

# BRYSTON OWNER'S MANUAL

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Instructions For Bryston

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ST Series Amplifiers

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Models 3B, 4B, 7B and 8B

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# GENERAL INSTRUCTIONS

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## Warranty Information:

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Thank you for choosing a Bryston product. We welcome any suggestions you may have, or comments regarding the operation of your amplifier. We consider you, our customer, to be Bryston's most important resource and your opinion is very much appreciated.

Bryston products are warranted to be free from manufacturing defects for a minimum of 20, (twenty), years from the original date of manufacture. This includes all parts, labor and one-way return shipping. This warranty covers the original owner and any subsequent owners. The warranty is retroactive for any Bryston product purchased within the last twenty years. Tampering by any

one other than factory authorized personnel voids the warranty.

Warranty service may be obtained by returning the unit to any authorized Bryston dealer or distributor. You may also contact the Bryston factory directly at the location listed on the rear page of this manual.

Please keep the original box and all packing material. This will ensure the amplifier is protected in the unlikely event you have a problem and must return it for service.

No warranty card is necessary to initiate your coverage. Please refer to the back page for more detailed warranty information.

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## Setup Recommendations:

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We recommend that you do not place the amplifier in a totally enclosed area. Allow some space at the top, sides and back as your Bryston amplifier relies on convection cooling and some air flow is desirable.

Make sure the power switch on the front of the amplifier is in the off (out) position. Plug the power cord (female end) into the rear of the amplifier, then insert the male end into the wall outlet.

All Bryston amplifiers contain high quality, dedicated circuitry in the power supplies to reject RF, line spikes and other power-line problems. Bryston power amplifiers **do not** require any specialized

power line conditioners. Simply plug the amplifier directly into its own wall socket.

Make sure the stereo switch is in the 'individual' (stereo) position and connect your loudspeakers, ensuring that the positive (red) and ground (black) terminals on your amplifier are connected to the positive and ground terminals on your speakers. Connect the right and left outputs from your preamplifier to the right and left inputs of the amplifier. Check that the rear panel switch for choosing the balanced (XLR) or non-balanced (RCA) input is in the proper position for your installation.

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## Clipping Indicators:

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All Bryston amplifiers use bicolor LEDs with green indicating power on and red indicating actual overload or distortion. If the LED indicator contains a substantial red content, it should be considered as a sign that the level is too high and may cause speaker damage if it continues. It should be remembered that the Bryston ST series are powerful amplifiers, and that it is possible to damage almost any speaker if an amplifier is used in a thoughtless or abusive manner, and that Bryston cannot be responsible for damage caused in this manner.

The clip-sensing circuit uses an AC comparator to detect any source of signal distortion including clipping, short circuits in cabling, excessive DC or supersonic sig-

nals, whether at the input or output. Most conditions which could cause the red LED to light for more than a moment or two can be dangerous to your loudspeakers and should be corrected immediately.

It is normal for the individual LEDs to decay at different rates, sometimes with colour changes, when the amplifier is turned off.

If one or both of the LEDs go out, check to see if any of the fuses, (located on the back panel just above the power cord), has blown.

**CAUTION: Replace fuses only with the type and size listed on the amplifier rear panel.**

# BRYSTON ST SERIES

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## **Bryston 3B-ST Amplifier Description:**

The Bryston 3B-ST stereo amplifier consists of two amplifier modules, each with its own +/-55v power supply. Each of the two amplifier modules uses four of Bryston's custom power transistors for a total of 8 output devices.

The channels may be operated independently,

for stereo at 120 watt per channel @ 8 Ohms, 200 Watts @ 4 Ohms, or combined (monaural) to form a single 400 watt amplifier into 8 Ohms. Please refer to "Bridged Operation" section of this instruction manual and to rear panel diagrams for clarity.

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## **Bryston 4B-ST Amplifier Description:**

The Bryston 4B-ST stereo amplifier consists of two amplifier modules, each with its own +/-85v power supply. Each of the two amplifier modules uses eight of Bryston's custom power transistors for a total of 16 output devices.

