

# **BRYSTON OWNER'S MANUAL**

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**Instructions For**  

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**Bryston Preamplifiers**  

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**Models BP-20 and BP-25**  

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# GENERAL INSTRUCTIONS

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## Setup Recommendations:

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Congratulations on your purchase of a Bryston preamplifier. We are confident it will provide you with many years of musical enjoyment.

You may place your preamplifier in any convenient location, with two possible exceptions. If you own the Bryston BP-25 remote-control version, position the preamplifier to maintain a direct line-of-sight between the hand-held remote and the remote sensor eye located on the left side of the preamplifier's front panel.

If you purchased the BP-25P or BP-25MC, which includes a Phono section, avoid placing the preamplifier directly on top of your power amplifier. Power amplifiers usually employ large power supplies and the transformer(s) in the power supplies can cause interference (hum) with the sensitive phono section inside the preamp.

Next, insert the 5-pin din cable from the outboard power supply into the input connector located on the rear of the preamplifier. Then plug the power supply into an appropriate AC power outlet. The preamplifier is powered up by engaging the slide switch located on the front of the external power supply. The "green" LED on the outboard power supply and the preamplifier front panel indicates power-on.

**If the preamplifier has been placed in the "mute" position operating the volume up button on the remote will automatically un-mute the BP-25 preamplifier, turning the LED from red to green. On the BP-20 you must manually activate the mute toggle on the front panel.** Both the Mute switch and the Polarity Invert switch are momentary-toggle types, operated by push-and-release.

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## BP-PS Power Supply:

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The BP-PS outboard power supply provides AC power for the BP-20 and BP-25 preamplifiers. It has a slide power switch located on the front and a green LED to indicate power on.

On the rear of the unit is a three-position connector which provides a control voltage for remote turn on/off of your Bryston THX amplifier(s) or other amplifiers so equipped. This feature can be used in two ways depending on the wiring arrangement utilized:

**Option one provides for the preamplifier and power amplifier to be turned on or off when you operate the power switch located on the front of the external power supply.** Turning the power off with the switch on the outboard power supply removes AC power

from both the preamplifier and the power amplifier(s) for complete system shut-down.

**Option two allows the power amplifier(s) to be turned on or off with the mute button on the hand-held remote control unit or the mute toggle on the front panel of the preamplifier.** This will shut down your system 'for the night', completely removing power from the amplifiers, but leaving the preamp in the Mute/standby mode, indicated by the red LED on the preamplifier's front panel.

Please refer to the diagram on the included separate instruction sheet for further clarity and optional wiring arrangements.

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## Connections:

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Connect the preamplifier's left and right outputs from either the RCA or Balanced XLR connectors to the appropriate left and right input jacks on your power amplifier. Balanced cables are an advantage if you are using long runs of cable, (greater than 20 feet), between your preamplifier and power amplifier.

Connect your CD player, tuner, tape deck, video recorder, or laser disc, etc. to the specific left/right preamplifier inputs. With phono-equipped models, (BP-25P or BP-25MC), connect your phono cables to the phono input jacks. If your turntable leads have a separate ground wire, it may be connected to the ground lug adjacent to the phono inputs on the rear panel.

The Bryston BP-20 and BP-25 preamps also feature two pairs of balanced XLR input jacks. Many signal sources, including CD-players and separate D/A converters are now available with Balanced outputs for minimum noise pickup on the cables.

The tape loop may be used to insert a surround sound processor, cassette tape deck or video tape recorder into your system. Plug your tape deck or external processor's input cables into the 'To Tape' jacks, and the processor or deck's output cables into the 'From Tape' jacks at the rear of the preamp. The tape or processor loop may be operated via the toggle switch located on the front panel of the preamplifier.

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# BRYSTON PREAMPLIFIERS

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## Input and Output Connectors:

Bryston preamplifiers are equipped with five pairs of RCA input connectors, two pairs of balanced XLR input connectors and one pair of RCA tape input jacks. The balanced inputs, (pin-1 ground, pin-2 positive and pin-3 negative). All inputs employ fully discrete active input circuitry. Two pairs of RCA main outputs, one pair of RCA tape outputs and one pair of balanced XLR outputs are also provided.

