

BRYSTON

OWNER'S MANUAL

**Instructions For
Bryston PreAmplifiers**

Models BP20 & BP25

IMPORTANT SAFETY INSTRUCTIONS



The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated "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".

General Specifications:

Frequency Response:

20Hz-20kHz +/- .05dB

Maximum Output:

15 volts unbalanced, 30 volts balanced

IMD/THD: <0.0015% at 3 volts out

Sensitivity:

Balanced inputs: 1.00 V
UnBalanced line level inputs: 500 mV

Rated Noise:

-100dB (Ref. 500mV unbalanced input, 20-20kHz)
-103dB (Ref. 1 volt balanced input 20-20kHz)

XLR Connector Pin out (Balanced I/O):

Pin 1 ground, pin 2 positive, pin 3 negative

Features:

- 2 pair balanced female XLR inputs
- 1 pair balanced male XLR outputs
- 5 pair RCA inputs
- 4 pair RCA + 1 pair phono inputs (BP-20/25P and BP-20/25MC only)
- 4 pair RCA + 2 SPDIF digital inputs (BP20/25 DA only)
- 2 pair RCA outputs
- 1 tape loop

Options:

- Silver faceplate & hand held remote (std. is black)
- 19" x 1.75" Rack mount faceplate (std. 17" long)
- Moving magnet RIAA phono equalization module
- Moving coil & moving magnet RIAA phono EQ module
- Digital audio input (SPDIF) module

Dimensions:

Standard version: 17" x 1.75" x 11"
43.18cm x 4.44cm x 28cm
Rack mount version: 19" x 1.75" x 11"
48.26cm x 4.44cm x 28cm

Weight: 17 lbs (7.5 kg)

MPS-1 POWER SUPPLY SPECIFICATIONS:

Dimensions: 7.75" x 4.525" x 2.36" h

Weight: 2.6 lb. (1182g)

Electrical: 120VAC/60Hz/29VA, Fuse: 315mA/250V time lag
230VAC/50Hz/29VA, Fuse: 160mA/250V time lag
240VAC/50Hz/29VA, Fuse: 160mA/250V time lag

Output: +/-28VDC @ 350mA (56VDC @ 700mA)

All fuses are 5mm x 20mm, time lag type and are accessible only by removing the top cover. When replacing fuses, disconnect the power cord before opening the unit!

Recommended replacement fuses:

for 100/120VAC models: Littlefuse 218.315
Bussmann GMC-315mA
for 230/240VAC models: Littlefuse 218.160
Bussmann GMC-160mA

Additional Specifications for BP20/25DA:

Input Sample Rate: 16kHz to 108kHz.
Word Length: 16, 18, 20, 24 Bit
Data format: SPDIF standard
Distortion: < 0.002%, 20Hz-20kHz
Signal to Noise Ratio: > 100dB
Frequency Response: 20Hz-20kHz +/- .1dB

Additional Specifications for BP20/25P

Phono Inputs:

Distortion:

<0.005%, IM or THD, any frequency or combination of frequencies from 20-20kHz, at rated output or below.

Rated Noise:

Phono: -80dBA referred to an input of 5 millivolts RMS @ 1kHz

RIAA Accuracy:

Within less than +/- 0.05dB from 20-20kHz inclusive

Input sensitivity: 5mV

Additional Specifications for BP-25MC

Phono Inputs:

Distortion:

<0.005%, 20-20kHz, with preamplifier driven to full rated output

Noise:

Equivalent to approximately 1000 ohm metal film register (Thermal noise greater than 85dB below 0.6mV input, unweighted)

Gain: 16.5 or 22.5dB (internally reconfigurable)

Frequency Response: Below 5Hz to above 30kHz, within less than +/- 0.5dB

Input sensitivity: 350uV (0.35mV)

INTRODUCTION

Thank you for choosing a Bryston PreAmplifier. Bryston welcomes 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.