The two channels may be operated indepen-

dently, (at 250 Watts per channel @ 8 Ohms, 400 Watts @ 4 Ohms), or combined to form a single 800 watt monaural amplifier into 8 Ohms. Please refer to "Bridged Operation" section of this instruction manual and to rear panel diagrams for clarity.

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## **Bryston 7B-ST Amplifier Description:**

The 7B-ST power amplifier consists of two amplifier modules, each with its own +/-60V power supply. Each 7B employs 16 of Bryston's custom output devices, for a total of 32 per stereo pair.

The modules may be combined in either of two modes to form a single mono power amplifier capable of up to 800 watts. The first of these modes, (Series), connects the modules in a bridged configuration. The output voltage swing is thus

additive and is appropriate for driving loads from 3 to 8 ohms.

The second mode, (Parallel), yields the voltage swing of a single amplifier module but the current available is additive and is appropriate for driving loads from 1 to 3 ohms.

Please refer to "Bridged Operation" section and to rear panel diagrams for further clarity.

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## **Bryston 8B-ST Amplifier Description:**

The 8B-ST power amplifier consists of four independent amplifier modules, each with its own +/-55V power supply, and four of Bryston's custom output devices for a total of 16. The 8B may be configured to drive two, three or four speakers: Four channels at 120 watts into 8 ohms; or two channels at 120 watts plus one channel at 400 watts; or two channels at 400 watts. This provides you with

excellent flexibility in any present or future audio or video system.

With four discrete channels available, the Bryston 8B-ST is also an ideal choice to bi-amplify your audio or video system, either actively using an electronic crossover such as Bryston's 10B, or passively in those speakers using independent connectors for the high and low frequency drivers.

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## **Important Notes:**

Bryston ST series amplifiers are available in specific THX versions.

The triangular fuse symbol on the rear panel of each ST amplifier, adjacent to the fuse drawer in the power-cord receptacle, gives the Ampere rating and type.

***THIS IS A SAFETY CRITICAL COMPONENT. Replace fuses only with the proper value.***

Bryston amplifiers rated for 120V may be operated on a 60Hz line only. Please contact the factory for information on 230V applications.

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# BRYSTON ST SERIES

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## Input and Output Connectors:

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Bryston amplifiers come equipped with one unbalanced RCA (single-ended), and one balanced combination XLR-1/4-inch jacks per channel. All inputs use fully discrete active buffer circuitry. The balanced inputs use a combination 3-pin XLR, (pin-1 ground, pin-2 positive, pin-3 negative), and 1/4" tip, ring and sleeve, (tip positive), input connector.

Bryston ST series amplifiers have gain levels which match the type of input used. This provides overall system gain which is consistent whether RCA, XLR/Phone, bridged or stereo is selected.

All input connectors are gold-plated and should

only be used with high-quality gold-plated interconnect cable, as a poorly plated connector will eventually corrode through the gold flash. Bryston interconnect cables, (XLR and RCA), with heavily gold plated, quality connectors are available through any authorized Bryston dealer.

Output connectors consist of red/black 5-way binding post terminals, which can accept standard banana plugs, spade lugs, pins, or bare wire. Since the binding posts are gold-plated, we recommend gold plated connectors also be used on the speaker cables for optimum low-distortion performance.

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## Bridged Operation:

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When operated in the bridged (monaural) mode, the two internal amplifier sections operate out of phase, and the load is connected between the two hot, (red binding post), terminals without any connection to ground, (black posts) (excluding the 7B). Please refer to the appropriate diagrams on the adjacent page for clarity.

Only the left unbalanced or balanced input is used in the monaural mode, (3B and 4B); the right input is left open. The two amplifier sections operate together to form a single push-pull amplifier with double the normal output voltage.

The Bryston 8B-ST four-channel amplifier combines channels 1 and 2 to provide one bridged

amplifier and channels 3 and 4 for another bridged amplifier. Channel 1 input is used when bridging channels 1 and 2, Channel 4 input is used to bridge channels 3 and 4. The 8B-ST can also be used as a three-channel amplifier by bridging one pair of channels only.