All input and output connectors on the BP-20

and BP-25 are gold-plated. Only cables with high quality gold plated connectors should be used with your preamp to avoid noise and distortion from the corrosion which will eventually appear on poorly plated cable connectors.

Bryston offers RCA or XLR cables with connectors gold-plated to 20 microinches, (up to 30 times heavier than standard gold-flashed cables). Standard 1 and 2 meter, or custom-length cables, are available.

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## Bryston BP-25 Remote Control:

The Bryston model BP-25 is supplied with a hand-held remote control unit. The remote features include Volume control, Mute, and Polarity Invert. All remote control functions may be operated manually from the front panel of the preamplifier if desired.

The Volume Control is a motor-driven design. This approach ensures the lowest distortion with maximum long term reliability.

The Polarity-Invert switch allows you to reverse the absolute phase of the audio signal, (not to be confused with left-versus-right channel phase), because polarity reversal can occur in the recording chain. (In fact, our investigations show that polarity is not consistently maintained in commercial recordings). It is desirable to maintain absolute phase as originally played in the recording

hall, as that will provide the most accurate representation of the original wavefront. This may be audible in some cases as a more realistic rendition of musical transients when the proper polarity for that recording is selected. The Bryston BP-20/BP-25 preamplifiers maintain non-inverting polarity at the Main output for all inputs when the pilot light is green, and inverting polarity for all inputs when the LED is yellow. The 'To Tape' outputs are always non-inverting.

The Mute control mutes the output of the preamplifier to allow for interruptions without affecting the volume control setting. (Refer also to the Power Supply section of this instruction sheet for information regarding remote Amplifier control via the Mute switch).

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## Bryston MM and MC Phono Section:

Bryston's Phono section is available in the BP-20 or BP-25 preamplifiers. It features state-of-the-art accuracy in equalization, extremely low noise and distortion, and provides headroom margins sufficient to prevent overload from any known phono source.

The Phono section may be ordered in either of two versions: Moving-Coil, (Model BP-20MC or BP-25MC), or Moving-Magnet, (Model BP-20P or BP-25P). The BP-20MC and the BP-25MC provides a front panel switch to choose the additional gain required for moving coil cartridges (See diagram page 4).

To access the Phono section on the BP-20MC or BP-25MC, simply plug your turntable interconnect leads into the Phono inputs on the rear panel of the preamplifier. Engage the **MM/MC Phono** toggle-switch located on the front panel of the preamplifier to the appropriate moving-magnet or moving-coil position and turn the "Source" rotary selector knob on the front panel to

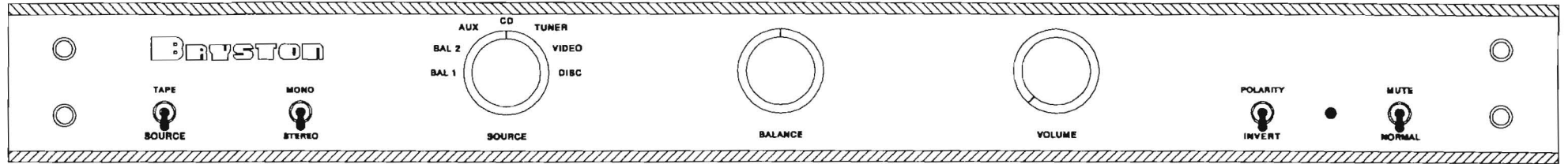
Phono. (Please ensure the MM/MC switch is in the correct position for your cartridge, or your system will display audible problems, such as poor frequency response, low output, or both). If your turntable provides a separate ground lead, system noise may be minimized by connecting it to the ground lug adjacent to the phono inputs on the rear panel.

The BP-20P and BP-25P hookup procedure is similar, with the exception that there is no front panel switch between MM and MC. (This is replaced with the Stereo/Mono switch).

