THE LIBERTY AUDIO B2B-1 PHONO PREAMPLIFIER

MADE IN THE USA

*Factory Direct With 2-Week Return Policy**

ONLY $2,295.00

INTRODUCTION

The B2B-1 Phono Preamp from Liberty Audio is a very high-quality, low-noise, all FET (Field Effect Transistor) Moving Magnet/Moving Coil Amplification device. Housed in a heavy-duty aluminum enclosure finished with a crinkle baked-on powder coating, it features a 3/8" thick solid black anodized aluminum faceplate.

The Liberty Audio B2B-1 is supplied with one set each of RCA inputs and RCA outputs, located on the back panel. A ground lug for securing the ground wire from your turntable is also provided on the back panel, as well as one input XLR connector and one output XLR connector.

A total of 5 internal cartridge-load settings are offered for resistive loads of 100R, 221R, 332R, 499R and 47K. a 220 pF Silver Mica capacitor is available and can be engaged for MM operation or disengaged for MC operation. Custom resistive and capacitive load settings can be ordered if desired at a very minimal upcharge.

Each B2B-1 Phono Preamplifier uses a cascaded two-amplifier topology instead of the typical single-amplifier approach. This allows us to optimize the B2B-1 for even lower noise, gain structure that is close to perfection, and an exceptionally refined capacity to satisfy the full dynamic range of any recording, past or present. The input amplifier features a superbly engineered high-gain design with a completely flat frequency response. By a simple adjustment of two internal jumpers it can be adjusted to achieve a gain of 40dB (MC) or 20dB (MM). The output amplifier provides 24dB (at 1kHz) of additional gain, while at the same time, implements the bass boost defined by the RIAA characteristic. A very simple, but cleverly placed RC network between the two amplifiers provides the 75uS roll-off as specified by the high-frequency section of the RIAA equalization curve. The B2B-1 boasts a better than 0.1dB RIAA accuracy, and provides 44dB of gain in the MM setting and 64dB in the MC setting.

There's more…the Liberty Audio B2B-1 Phono Preamp has been designed with the ultimate phonograph connoisseur in mind. Each B2B-1 unit can be set for MONO operation to turn it into a fully differential amplification device. The conversion is accomplished by adjusting two internal jumpers and by making connections to both the balanced input XLR connector and the balanced output XLR connectors. All the benefits of a differential topology are then realized: Better dynamics, a lower noise floor, inherent immunity from RFI, and, of course, double the speed. These are all essential attributes which position the Liberty B2B-1 in virtually a league of its own. For stereo operation you would, of course, then require two B2B-1 units. When configured as a differential mono block, the gain is 50dB for MM and 70dB for MC.

For ease of use the B2B-1 has been designed with an internal power supply. To prevent interference from contaminating the delicate signal amplification circuits, the power supply is completely sheltered by a number of impenetrable aircraft-grade aluminum shields. The power supply is a completely dual/mono design,

featuring separate low mechanical noise, 50% duty cycle transformers for each channel, and powered from a fused/switched/filtered IEC AC inlet socket, thus allowing the option of using custom AC power cords.

The B2B-1 uses FET transistors throughout, even in the on-board regulators. While the commonly used bi-polar devices provide excellent low-noise characteristics, they lack the ultimate resolution capability and linearity demands necessary for low-level signal circuits like a phono preamplifier. In addition, they tend to contribute a grainy and irritating sound. JFETs, on the other hand, offer exceptional resolution as well as natural and transparent sound in combination with low noise. Bi-polar devices do not come close to matching the B2B-1's refined resolution. In some instances, tubes have excelled in terms of resolution, but ultimately they can't match the low-noise and neutrality of the JFETs – precisely why we have selected JFETs for this groundbreaking amplifier.

CONFIGURATION

THE B2B-1 Preamplifier can be configured for almost any cartridge by internal jumper settings; to access them simply remove the small cover on the left side on the top of the unit. *Make sure the B2B-1 is OFF and the power cord is COMPLETELY REMOVED before attempting to configure your amplifier. Further, make sure that you do not have any static discharge – TOUCH EARTH GROUND before opening the B2B-1.*

Remove the four Phillips screws (#1) used to secure the cover, using the supplied screwdriver and taking care not to damage or scratch the cover while doing so. Beneath the cover you will find three groups of jumper pins. The front group has settings for the left channel; the middle one has settings for Stereo/Differential Mono operation; and the group furthest to the back has settings for the right channel. The channel settings, from front to back, are as follows: MM - MC - 100 - 220 - 330 - 500 Ohm loading (the last one is capacitive loading for MM settings at 220pF). *THE JUMPER MUST BE IN PLACE on either MM or MC.* If there is no jumper in any of the resistive settings, the input impedance of the B2B-1 is 47500 Ohms or 47K5. By inserting one or more jumpers you can select the desired resistive loading to suit your listening preferences. You can adjust for lower than 100 Ohms by inserting two or more jumpers in any of the four resistive settings. As one example, if you have a jumper in the 100R and the 500R, the loading on the cartridge is approximately 83 Ohms. The resulting value with more than one resistor engaged is calculated as follows:

$$R = 1 / ((1/100) + (1/500))$$, based on the above example.