The 7B-ST is a monaural amplifier. The output-stage can be configured, with the use of a rear panel switch, in one of two operating modes. A series mode, (higher Voltage, for 3 to 8 Ohms or a parallel mode, (higher current, for 1 to 3 Ohms, depending on the specific loudspeakers voltage/current requirement.

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## Bryston 8B-ST Amplifier Description:

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A ground lift switch is located on the rear panel of the amplifier. It is connected between the chassis ground, (including the third prong on the power cord), and the signal ground. This switch is normally left in the connected, (down), position.

Occasionally a multi-amplifier installation or a grounding situation with another component, (CD player, video recorder, television etc.), which may also use a 3-prong grounded line cord, will cause a 'loop' between the signal ground and the chassis ground. Opening the ground lift switch, (separated or up position), will reduce the resultant system hum in most cases, without resorting to a "cheater plug".

***Note: this switch does not disconnect the chassis from the third prong on the power cord which must be left intact for safety reasons.***

When turning off or powering up your Bryston power amplifier it is normal to hear a slight 'click' from your loudspeakers. This is due to Bryston's mute relay. This will not produce any problems nor harm your loudspeakers or any other components in your audio or video system.

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### 3B-ST and 4B-St Rear Panels:

TO REDUCE THE RISK OF FIRE  
REPLACE WITH FUSES AS MARKED  
POUR DIMINUER LE RISQUE D'INCENDIE  
REMPLEZ AVEC LES FUSIBLES TEL QU'INDIQUE

**CAUTION**  
RISK OF ELECTRIC SHOCK - DO NOT OPEN  
**PRECAUTION**  
RISQUE DE CHOC ELECTRIQUE  
NE PAS OUVRI

**INDIVIDUAL OPERATION**

CH2 250W/8Ω    CH1 250W/8Ω

**BRIDGED OPERATION**  
800W/8Ω min  
CLASSE 2 WIRING PERMITTED  
CABLAGE DE CLASSE 2 PERMIS

**BRISTON**  
AMPLIFIER AMPLIFICATEUR  
4B ST SERIES  
120V 60Hz 1560W  
BRYSTON LTD./LITE  
PETERBOROUGH, ONT.  
MADE IN  
FABRIQUE AU CANADA

BRIDGED    CH1    INPUTS  
MODE    UNBAL    BAL  
INDIVIDUAL    CH2

DATE CODE: \_\_\_\_\_

**WARNING** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK  
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE  
**AVERTISSEMENT** POUR DIMINUER LE RISQUE D'INCENDIE OU DE CHOC ELECTRIQUE  
NE PAS EXPOSER CE MATERIEL A LA PLUIE OU A L'UMIDITE

### 7B-St Rear Panels:

TO REDUCE THE RISK OF FIRE  
REPLACE WITH FUSES AS MARKED  
POUR DIMINUER LE RISQUE D'INCENDIE  
REMPLEZ AVEC LES FUSIBLES TEL QU'INDIQUE

**CAUTION**  
RISK OF ELECTRIC SHOCK - DO NOT OPEN  
**PRECAUTION**  
RISQUE DE CHOC ELECTRIQUE  
NE PAS OUVRI

**"WARNING!"**  
RISK OF HAZARDOUS ENERGY!  
MAKE PROPER SPEAKER CONNECTIONS.  
SEE OPERATING MANUAL BEFORE USING.

GROUND LIFT

**SERIES OPERATION**  
800W/4Ω min

**PARALLEL OPERATION**  
800W/1Ω min

**BRISTON**  
AMPLIFIER AMPLIFICATEUR  
7B ST SERIES  
120V 60Hz 1350W  
BRYSTON LTD./LITE  
PETERBOROUGH, ONT.  
MADE IN  
FABRIQUE AU CANADA