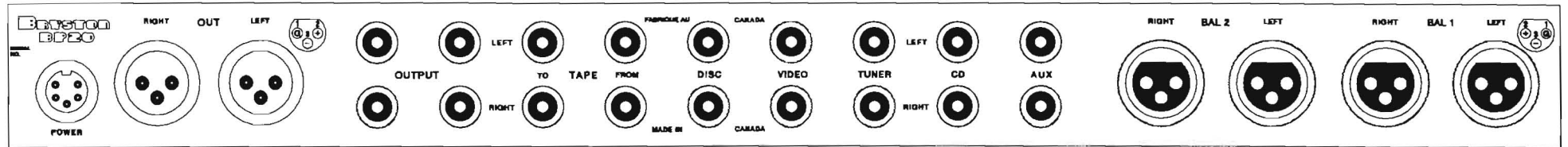
The Bryston BP-20 and BP-25 are line-level preamplifiers only. You may acquire Moving-Magnet or Moving Coil phono capability by returning it to the factory for updating. We also offer the Moving-Coil setup stage, as an outboard unit (TF-1), if your preamplifier already contains a Moving-Magnet phono section.

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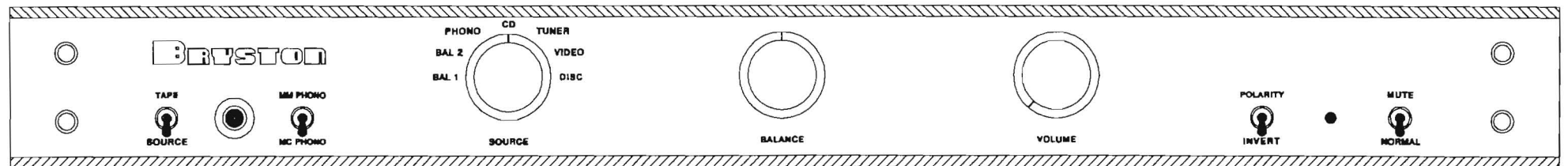
BP-20 Front Panel



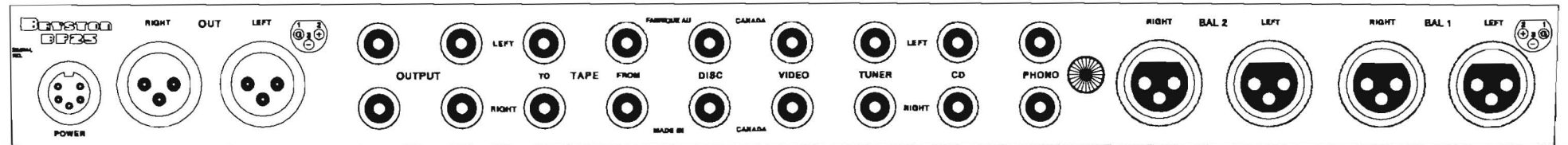
BP-20 Rear Panel



BP-25 Front Panel



BP-25 Rear Panel



# BRYSTON PREAMPLIFIERS

## BP-25 and BP-20 Functions:

**BP-PS POWER SUPPLY :** LED indicates GREEN when power on. Provides 12-Volt supply for remote turn-on of Bryston THX power amplifier(s) or others so equipped.

**PREAMPLIFIER LED:** Indicates RED when output muted. GREEN indicates output is non-inverting polarity. YELLOW indicates output has inverted polarity.

### HEADPHONE OUTPUT (BP-25):

Allows monitoring of any input source with the use of headphones. It is recommended that you use headphones with input impedances greater than 50 ohms for optimal performance. If you wish to mute your loudspeakers while listening to your headphones simply engage the *MUTE* switch on the preamplifier (LED turns red). Be sure *not* to use your remote control (use the front panel volume control) to adjust the volume while listening to your headphones, as the remote will 'unmute' the preamplifier on 'volume up'.

### FRONT PANEL CONTROLS:

**MUTE/NORMAL TOGGLE:** Mutes or releases mute at the main outputs, (not 'To Tape' outputs), without changing the volume control setting, each time pushed.

**POLARITY/INVERT TOGGLE:** Reverses polarity at main outputs each time pushed. (GREEN LED indicates positive polarity, YELLOW LED indicates inverse polarity).