SETUP:

The Bryston BP-25 pre-amps, with remote-control, should be placed where there is a direct line-of-sight between the hand-held remote and the remote infra-red sensor eye located on the left side of the pre-amplifier's front panel.

If you purchased the BP0/25P or BP20/25MC, 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 pre-amp.

Next, insert the 5-pin DIN cable from the outboard power supply into the "Power Supply" input connector (5 pin DIN) located on the rear of the preamplifier. Then plug the power supply into an appropriate AC power outlet. The pre-amplifier is powered up by engaging the push button switch located on the front of the MPS-1 external power supply. The "green" LED on the outboard power supply and the pre-amplifier front panel indicates power-on.

EXTERNAL POWER SUPPLY (MPS-1) and REMOTE TURN-ON FUNCTIONS:

The MPS-1 outboard power supply provides AC power for the BP20 and BP25 preamplifiers. It has a push button switch (push-to-set/push-to-release) located on the front and a 2 colour LED to indicate power and mute status. This LED mirrors the operation of the similar LED on the BP20/25 preamp (see the *Visual Indicators* section for more information). On the rear of the unit there are two terminal blocks and a two position slide switch.

The two position connector, or terminal block, accepts bare wires between 12 and 26 AWG. Insulated wires should be stripped to expose .3 inches (5/16" or 8mm) of bare wire. This provides a means of turning on the MPS-1 power supply (and thus the BP20/25 pre-amp) remotely by connecting a 4 to 12 volt (AC or DC) control signal. To enable remote turn-on, the rear panel slide switch must be in the **REMOTE** position and the front push-button power switch must be depressed (activated).

To operate the MPS-1 power supply manually:

- 1st) Put the rear panel slide switch in the **LOCAL** position,
- 2nd) Press in the front panel push-button switch to turn on the unit. Press in the push-button switch again to release the switch and turn off the MPS-1 power supply and the BP20/25 pre-amp.

The three-position connector provides a control voltage for remote turn on/off of your Bryston amplifier(s) or other amplifiers so equipped.

To turn on a Bryston amplifier by turning on the MPS-1:

- 1st) Connect the **COM** and **+12V** terminals of the three terminal connector on the rear panel of the MPS-1 to the IN terminals on a Bryston power amplifier intended for a 4~14V AC/DC control signal.
- 2nd) Put the amplifiers "EXTERNAL TURN ON" switch in the **EXTERNAL** position for the amplifier to respond to remote control turn-on signals (see figure 2).

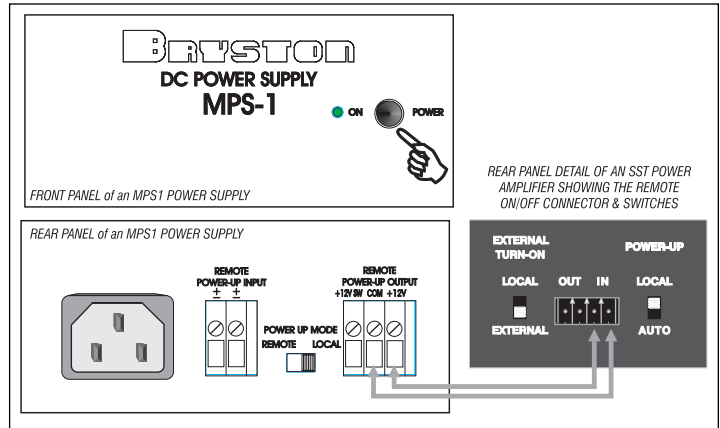


Figure 1: Turning "SST" power amps on & off via the MPS1 power supply

To turn a Bryston power amplifier OFF and ON when the BP20/25 pre-amp is MUTED and unMUTED respectively:

- 1st) Connect the **+12V SW** and **COM** terminals on the back of the MPS-1 to the two **IN** terminals on the power amp's remote control connector.
- 2nd) Place the power amplifiers **EXTERNAL TURN ON** switch in the **EXTERNAL** position.

