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Text by: Werner Höglmaier
Photos by: Rolf Winter

Test - Preamp and Power Amplifier (Bryston 4B-SST Power Amplifier)



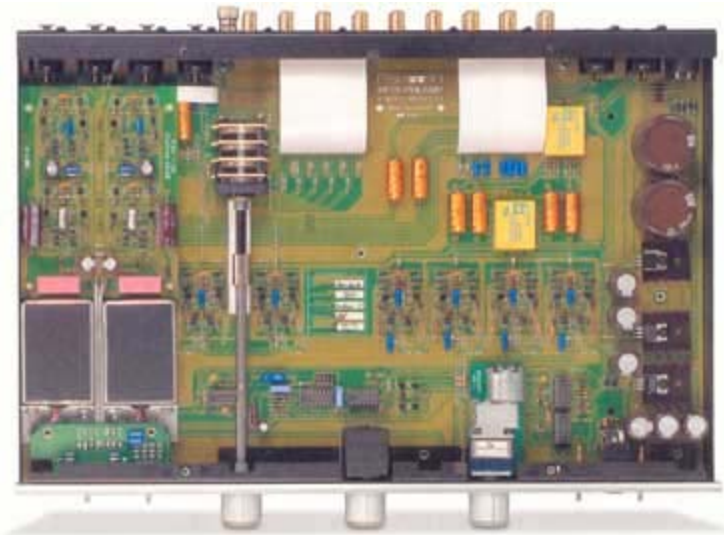
There are a considerable number of companies, which invest significantly more energy and financial power into their marketing department than into their actual product development. Illogically the resulting market success sometimes reinforces these responsible parties in this questionable endeavor - thank God however not at Bryston

The quite perverted laws of marketing are responsible for promoting these strange "blossoms." Thus the audible end result and the long-term functioning of the components is not a priority, but just a pretty, apartment matching, outside chassis. Lacking opportunities for audible comparisons, many consumers have only the outside measurements of the products, a neatly mirror finished or chrome plated front panel, or diverse other designer capers, for their decision making criteria. Many shoppers are not aware that inside the cabinets there might often be hidden atrocious and quite mediocre, or prone to failure, circuitry. Only when the components must be taken to a service center for the first time, for expensive repairs is the insufficient development work exposed. Then the buyer realizes that she/he has been blinded by outer appearances. The situation becomes quite stressed when in ones circle of friends similar, or even worse, better performance is achieved with considerably cheaper



components than within ones own four walls. At the time of the purchase perhaps one should have listened somewhat more carefully and compared more intensively!

It is almost certain that you will be spared such insights with Bryston. Which other manufacturer has enough confidence to offer a full 20 year warranty for their products, that is transferable to each subsequent owner? Besides that, 80 employees in the 3000 square meter factory have totally come to terms with the engineering, manufacturing, and quality control tests of the products. Furthermore, the design of the Canadian components is straightforward and odown-to-earth to such an extent that alone from this there would rarely be a decision made to purchase. The shopper who finally decides on Bryston amplifiers has normally been convinced by the inner values and acoustical results.



Thus the new BPS-25 preamp is a carefully reworked variant of its predecessor. Only the most costly and longtime-stable parts are used in the complimentary-symmetrical circuit design. All areas are very conservatively designed, and parts are very conservatively selected, in order not to stress the power handling capacity of the individual active and passive parts. Discrete devices are used exclusively for the entire signal paths. Integrated circuits, the "little bugs", are only utilized for control and auxiliary functions.



The phono printed circuit board, located on the large main circuit board, was taken over from the previous model without any modification, because nothing of importance could be improved upon its first class performance. The expensive concept of the two-stage amplification, respectively equalization, and the costly mu-metal triple shielded Hammond transformers with their tightly soldered shields for the MC signals, altogether also do not justify any complaints. One rarely finds such an extravagance even in several times more expensive external phono preamps. Also not too many competing products exhibit the attained accuracy of the Bryston Phono RIAA equalization.

The remote power supply which contains the transformer, a few electrolytic capacitors, and the first stage of the voltage regulation, assures a relatively high supply voltage standard. The plus/minus 24 volts guarantee an extremely high output voltage reserve and the best acceleration values for the usable signals. Therefore, quite high input levels via an extremely costly input switch - the switch contacts are silver plated copper, with a final layer of gold plating - are routed to the actual amplification stages, without the BPS-25 showing even the beginning of any type of distress. There, and in many other areas, one notices that the Canadians are also at home in the highly demanding studio engineering environment with a very efficient product. Although no one needs to use the enclosed rudimentary infra-red remote control, the precision of the volume and balance control is taken for granted. Their origin from Alps and Noble already speaks for itself, but even these extremely accurate parts are still measured individually and specially selected prior to being installed.