SERIES    INPUT  
MODE    UNBAL    BAL  
PARALLEL

DATE CODE: \_\_\_\_\_

**AVERTISSEMENT** POUR DIMINUER LE RISQUE D'INCENDIE OU DE CHOC ELECTRIQUE  
NE PAS EXPOSER CE MATERIEL A LA PLUIE OU A L'UMIDITE

**WARNING** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK  
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE

### 8B-St Rear Panels:

EXTERNAL CONTROL VOLTAGE 4 TO 18V ON  
OR OFF

SELECT 'LOCAL' IF NOT  
USING REMOTE OPTION

FRONT PANEL POWER  
SWITCH MUST BE 'ON'  
WHEN USING REMOTE  
POWER OPTION

AG/DG

CLASS 2 WIRING PERMITTED    CABLAGE DE CLASSE 2 PERMIS

BRIDGED 400W/8Ω min

CH4 120W/8Ω    CH1 120W/8Ω

BRIDGED 400W/8Ω min

BRIDGED

CH3    CH2

GROUND LIFT

**BRISTON**  
AMPLIFIER AMPLIFICATEUR  
8B ST SERIES  
120V 60Hz 1350W  
BRYSTON LTD./LITE  
PETERBOROUGH, ONT.  
MADE IN  
FABRIQUE AU CANADA

BRIDGED    CH1    INPUTS  
MODE    UNBAL    BAL  
INDIVIDUAL    CH2

DATE CODE: \_\_\_\_\_

**AVERTISSEMENT** POUR DIMINUER LE RISQUE D'INCENDIE OU DE CHOC ELECTRIQUE  
NE PAS EXPOSER CE MATERIEL A LA PLUIE OU A L'UMIDITE

**WARNING** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK  
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE

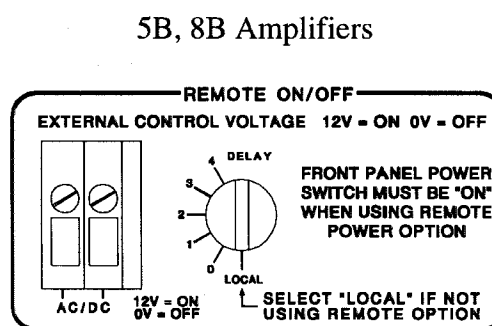
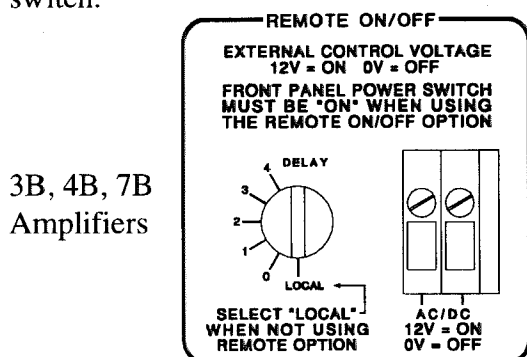
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REPLACE WITH FUSES AS MARKED  
POUR DIMINUER LE RISQUE D'INCENDIE  
REMPLEZ AVEC LES FUSIBLES TEL QU'INDIQUE

**CAUTION**  
RISK OF ELECTRIC SHOCK - DO NOT OPEN  
**PRECAUTION**  
RISQUE DE CHOC ELECTRIQUE  
NE PAS OUVRI

## CONNECTING BRYSTON AMPLIFIERS FOR OPTIONAL REMOTE ON/OFF FUNCTION

Bryston's remote on/off function allows the user to link the power on/off of an amplifier, or group of amplifiers, to the preamp, (such as Bryston's BP-20 or BP-25, see connection instructions overleaf), or other control product. This is useful in installations such as home theater, which present a convenience problem for powering up multiple amplifiers, often at distant locations from the source.

A box printed on the rear panel of the amplifiers, (illustrated below), contains a two-terminal 12-Volt, (AC or DC of either polarity), input connector and a 6-position rotary switch.