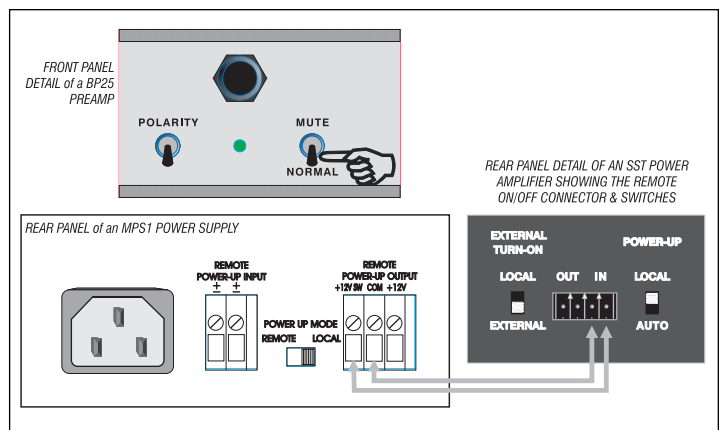


Figure 2: Turning "SST" power amps on & off via the BP20/25 MUTE switch

CONNECTIONS to OTHER EQUIPMENT:

All inputs and outputs employ fully discrete active circuitry and all input and output connectors have gold plated contact surfaces. Only cables with high quality gold plated connectors should be used with your pre-amp to avoid noise and distortion from the corrosion that will eventually appear on poorly plated cable connectors.

Connect the pre-amplifier'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, (BP20P, BP25P, BP20MC, BP25MC) 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 post adjacent to the phono inputs on the rear panel.

The Bryston BP-20 and BP-25 pre-amps 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 pre-amp. The tape or processor loop may be operated via the "Tape/Source" toggle switch located on the front panel of the preamplifier.

HEADPHONE OUTPUT:

It is recommended that you use headphones with an impedance of greater than 50 ohms for optimal performance. The main outputs, both balanced and single-ended, will be muted when a phone plug is inserted into the headphone jack (TAPE outputs are not muted). The front panel indicator LED will *not* turn red, however, as is does when the outputs are muted via the MUTE toggle switch or the hand held remote control.

INPUTS:

BP20/25 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.

Balanced inputs use 3 pin XLR female connectors with pin 1 being ground, pin 2 as positive signal, and pin 3 as negative signal. Input sensitivity is 1 volt and input impedance is 15K ohms.

Single-ended (or unbalanced) inputs employ gold plated RCA (Phono) jacks. Line input sensitivity is 500mV and input impedance is 50K ohms. See also *PHONO EQUALIZATION MODULES* for Phono input details.

OUTPUTS:

There are two pairs of parallel RCA main outputs and one pair of RCA tape output jacks. One pair of balanced outputs, using 3 pin male XLR jacks, are also provided.

Balanced Outputs: As with the input XLR jacks, pin 1 is ground, pin 2 is positive and pin 3 is negative. These out-

puts are capable of driving 30 volts into any load of 600 ohms or greater. Do not short any of these three pins together!

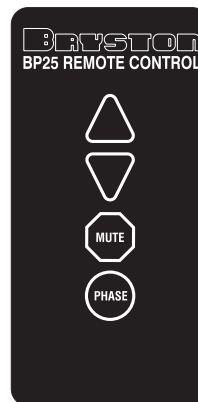
Single-ended or unbalanced outputs: As with unbalanced inputs, these connectors are gold plated RCA (phono) jacks. They are capable of driving 15 volts into any load of 600 ohms or greater.

TAPE LOOP:

Tape Outputs: 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.

Tape Inputs: The "FROM TAPE" (unbalanced RCA) inputs are 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.

BP25 REMOTE CONTROL (Optional):



The Bryston model BP25 preamplifier is supplied with a hand held infra-red remote control unit (units without the IR remote control are referred to as BP20 models). The remote features include *volume control*, *mute* and *polarity* (or signal phase). All remote control functions may be operated manually from the front panel of the preamplifier if desired.