The same care is applied to the construction of the chassis. Each screw is affixed into its own threaded bushing, so that it will still hold after the hundredth time, and not rotate endlessly after the first snooping inspection into the cabinet's innards.

That one can also find these aspects in the considerably more voluminous 4B-SST power amplifier almost goes without saying. Incidentally this classic amplifier has sold more than 30,000 units in its individual incarnations since its birthday in 1975. Despite the fact that during this time this powerful amplifier had to undergo several revisions, the basic concept remained the same: Double mono construction with very high output at the speaker terminals. Also in the most recent chapter of this success story Bryston has worked very hard on the innards in order to "get something more out of it." Both transformers which are stacked behind the thick front panel, have a conservative rating of 600 VA each. The electrolytic capacitor bank of 90,000 mfd. does its part in order to assure continuous and uniform output. Therefore 2 x 300 Watts into eight ohms are available, which can be raised, if necessary, to bridged mode providing 1 x 900 Watts. That these potent power outputs must be controlled with the Bryston proprietary

"softstart" circuit is a given. In our case the protective switching is particularly clever because Bryston - as well as the author of these lines - is certain that from an audible viewpoint relay contacts have no business at the output of a superb power amplifier. Therefore the switching for high temperature, high current, short circuit, and DC offset protection must take place in other areas of the circuitry, and much earlier, in order to prevent damage. The main fusing is automatic for convenience sake. If all of this would not function absolutely reliably Bryston would not be able to sell a single component to professional studios worldwide because the managers of these establishments easily bear a grudge which could have dire consequences for Brystons reputation.

The output transistors, jointly developed by Toshiba and Motorola, can supply 250 Watts each. Eight of these devices are, as far as I know, uniquely connected in the Canadian power amplifier. Normally it is not possible to manufacture NPN and PNP transistor types which are always used in the classic push-pull arrangement, with the same data and characteristics. Small differences are unavoidable from a physics standpoint. These unbalances are caused when the positive and negative half waves are processed. Bryston succeeded in each circuit leg, by means of a design trick, to utilize NPN as well as PNP types, which compensate each other, and as a consequence produce a completely homogeneous form of signal. Actually it makes one wonder that no one else has come up with this ingenious idea until now.

The list of features of the preamp and the power amplifier is quite long. Especially the power amp which is blessed with a few special traits. The input sensitivity can be chosen in two steps, the amplifier can be remotely turned on with a trigger voltage, and can even receive signals via studio phone plugs.

Before a component in Canada is ready to be shipped, it undergoes a so-called burn-in. The components run uninterrupted for 100 hours at full output, and during half of this time they are also subjected to additional outside temperature extremes. Thus one relentlessly identifies the existence of possible impaired areas in the circuitry. A component that has survived this marathon test without damage, will also survive the next 20 to 40 years without problems. Therefore, the customer does not have to subject Bryston components to wearisome break-in times. Parts which are not completely formed after such long stress processing, normally do not exist.

Consequently one only has to wait for the warm up phase, which takes approximately a quarter of an hour, and then one can begin, of course always with the presumption that one has carefully read the operating instructions, because only the main power switch is on the back of the power amplifier. The amplifier is activated by touching the "SST POWER" emblem on the front panel, and for this insight one would undoubtedly require a large portion of intuition without the instruction manual.

Components of the Test Setup	
CD Players:	Naim CDS II, Linn Karik
D to A Converter:	Linn Numerik

But once this small hurdle has been overcome there is no stopping. Already during the first few minutes with the small Linn Katan loudspeakers connected to the massive, suitable for all types of connectors, speaker terminals, there was evidence of the distinct audible potential of the Bryston preamp-amplifier duo. With the most comprehensive Model Linn LP12 LP record player and the Linn Adikt phono cartridge, both the MM phono section as well as the actual BPS-25 preamp and the 4B-SST power amplifier reveal how well this combination handles musical signals. With a potent ration of power in the lower registers, with a variant rich, relaxed mid tonal section, and unobtrusive but always very clear and detailed highs, the duo immediately played into the heart of the listener with diverse "black discs." The control capability in all areas is especially impressive, as well as the resulting natural and unforced sounding clarity. No trace of the strongly artificial sound pictures which one obtains from many amplifiers which are cultivated with all imaginable means to achieve resolving power. The exceptionally successful "voicing" of the Brystons has the advantage of not robbing part of the music or dissecting it: Here what belongs together remains together without creating muffled uniform mush. It is definitely possible for the listener to cleanly separate the individual (tonal) occurrences. This is especially successful on the basis of the very clear reproduction of space and the distinct fine dynamic links which the Canadian team is able to portray.