For easy configuration, use the supplied set of tweezers and make sure the jumpers are properly inserted (if a very specific loading is desired you may return your B2B-1 to Liberty Audio for custom load optimization at a nominal fee). *REPLACE* the cover after you are done configuring the B2B-1 and *NEVER* operate the unit without the cover in place.

DIFFERENTIAL MONO BLOCK OPERATION

If you have two B2B-1 preamplifiers you can configure them as differential mono blocks by internal jumper settings. Move the two jumpers in the middle section between the two channels furthest to the right.

DO NOT ATTEMPT TO OPERATE THE B2B-1 as a differential mono block using the RCA sockets. Use the BALANCED CONNECTORS ONLY. Note: In differential mono operation the load settings must be half of what you would normally use; if you have engaged jumpers in the LEFT (negative node) and RIGHT (positive node) 100R jumper positions, the load your cartridge will see is 200R.

CONNECTIONS

To connect the B2B-1 to your system you will need a high-quality set of interconnects to connect it to your line-level preamplifier. The set of RCA sockets located in the middle back of the B2B-1 are the outputs; the upper one is LEFT (black) and the lower one is RIGHT (red). Then connect the tone arm cable from the B2B-1 to the RCA connectors on the right side (when looking at it from the front) of the amplifier. Again, the RED (lower) connector is RIGHT; the BLACK (upper) connector is LEFT. Also secure the CHASSIS ground wire to the ground lug furthest to the right (this is connected to the EARTH ground inside the B2B-1).

Lastly, connect the supplied power cord to the B2B-1 and connect it to an AC power source. Check the back panel to assure that your B2B-1 unit is correctly set up for your AC power. 117V is good in all areas with AC power from 100V to 125V, and if labeled “234V” you can use it with AC power from 220V to 240V. The B2B-1 has adequate internal regulation to ensure proper operation within the above specified voltage ranges.

Internally, the B2B-1 can be configured for either 117V or 234V operation by the removal/insertion of hard-soldered jumpers. *THIS SHOULD ONLY BE PERFORMED BY QUALIFIED PERSONNEL. LETHAL VOLTAGE IS INSIDE THE AMPLIFIER AND IRREPARABLE DAMAGE CAN OCCUR IF NOT CONFIGURED CORRECTLY.*

The B2B-1 is equipped with an AC input socket also containing an AC fuse and a power “on” switch. It should never be necessary to replace the AC fuse if the B2B-1 functions properly. In the unlikely event that the B2B-1 does not power up, first check to confirm that the outlet it is connected to is “hot.” If so, THEN check the fuse. The power cord must be removed to do this. It is located in the middle of the inlet, and there is a spare fuse there as well. ALWAYS use the correct value fuse: 250mA for 234V operation and 500mA for 117V operation.

PLACEMENT

The B2B-1 is a pure class A amplification device, and it will run warm. Please make sure that you leave adequate space around the amplifier for air flow, and make sure you do not cover the ventilation holes on either the top cover or the bottom of the amplifier.

B2B-1 TECHNICAL SPECIFICATIONS

INPUT STAGE

Gain ..... 20 or 40 dB, depending on jumper setting (MM/MC)
THD @ 20dB Gain 3V/1kHz 0.001%, 3V/10kHz 0.0028%
Max Output Voltage .....10V RMS
Rise Time @ 20dB Gain 300nS
Equivalent Short Circuit Input Noise 100nV
Current Consumption 40mA

OUTPUT STAGE

Gain @ 1kHz 24dB
THD 3V/1kHz 0.001%, 3V/10kHz 0.0015%
Max Output Voltage .....12V RMS
Rise Time..... 300nS
Current Consumption 70mA

RIAA Accuracy..... 0.1%
Total Current Consumption..... 130mA (on-board regulators use 20mA)
Dimensions .....17” W x 10.5” D x 3.25” H
Net Weight..... 11 lbs.
AC Input Voltage ..... 100V to 240V, depending on internal setting
AC Consumption 25W

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