**VOLUME:** Rotary control varies the output level to the 'MAIN OUTPUTS', (does not effect 'TO TAPE' outputs).

**BALANCE:** Rotary control adjusts the left-versus-right channel levels. The Balance Control is a tailored-inflection type which has very gradual action near the center of rotation allowing fine adjustments to the stereo image. For convenience the electrical center of the control is detented.

**SOURCE:** Rotary knob, determines which input will appear at the 'TO TAPE' outputs for recording or processing, as well as determining which program is available at the Main outputs. (When the 'TAPE/SOURCE' switch is in 'Tape' position, 'TAPE FROM' inputs appear at Main Outputs).

**MONO/STEREO SWITCH:** 'Stereo' position provides two-channel stereo at the Main outputs. 'Mono' position sums the main outputs to monaural. The 'TO TAPE' outputs are always stereo. (Switch not present on BP-25MC).

**PHONO SWITCH (BP-25MC only):** Allows the selection of either Moving-Magnet or Moving-Coil phono. (BP-25MC preamplifiers are equipped with a Phono MM/MC switch in place of the Mono/Stereo switch).

**TAPE/SOURCE SWITCH:** Source (down) position monitors whichever input is selected at the rotary SOURCE selector knob. Tape (up) position provides monitoring of the 'FROM TAPE' input for A/B comparison with the source. Should an external processor or equalizer be connected in the TAPE LOOP, the "TAPE/SOURCE" switch will act as an in/out switch for the external equipment.

### REAR PANEL CONNECTORS:

**BALANCED OUTPUTS:** Output is taken from the three-pin "XLR" type connectors. Pin-1 is ground - Pin-2 is the positive (+) output and Pin 3 is the inverted output. The output is "ACTIVE BALANCED" (no transformer). *Never connect pin 2 or pin 3 to each other, to pin 1, or any ground.* The outputs are capable of driving 30 volts to any load 600 ohms or greater in balanced operation.

**UNBALANCED OUTPUTS :** There are two parallel unbalanced outputs for each channel available, utilizing gold-plated RCA-style connectors. The output is always in-phase with the input, and is capable of delivering 15 volts into any load of 600 ohms or greater.

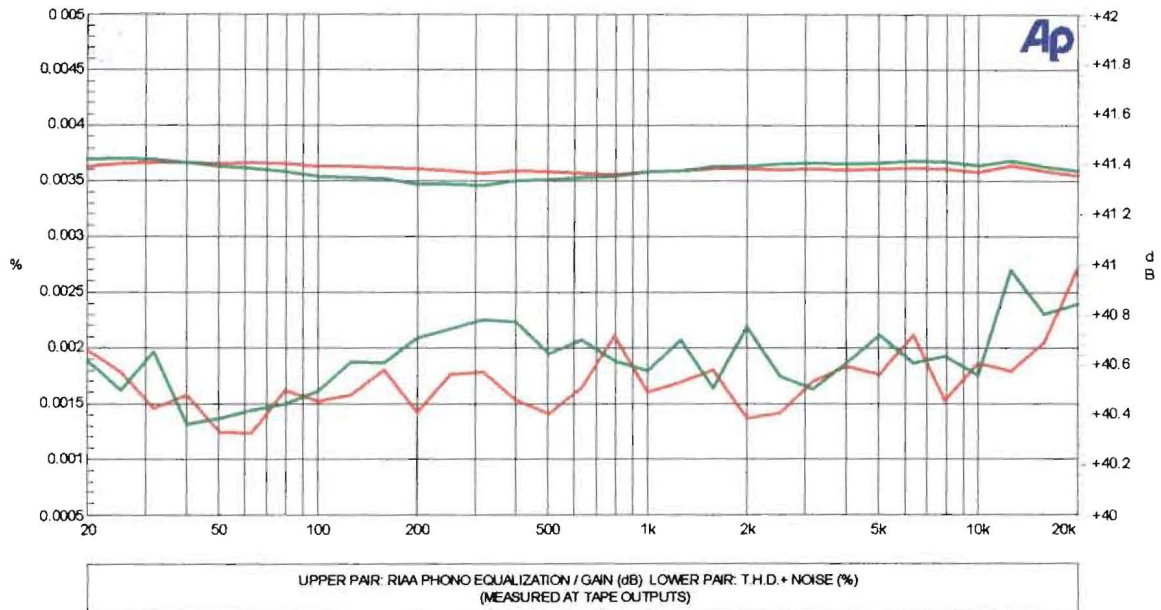
**TO-TAPE-FROM:** The 'TO TAPE' outputs are selected by the rotary "SOURCE" knob and are provided as a recording output. This feed is unaffected by the operation of other front panel controls. The 'FROM TAPE' (unbalanced RCA) input is useful for monitoring tape playback or processed signals. Moving the "Tape/Source" toggle to 'Tape' (up) position monitors the recorded signal on recorders equipped with a separate playback head, or the processed signal when using a signal processor. Input sensitivity is 500mv, input impedance is 10K ohms .