Then when my Naim DBL loudspeakers were connected, the 4B-SST amplifier could really revel in the nether regions and demonstrate its pronounced mobility in this region. Extremely clear gradations and modulations are produced which leave many other power amplifiers in the dust. Thus the Bryston preamp/amplifier combination exhibits an especially lively and speedy pace, which unceasingly sweeps one along. The transition to the vocal range is achieved homogeneously and without breaks because of the especially finely drawn high frequency spectrum. There one gear meshes into the other without

CD Transport:	Linn LP12 with Lingo
Tone Arm:	Linn Ekos
Phono Cartridges:	Linn Arkiv II, Linn Adikt, Benz Glider L2, Audio Technica AT-33 PTG
Phono Equalizers:	Naim Prefix with Supercap, Conrad Johnson EV-1
Preamps:	Naim NAC 52, Naim NAC 552
Power Amplifiers:	6 x Naim NAP135 Linn Klout, Linn 2250
Loudspeakers:	Naim DBL (active and passive), Linn Katan
Cables:	Naim, Linn, HMS, Chord, Cardas, Sun Audio
Accessories:	Naim Frame, Sun (plug-in) Strip, HMS-Power Plug, Furutech RD-1, Artkustik Audio Animator, VPI 17

creating any frictional losses. This becomes even more evident when high quality MC phono cartridges are used. With the Linn Arkiv II or the Audio Technica AT-33 PTG cartridges a little bit more blackness and pressure came into play in the low tonal region, without influencing the rest of the frequency spectrum. The listener was rewarded with a still more convincing and impressive presentation, which is surely due to the excellence of the exceedingly potent power amplifier. But in this area one should definitely not forget the decisive contribution of the excellent transformers on the preamp phono section circuit board. Perhaps due to the somewhat too low 180 ohm input impedance I then found the combination of the BPS-25 preamp with the Benz Glider L2 phono cartridge somewhat less successful.

It must still be mentioned that the line level input of the BPS-25 preamp exposed no problems, and signals from the Naim CDS II CD player or the Linn Karik transport coupled with the Numerik D to A converter were passed on with no perceptible losses. Here also the outstanding capability of the Bryston duo becomes evident, by reproducing the tiniest subtleties without causing a trace of nervous obtrusiveness for the loudspeakers. Are there any criticisms? Actually not. As long as one keeps the input impedance for MC phono cartridges in mind, there are no real constraints in sight, and on the output side I also do not see any kind of criteria for the loudspeaker connections. With such an output capacity and stability even immense rooms with their respective efficiency annihilators and impedance monsters should not cause any problems.

Bryston BPS-25 Preamp	
Inputs:	1 x Phono, 5 x Line (RCA), 2 x Line (XLR)
Outputs:	2 x Line, 1 x Tape (XLR), 1 x Line (XLR)
Special Features:	Remote Control, Outboard Power Supply, Phase Reversal Switch, Headphone Jack, MC Transformers
Dimensions (W/H/D):	43.18/4.44/28 centimeters 17/1.75/11 inches
Weight:	7.5 kg., 17 lbs.

Price:	2,500 Euro; 3,200 Euro including phono PC Board
Warranty Period:	20 Years, transferable
Bryston 4B-SST Power Amplifier	
Output (8 Ohm):	2 x 350 Watt
Inputs:	1 x RCA, 1 x XLR/1/4" Phone
Special Features:	Bridgeable, Standby Switch, Variable Input Gain, Quick-Connect Remote 12 Volt Power Trigger Input
Dimensions (W/H/D):	
With Handles -	48.25/13.3/43.8 centimeters 19/5.25/17.25 inches
Without Handles -	43.2/13.33/40.1 centimeters 17/5.25/15.75 inches
Weight:	18 kg., 42 lbs.
Price:	3,800 Euro
Cabinet Finishes:	Black, Silver
Warranty Period:	20 Years, transferable

Rather let's ask the question the other way around, because here the response is easier: For whom is the Bryston duo especially rewarding? Besides the consumer who is looking for a high-class, bereft of flourish, and gimmick-free preamp/amplifier combination, one can name the owners of somewhat analytical, weak in bass and overall reproduction, loudspeakers which can find their "path of virtue" once again. The users of high quality analog sources should certainly compare the BPS-25 preamp with expensive external equalizers. The quality of the built-in (equalizer circuit) printed circuit board should provide a few "Aha!" occasions.

image Verdict:

Ultra robust, sensible, indestructible, potent, and tonally powerful are the fitting attributes for the combination of the Bryston BPS-25 preamp and the 4B-SST power amplifier. The components are manufactured rationally in every respect. Additionally they provide their owner with a totally free choice of loudspeakers. The "future safe" preamp/amplifier duo justifies every single Eurocent of its purchase price. And what do we learn from all of this? With the availability of such outstanding product quality one can confidently spare one's own marketing and one's own design department.

Translated from the German by Peter Ullman