Moving the rotary switch clockwise to one of the 'delay' positions, (0 through 4 seconds), enables the remote-on/off function. The amplifier's front-panel power switch must be left in the 'on' position, (in), at all times for the amplifier to operate in this mode. The amp can then be powered-up by an external 12-Volt signal, connected to the 2 terminals of the jack. (This jack will accept 1/4-inch stripped wire ends, inserted into the square holes provided, and the adjacent screws carefully tightened to hold them in place). The amplifier will remain powered on while the 12-Volts is present, and will turn off when the 12-Volts is switched off.

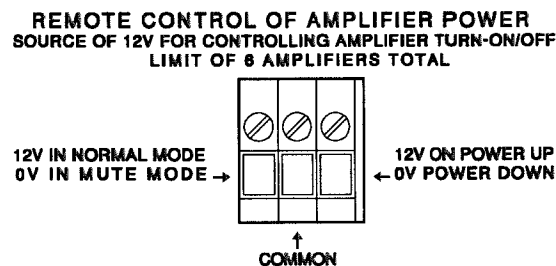
The 'delay' function is provided to allow sequential power-up of multiple amplifiers in more complex systems. If the first clockwise position, (0), is selected on the rotary switch, the amplifier will turn on instantly upon application of the 12-Volt signal. Subsequent positions, (1 through 4), will give delays of approximately that number of seconds before power-up, following application of the 12-Volts. In this way up to 5 amplifiers, (or groups of amplifiers), may be sequenced on to distribute power surges over a period of time. (The Soft-Start function in the 4B and 7B operates normally at all times to further reduce power surges and their impact on circuit-breakers, etc).

If the rotary switch is left in 'local' position, (fully counterclockwise), the amplifier can be turned on and off by the front-panel power switch only, in the normal manner. It will not respond to a 12-Volt signal in this mode.

## CONNECTING AMPLIFIER REMOTE ON/OFF TO BRYSTON BP-20/BP25 PREAMPLIFIERS

Bryston's remote amplifier on/off function may be controlled through Bryston's BP-20, (Ser. No.'s 220659 and up), or BP-25 preamps via the power switch on the preamp's external power supply. It can also be connected to operate through the 'mute' switch on the front panel, (and through the mute button on the BP-25 hand held remote control).

The rear panel of the BP-20/25 series power-supply carries a 3-terminal 12-Volt output connector, (see illustration below). This connector supplies the required 12-Volt signal to operate the amplifier's remote on/off function in Bryston amplifiers so-equipped. (See overleaf for amplifier connection instructions). The center, (common), terminal is always used, with either the left or right terminal completing the circuit to establish the control mode as follows:

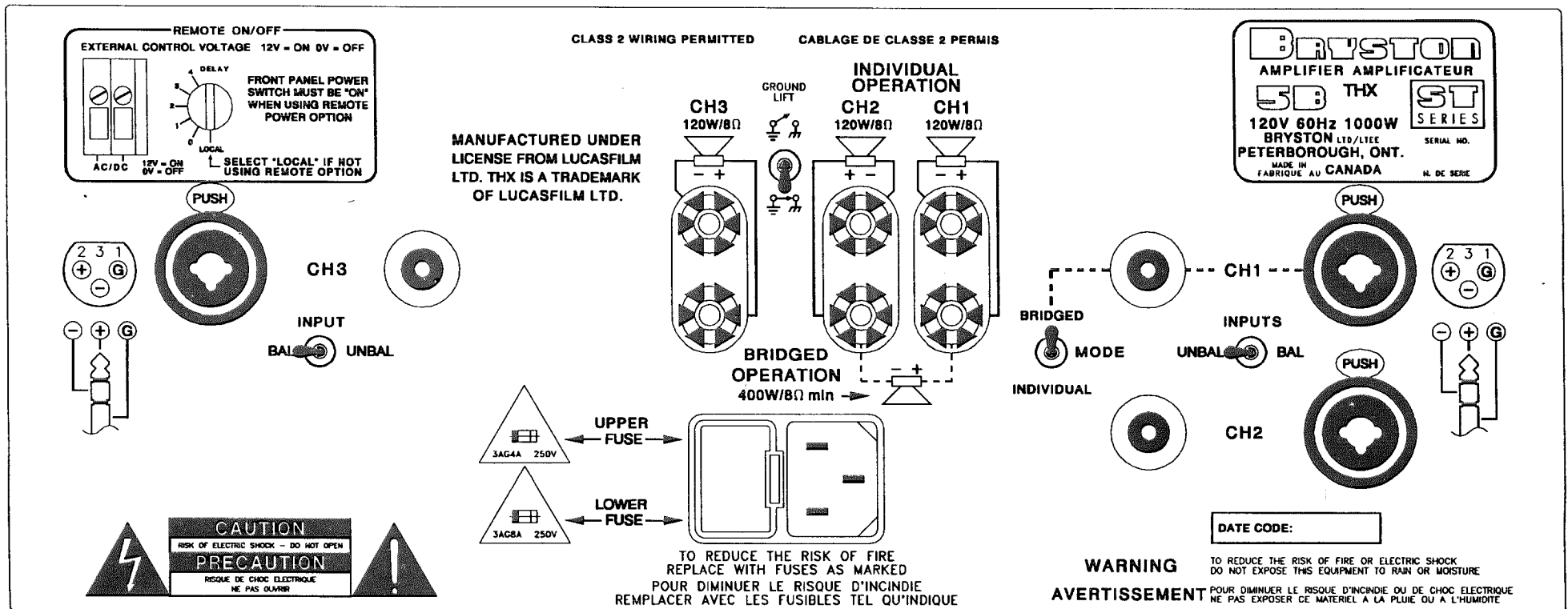


**Option 1:** Viewed from the power supply's rear panel, connecting the remote signal wire to the center and left-hand terminal, (closer to the power cords), sends or interrupts a 12-Volt signal to the amplifier based on the status of the mute switch on the preamp's front panel, and/or of the mute button on the BP-25 hand-held remote control. The mute button places the preamp in a 'standby' mode. (Turning off the preamp power-supply switch will also interrupt the 12-Volt signal, turning off the amplifier{s} as well).

**Option 2:** Connecting to the center and right-hand terminals will operate the 12-Volt signal only when the preamp power-supply switch is used.

The preamp's 12-Volt connector will accept 1/4-inch stripped wire ends, inserted into the square holes provided, and the adjacent screws carefully tightened to hold them in place.

# 5BST AND 5BST-THX POWER AMPLIFIERS



## NOTICE:

The **5BST** power amplifiers are essentially 3 channel versions of our **8BST** power amplifier. Channels 1 & 2 operate identically to those of channels 1 & 2 of an **8BST**, and can be operated as 120 watt/8ohm individual channels, or can be "bridged" to form a 400 watt/8ohm mono power amplifier. Channel 3 of the **5BST** can only be operated as a individual 120 watt/8ohm power amplifier.

All references regarding power output, distortion, connections etc. for the **5BST** may be read directly from the specifications for the **8BST** found in the "**Bryston Amplifier Manual**" included within.