Volume is remotely controlled via the **UP** and **DOWN** arrow buttons. A motorized volume control ensures the

lowest distortion with maximum long term reliability. It is also manually accessible on the front panel.

The **Phase** switch (or the "Polarity/Invert" toggle switch on the front panel) allows you to reverse the absolute phase of the audio signal (not to be confused with the left-versus-right channel phase), because polarity reversal can occur in the recording chain. 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 wave front. This may be audible in some cases as a more realistic rendition of musical transients when the preamplifiers maintain non-inverting polarity at the Main output for all inputs when the pilot light (or status LED) is green. The polarity is inverted when the status LED is yellow. The "To Tape" outputs are always non-inverted.

The **Mute** control mutes the main outputs (both balanced and unbalanced) of the preamplifier, but not the tape outputs (labeled "To Tape"). Refer also to the Power Supply section earlier in this manual for information regarding remote amplifier control (on/off) via the mute switch.

PHONO EQUALIZATION MODULES (Optional):

Bryston's phono equalizer circuitry is available in both BP20 and BP25 pre-amplifiers. It features highly accurate equalization, extremely low noise and distortion and provides headroom margins sufficient to prevent overload from any known phono source. If your turntable provides a separate ground lead, system noise may be minimized by connecting it to the ground post adjacent to the phono inputs on the rear panel.

Moving Magnet Phono Cartridge Input (MM):

This is Bryston's standard RIAA phono equalization stage. It is found in both the "-P" and "-MC" versions of the BP20/25 pre-amp. Input impedance is 50K ohms and sensitivity is 5mV.

Moving Coil Phono Cartridge Input (MC):

Moving coil phono cartridges require much more gain than the more common moving magnet types. To accommodate moving coil cartridges Bryston offers the BP20MC/BP25MC pre-amps which include specially designed, custom made step-up transformers in addition to Bryston's standard RIAA phono equalization stage found in the "-P" versions of the BP20/25 pre-amp. Which phono equalization stages are engaged is determined by the front panel toggle switch labeled "MC Phono / MM Phono". This switch is not present on the BP20P/BP25P models; it is replaced, instead with a "Mono / Stereo" switch. Please note that it is important that your phono cartridge is connected to the correct inputs in order to achieve proper performance.

Input impedance is 180 ohms and sensitivity is 350uV.

DIGITAL AUDIO INPUT MODULE (Optional):

The BP20DA / BP25DA models contain two SPDIF compatible digital audio inputs. To select either the DAC-1 or DAC-2 digital audio input, first set the rotary SOURCE selector to DAC, and then select between the two SPDIF inputs with the DAC-1/ DAC-2 toggle switch. The digital-to-analog convertor can handle input sample rates from 16KHz to 108KHz, and word lengths of 16, 18, 20 or 24 bits.

VISUAL INDICATORS:

MPS1 Power Supply: The LED on the front panel of the MPS1 lights GREEN when power is on and RED when the power is on but the main outputs are muted by having activated either the "Mute/Normal" toggle switch (on the pre-amp's front panel) or the "MUTE" button on the hand held remote control.

BP20/25: The three colour LED (light emitting diode) located on the front panel lights RED when the output is muted, GREEN when the output signal is non-inverting polarity and YELLOW when the output signal is inverted with respect to the input. When the LED is unlighted, the power is off.

FRONT PANEL CONTROLS:

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

POLARITY/INVERT TOGGLE SWITCH: Reverses polarity at main output5 each time pushed. (GREEN LED indicates positive polarity, YELLOW LED indicates inverse polarity).

VOLUME CONTROL: 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.

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 SELECT SWITCH: Rotary switch 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, "FROM TAPE" 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 "-MC" or "-DA" models).