**UNBALANCED INPUTS:** Input connectors are gold plated RCA Phono jacks. Input sensitivity is 500mv, input impedance is 50K ohms. On BP-25P, Phono input impedance is 47K, sensitivity is 5 mV. On BP-25MC, MMohms. Phono input is as above, MC Phono input impedance is 180 Ohms, sensitivity is 0.35 mV.

**BALANCED INPUTS:** Balanced input connectors are gold-plated 3-pin "XLR" style connectors. Pin 1 is ground, Pin 2 is positive input (+) and pin 3 is the inverting input (-). Input sensitivity is 1 volt, input impedance is 15k

# BP20P PHONO INPUT SPECIFICATIONS

07/25/01 12:16:19



LEFT CHANNEL

RIGHT CHANNEL

**A' WEIGHTED SIGNAL/NOISE**

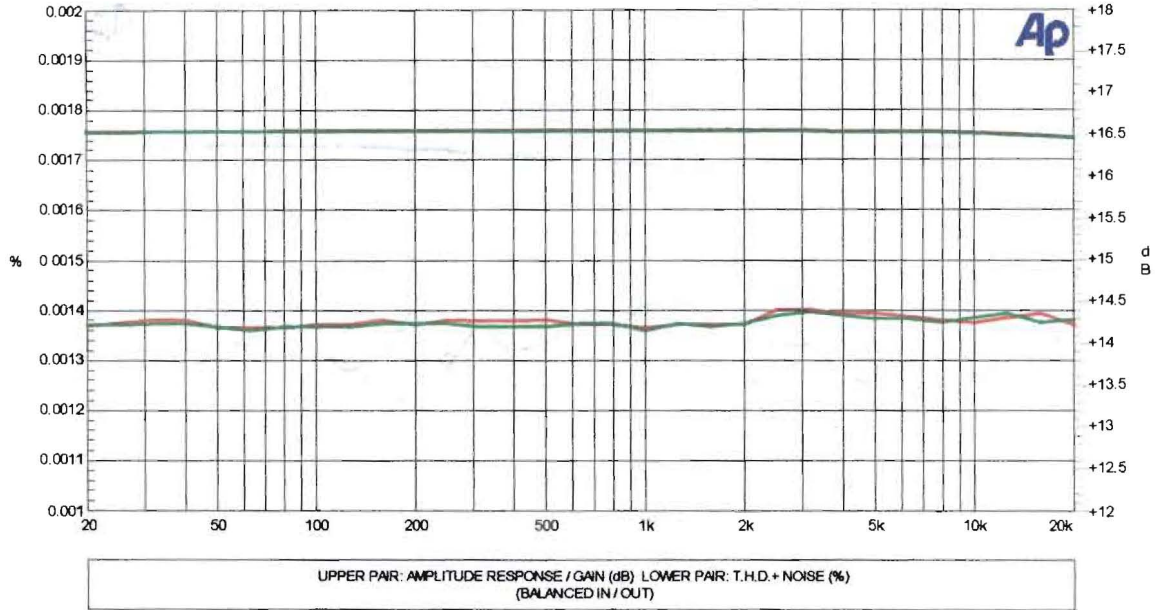
**-81.71 db**

**MM PHONO  
(ref. to 5mv input@1khz)**

**-81.76 db**

**BP20P PREAMPLIFIER SPECIFICATIONS**

07/25/01 12:14:50



**LEFT CHANNEL**

**RIGHT CHANNEL**

**0.00110 %**

**SMPTE I.M.D.**

**0.00111 %**

**UNWEIGHTED SIGNAL/NOISE (ref. 0.5V input @1khz)**

**-103.22 db**

**BALANCED**

**-103.24 db**

**-105.53 db**

**UNBALANCED**

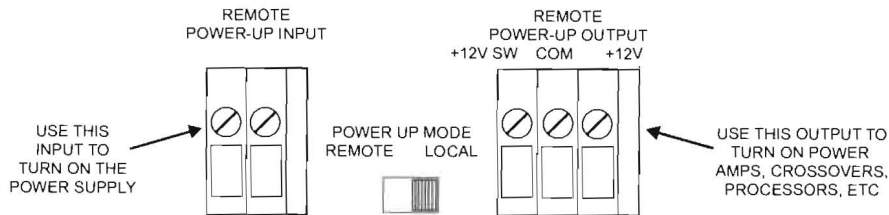
**-105.52 db**

**Inspector: DjG**

**Serial #: 221870**

## CONNECTING BRYSTON BP20/25 PREAMPLIFIERS FOR OPTIONAL POWER ON/OFF FUNCTIONS

The Bryston MPS-1 power supply (supplied with all Bp20/25 preamps) has two ways of being turned on and two ways of turning on other equipment (such as Bryston power amplifiers).



The wires are secured by loosening the small screws, placing the wire(s) in the opening and tightening down on the screws. Stranded wire gauges between 12 and 26 AWG are acceptable.

### **Turning on the MPS-1 Power Supply:**

#### **MANUAL POWER-UP (Normal Operation)**

To turn on your BP20/25 manually, make sure the **Power Up Mode** switch on the rear of your power supply is set to **LOCAL** and operate the master **Power** button on the front of the power supply as required.