# PROFESSIONAL AMPLIFIERS ONLY

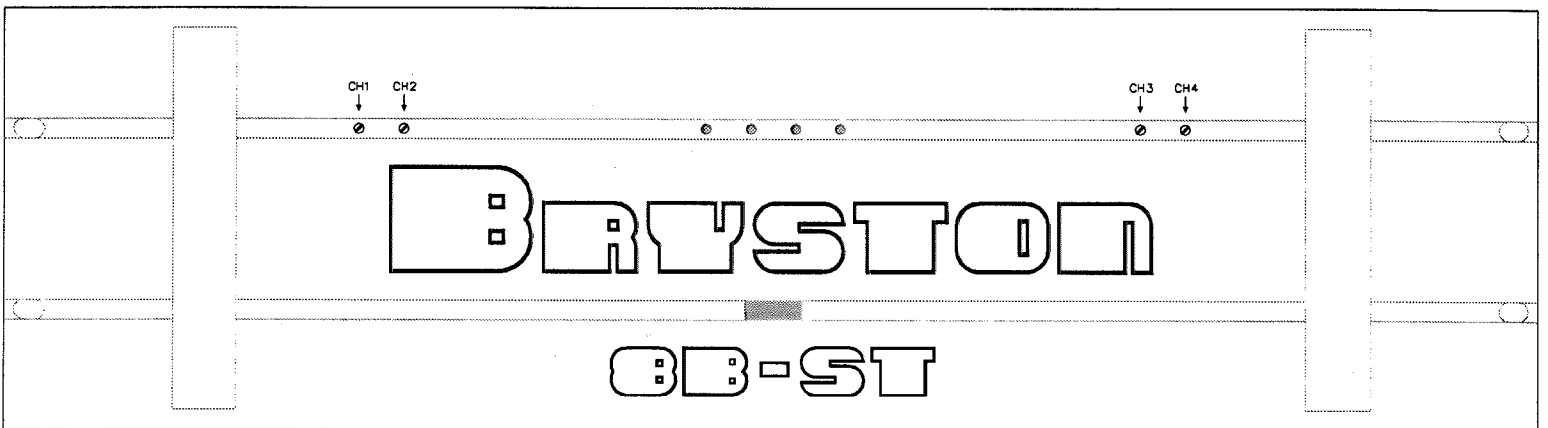
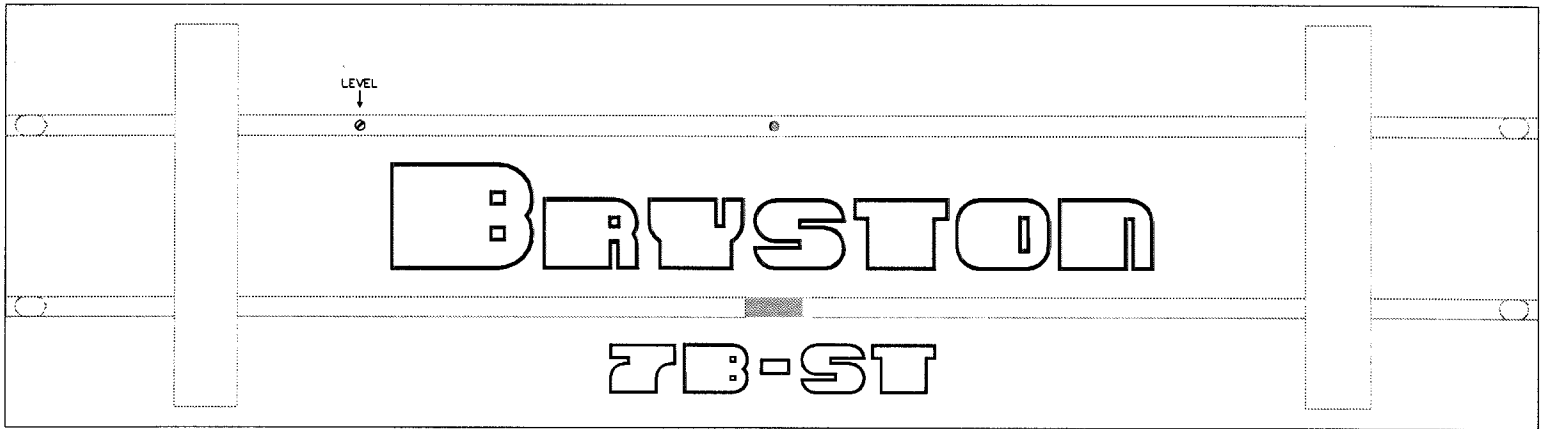
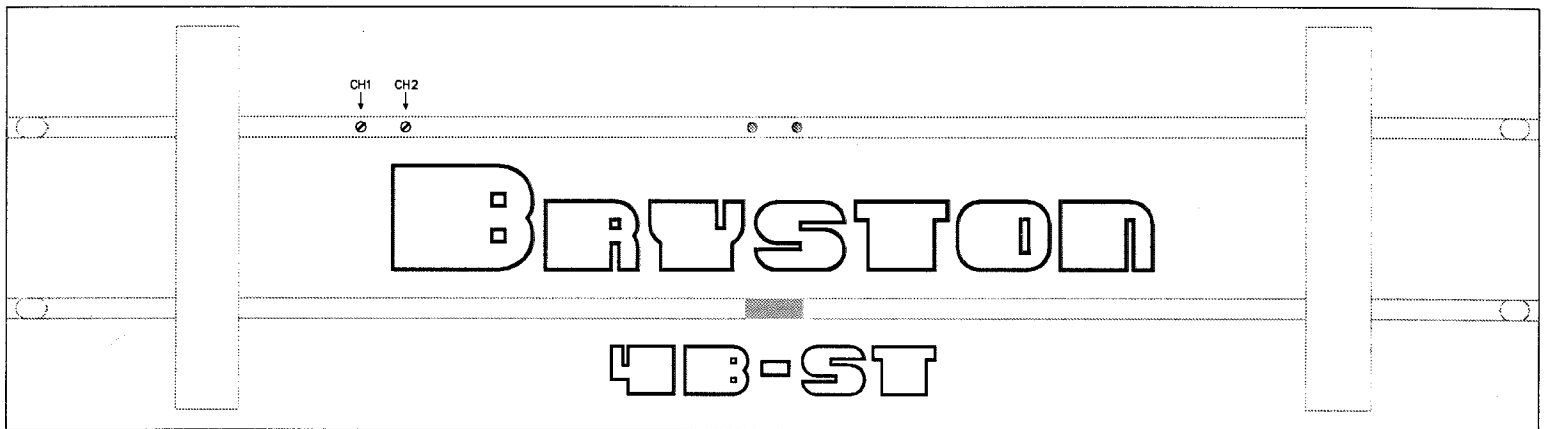
## Input Level Controls:

Bryston Pro Series amplifiers feature input level controls, located on the front panel as 1/8" screwdriver-adjustable potentiometers, (see illustrations below). Through either the balanced XLR input or the unbalanced RCA input, when the control is in the full-up, (clockwise), position the amplifier gain is 1 Volt input equals 28.3 Volts output, corresponding to 100 Watts @ 8 Ohms. In the full down, (counterclockwise), position the gain is attenuated by 13 dB. Under that condition 1 Volt input

equals 6.3 Volts output, corresponding to 5 Watts @ 8 Ohms.

The range of attenuation is limited to the above values to protect both the source and the input stages of the amplifier from the possibility of overload before the output of the amplifier reaches full power.

Please do not force the rotation of the potentiometer beyond the end-stop, as this may damage the control. Physical damage to the amplifiers may not be covered under warranty.



# BRYSTON 20-YEAR WARRANTY

Bryston products are warranted to be free from manufacturing defects for a minimum of twenty years from the original date of manufacture. This includes parts, labour and return shipping to the first owner and all subsequent owners. Warranty coverage is automatic and commences with the original date of manufacture which is kept on file at Bryston.

In the event of a defect or malfunction, Bryston will remedy the problem by repair or replacement, as we deem necessary, to restore the product to full performance.

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 comply with Bryston operating instructions.

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.

• BRYSTON SERVICE IN CANADA:  
24 STEINWAY BLVD., UNIT 48  
ETOBICOKE, ONTARIO  
M9W 6T8  
PHONE: 416-675-2585  
FAX: 416-675-3103

• BRYSTON SERVICE USA:  
79 COVENTRY STREET  
NEWPORT, VERMONT  
PHONE: 802-334-1201  
FAX: 802-334-6658

• BRYSTON SERVICE OUTSIDE CANADA:  
CONTACT YOUR LOCAL DISTRIBUTOR  
OR:  
CALL BRYSTON DIRECTLY AT:  
PHONE: 705-742-5325  
FAX: 705-742-0882  
[www.bryston.ca](http://www.bryston.ca)

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