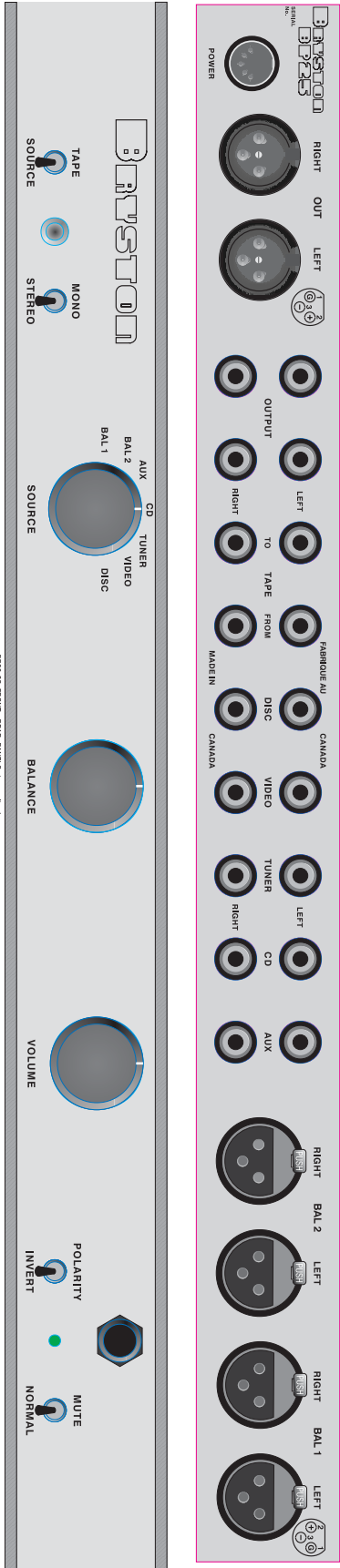
MC/MM PHONO SWITCH: This switch is present on the BP20MC & BP25MC models only. It allows the selection of either Moving-Magnet or Moving-Coil phono equalization. This switch takes the place of the "Mono/Stereo" toggle switch on other BP20/25 models.

DAC-1/DAC-2 TOGGLE SWITCH: Only on BP20DA & BP25DA models, this switch determines which of the two SPDIF digital audio inputs is processed and then sent to the tape and main outputs. The SOURCE select switch must also be in the "DAC" position to monitor the digital audio inputs.

TAPE/SOURCE SWITCH: "Source" position monitors whichever input is selected at the rotary SOURCE selector rotary switch. "Tape" 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.

