

BRYSTON 4270

**70 VOLT OUTPUT
MONO POWER AMPLIFIER**

GENERAL DESCRIPTION

Bryston's 470 power amplifier is a "70 VOLT" monaural version of the 4B and consists of a single amplifier module - with a $\pm 85\text{v}$ power supply - which can deliver 250 watts into 8 (500 watts into 4) via the ***DIRECT*** output or into 20 via the ***70 VOLT*** output transformer. As in the 4B, each amplifier module employs 4 of Bryston's custom power output transistors.

POWER CONSIDERATIONS

The 470 employs a truly massive power supply which can draw prodigious amounts of current from the line when the music demands it. In addition, every Bryston amplifier contains exceedingly high quality dedicated circuitry in its power supplies to reject RF, line spikes and other power line problems. For these reasons the amplifier should NOT be connected to the accessory power outlets in a preamp NOR into such devices as power bars or line conditioners. It should be plugged into its own socket in the wall outlet (with the power switch in the OFF, or OUT, position).

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 470 amplifier uses a 3 colour LED with green indicating *power on* and red indicating actual *overload or distortion*. Yellow appears dynamically at the threshold of clipping to indicate caution in proceeding to higher power levels. As long as the LED is green, or green and yellow with only very brief red flashes, the waveform is reaching full power only at the highest musical peaks. Once the indication contains a substantial red content it should be considered as a sign that the level is too high and may cause speaker damage if allowed to continue.

The clip-sensing circuit in the 470 uses an AC comparator to detect any source of signal distortion including clipping, short circuits in cabling, excessive DC or supersonic signals, whether at input or output, etc. Most conditions which could cause the red LED to light for more than a moment or two can be dangerous to your speakers and should be corrected immediately.

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 470 . 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 of accidental (or even wilful) overload. If you wish to use fuses follow the manufacturers recommendations since even what seems like a small increase in current rating on a fuse will result in large increases in power allowed. Example: A 3 amp fuse will allow about 70 watts but a 4 amp fuse will nearly double this to about 130 watts and a 5 amp fuse will allow 200 continuous watts.

It should be emphasized 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.

INPUT CONNECTORS

The 470 is supplied with two pairs of input connectors: unbalanced RCA/phono and a combination - 3 pin balanced XLR (pin 1 is ground, *pin 2 is **POSITIVE** & pin 3 is **NEGATIVE***) & 3 conductor balanced ¼" phone (TIP is positive, RING is negative & the sleeve is ground) - jack with fully discrete active input circuitry. A toggle switch allows selecting between balanced or unbalanced inputs.

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 470 is equipped with four binding post terminals (2 red, 2 black) which can accept either standard banana plugs or bare wire. One BLACK/RED pair is the **DIRECT** output and the remaining pair is the **70 VOLT** output (see rear panel for wiring instructions). Since the binding posts are gold-plated we recommend gold-plated banana plugs be used for the lowest distortion.

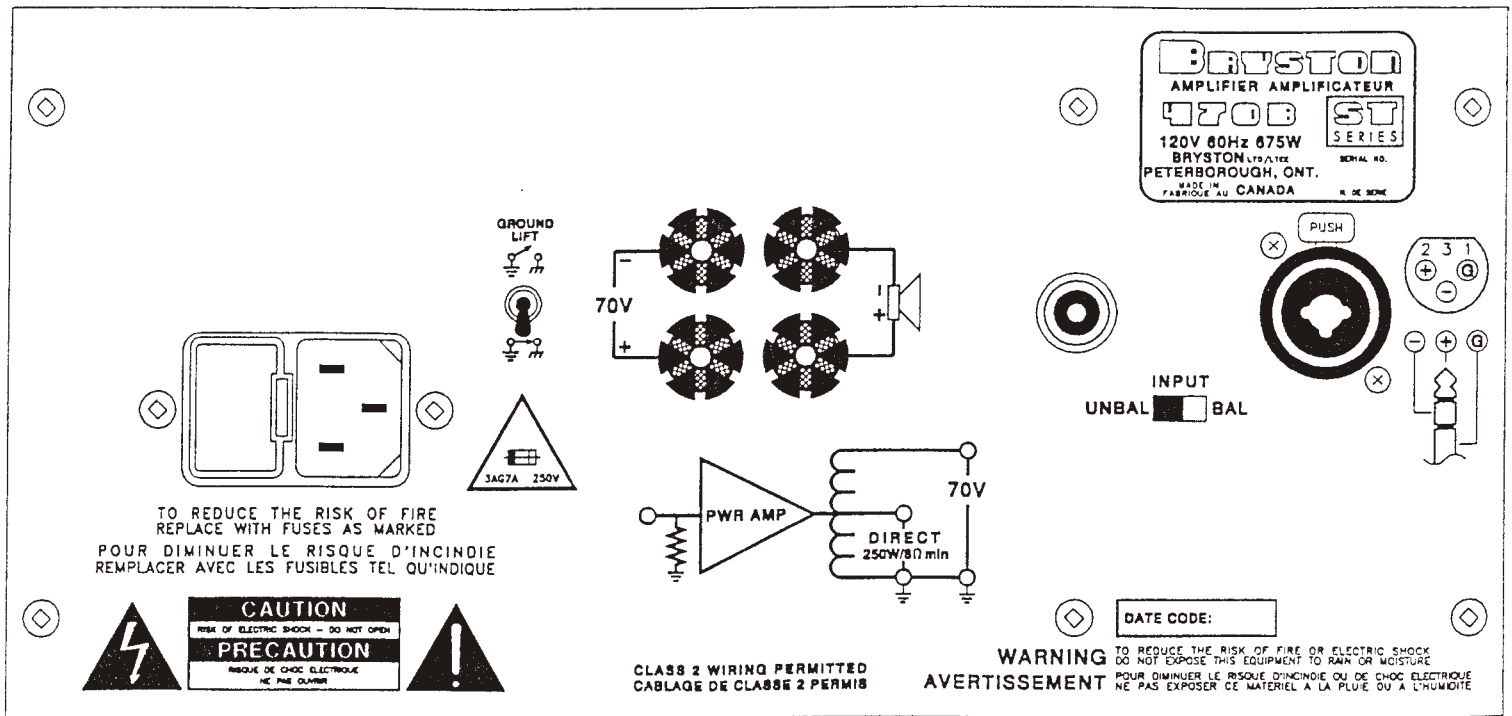
N.B. Do not attempt to remove the red or black connector nuts from the binding post connectors. They are not removable and attempting to force them off may break the connector or strip the threads.

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



WARRANTY

Bryston products are warranted to be free from manufacturing defects for a minimum of **twenty years** from date of original purchase, including parts, labour and return shipping to the first and all subsequent owners. Warranty coverage is automatic and commences with the date of the original dealer's bill of sale (which is the sole proof of purchase date).

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. Warranty service may be obtained by returning the unit to any Bryston retail dealer. If it cannot be returned to a Bryston dealer, write or call:

In Canada:

Bryston Service
24 Steinway Blvd.
Etobicoke, Ontario
M9W 6T8

Voice: (416) 675-2585
Fax: (416) 675-3103

In the USA:

Bryston Service
79 Coventry St.
Newport, VT
05855

Voice: (802) 334-1201
Fax: (802) 334-1201

All others:

Contact your local distributor

This warranty is 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 follow Bryston operating instructions.

This warranty gives you specific legal rights and you may also have other rights which may vary from province to province or from state to state.

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