**CAUTION:** If the switch is left in the **Remote** position, your BP20/25 preamplifier will not power-up when the **Master Power Switch** on the front of the MPS-1 power supply is engaged unless a 4-12 volt signal is present at the **Remote Power-up Input** (see above).

#### **REMOTE POWER-UP USING A 4~12V CONTROL SIGNAL**

To turn on your preamplifier remotely connect a 4~14 volt signal via two wires into the **Remote Power Up Input** terminals on the rear of the BP20/25's MPS-1 power supply. Place the **Power Up Mode** switch on the rear of the power supply in the **REMOTE** position and engage the **Master Power Switch** located on the front of the power supply. When a 4-12 volt signal is present the BP20/25 power supply will turn on. Removing the trigger signal turns the power supply off.

**NOTE:** The **Master Power Switch** on the front of the power supply must be engaged in order for the remote trigger function to operate. Polarity of the control voltage is not critical; either AC or DC is acceptable.

### **Using the BP20/25 and MPS-1 to turn on other equipment:**

#### **Power-Up Other Equipment when the MPS-1 is Powered-Up**

Connecting the **+12V** and **COM** terminals of the MPS-1 to the Remote On/Off terminals located on Bryston power amplifiers will allow the amplifier to be turned on whenever the MPS-1 is turned on.

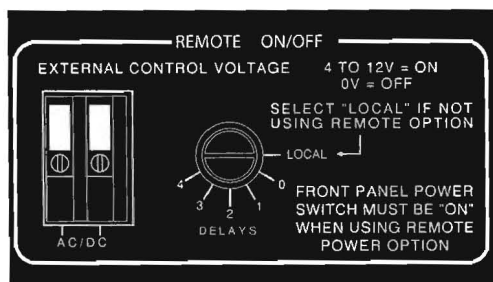
#### **Power-Down Other Equipment when the BP20/25 Preamp is Muted**

Connecting the **+12V SW** and **COM** terminals of the MPS-1 to the Remote On/Off terminals located on Bryston power amplifiers will allow the amplifier to be turned OFF whenever the BP20/25 preamp is muted. When the preamp is un-muted the power amp will be automatically turned on.