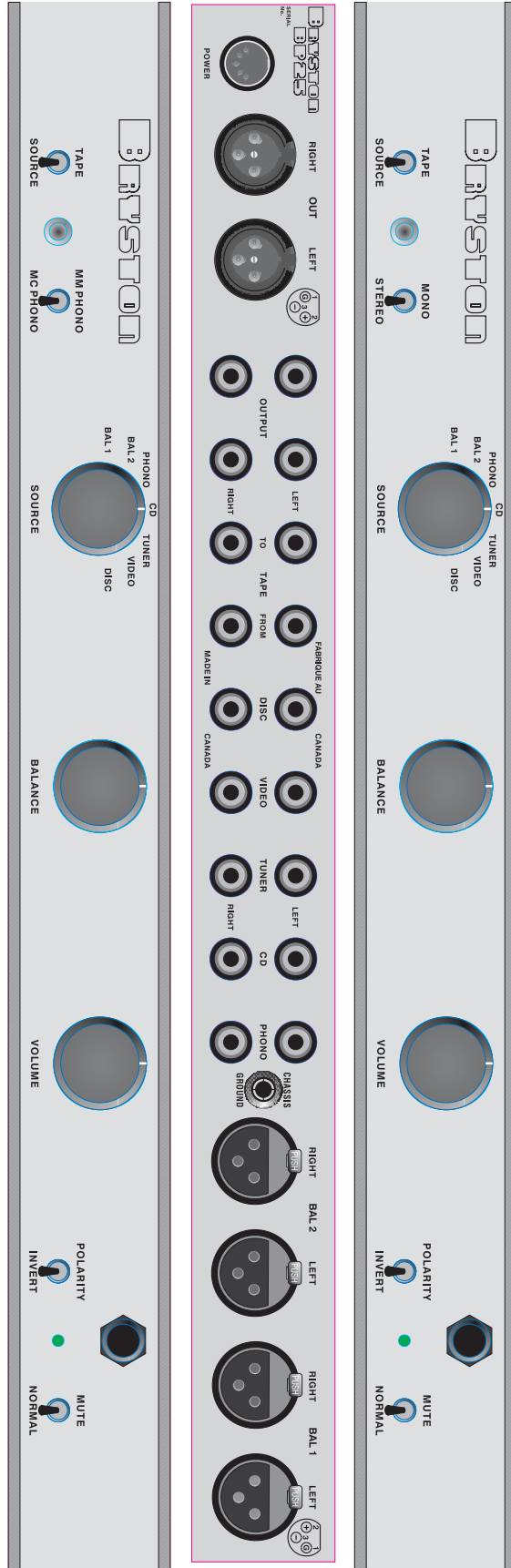
BP20 / BP25

Stereo preamplifier with 2 pairs of balanced inputs, 1 pair of balanced outputs, 4 pairs of single ended line level inputs, one pair of single ended phono inputs and a tape loop. Other features include phase inversion and mute switches and an external power supply. All BP25 models also include infra-red remote control.



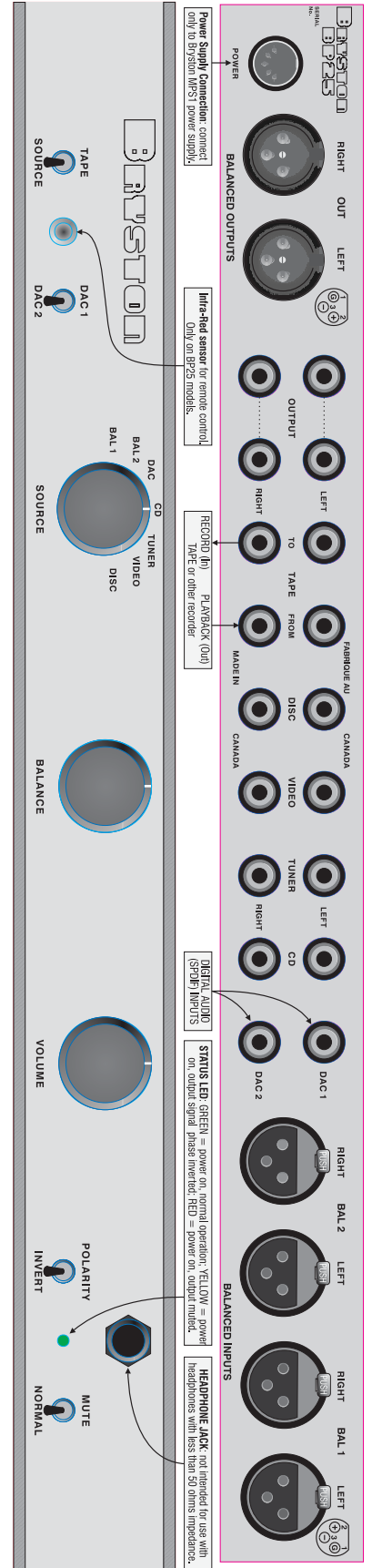
BP20MC / BP25MC

Stereo preamplifier with 2 pairs of balanced inputs, 1 pair of balanced outputs, 4 pairs of single ended line level inputs, one pair of single ended phono inputs and a tape loop. Other features include phase inversion and mute switches and a moving coil phono stage switches and like all BP20/25 preamps, an external power supply.



BP20P / BP25P

Stereo preamplifier with 2 pairs of balanced inputs, 1 pair of balanced outputs, 4 pairs of single ended line level inputs, one pair of single ended phono inputs and a tape loop. Other features include phase inversion and mute switches and an external power supply. All BP25 models also include infra-red remote control.



BP20-25_FRONT+RIGID_PANELS_manual.cdr

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 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.

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