be illuminated green Pressing the button a 7th time will cause that channel to fully mute and the LED above the button will light red.

CONTROL

Can be operated

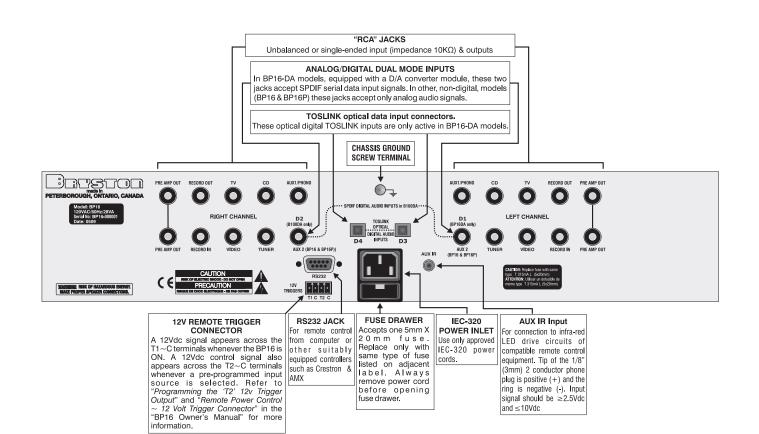
manually or via the

remote control.

The balance control does not affect the RECORD OUT outputs.

Pressing this button mutes both power amplifier channels fully and the LED lights red. Pressing the button again releases the mute condition and the LED extinguishes.

The mute control does not affect the RECORD OUT outputs or the headphone outputs.





# **BP16 PREAMP**EXTERNAL DIMENSIONS & CLEARANCE ENVELOPE