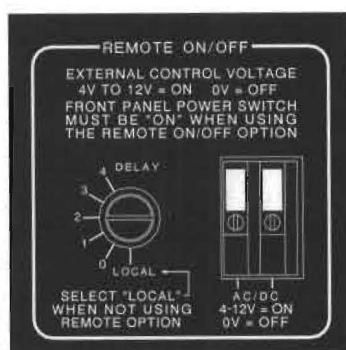


# BRYSTON

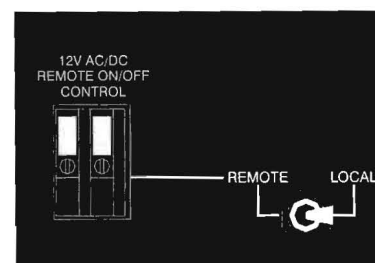
## CONNECTING BRYSTON POWER AMPLIFIERS and PRE-AMPLIFIERS for REMOTE ON/OFF CONTROL



Rear panel detail of 5B/8B amplifiers



Rear panel detail of 3B/4B amplifier



Rear panel detail of 2B-LP amplifier

Bryston's remote amplifier on/off function allows the user to link the power on/off operation of Bryston's BP20/25 pre-amps to one or more Bryston power amplifiers, models 2B-LP, 3Bst, 4Bst, 5Bst, 7Bst & 8Bst. When the **Remote ON/OFF** switch on the rear panel of a Bryston power amplifier (shown above) is set to **LOCAL** the amplifier responds only to its front panel power switch. When the **Remote ON/OFF** switch is set to one of the delay settings, however, the amplifier will accept a remote control voltage (between 4 and 12 volts, either AC or DC) to turn the amp on or off. The delay settings cause the amplifier to wait for a few seconds after initially receiving a control signal before turning on the amplifier. This allows several amplifiers to turn on sequentially rather than simultaneously. If the remote on/off function is used, the front power switch on the power amplifier must be pushed in (ON). The exception to this is the 2B-LP on which a front mounted power switch is not standard. Also, the 2B-LP does not offer delay settings and it uses a rear mounted toggle switch to select between REMOTE, OFF (center position) or LOCAL (on). The source of the control voltage can be a Bryston's BP20/25 preamp or other control product capable of supplying 12Vdc (maximum) @ 64mW. When a Bryston BP20/25 is used, either the ON/OFF or MUTE/UN-MUTE operation of the preamp can be used determine when the control voltage is sent to the power amplifier. In addition, BP25 preamps are supplied with an infra-red remote control which can be used to toggle the preamp's MUTE function and thus can also be used to turn Bryston power amplifiers on and off. The power switches for the BP20/25 preamps are located on their external power supply (MPS-1) and turning this power supply on or off can also be used to turn Bryston amplifiers on and off remotely.

The rear panel of the MPS-1 power supply is equipped with a 3-terminal connector (see illustration on next page) which provides two different 12v output signals. The **+12V SW** terminal, which responds to the MUTE operation of the preamp, generates a 12VDC signal when the preamp is *not* muted. When the preamp *is* muted the 12VDC signal is interrupted and any remotely controlled power amps would turn off. The **+12V** terminal provides a 12VDC signal whenever the power supply is turned on.

To summarize:

**Option 1:** Using the **+12V SW** and **COM** terminals of the rear panel of the preamps MPS-1 power supply, a 12-Volt signal is sent to the amplifier based on the status of the preamp's MUTE function. When the preamp is muted, the 12V signal is interrupted and the power amp turns off.

**Option 2:** Using the **+12V** and **COM** terminals, a 12 Volt control signal will be sent to the power amplifier *only* when the preamp power supply is turned ON. Therefore, the power amp will be turned on only when the preamp is turned on.

The terminal blocks will accept stranded wires between 12 and 26AWG, stripped up .35". The setscrews are used to open (loosen) and close (tighten) the wire cages.